

Poster Presentation: Mankind and Health

19c: Three Years of Spanish Compulsory Helmet: Some Results of an inconvenient Law

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In 2004 a reform of the General Regulation of Traffic was approved containing some improvements for cyclists. Nevertheless, it also had some points in that regulation breaking that positive tendency. The compulsory helmet regulation in interurban routes created a serious sensation on which bicycle was a risk sport, ignoring its function like means of transport, means of healthful leisure and tool for cyclotouring.

This Regulation, done by the Spanish government, but in fact written by the technicians of the Spanish National Traffic Safety Committee, had to develop the Road Security Law, dictated by the Parliament, which already placed the helmet like an obligatory element.

But the technicians did not know very clearly how to approach the development of that law that had been made with no attention to all the users of the bicycle. Regulation then proposed somewhat subjective conditions in which the helmet would not be compulsory. This double moral to force restrictively in one hand and to be open-handed on the other hand, showed the deep contradictions of a law that should never had to have carried out.

After three years from the beginning of the Regulation, I analyze its results, demonstrating that after this time the intentions that the law persecuted with the compulsory helmet are far to make progress but a deep lack of success in the primary intention of the law: improve the security of the cyclists.

1. Cyclists have not been a priority

Spain don't care about cyclists; in fact it is one of the countries in Europe more carefree about it. Trustworthy and updated data on the number of cyclists that exist in the country are unknown either the number of bicycles that exist nor the kilometres travelled with them. Likewise, percentages of the reasons for the trips by bicycle (leisure, sport, transport, etc...) do not exist

By ignorance of these data, statistics of cycling accidents cannot be totally trustworthy. So we are losing a large amount of information which prevents us from understanding the problem and to find possible solutions.

In Spain, the context used for solving the problems on road safety of cyclists up to year 2004 has mainly been two:

1. Trying to improve the safety of cyclists in inter city areas, normally ignoring urban areas.

The characteristic mistake to consider cycling from an almost exclusively sport point of view avoided one more global conception of bicycle.

2. Implementing compulsory rules for cyclists as some of them dissuade from using the bicycle, doing responsible the own cyclists for which it happens to them, without a previous study of the real causes that made cyclists to be such a vulnerable group.

It is an attempt to solve the problem of road violence treating the symptoms of the final link of the chain, cyclists, instead of focusing on the automobile aggressiveness and the responsibility of Public Administrations.

2. What Law and Regulations say about cycle helmet.

In the "Adaptation of rules of traffic to the cycling practice" (1999), the sadly known as "Anti-cyclists Law" obligation of using helmet for cyclists in inter cities road was imposed as follows: *"Users of bicycles will be obliged to use the protective helmet in inter cities roads under the conditions statutorily established"*.

In the justification of the Law was recognized that *"helmet is not the solution for the cyclist accidents in road¹"*. And it was also stated *"If out of 100 cyclists one survives.²"*. That is to say, Administration agreed with 1% of effectiveness, without deciding if that 1% of cyclist was lost for any other causes, produced precisely by the implementation of compulsory helmet. Spanish traffic casualties amount to 4,000 per year; near 100 of them are cyclists. To reduce the figure up to 3,999, more than two million of cyclists (accepted estimation of cycling users in inter cities areas, but not official) should have to use helmet each time they go out³.

The General Regulations of Traffic, in force since January 2004 developed the Law, as follows:

"Users of bicycle will be obliged to use protective helmets officially authorized or certified according to valid legislation, when they travel in inter cities road, except in long upward slopes, or due to medical reasons duly proved, or in extreme conditions of heat."

Users of bicycles in competition, and professional cyclists, during their training or in competition, will be regulated by their own rules."

Racing bike, one of the riskiest modalities of cycling, is free of using helmet for training (for competition is compulsory according to UCI norm) but the rest of users are obliged to use it for safety reasons.

Analysing the text, we do not know exactly what is "long upward slopes" which percentage is considered "upward"? which distance is considered "long"?

Exemption due to "extreme conditions of heat" is a necessary and justified sentence by the same reason that the long upward slopes (an excessive effort and/or the heat can prevent from an adequate dissipation of heat in the head for most cyclists' helmets⁴). Even so it is not clear. What is "extreme conditions of heat"?

Feeling of heat will not be the same for everybody (Spanish people and North European people, for instance). It will not be the same for anybody in a quiet ride or anybody in a fast ride. It will not be the same for anybody with long hair or anybody with short/without hair. However, no one of these things can be measured. Should we discuss with police if the conditions in a concrete moment are classified of "extreme heat"?

The solution is not to set parameters of extreme temperature, neither the conditions considered hot for cyclists or the parameters for considering an upward or long slope. The solution is not doing compulsory the use of helmet that the own Regulations did not even know how to face properly.

In these circumstances it is not strange that police responsible of interurban traffic do not consider a priority to fine cyclists without helmets (except rarely in few areas of our country), and consequently shows the unnecessary regulation on this subject.

¹ "The Congress will approve compulsory helmet for cyclists in highway ", Agency Efe, El País, Madrid, 1 November 1999.

² "Safer Cyclists", J.M.M., Traffic, XV, Spanish Directorate of Traffic (Ministerio de Interior), Madrid, July-August 1999.

³ "The helmet for cyclists and road safety", Hildegard Resinger, Iberian Congress The bicycle and the city, Aveiro, Portugal, 2000.

⁴ "Heat transfer variations of bicycle helmets", Paul Bruhwiler, Empa, Journal of Sports Sciences, British Association of Sport and Exercise Sciences.

According to Spanish Directorate of Traffic, most of dead cyclists are knocked down by a car when they ride by wide roads, in good conditions of visibility and in straight sections, and without committing any infraction on the cyclist part⁵. Under these circumstances, the fact of wearing helmet or not has no sense.

3. Impact on urban areas

The compulsory helmet in inter urban roads has resulted in blaming the cyclist of everything that happens to them by the fact of not wearing helmet, even if the cyclist is travelling in urban areas, where it is not compulsory. Persecution in some cities is worrying. That is the example of Madrid, where the mobility police and the local police are continuously taking the cyclists to task for not wearing a helmet.



There are some cases of fines to cyclists in Madrid, despite of not being compulsory (see image on the left, model of fine to a cyclist in urban area for not wearing helmet). Those fines are not paid, but this persecution is dissuasive of using the bicycle. If now is difficult introduce a cycling culture as means of transport in Madrid, mainly due to that the city is designed for cars, this persecution to cyclists does not precisely help promoting the bicycle in this city.

4. Culpability and responsibility

Nowadays if a car driver commits a driving offence and endanger a cyclist who reproaches the car driver the offence, this one blames the cyclist for not wearing a helmet. The message would be, "if I knock you down and you do not wear a helmet, a good deal of guilt is yours." Is it not thus in fact? Insurance companies allege the fact that the cyclist does not wear a helmet (even where it is not compulsory) to pay less quantity in concept of accident damages, though it is demonstrated that if a cyclist is knocked down by a car the helmet will not work and it will not prevent from a severe or even mortal injury⁶.

5. Bicycle is dangerous

Since the law came into force there has not been information enough about the norm, but the worst is the message sent to the society, "travelling by bicycle is VERY dangerous, for that reason it is necessary wearing helmet". Is it true? Is that assertion compatible with promotion of the use of bicycle to help clearing cities from polluting vehicles? Helmet is giving the feeling that to travel by bicycle is unsafe, when in fact it is a very safe activity.

⁵ "Survey on cyclists' accidents in inter urban roads", Ministerio del Interior, Spain, 1999.

⁶ Cited in "Ontario Coalition for Better Cycling, Bicycle Helmets. Frequently asked questions", Dr. Michael Schwartz, neurosurgeon and member of the commission to establish norms of helmets of the Canadian Standards Association, <http://www.globalx.net/ocbc/hfaq.html>, 1999.

6. Campaign about road safety for the cyclists and helmet

The radio and press campaign carried out in year 2005 by the Spanish Directorate of Traffic informed cyclists about some of their obligations and rights. They did not tell about everything, but of course, they informed very well about compulsory helmet.

In the radio, they said the following sentence: “... and of course, helmet is better to wear it always, although it is only compulsory in inter urban areas...” Now it is not rare that even in cities we are suffering the above-mentioned persecution. Furthermore, there was no information about the circumstances which excuse from using helmet in inter urban areas (heat, slopes, medical reasons), so many people believe they have to wear it anyway.



In the left image, it says, “... 72 sport cyclists had saved their lives last year”. Once more the use of bicycle is associated with sport, and consequently with risk and with the necessity of protecting oneself with helmet, a passive protection measure. Some of these 72 cyclists who died were not at all sport people, simply they used their bicycle as a means of transport or as a means of entertainment (cycle touring trips), for whose activities it is not necessary to be especially fit, neither wearing especial suit that implies doing sport.

In the same image advises for car drivers in their relation with cyclists and advises for cyclists are all mixed. After telling car drivers to be careful with cyclists it says that helmet is compulsory for those pedalling. Are not they giving again the message that in case of accident the responsibility is for the cyclists if they do not wear a helmet?

7. Statistics and surveys

The only official survey about cyclists carried out until now in Spain⁷ stated, “It could not be established existing relation between the use of the helmet and the type of injury suffered to cranial level. The found differences can be due at random. Neither could be established, from the available data in this survey, the advantages of the use of helmet in front of the type of cranial injury suffered (traumatism in front of fracture)”. Despite of this, that same year was approved the law which obligated helmet for cyclists.

No reliable data inform how the compulsory helmet has affected. It is not very useful the number of casualties/ accidents in previous and later years to the law as it is statistically unknown increase or decrease of users in that period. In the graphic, there is no incidence in the number of injured or dead cyclists. By being relatively small figures, changes in the statistics can easily be fortuitous and not significant. Even the first year of obligation (2004) there was an important increase of accidents and casualties that corrected the next year.

YEAR	Injured cyclists in inter urban roads	Injured cyclists in urban areas	Dead cyclists in inter urban roads	Dead cyclists in urban areas
2001	753	1239	78	22
2002	803	1238	78	18
2003	766	1320	62	15
2004	820	1455	68	21
2005	733	1434	59	23

⁷ “Survey on cyclists’ accidents in inter urban roads”, Spanish Directorate of Traffic, March 1999.

Statistics show most of cycling accidents involve a motorized vehicle. Half of cyclists who die nowadays in Spanish roads wore helmet. Users in urban areas are strongly increasing.

8. Study of Evaluation of the Spanish Directorate of Traffic

A brief Study of evaluation in the first year of compulsory helmet,⁸ produced the next conclusions:

- The first year of compulsory helmet accidents increase a 8.93%.

As said, the tendency changed next year. Low figures make no significant results.

- After the compulsory helmet, it is detected an increase of use of helmet among the cyclists who suffered an accident (from 35.6% to 48%).

Since the number of casualties in general increased 8.93%, from the years of the study (1999-2003) to the year of introduction of the law (2004), and the number of casualties with cyclists using helmets increased in that same period 12.6%, the use of the helmet might take to suffer an accident more frequently. Will the effect of compensation of the risk take them to commit more irregularities and make them take more risks? To be sure, it would be necessary to know the number of cyclists who used the helmet before and after the law, unavailable information now.

- They say there was a reduction of head injuries, because they passed from 30.2% to 25.1%.

It is surprising that the use of helmet among the cyclists' casualties has grown a 12.6% and, nevertheless, the reduction of head injuries "only" has decreased a 5.1%. Still more when this reduction in the importance of head injuries has to be considered necessarily compensated by a relative increase of the importance of injuries in other locations. The own study warns us that *"In this point it is possible to consider that in the procedure of statistical registry of data in the variable of 'location of the injuries' the police must indicate a single alternative. On the other hand, given the characteristics of the cyclists' accidents, it is usual that these ones present injuries in more than one location. Before the existence of a verifiable injury in the head together with other injuries, the police are going to tend to indicate the head injury, assuming a greater potential seriousness of this one. Thus, it is possible to state the hypothesis that those locations of injuries that have a greater relative importance already existed previously to the introduction of the regulation, but they left themselves in a second place before the presence of head injuries"*.

To this aspect, it is necessary adding the phenomenon of infra registry⁹. It is excluded an important percentage of accidents and casualties since there is not any police registry, although there are hospitable admissions or other similar actions. Furthermore, the police data do not contain references to the mobility context in which the accident were registered. It is not possible either to explode as trustworthy source of medical character the limited appreciations by definition (multiple answer is not allowed) and purely subjective of the traffic police (staff without medical qualification) on the location and the seriousness of injuries. This implies to be very sensible when studying evolution of cycling accidents from the data offered by the police responsible of traffic.

⁸ "Survey on Evaluation. Obligation of using helmet for cyclists in Inter city areas", Traffic and Road Safety Institute, University of Valencia, 2005.

⁹ "Under reporting of road traffic accidents". Helen James, Traffic, Engineering and Control, London, December 1991.

9. Survey of the Polytechnic University of Valencia

	Polytechnic University of Valencia 1996-2001	Study of Spanish Directorate of Traffic 1999-2003	Study of Spanish Directorate of Traffic 2004 (obligation of helmet)
Percentage of cyclists' accidents with helmet in Inter. City areas	28,1%	35,6%	48%
Percentage of head injuries	22,4%	30,2%	25,1%

This survey¹⁰, carried out for period 1996-2001 on the data of the Spanish Directorate of Traffic, and previous to the one made by the DGT (Spanish Directorate of Traffic), allows us to have a wider vision that we show in the graphic.

From these data, we can extract new conclusions:

- The use of helmet in cyclists' accidents seems to be increasing in inter urban areas. It could be that a greater number of cyclists use helmet, but data is not verifiable.
- There is no clear correlation between head injuries and the supposed greater use of helmet.
- Previously to the "anti-cyclists' Law", that introduced the obligation of helmet (1996-1999 period) the percentage of head injuries was much lower despite of lower use of helmet in casualties of cyclists.

10. Prohibitions and obligations for most polluting vehicles

Many Spanish cities fail to fulfil the maximum number of days allowed to exceed the top levels of pollution in atmosphere. Nevertheless, there is no a serious imposition to fight this problem, imposing to the causes (motorists) clear prohibitions and obligations that contribute to avoid this. Logically, those measures would be dissuasive of the use of the automobiles, but all of us would gain with it. However, at the time of "trying" to solve the problem of the cycling accidents, it is considered adequate to impose and to force to cyclists the use of helmet. Weakest and less polluting people are blamed and obliged and, most dangerous and polluting people, motorists, are tolerated.

11. Spain, tourist destiny

Spain is one of the preferred countries as tourist destiny. In fact, the tourism is one of the pillars of the national economy. A tourist destiny so little friendly with an activity in apogee as it is the cycle tourism is clearly losing options to be a tourist destiny for the cyclists who look for good weather, nice landscapes or doing exercise. The compulsory helmet and the ominous accessibility of bicycles in the Spanish trains are recognized as inconvenients by most of European cyclists as to fix their cycle touring visits to Spain, doing them to change their holiday plans by other more attractive destinies.

¹⁰ "Survey on cyclists' accidents in Spain. Period 1996-2001", Polytechnic University of Valencia-Commission of Road Safety of Cyclists- from the Cycling Federation of Autonomous Community of Valencia.

No other European country has such degree of obligation of the use of helmet and, curiously, Spain is the country with fewer kilometres travelled in bicycle per year and per inhabitant¹¹.

With this situation fewer cyclists want to come to visit us by bicycle, especially conscious of the oppression that helmet can cause with heat in our country and the ambiguity of the norm in this point.

12. Expectations

In the text of PEIT¹² a section destined to the non motorized modes of transports was included¹³. Such section quote among other measures in favour of the bicycle:

"To avoid the introduction of measures that, with the pretension to improve the cycling accidents, penalizes the use of bicycle."

The obligation of helmet is one of these measures whose pretension was to improve the cycling accidents and it has been largely demonstrated as ineffective. In fact, the original version of the text was a proposal of ConBici, the Coordinator in Defence of Bicycle, whose intention was clearly the one of the derogation of the compulsory helmet in Spain.

In these days, the text of the "Plan for Promotion of the Non-Motorized modes of Transports" is being written up. We hope and wish that the PEIT is fulfilled and, therefore, the controversial obligation of helmet for cyclists will be removed.

13. Conclusions

- The law that forces the compulsory helmet does not reduce the rate of dead and injured cyclists. Instead, it could be moving some people away from bicycle, thus contributing to health problems caused by sedentary style of life. Simultaneously, it would be having negative impact on some urban areas, by the pressure against daily cyclists to use the helmet in the city, despite of not being compulsory.
- Bicycle has happened to be a dangerous vehicle and not helmeted cyclists seems to be responsible of accidents.
- There is no clear correlation between a greater use of helmet and less head injuries.
- It would be possible to be losing "green" tourist clients because of a law with many detractors among foreign cycle tourists.
- We trust that the norm changes, exempting from the obligation of helmet for cyclists.

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¹¹ "Cycling, the way ahead for towns and cities", European Commission, 1999.

¹² PEIT = Strategic Plan of Infrastructures and Transports, Ministry of Transport, 2005.

¹³ Section 6.10.4. Plan for Promotion of non-motorized modes of transport, PEIT, Ministry of Transport, 2005.