Effect of the Spanish *Law of Political Parties* (LPP) on the attitude of the Basque Country population towards ETA: A dynamic modelling approach

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Abstract

In June 2002, the Spanish Government passed the "Law of Political Parties" (LPP) with the aim, among others, to prevent parties giving political support to terrorist organizations. This law affected the Basque nationalist party "Batasuna", due to its proved relation with ETA. In this paper, taking data from the Euskobarometro (Basque Country survey) related to the attitude of the Basque population towards ETA, we propose a dynamic model for the pre-LPP scenario. This model will be extrapolated to the future in order to predict what would happened to the attitude of the Basque population if the law had not been passed. These model predictions will be compared to post-LPP data from the Euskobarometro using a bootstrapping approach in order to quantify the effect of the LPP on the attitude of Basque Country population towards ETA.

Key words: Modelling, Attitude dynamics, Law of Political Parties, Law effect, Bootstrapping

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1 Introduccion

ETA defines itself as "(...) a Basque socialist revolutionary organization for national liberation" [1]. One of its core demands is the creation of a Basque State, which would encompass the current three Basque Provinces and Navarra, in Spain, and three more French provinces. According to the Spanish Ministry of Internal Affairs, ETA has committed 829 murderers since 1968 [2].

In June 2002, the "Law of Political Parties" (LPP) was passed and its goals were "(...) to guarantee the democratic system and citizen's essential freedoms, by preventing some political parties from threatening democracy, justify racism and xenophobia or give political support to terrorist organizations" [3]. As a consequence of this law, in August 2002, the suspension of the activities of the party Batasuna and the closing of its headquarters was decreed. The organization to conduct any political meeting or propaganda activities was also specifically prohibited [4].

However, the fact is that Batasuna persisted in conducting the political activities banned by the LPP. That circumstance led the Supreme Court to outlaw that organization in March 2003, what implied the eventual cease of all its activities and the confiscation of its possessions [5]. In June 2003 Batasuna and other related parties were included, as a part of ETA, in the list of terrorist organizations in the European Union [6].

The LPP meant a substantial change in the anti-terrorist policy in Spain. In practical terms, once Batasuna was outlawed, this party could not present candidates to elections anymore. Considering Batasuna as the ETA's political wing, as the Supreme Court had stated, which meant that ETA was not going to be supported anymore from political institutions nor funded by public budgets.

Along with that impact in the political arena, it is also reasonable to expect some impact in the sociological one. The question is: had the LPP any effect on the attitude of the Basque Country population towards ETA? This question is absolutely pertinent in light of the current situation in that region. On one hand, generally speaking, it is well known that repressive initiatives taken by Governments can generate sympathies, to some degree, towards the repressed organizations. On the other hand, in this particular case, violent activities carried out by ETA could be responsible for part of the population not expressing freely their political beliefs, so measures taken to prevent ETA violence could encourage that people to express themselves openly. In other words, either have ETA, and its political wings as well, gained additional support from the population or have part of the Basque country been uninhibited because of that law?

Certainly, it is not the aim of this paper to provide an answer to that question, but to extract and process the available data and show the results. These data, in their turn, have been taken from the Euskobarometro survey [8, Table 20], one of the most well-known independent opinion polls in the region, which is periodically conducted by the University of the Basque Country. The results may provoke discussions in other scientific areas, such as politics, sociology and psychology, our approach being a part of the multidisciplinary effort to understand a real, complex phenomenon.

The period of time considered for this study is from the passing of the LPP (June 2002) to June 2005. The reason for this time limitation is that, in our opinion, during this period the anti-terrorist policies were reasonably homogeneous, while, from June 2005 on, a perceptible change occurred when the Congress approved the possibility the Government to support dialogue processes with ETA given that appropriate conditions to end violence occur [7, Resolución 34, p. 13]. It is believed that this major event and subsequent ones as well, could jeopardize the homogeneity necessary to conduct this study [1]. Finally, to say that during the mentioned period of time, the 11-M attacks in Madrid, in 2004, did not provoke major changes in the trend and we show it in the final analysis.

This paper is organized as follows. In Section 2, data from Euskobarometro about the attitude of the Basque Country population towards ETA are retrieved and processed [8, Table 20]. Section 3 is devoted to build a model describing the attitude dynamics towards ETA in the Basque Country. Model parameters are estimated in Section 4 by fitting the model with the Euskobarometro data. In Section 5 it is concluded that the LPP is responsible of an increasing attitude of rejection towards ETA and we quantify this effect by performing a bootstrapping approach. Finally, some conclusions are drawn in Section 6.

2 Data

We have retrieved data from the Euskobarometro of November 2010 on the attitude of the Basque Country population towards ETA [8, Table 20]. The eight types of attitudes towards ETA that appear in the Euskobarometro are: Total support; Justification with criticism; Goals yes / Means no; Before yes / Not now; Indifferent; ETA scares; Total rejection; No answer. In order to simplify the model (the number of subpopulations) we group the eight

[1] A month later, ETA announced the cessation of its armed actions against the elected politicians in Spain, although later on pointed out that this truce did not apply to members of the Government.

attitudes in only three:

(1) Support: people who have an attitude of support towards ETA. We consider the people with attitudes of "Total support" and "Justification with criticism" make up of this group.
(2) Rejection: people who have an attitude of rejection against ETA. In this group we include the people with attitudes "Goals yes / Means no", "Before yes / Not now", "ETA scares" and "Total rejection". It could be dubious to include in this group the attitude "Goals yes / Means no", however, the fact is that there are parties and associations in the Basque Country with similar goals as ETA and they have a rejection attitude towards ETA because its violent means.
(3) Abstention: people who have no opinion or have an indifferent attitude towards ETA, that is, the "Indifferent" and the "No answer" groups.

Data grouped in these three groups appear in Table 1 from June 1995 to June 2002 (before the passing of the LPP) and Table 2 from December 2002 to June 2005 (after the passing of LPP until the permission of the Parliament to dialogue with ETA).

Survey date	Support (%)	Rejection (%)	Abstention (%)
Jun 1995	7	85	8
Dec 1995	5	87	8
Dec 1996	6	87	7
Dec 1997	6	86	8
Dec 1998	5	85	10
Jun 1999	11	76	13
Junc 2000	8	87	5
Dec 2000	7	87	6
Jun 2001	3	90	7
Dec 2001	4	88	8
Jun 2002	2	96	2

Table 1
Percentage of people in the Basque Country with respect to their attitude towards ETA from Jun 1995 to Jun 2002, when the LPP was passed (pre-LPP scenario).

Data in Table 1 will help us to estimate the parameters of the mathematical model. Data in Table 2 will be used to find out if the LPP affected the attitude of the people in the Basque Country towards ETA, and if so, quantify the effect of the LPP.

Survey date	Support (%)	Rejection (%)	Abstention (%)
Dec 2002	3	93	4
Jun 2003	2	95	3
Dec 2003	2	94	4
Jun 2004	3	93	4
Dec 2004	3	93	4
Jun 2005	2	93	5

Table 2
Percentage of people in the Basque Country with respect to their attitude towards ETA from Dec 2002 to Jun 2005, after the passing of the LPP until the permission from the Spanish Parliament to dialogue with ETA (post-LPP scenario).

3 Model building

Bearing in mind Table 1 and Table 2, we distinguish three main different attitudes towards ETA and divide the population of the Basque Country into the following three subpopulations (time t in years):

- $A_1(t)$, the percentage of people in the Basque Country which have an attitude of support towards ETA at time instant t,
- $A_2(t)$ is the percentage of people which have an attitude of rejection towards ETA at time t,
- $A_3(t)$ corresponds to the percentage of population in the Basque Country whose attitude towards ETA is not defined, abstain or simply they do not want to say their opinion, at time t.

$A_1(t)$, $A_2(t)$ and $A_3(t)$ are the variables of the mathematical model. The assumptions used to build the equations of the model are:

- A subpopulation A_i, whose people share a particular attitude towards a phenomenon, can influence the people's attitude of another subpopulation, A_j, towards the same phenomenon. This influence can be provoked either by direct contact, i.e., when people from A_i and A_j interact, or by indirect contact, i.e., through the interaction of a person in A_i with his environment.
- Regarding this latter way, in this context, it is assumed that the environment of a person in A_j is made up of the flows and channels of information able to reach his sensorial system. Note that reaching sensorial system does not imply necessarily reaching perception. Thus, alteration in that environment can provoke either changes in the attitude of that person in A_j or not. Environment alteration can be provoked, in its turn, by the behaviour of people from the other subpopulations among other factors, attitude being itself considered as a part of that behaviour.

- It is assumed that all people could access to all relevant information channels and flows, i.e., there is in principle a homogeneous environment affecting people of all the subpopulations. However, the interaction of a person with the environment varies on an individual basis, depending on both situational and non-situational factors. The individual initial attitude itself towards the subject of influence, for instance, is a non-situational factor which modulates environment influence, acting on that initial attitude either as an enabler or as a shield.
- It is not the goal of this work to clarify those factors of variation, but only to show the eventual changes in attitudes of the object populations and, if possible, to attribute those changes to the influence of other subpopulations, either directly or indirectly. However, a diffuse idea as to the involved processes, environment effectiveness differences etc., as a whole can be obtained from the model. The non-linear term $\beta_{ij}A_iA_j$ being the one that models these influences, it is the parameter β_{ij} that, in some way, measures that environment effectiveness and includes the rest of the above mentioned factors.

Then, the system of differential equations that models the evolution of attitudes towards ETA in Basque Country over time is given by

$$A_1'(t) = (\beta_{21} - \beta_{12})A_2(t)A_1(t) + (\beta_{31} - \beta_{13})A_3(t)A_1(t), \quad (1)$$
$$A_2'(t) = (\beta_{12} - \beta_{21})A_2(t)A_1(t) + (\beta_{32} - \beta_{23})A_3(t)A_2(t), \quad (2)$$
$$A_3'(t) = (\beta_{13} - \beta_{31})A_3(t)A_1(t) + (\beta_{23} - \beta_{32})A_3(t)A_2(t). \quad (3)$$

The above system of differential equations can be represented by the diagram of Figure 1.

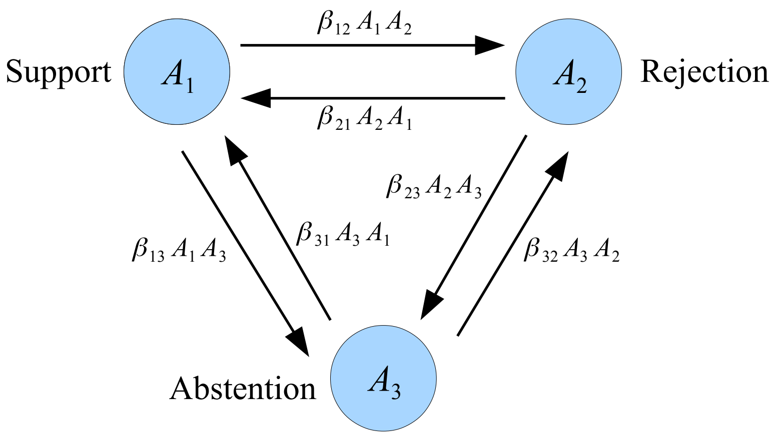

Fig. 1. Graph depicting the model (1)-(3). Circles are the subpopulations and arrows represent the flow of people who change their attitude towards ETA over time.

4 Estimation of model parameters

The model has six unknown parameters $\beta_{ij}, i, j = 1, 2, 3, i \neq j$ and we should estimate them taking into account that the model has to be as close as possible of data in Table 1, that is, before the passing of the LPP.

To do that, we designed an algorithm in *Mathematica* [9] in order to compute the parameters which best fit the model with data of Table 1 in the least square sense. The values of these parameters appear in Table 3.

Parameter	Value		Parameter	Value
β_{12}	0.0815425		β_{21}	0.0627668
β_{13}	0.000421055		β_{31}	0.182483
β_{23}	0.0317568		β_{32}	0.0216873

Table 3
Estimated model parameters.

We can see the goodness of fitting graphically in the Figure 2.

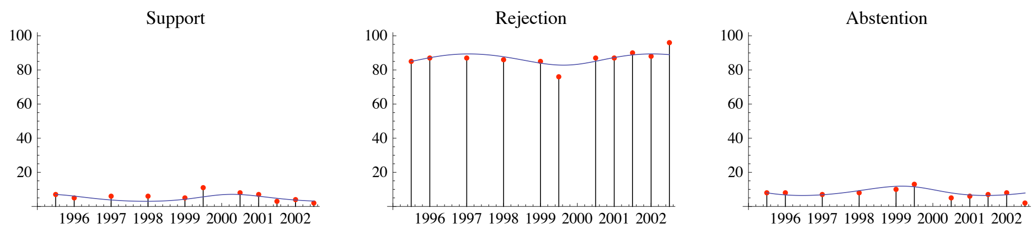

Fig. 2. Graph representing the fitting. The lines are the corresponding model functions and the points are data from Table 1. Support subpopulation $A_1(t)$ on the left, Rejection subpopulation $A_2(t)$ in the middle and Abstention subpopulation $A_3(t)$ on the right.

5 Analysis of the effect of the LPP

In Figure 3, we can see the model predictions (line) for every subpopulation after LPP passing (June 2002) until June 2005 and data from Table 2 (points).

Looking at the graph (Figure 3), it is difficult to ensure if the differences between the points and the model prediction, on one hand, are attributable to model fitting error, i.e., the differences are non-significant and consequently the LPP had not effect on the general attitude towards ETA, or, on the other hand, the differences are significant and attributable to the LPP.

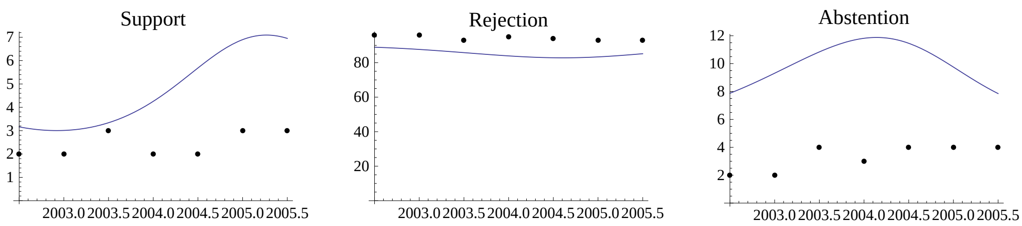

Fig. 3. Graph of model prediction after LPP (June 2002) until June 2005 (line) with data from Table 2 (points). The question is if the differences are due to model fitting error (non-significant) or the are due to the LPP (significant).

5.1 How are we going to find out if the differences between data and model prediction are (or not) due to the effect of the LPP on the Basque population?

An uncertainty study of the predictions of the model will allow us to determine if differences between data and model prediction are significant. Thus, in order to obtain more information on the output of the mathematical model, let us perform a residual bootstrapping approach. Considering the general procedure presented by G. Dogan in [10], we study error terms for the estimated parameters and resample these terms using bootstrapping. Then, we obtain new perturbed data by adding the resampled error to Table 1 data. For each new data perturbation calculated, we compute the parameters that best fit the model with the perturbed dataset. Once we compute the set of parameter values obtained by fitting the model with the perturbed data, we solve the model with these parameters and compute the outputs in the required time instants. Taking 90% confidence interval of each output from each subpopulation by percentile 5 and percentile 95 and comparing with the corresponding datum from Table 2, i.e., if the datum lies inside the confidence interval or not, we will be able to conclude if the LPP had effect on the attitude of Basque population towards ETA or not, and, in case there was effect, quantify it by measuring the distance of the datum to the extremes of the confidence interval.

5.2 Error term analysis

First, we compute the output of the model with the parameters in Table 3 in the time instants appearing in Table 1 (from June 2005 to June 2002) and compute their differences with the corresponding data from Table 1. The results can be seen in Table 4.

Now, we analyse whether the error terms $e_{1t} = A_1(t) - \hat{A}_1(t)$, $e_{2t} = A_2(t) - \hat{A}_2(t)$ and $e_{3t} = A_3(t) - \hat{A}_3(t)$ are correlated. Pearson correlation coefficient is used and the results obtained are: $\rho_{12} = -0.782$, $p - value = 0.007$; $\rho_{13} =$

Survey date	$A_1(t) - \hat{A}_1(t)$	$A_2(t) - \hat{A}_2(t)$	$A_3(t) - \hat{A}_3(t)$
Dec 1995 (t=1)	-1.060970135	-0.172986635	1.23395677
Dec 1996 (t=2)	2.216235209	-2.382102564	0.165867355
Dec 1997 (t=3)	2.992820716	-1.740283841	-1.252536874
Dec 1998 (t=4)	0.792540417	1.008587701	-1.801128118
Jun 1999 (t=5)	5.386657918	-6.874217326	1.487559407
Jun 2000 (t=6)	1.02135272	1.909570229	-2.930922949
Dec 2000 (t=7)	0.993820922	-0.260804633	-0.733016289
Jun 2001 (t=8)	-1.762253593	1.194714054	0.567539539
Dec 2001 (t=9)	0.250086725	-1.385370292	1.135283566
Jun 2002 (t=10)	-1.164726381	7.035272584	-5.870546202

Table 4
Residual or error terms. $A_i(t)$ are the real data (Table 1) and $\hat{A}_i(t)$ are the predictions of the model.

0.270, $p - value = 0.4514$; $\rho_{23} = -0.811$, $p - value = 0.004$. Note that ρ_{ij} is the Pearson correlation coefficient between e_{it} and e_{jt}.

Taking into account runs test, we also study if each error term is autocorrelated. Note that this non-parametric test can be used to check the hypothesis that the elements of a sequence are mutually independent. In this case, the results are: $z_1 = 1.677$, $p - value = 0.094$; $z_2 = -0.335$, $p - value = 0.737$; and $z_3 = 0.000$, $p - value = 1.000$. None of the test statistic values is statistically significant ($p - value > 0.05$), therefore the claim that there is autocorrelation should be rejected. z_i is the runs test statistic value for each case.

Additionally, normality of the distribution of errors is determined by using non-parametric tests. Goodness-of-fit analysis suggests that each error term is normally distributed. The Kolmogorov-Smirnov and Shapiro-Wilk tests have $p-values$ of 0.200, 0.200, 0.200 and 0.560, 0.552, 0.154, respectively. Moreover, Mardia's multivariate normality test is applied to the sample (e_{1t}, e_{2t}), $t = 0, 1, \ldots, 10$ (see Table 4). In this case, Mardia's test has a $p - value$ equal to 0.282 ($p - value > 0.05$). Therefore, we can accept that vector (e_{1t}, e_{2t}) presents a bivariate normal distribution. To be precise, we accept that

$$(e_{1t}, e_{2t}) \sim N_2 \left[\begin{pmatrix} \mu_{e_{1t}} \\ \mu_{e_{2t}} \end{pmatrix}, \begin{pmatrix} \sigma^2_{e_{1t}} & \rho_{12}\sigma_{e_{1t}}\sigma_{e_{2t}} \\ \rho_{12}\sigma_{e_{1t}}\sigma_{e_{2t}} & \sigma^2_{e_{2t}} \end{pmatrix} \right], \tag{4}$$

where $\mu_{e_{it}}$ and $\sigma_{e_{it}}$, $i = 1, 2$, are the mean and the standard deviation of e_{it}, respectively, and ρ_{12} is the Pearson correlation coefficient between e_{1t} and e_{2t}.

These parameters can be estimated using the errors in Table 4 and its values are $\mu_{e_{1t}} = 0.966556$, $\mu_{e_{2t}} = -0.166762$, $\sigma_{e_{1t}} = 2.15643$, $\sigma_{e_{2t}} = 3.54782$ and $\rho_{12} = -0.738104$. Finally, considering that $e_{1t} + e_{2t} + e_{3t} = 0$, $t = 1, \ldots, 10$, e_{3t} can be calculated by $e_{3t} = -e_{1t} - e_{2t}$. e_{1t} and e_{2t} are estimated by (4).

5.3 Generating new perturbed data

Bearing in mind data from Table 1 (pre-LPP data), for $t =$ Jun 1995, Dec 1995, …, Jun 2002, we generate 10 random pairs (e_{1t}, e_{2t}) following the multivariate distribution given by the expression (4) and e_{3t} as $e_{3t} = -e_{1t} - e_{2t}$. Thus, we have 10 vectors (e_{1t}, e_{2t}, e_{3t}) for $t =$ Jun 1995, Dec 1995, …, Jun 2002, and we add them to data in Table 1, obtaining a new set of perturbed data. Then, we compute the parameters which best fit the model with the new set of perturbed data in the least square sense and store them, using the same procedure we used to estimate the parameters of Table 3.

We repeat this procedure 5000 times in order to obtain 5000 set of parameters that fit each set of perturbed data (pre-LPP data plus (e_{1t}, e_{2t}, e_{3t}) for each t).

5.4 Obtaining confidence intervals for model outputs

For each one of the 5000 set of parameters, we solve the system of differential equations (1)-(3) and compute the output of the solution, i.e., in the three subpopulations $A_1(t)$, $A_2(t)$ and $A_3(t)$, for $t =$ Dec 2002, Jun 2003, Dec 2003, Jun 2004, Dec 2004 and Jun 2005 (post-LPP data). Thus, for each t and for each subpopulation, we have a set of 5000 model output values. Then, we compute the mean and the 90% confidence interval by percentiles 5 and 95. Obtained results can be seen in Table 5.

In Figure 4 we can see graphically, for each subpopulation, the data from Tables 1 and 2 (points), the deterministic model prediction (line) and the 90% confidence intervals (error bars). The points in the middle of the confidence intervals are the mean of 5000 outputs for each subpopulation and each time instant where we have data about people's attitude towards ETA. These mean values are the ones appearing in Table 5.

If we observe the right side of vertical axis in the three graphs, we realise two facts: On one hand, there are differences between the deterministic model predictions and the means of Table 5. These differences indicate us that the model is sensitive to parameter changes; On the other hand, most of the attitude prevalence points lie out of their corresponding 90% confidence intervals

	Support		Rejection		Abstention	
	Mean	90% CI	Mean	90% CI	Mean	90% CI
Dec 2002	4.595	[2.387, 7.978]	86.643	[83.893, 89.018]	8.762	[7.031, 10.831]
Jun 2003	5.310	[2.673, 9.912]	85.144	[82.737, 87.470]	9.546	[6.546, 12.453]
Dec 2003	6.161	[3.421, 10.514]	84.180	[81.800, 86.306]	9.660	[4.753, 13.634]
Jun 2004	6.791	[4.549, 9.627]	84.099	[80.615, 87.984]	9.110	[3.774, 13.699]
Dec 2004	7.021	[5.673, 8.509]	84.839	[80.374, 89.566]	8.141	[3.577, 12.839]
Jun 2005	6.755	[5.117, 8.218]	85.967	[80.931, 90.410]	7.278	[3.949, 11.225]

Table 5
Means and 90% confidence interval of the model output. We estimate these predictions (point prediction and interval prediction) solving model (1)-(3) for each one of the 5000 set of parameters calculated by fitting the model with perturbed pre-LPP data.

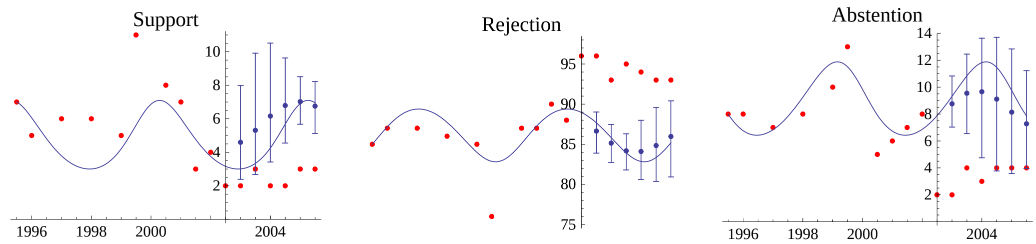

Fig. 4. In this graph we show the attitude towards ETA (points), the model deterministic prediction (line) and the error bars corresponding to 90% confidence intervals in the same time instants as we have data in Tables 1 and 2. The points inside the confidence intervals are the mean of the 5000 outputs for every subpopulation in every time instant. The vertical axis is placed on the time instant when the LPP was passed (June 2002).

and the ones that lie inside are placed in the interval extremes. This leads us to consider that the LPP had an effect on the attitude of Basque population towards ETA. Moreover, we can see that around the 11-M attacks in Madrid, the points still lie outside of the confidence intervals, and this fact leads us to conclude that the Madrid attacks hardly had any effect on the general attitude of the Basque Country population towards ETA.

In Table 6 we show the differences between the attitude data and their corresponding 90% interval extremes, in order to obtain an upper and lower bound measurement of the LPP effect on the Basque population.

Looking at Figure 4 and Table 6, we can conclude that the LPP had an effect on increasing the quantity of people that have an attitude of rejection towards ETA at the expense to the ones who have an attitude of support or abstention, previously. Moreover, the increase is strong until Dec 2003 - Jun

	Support	Rejection	Abstention
Dec 2002	$[0.39, 5.98]$	$[6.98, 12.11]$	$[5.03, 8.83]$
Jun 2003	$[-0.33, 6.91]$	$[5.53, 10.26]$	$[2.55, 8.45]$
Dec 2003	$[1.42, 8.51]$	$[8.69, 13.20]$	$[1.75, 10.63]$
Jun 2004	$[2.55, 7.63]$	$[6.02, 13.38]$	$[-0.23, 9.70]$
Dec 2004	$[2.67, 5.51]$	$[3.43, 12.63]$	$[-0.42, 8.84]$
Jun 2005	$[2.12, 5.22]$	$[2.59, 12.07]$	$[-0.05, 7.22]$

Table 6
Distances between Table 2 data and the extremes of their corresponding 90% confidence intervals. Intervals with negative values mean that the attitude prevalence datum lies inside the 90% confidence interval.

2004, when, even maintaining values greater than before the law, the trend starts to decrease slightly.

6 Conclusion

In this paper we present a mathematical model to study the evolution dynamics of the attitude of Basque population towards ETA. Once the model is stated, we determine the model parameters in such a way that the model fit with data from Table 1.

Then, we use it to find out if the LPP had any effect on changing the attitude of the Basque population towards ETA over time after its passing. To do that, we perform a residual bootstrapping approach to get more information as the estimated parameter values and obtain output model values. With these outputs, we calculate confidence intervals that allow us to determine if the differences between Table 2 data and model outputs are related to the intrinsic model error or are due to the effect of the LPP.

As we can see in the above section, there is a clear effect of the LPP in the time interval Jun 2002 until Jun 2005, where the Rejection attitude increases strongly until Dec 2003 - Jun 2004 and then, a slightly decrease, maintaining values greater than the ones before the passing of the LPP during the whole period. These greater values of the Rejection subpopulation are at the expense of the other subpopulations, Support and Abstention. The 11-M attacks in Madrid, in March 2004, could have had some local impact in the polls, but they do not interfere in the general trend.

The effect of the LPP, for Rejection subpopulation, can be measured from Jun 2002 to Jun 2005, as an increase of 2.59% in the lower case and an increase of 13.38% in the higher case, of the people changing to a rejection attitude towards ETA (see Table 6).

Finally, we would like to say that, jointly with [11], this paper is the only reference we know where the effect of laws is studied using dynamic models. Moreover, it should be pointed out that bootstrapping approach is only one of the possible approaches to study the effect of the laws on a society. In our opinion, the application of other techniques based on uncertainty analysis of mathematical models and probability distributions of the model parameters may be a fruitful area of research.

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[6] Posición Común 2003/482/PESC del Consejo, de 27 de junio de 2003, por la que se actualiza la Posición Común 2001/931/PESC sobre la aplicación de medidas específicas de lucha contra el terrorismo y se deroga la Posición Común 2003/402/PESC. (Common Position 2003/482/PESC where it has been updated the Common Position 2001/931/PESC about the application of specific measures against terrorism and Common Position 2003/402/PESC is revoked).

[7] Boletín Oficial de la Cortes Generales (Diary of the Spanish Parliament). Available in http://www.congreso.es/public_oficiales/L8/CONG/BOCG/D/D_204.PDF.

[8] Euskobarómetro Survey. Available in http://alweb.ehu.es/Euskobarometro/index.php?option=com_docman&task=cat_view&gid=15&Itemid=97

[9] http://www.wolfram.com/products/mathematica.

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[11] F. Guerrero, F.J. Santonja, R.J. Villanueva, *Analysing the Spanish smoke-free legislation of 2006: A new method to quantify its impact using a dynamic model*, International Journal of Drug Policy 22-4 pp. 247-251, 2011.