

ON A POSSIBLE DEMOCRATIC CONSULT FOR THE INDEPENDENCE OF CATALONIA [OR OTHER REGIONS OF SPAIN]

A review from Social Choice Theory

Summary:

Introduction: Three fundamental principles of Social Choice. Does the ‘right to decide’ fulfill the Anonymity condition? Does the ‘right to decide’ fulfill the Neutrality condition? Does the ‘right to decide’ fulfill the condition of ‘No restriction of the universe of choice’?. Recap and Conclusions. Epilogue.

Abstract:

In recent times, there is a substantial debate about the right [or not] of inhabitants of certain regions of Spain 'to decide' whether they wish to continue forming part of Spain or become independent republics / states. Some political parties claim this ‘right to decide’ is a fundamental right of any democracy, while others argue the opposite.

In this text, we review this issue from the Social Choice Theory point of view. We begin by reviewing the arguments of those who desire to change the current situation [those who request this ‘right to decide’], then outline the conditions that would allow for a democratic referendum on the independence [or not] of different regions of Spain.

Key words: Right to decide / Referendum / Spain / Catalonia / Democracy / Social Choice

Author name and affiliation: Ricardo Alvira, Architect, DEA, PhD Urban Studies, Affiliated: Universidad de Murcia.

Email: ricardo.alvira@um.es

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PRELIMINARY NOTE:

This article was finalized in July 2017, three months before the *consult* that, in a situation of confrontation with Spain's Central Government, Catalonia Regional Government celebrated on October 1st, 2017. Therefore, we only refer to this *consult* in some comments in footnotes.

1 INTRODUCTION: THREE FUNDAMENTAL PRINCIPLES OF SOCIAL CHOICE

Lately, and more evidently since 20th December 2016 Spanish General elections, it has become common to hear some political parties in Spain using the term 'right to decide', referring to their desire that the inhabitants of certain territories decide, autonomously from the inhabitants of other territories of Spain, whether they prefer continuing forming part of Spain or becoming independent States.

The spokespersons/members of these political parties argue that *this right to decide autonomously from the rest of Spaniards* is a *basic right of Democracy*.

But ... Is this true? Is the right of the inhabitants of a territory within Spain to decide, independently of the rest of Spaniards its continuity or not as part of Spain an inherent right of democracy?

Let us prove it is not; which we do by reviewing the 'right to decide' in the terms proposed by these political parties implies breaching three basic principles of the Social Choice Theory, experts unanimously agree a collective decision must satisfy to be deemed as *democratic*:

- **Anonymity** [May, 1952], which alludes to equality among all individuals, and requires that the same value is given to the vote of all of them; i.e., that the rights of some individuals are not prioritized over those of other individuals. The only accepted exception is assigning more value to the vote of some person in case a tie between options is achieved.

- **Neutrality** [May, 1952], which requires equal treatment of all options, implying the adopted procedure for making the decision does not favor one option over the others, i.e., that it does not make it more likely that one option is chosen over other options. Breaching this premise is only accepted in two situations:
 - When there is a tie between *maintaining current trend / preserving the status quo* and choosing another alternative, it is usually preferred continuing *current trend / maintaining the status quo*¹.
 - When the issue on which the decision is made can have great impact on society and/or involves high uncertainty, it is usually required that the option that promotes change is supported by a 'qualified majority' [e.g., 3/5 or 2/3] of citizens².
- The **non-restriction of the eligible options** [Arrow, 1951], which requires whom organizes the election does not limit -to favor his own interests- the options about which the individuals can express their preference. It is only accepted excluding from the set of eligible options, those options which are not environmentally, socially, economically or technologically possible.

The above three conditions are considered essential premises in the realm of the Social Choice Theory for deeming a collective decision as *democratic*, because they in turn refer to **two fundamental issues**:

- Art 01 of the Universal Declaration of Human Rights [incorporated in one form or another by most Constitutions], which establishes that *all persons are equal before the law* [they have equal rights], and participating in public decisions is a right that must be exercised under equal conditions³.

¹ A tie between two options implies collective indifference between both options. In this situation maintaining current course of action is considered preferable to modifying it. While collective indifference implies equal collective utility assigned to both options, change implies lower efficiency [as measured by effort in relation to the obtained benefit] and lower expected utility [as measured by multiplying collective utility by the probability of success], since the change implies greater effort / risk than continuing current course.

² The principle is the same as the one explained on the above note. The greater the uncertainty, the greater the difference in collective utility must be [i.e., the difference between people supporting change and people supporting permanence], so the expected utility of the change exceeds that of maintaining the status quo. Additionally, in Federal States [e.g., Switzerland], double majority requirements are usually imposed; More than half of citizens in more than half of states/cantons must support change.

³ Actually, participating in collective decisions is a right and a duty that must be exercised / supported by all citizens on equal terms:

- As a right, it is the possibility of each individual to condition collective decisions according to his or her values / preferences, assigned the same value as those of other citizens.
- As a duty, it is the obligation that each individual assumes of accepting the resulting decision, even if it is the opposite of his or her preferred decision.

- to the will of *preventing manipulation of collective decisions*. Satisfying these three premises allows us to consider that whom organizes a collective choice process does not try to manipulate it in order to obtain his preferred result; i.e., that he does not design the decision making process in order to increase the likelihood his favorite option is chosen independently of citizens' real preferences [i.e., that his favorite option is non-democratically chosen].

Therefore checking whether the request of the 'right to autonomously decide' satisfies or not the above three conditions is not a trivial matter. If the so-called *right to decide* does not satisfy the above conditions, it would lead to a decision that might not be democratic, and the legitimacy of that *right to decide* [and of the decisions resulting from applying it] could not be sustained on the concept of *Democracy*.

Let us review whether or not it meets them, and for clarity we refer our analysis to the region whose 'independence or not' is currently generating more debate in Spain: Catalonia⁴.

2 DOES THE 'RIGHT TO DECIDE' MEET THE 'ANONYMITY' CONDITION?

Anonymity requires that the collective decision is reached assigning the same value to the preferences [vote] of every individual; it refers to the equal rights of all citizens⁵. Let us review whether the approach of pro-independence parties satisfies the 'Anonymity' condition.

Preliminary Title, Article 2 of Spanish Constitution [CE] states that

Art 2. Unity of the Nation and right to autonomy. The Constitution is based on the indissoluble unity of the Spanish Nation, common and indivisible homeland

In a certain way, in collective decisions voting, each and every individual participates in the decision [whether he votes or not] since he commits to accept the result of the decision.

⁴ To revise the approach of those in favor of independence, we use the text written by Constituim [we designate C], which nowadays seems to be the reference of a Constitution for a hypothetical independent Catalonia. However, given its non-official nature, we do not limit the analysis to the revision of this text.

⁵ In addition to Art.01 of the Universal Declaration, UDHR [UN, 1948], this requirement of equally valuing the vote of all individuals is implicit in Art 09.CE [CGE, 1978] and Art 2.1. Voting Rights [CEDD; 2009]

of all Spaniards, and recognizes and guarantees the right to autonomy of the nationalities and regions which comprise it and solidarity among them⁶.

Therefore, any change in the geographical demarcation of Spain implies a modification of that article, which should be done following the provisions of Article 168, which states:

Art 168. Essential reforms of the Constitution

1. If total revision of the Constitution or partial revision affecting the Preliminary Title, Chapter II, section 1, Title I or Title II are proposed, such revision shall be approved by two-thirds majority of each Chamber, and the Parliament will be afterwards dissolved.
2. The [new] elected Chambers must ratify the decision and proceed to examine the new constitutional text, which must be approved by two-thirds majority of both Chambers.
3. Once approved the reform by the Parliament, a ratification referendum will be held.

This implies that a process for Catalonia becoming independent from the rest of Spain requires the favorable vote of more than two thirds of the representatives of both Chambers [where there are Catalan representatives], the convening of general elections for new Chambers [where all Spanish citizens could vote, including those residing in Catalonia], a second approval by more than 2/3 of the representatives of the new Chambers [where there would again be Catalonia representatives] and then the vote in favor of more than 50% of Spanish citizens [including Catalonia inhabitants].

That is, it is a process in which first political representatives exercise their right to vote, and only if politicians support the process, citizens will later be able to vote it. And it is important to point out that in both cases Catalonia politicians and inhabitants have the 'right to decide' on an equal footing with the rest of Spanish politicians and people.

This is important because it allows us to understand that *Catalonian representatives and residents cannot acquire a right they already possess*. Therefore, *what the pro-independence parties are actually requesting is not the 'right to decide', but the elimi-*

⁶ Currently, when there is some debate on whether Spain is a "country of countries", it is worth emphasizing the different meaning of the term 'nation' when it is capitalized [equivalent to 'State'] and when it is written in lower case [equivalent to 'people' / culture].

*nation of other Spanish politicians and citizens' right to see their preferences also valued in that decision*⁷.

It implies granting different rights to politicians / citizens based on a personal circumstance [residing or not in Catalonia], breaching the Anonymity principle among Spanish citizens: **some are allowed to participate in the decision while others are not.**

To better understand it, an equivalent example could be if Barcelona's politicians and inhabitants decided to hold a referendum to become independent from the rest of Catalonia, only taking into account the vote of Barcelona's politicians and inhabitants, claiming that Barcelona has an independent identity from the rest of Catalonia [which is unquestionable] and therefore the vote of the rest of Catalonia inhabitants/politicians would not need being taken into account for such consult [which would be quite questionable].

Another example would be Valle de Arán inhabitants decided holding a similar referendum, claiming that having their own language -Aranés-, different from Catalan, proves their own and different identity [which is again unquestionable] and independent nature from the rest of Catalonia [which is again questionable]⁸.

In fact, in the terms proposed by the pro-independence parties, the 'right to decide' implies that any administrative district [i.e., any geographical area with capacity to make its own collective decisions] where the 'independence' was preferred to 'permanence' should have the right to independence, but any area where the 'permanence' was preferred to 'independence' should be able to remain part of Spain.

That is, if domains are not set to which the 'right to decide independently' is assigned, any geographical area would be able to segregate from the rest. Not only could Catalo-

⁷ We have previously indicated that the right of a citizen to vote in a decision implies a right [that his preference is taken into account], but also a duty [he must abide by the resulting decision even if he does not like it]. In this sense, the proposal of the pro-independence parties is to remove the right to vote to the majority of Spanish citizens [i.e., their right to see their preference taken into account for the decision], maintaining their obligation to abide by the resulting decision. It breaches the democratic paradigm that one's acceptance of the result of a vote is a logical consequence of one's right that one's preference is taken into account.

⁸ Some pro-independence politicians argue that Valle de Arán already has the right to self-determination granted by the Generalitat of Catalonia through Law 1/2015, of February 5, of the special regime of Arán, which in its First Additional Provision states that "The Parliament of Catalonia recognizes the right of the Aranese people to decide their future" [noteworthy, at the time this law was passed, the parliament of Catalonia had a majority of pro-independence politicians]. The fact that neither the content of that "right to decide" nor the way how it might/could be exercised are explained in the above Law, gives little legal value to this Additional Provision. Furthermore, in the 'enquiry' undertaken by the pro-independence parties on last October 1, the option of Valle de Arán deciding its future independently of the rest of Catalonia was not allowed, forcing its inhabitants to follow the course supported by most Catalonians.

nia segregate from Spain; Barcelona could decide to become an autonomous city; Lérida could decide to join France; Valle de Arán could decide to separate Lérida and join the rest of Pyrenees region founding an independent kingdom...

If we review the results of the last regional elections in Catalonia, the 'right to decide' as above defined would actually imply disintegration of Catalonia, because in half of the constituencies pro-independence parties received more votes, while in the other half of the constituencies parties supporting permanence within Spain received more votes⁹.

Since pro-independence parties do not appear to be favorable to disintegration of Catalonia, it seems clear that with the term the 'right to decide' they are actually referring to the 'right to decide whether the whole of Catalonia becomes independent or not', but not to the 'right to decide' regarding other possible options.

*That is, these pro-independence parties are not then requesting Catalonia inhabitants acquire the 'right to autonomously decide on any issue', but that **they acquire the right to decide on a single issue posed precisely by the members of these parties**, whose preferences acquire thus more value than the preferences of the rest of Catalonians **breaking thus the anonymity principle also between Catalonia inhabitants**¹⁰.*

In addition, this implies absence of Neutrality in the treatment of possible options favoring one of the possible decisions implicit in the 'right to decide' against all the others. Why has Catalonia region the right to be constituted as an Independent Republic but the City of Barcelona, Lérida province or Valle de Arán do not have such right?¹¹

A consult as described would not be neutral, forcing us to review what Neutrality implies referred to collective decisions.

⁹ We make this statement being aware it implies certain simplification since voting for a political party does not imply agreeing with all its proposals, and also these elections were made using a voting rule that does not satisfy most criteria accepted in the realm of Social Choice [e.g., it breaches the Condorcet Criterion].

¹⁰ This breaching of the assignment of equal value to citizens' preferences is less evident since citizens' preferences expressed during the vote are not assigned different value; citizens' preferences are assigned different value before the vote, when 'what can be voted' and 'what cannot be voted' is decided. It may be easier to understand it in terms of *restriction of the universe of eligible options*, which we later review.

¹¹ It is true Law 1/2015 assigns an imprecise 'right to decide' to the people of Valle de Aran, which in the text of the hypothetical Constitution drafted by Constituïm is designated as an also imprecise 'right to self-determination' [Preliminary Title. Art 6. CĪ]. However, this [imprecise] right to self-determination of Valle de Aran could be eliminated in the future by Catalonia politicians/inhabitants even if all Aranese opposed [Art 149 and Art 139 CĪ]. In any case, this 'right to self-determination' is not assigned to any Catalonia demarcation, i.e.; *Ci does not consider the 'right to decide' as a fundamental right of democracy*.

3 DOES THE 'RIGHT TO DECIDE' MEET THE 'NEUTRALITY' CONDITION?

Neutrality refers to the fact that a decision is only democratic if the procedure for making the decision does not favor any alternative over the rest, i.e., if it does not increase the probability that some option is chosen regardless citizens' preferences.

We have already seen that pro-independence parties' approach departs from Neutrality, favoring one of the possible questions against others.

But it also does so by designing the consult in a way it favors the independence option against the option of remaining as part of Spain. The key issue is that these political pro-independence parties are not asking for the right to 'hold one referendum', but for the 'right to [autonomously] decide', which implies *the right to hold as many referendums as desired*.

Suppose such 'right to decide' was accepted. A referendum was held and the majority of Catalonia residents voted 'no'. Catalonia would remain as part of Spain.

Evidently pro-independence parties would be dissatisfied, so some time later they demand another referendum was held. The 'right to decide' would support their request.

Let us suppose another referendum was held and again the majority of Catalonia residents voted 'no'. As a result, Catalonia would remain as part of Spain.

Some time went by and again these pro-independence parties demanded that another referendum was held. This time the majority of Catalonians voted 'yes'; consequently, Catalonia would become an independent republic.

As a new State, Catalonia would draft and approve its own Constitution. As a consequence a key question arises: **would the citizens of this hypothetical Independent Republic of Catalonia preserve this so called 'right to decide'? Would they be able at any time in the future to call a referendum on a reincorporation to Spain and if most citizens vote 'yes' unite back to Spain?**¹²

¹² Noteworthy, requiring the right to convene more than one referendum implies recognizing that citizens' preferences may be different now and in the future. It implies recognizing that even if there was a majority support for independence at present time, it could be possible that in the future a majority would prefer to return to current situation. That would require that the 'right to decide' is incorporated as a fundamental right of citizens in this hypothetical Independent Republic of Catalonia, which does not happen in Constituim text. On the contrary, in Constituim proposal, the nature of Catalonia as an 'Independent State' appears in the Preliminary

The above question is crucial, because if the answer is ‘no’, then pro-independence parties would not actually be asking for the ‘right to autonomously decide on the independence of Catalonia or its permanence as part of Spain’, but for the **‘right to autonomously decide on the independence of Catalonia only until it happens’**, at which point Catalonians would lose that right again.

As long as Catalonia residents voted they prefer to continue as part of Spain, referendums could be indefinitely repeated, but if they voted for independence, no more referendums would be allowed. If some time later Catalonia residents regretted their decision and wanted to vote their reincorporation to Spain, they would not be able to do so.

From the neutrality point of view, it would be a very unequal treatment of the two options [permanence/independence] that pro-independence parties propose; i.e., *a procedure unequivocally designed to facilitate independence and make it more difficult permanence*¹³, regardless of the will of Catalonia residents.

But even if the future Constitution of a hypothetical independent Catalonia recognized its citizens’ right to periodically vote whether they prefer to preserve their independence or unite back to Spain, future reincorporation may not be possible even if at some point in the future every Catalanian voted in favor of such option¹⁴.

Spain would have modified its Constitution to acknowledge the independence of Catalonia, which no longer would be part of Spain. Therefore the reincorporation of Catalonia into Spain would require modifying again the Spanish Constitution, and therefore the favorable vote of more than 2/3 of the representatives of the legislative Chambers and more than 50% of the remaining Spanish citizens.

Title. As a consequence, the process to carry out a hypothetical referendum on the reincorporation of Catalonia to Spain as established by Constituím text would be very complicated and would require a vote in favor of 3/5 of the Assembly [Art 147.2 and 148]. Surprisingly, **to call the referendum nowadays, the Catalan ‘Parliament’ [with a majority of pro-independent parties] is requiring only the favorable vote of more than 50% of the representatives; to vote a hypothetical reunification, it would require more support [more than 60%], failing thus to comply with the Neutrality condition.**

¹³ In fact, this approach makes permanence highly unlikely, given the possibility of indefinitely repeating referendums.

¹⁴ Although pro-independence politicians claim this is an almost impossible scenario, this is not actually the case. For example, recent scientific publications suggest that if climate change is not reversed, between one third and one half of Catalonia surface could be submerged under the sea towards the end of this century. At this point, it is easy to think that many Catalonians would want to reintegrate in Spain to regain their current right –as Spanish citizens- to live in any part of Spanish territory [Art 19, CE], a right that would have been lost if independence took place. In addition, it is reasonable to think that by that time the rest of Spaniards, after a 75 year disconnection period could reject the reincorporation of Catalonia since it would imply greater competition for a territory that would have become a scarce resource. For an analysis of the current excess in Spain in the use of biocapacity and available territory see Alvira, 2017a

If we take as reference 2016 Electoral Census [INE, 2016], and accept the proposal of pro-independence parties, the independence of Catalonia could be achieved with the favorable vote of more than 50% of Catalonia representatives and 2,759.927 votes, while subsequent reincorporation into Spain would require a favorable vote of more than 2/3 of the representatives of both Spanish Chambers, 60% of the representatives of the Catalonia Assembly and 18,259,052 citizens [2,759.927 Catalonians and 15.499.125 from the rest of Spain].

Once again it is evident that the ‘right to autonomously decide’ proposed by these political parties is designed to favor independence against permanence as part of Spain; both options are very unequally treated.

Even if current Catalonia inhabitants never modified their opinion [and therefore never wanted to review their decision of seceding from Spain, in case of succeeding in it] ... What would happen with the preferences of future Catalonians? ¹⁵. The proposal of pro-independence parties fails to fulfill the ‘anonymity’ condition in the sense that it promotes *intergenerational inequality of rights*. *Current Catalonia residents would be able to autonomously decide in apparent equality of conditions between independence and permanence as part of Spain; future Catalonia residents would not*¹⁶.

*Equally treatment of both options requires that the opinion of the rest of Spanish citizens is also taken into account in any pro-independence process, and establishing a double majority requirement; modification of the current situation should only take place if it is approved by a qualified majority both in Catalonia region and in the rest of Spain*¹⁷.

Apparently, the lack of neutrality [i.e., partiality] of the proposed ‘right to decide’ could be solved by adopting another of the approaches proposed by some Spanish parties: *the right to call a single non-repeatable referendum*. In this case, being a one-time consult,

¹⁵ We have previously alluded to the probable high impact of climate change on Catalonia, which makes it more than likely that many future Catalonia inhabitants prefer to reverse a possible current vote favorable to independence.

¹⁶ In fact, CÍ's proposal reveals a clear intention of making quite difficult a possible future reintegration of Catalonia into Spain by forcing rapid elimination of the Spanish language from Catalonia, one of the current links between Catalonia and the rest of Spain [CÍ, First Transitory Disposition eliminates Spanish as a language for those born after 1977].

¹⁷ The apparent 'severity' of this requirement is based not only on the Neutrality requirement; it is also a design that prevents actions in which a majority discriminates against a minority. For example, it ensures that if 66% of Spanish citizens wanted to expel Catalonia from Spain, they could not do so if more than 33% of Catalan residents were against it. In Nicolaus Tideman's opinion [personal communication, April 2016], this does not imply neutrality, but symmetry; yet he suggests it could be sufficient to consider the approach is "adequate".

both options would have the same requirements to be chosen and therefore they would be equally treated.

But again **there would be an intergenerational inequality of rights**. Granting current Catalonia residents the right to call a single non-repeatable referendum implies denying that right to future Catalonia residents; it implies unequal treatment of people/voters.

In other words, current Catalonia inhabitants could decide between the permanence or not of Catalonia within Spain, but its future inhabitants [i.e., their children, their grandchildren...] could not. Holding a single non-repeatable referendum discriminates between current and future Catalonian inhabitants, something inherently non-democratic.

Is it democratic modifying citizens' framework of rights to prioritize the rights of current Catalonia inhabitants over the rights of its future inhabitants?

Anonymity requires that the 'right to decide' is not established or it is established forever, but it does not accept that it is only exercised once; either the possibility of holding a referendum is rejected or the possibility of holding infinite referendums is accepted; intermediate positions grant different rights to people whose only difference is having been 'born' at different points in time, something inherently contrary to Art.01 of the Universal Declaration of Human Rights¹⁸.

The proposal of holding a single non-repeatable referendum in which only current Catalonia inhabitants vote does not satisfy the Anonymity condition both in relation to the set of all Spanish citizens and to future Catalonia inhabitants.

Let us now review the last of the above mentioned three principles:

4 DOES THE 'RIGHT TO DECIDE' MEET THE CONDITION OF 'UNRESTRICTED UNIVERSE OF CHOICE'?

The Condition of Unrestricted Universe of Choice alludes to the fact that the choice of the question being voted and the options that can be chosen can determine whether a collective vote is democratic or not¹⁹.

¹⁸ From a comparable line of thought, we could say it underlies current approaches to Sustainability concept, which not only seek to optimize the state of the world and its probability of enduring, but also that "future generations" enjoy the same rights as current inhabitants. For a formal review of Sustainability and Sustainable Development see Alvira, 2014.

¹⁹ Although in strict sense eligible options are always restricted, it is essential that the most important options are eligible.

If we review the pro-independence parties' proposal, Catalonia inhabitants vote on a question as 'Do you want Catalonia to become an Independent Republic?' being 'yes' and 'no' the eligible answers²⁰.

And this poses an important restriction in two areas: the questions that can be asked and the answers that can be chosen, and both issues place this approach very far from the concept of democratic choice. Let us review it.

4.1 RESTRICTING THE QUESTIONS THAT CAN BE MADE

Pro-independence parties argue a historical legitimacy²¹ as the basis of the right to hold the consult, but they subordinate the effective realization of the separation to Catalonia inhabitants' preferences. And once the territorial definition of Spain has been subordinated to its inhabitants' preferences, there is no objective reason why the 'right to decide' should consider Catalonia, or any other Spanish region, an indivisible entity independently of these inhabitants' will.

In other words, if the majority of Lérida, Gerona and Tarragona residents prefer independence but the majority of Barcelona ones prefer to remain as part of Spain...

- ... Why should we impose Barcelona's residents separating from the rest of Spain [thus losing their current rights as Spanish citizens]?
- ... Why cannot each circumscription within Catalonia independently decide whether to remain integrated or split from the rest of Spain, in order to constitute an independent State, which could be a republic, a kingdom, ...?
- ... Why should Catalonia residents be forced to remain united, if different Catalonia regions inhabitants decide they prefer different paths for the future?

Given that there have already been differences between the preferences of inhabitants from different parts of Catalonia ... why does not the referendum also ask: "If some parts of Catalonia prefer independence and others do not ... do you prefer to maintain territorial integrity with the rest of Catalonia or with the rest of Spain?"

²⁰ This was the question/answer format chosen by the Catalan Regional Govern when it called a referendum on the independence or not of Catalonia, last October 1st, 2017 [noteworthy, this referendum was prohibited by the Constitutional Court of Spain].

²¹ This historical legitimacy is questionable, since Spain has already existed as a political entity at least 1,000 years before Catalonia. It is significant that Isidore of Seville [ca. 630 CE, Bk IX, ii] only described in his *Etymologies* the existence of four peoples [gens] in Spain [Hispania]: Galician, Asturian, Cantabrian and Basque. Isidore could have not mentioned the Catalanian people because there were still several centuries left before the birth of Catalonia, which indeed would occur on the 'blank canvas' left by the Muslim invasion of the Visigothic kingdom of Spain.

There is no reason why, if the door is opened to 'territorial redefinition' of Spain based on individual preferences, any of the above options is not valid. In fact, not assessing these options would question the democratic character of the consult, which would again show a design favorable to the option preferred by the pro-independence parties, but not necessarily the one preferred neither by the majority of Spanish citizens nor by the majority of Catalonia inhabitants.

Restricting the questions that can be asked is a way of limiting the answers that can be obtained; i.e., a way of avoiding obtaining undesired answers even if one of them was the preferred by the majority of individuals. It is a non-democratic way of manipulating elections favoring some options over others; i.e. to achieve 'apparently' democratic decisions which are not actually so.

4.2 RESTRICTING THE ANSWERS THAT CAN BE CHOSEN

Pro-independence parties propose 'yes' and 'no' as possible eligible options, but there are actually many possible differences/nuances within 'yes' and 'no'...

For example, an individual may prefer Catalonia remains as part of Spain if the 'Autonomies model' is further developed or a Federal territorial model is adopted, but prefer Catalonia separates from the rest of Spain if an ultraconservative stance is adopted which rejects certain issues such individual considers very important. For this individual neither 'yes' nor 'no' are his favorite option.

Choosing between 'yes' and 'no' can prevent many people from expressing their true preferences, forcing them to choose inaccurately.

A democratic approach to a consult of this nature requires that people can assess all possible options, not limiting them to choosing between two options that do not describe the actual variety of possible solutions. The consult should at least assess the proposals of the main political groups, which can roughly be grouped in:

- ... everything remains the same.
- ... the autonomies model is further deepened.
- ... the territorial model is redefined as a Federal State.
- ... an Independent Republic is proclaimed.

Yet here another problem arises, because *there is no rule for choosing between more than two options that is sufficiently accepted by Social Choice experts*:

- If the *most voted option* is chosen [plurality rule], said option will not necessarily be the most preferred one, and may even be the least preferred one²².
- If we use a preferential voting method, there is no aggregation rule accepted by a large number of experts [it refers us to Arrow's Impossibility and Gibbard Satterthwaite result].

However, it is our opinion that any rule satisfying the Condorcet Winning Criterion would lead with high probability to a matching result²³.

5 RECAP AND CONCLUSION

The review allows us to see that the 'right to decide' in the terms proposed by pro-independence parties breaches three fundamental premises of the Social Choice:

- It breaches **Anonymity**
 - Assigning more value to the rights -votes- of Catalonia politicians/inhabitants than to the rest of Spanish politicians/inhabitants.
 - Assigning different value to the rights -vote- of current Catalonian politicians / inhabitants than its future politicians / inhabitants.
 - Assigning more value to the preferences of the members of the independence parties than to the rest of Catalonia inhabitants.
- It breaches **Neutrality**: designing the consult to favor the choice of independence against permanence within Spain.
- It breaches **No restriction of the Domain of Choice**:
 - Promoting one question, while denying many other possible questions regardless they might be the most preferred.
 - Accepting only two answers, even if may be none of them is the most preferred by Catalonia inhabitants.

²² This is called 'Borda Paradox' and was proven more than 200 years ago by J.C. Borda. The probability that the plurality rule does not choose the most preferred option among the 4 options above could be higher than 40% [Wright, 2009]

²³ The reason is rational preference over the options presents a 'Single Peaked' structure [Black, 1948], so it is very unlikely that cyclical relationships will occur. If they occurred, our preferred rule to resolve them is Beatpath Schulze [Schulze, 2011].

Therefore, **these parties' approach cannot be considered a basic right of democracy, and their implementation in the terms demanded by these parties would lead to a decision that with high probability would not be democratic**; i.e., which would not represent the citizens' will; nor that of Spanish citizens, nor that of Catalonia inhabitants.

However, it can be questioned that the procedure established by the Spanish Constitution assigns much greater value to politicians' preferences than to citizens' preferences, especially in the *status quo* preservation. That is, if a proposal to modify the geographical delimitation of Spain is not approved by 2/3 of each Chamber, it cannot be voted by citizens, regardless of their opinion; even if 100% of them are in favor of such modification.

This also breaches the condition of Anonymity; 117 deputies or 89 Spanish senators currently have the right to impose their preferences on the rest of Spanish citizens even if 100% of the latter held the opposite preference. If we consider the number of Spaniards in the Electoral Census [INE, 2016], it is approximately equivalent to granting a senator's vote greater value than the vote of 200,000 Spanish citizens.

This makes it questionable whether a referendum on the continuity or not of Catalonia as part of Spain should follow the process currently established in the Spanish Constitution, since this process grants Spanish [and Catalanian] politicians a veto that could lead to a situation contrary to actual preference of Spanish citizens on this issue.

Therefore, in order to state the conditions that would allow a democratic referendum regarding the permanence [or not] of Catalonia as part of Spain, we do not build on the conditions established in the Spanish Constitution, but on the issues that relate to the three above referred principles of Social Choice: Anonymity, Neutrality and No restriction of the Universe of Choice.

From these three principles, a democratic procedure for the decision of the permanence or not of Catalonia as part of Spain should:

Satisfy **Anonymity**...

- among current citizens, granting the same value to the vote of all Spaniards, which implies:

- Enabling the consult to citizens, eliminating current veto power of the representatives of the two Chambers²⁴.
- Asking the *preferences of every Spanish citizen, not only Catalan residents*
- Between current and future citizens
 - Establishing conditions that ensure current decision is not different from the one that would be made within a few months, as soon as the *electoral census is slightly modified, requiring:*
 - *sufficiently high participation percentage* [e.g., 75% of electoral census]²⁵
 - the favorable vote of a *qualified majority* [e.g., 2/3 of citizens]
 - Establishing a second majority requirement that *preserves the rights of minorities*; the majority of Spanish citizens must vote in favor of the independence option in both contexts: in Catalonia and the rest of Spain²⁶.
 - If the result of the consult leads to independence, *citizens' right to call a similar referendum [whether to return to the current situation of Catalonia being a Spanish region or to make some Catalonian region independent itself from the rest of Catalonia] must be established as a fundamental right in the future Catalonia Constitution.*

In addition, satisfying anonymity between current and future citizens implies satisfying inter-temporal **Neutrality** between the options.

To satisfy the condition of **Unrestricted Domain**, avoiding limiting the options that citizens can choose according to the preferences of some individuals²⁷:

²⁴ Politicians/'Representatives' have long argued the positive effect of their 'veto' which -they claim- 'prevents the instability inherent to citizen consults'. However, there are mechanisms that prevent instability in important decisions such as the use of qualified majorities or double majorities [or both, for specially important issues], using rules that satisfy the Condorcet Winner Criterion, ... On the contrary, current model of representation which concentrates most political power in a few representatives is showing a disturbing generalization of corruption [primacy of politicians' private interests over the general interest], and most likely is - together with the use of inadequate voting rules [see Alvira, 2016 & 2017c]- one of the causes of current political instability in Spain.

²⁵ To avoid that this mechanism could result in the capacity of 25% of citizens of preventing the decision, an equivalent condition is that if the participation is lower than 75%, the difference between the actual participation and 75% of the citizens summoned, is accounted as if those citizens had voted in favor of preserving current rights / status quo.

²⁶ It refers to the need to decide in conditions similar to those of future Catalonia residents would have if independence was now approved and later they preferred reincorporating to Spain. We anticipate that many times it may be impossible to ensure this possibility of going backwards, but at least it must be assessed and a voting procedure designed that facilitates it as much as possible.

- Among the questions to be asked, a second question should be added in the consult: *if in your constituency wins 'no' but in most Catalonia districts wins 'yes', ... do you prefer to preserve the territorial integrity with the rest of Catalonia or with the rest of Spain?*
- among the answers that can be chosen, it is essential to include all the options supported by the main political parties, and at least the four indicated above:
 - Continuing current territorial model
 - Deepening the Autonomies model
 - Developing a Federal State
 - Allowing Catalonia to become an independent state²⁸

The opposite would imply that the decision could be imposed since *the option preferred by the majority of citizens could be different from the eligible options.*

These would be the conditions that would allow holding a 'democratic' consult on the issue of the continuity or not of Catalonia as part of Spain. Any other conditions for holding said consult would not meet fundamental requirements to be considered democratic according to unanimously accepted principles in the realm of Social Choice. *It would be essentially 'anti-democratic', regardless of whether or not it implies a vote.*

But it is important to point out that if the consult is held satisfying above conditions, **it would have democratic legitimacy**, regardless of whether this procedure is not acceptable from current design of our Constitution.

Strictly speaking, it is possible to design a democratic consult on the independence [or not] of Catalonia, but the conditions this consult would have and the risks that it would imply [especially for Catalonia residents] make it doubtful there is anyone interested in summoning it.

6 EPILOGUE

We have seen the conditions that would allow a democratic decision about the continuity or not of Catalonia as part of Spain. However, this procedure means that, in the situation of equal number of citizens supporting the status quo and independence, maintain-

²⁷ Although in any election it is necessary to limit the number of eligible options [it is not possible assessing infinite options], this limitation must be related to the preferences of the majority of citizens, not to those of a few politicians.

²⁸ Noteworthy, it would be convenient to disaggregate this option, and to explain the different State models proposed by the pro-independence parties, since although these parties currently form a group, they actually defend very different futures for Catalonia.

ing current trend / status quo prevails against independence; i.e., above conditions assign greater value to the preferences of those who decide on continuing with the current trend/preserving the status quo.

And a question arises ... is this democratic? The answer is yes, which is justified by three objectives that must guide social choices:

- The first is *preserving our societies' stability*, which requires that reforming structural aspects of societies is more difficult than reforming non-structural issues [Barberá & Jackson, 2004]. A structural change approved by a small number of votes can easily imply that if the election is repeated, even after a short period of time, the opposite result is obtained, leading to a situation of high social instability.
- The second is the *Efficiency in the use of societies' resources*. Structural changes require time and high use of resources to be implemented. Again, if there is no appreciable difference of votes in favor of change [i.e., if a large majority of citizens do not improve their status] a major change is an inefficient use of resources.
- And the third is in terms of *Rationality as expected utility maximization*. Major changes in short periods of time imply high uncertainty / risk compared to the more 'certain' future of maintaining more constant change / development trends. If there is not an important reward to be reached [i.e., if a large majority of citizens do not improve their status] an uncertain change implies less expected collective utility than continuing the current trend.

Most people prefer public decisions are stable, efficient and rational, and this global preference is superimposed on the preferences expressed in particular votes/decisions, allowing the compatibility of qualified majorities with the democratic nature of the decision in processes involving structural changes.

And of these three issues, the last *-rationality of the decision-* is crucial because *the way an individual / group has to decide whether a change is rationally desirable or not, is comparing the utility provided by current context against that provided by the context*

that would be created by the change²⁹. And when we review the State model advocated by Constituïm, we find several surprising questions:

The first is that *all citizen rights explained in Constituïm proposal are compatible with permanence of Catalonia as part of Spain*. In particular, the majority of new citizen rights in Cï proposal refer to citizens greater influence in some collective decisions [Cï, Seventh Title], something which is perfectly possible without independence³⁰.

The second is that in case of independence, *Catalonia inhabitants see their current rights restricted to Catalonia*, and even within Catalonia they lose some important rights [e.g. ; the right to use the Spanish language in its communications with the Administration³¹, the right to participate in making collective decisions in Spain and the EU, ...].

The third is that in Cï proposal *Catalonian political parties and politicians greatly increase their power*³², severely questioning their impartiality in this process.

The fourth is that *Cï proposes an Electoral Law for electing the members of the Catalan Assembly that would make it very unrepresentative*; that would imply with high probability a persistent ideological bias towards the conservative side, and that would

²⁹ Rational preferences between courses of action are not established by the characteristics of the eligible courses of action, but by the consequences [or states of the world] that are expected to be achieved following each eligible course of action [Savage, 1954]. The rational preference between permanence or independence should be based to a large extent on the comparison of current constitutional framework and the one that would be implemented. In the absence of an official proposal of Constitution, we value Cï proposal.

³⁰ Although some rights would require modifying Spanish Constitution, this modification is possible without the need for independence [in fact, at present time there are several Spanish political parties that advocate greater citizen intervention in public decision-making]. Additionally, a deeper reading of Cï proposal leaves some important doubts, since the definition of most of these new proposed rights is left to a Citizen Participation Law that would be drafted by future Catalanian politicians. However, these politicians' currently do not promote citizens participation except for the issue of the independence referendum [and with an approach that breaches the three most fundamental principles of Social Choice]. Why are not citizens' participation rights fully defined in Cï's proposal to 'shield' them from possible later changes in politicians' opinion? History has already shown us that citizens' right to control representatives' actions is the first thing politicians always eliminate in constitution-making process.

³¹ The emphasis placed by Constituïm on increasing future relations with regions with similar linguistic links [Art.7], and the urgency in breaking the linguistic link with the rest of Spain [First Transitory Disposition], are relevant because they indicate the will of Cï to break any bond with Spain as soon as possible, something highly questionable since it is unnecessary. On the other hand, Cï does not take into account that breaking the linguistic link with the rest of Spain implies doing it also with all Latin American countries.

³² Title Four, Chapters 1 and 2 detail the powers Catalan politicians would have in a hypothetical independent Catalonia, which are far superior to the ones they currently have, starting with a 25% increase in the duration of mandates.

marginalize the less populated provinces³³. If the elections to the Assembly of a hypothetical independent Catalonia were carried out following the system proposed by Cİ:

- The decisions the Assembly would make would be very different from those the whole Catalonian society would make, and consequently, the long-term evolution of Catalonia would be very different from what said society would prefer.
- The future of Catalonia would be almost autonomously decided by few Barcelonans. On the contrary, Lerida, Gerona, Tarragona and Arán would become politically irrelevant.

To sum up, except for some increase in citizens' participation in public decision-making [inexplicably little 'defined' in the text] Constituim proposal would not provide new rights to Catalonia inhabitants but instead would greatly diminish their current rights [they would suffer the loss of their rights in the rest of Spain and the EU], while imposing large concentration of power increase in the hands of few politicians³⁴ elected by an electoral law with important design errors, in a system which marginalizes least populated provinces.

Organizing an independent process where individuals have complete certainty of losing many and important rights; raises many doubts regarding which rights could possibly be gained, moreover everything they could obtain following this high risk independence process could also be obtained without it, so then this is not rational. In addition, the fact that the only agents that would obtain rights they could not acquire without independence are the pro-independence politicians and parties themselves, questions again the legitimacy of their actions.

³³ Cİ, Chapter 2. Art 78 and 79. The "Electoral Law" for the Assembly proposed by Cİ incorporates small electoral districts [according to the population data of Idescat, 2016, 53% of the electoral districts would choose one representative, and 30 % two representatives], in a design closer to Anglo-Saxon majority systems than to systems of proportional representation used in the rest of the countries [e.g., rest of EU]. The lack of representativeness of the systems with small number of representatives per district was revealed as soon as Hare, 1860 or Dodgson, 1888. Cİ also proposes an open lists system, which tends to promote the primacy of the person and elitism [political positions are restricted to a greater extent to citizens with greater wealth]. In addition, Cİ proposes that "The deputies [...] politically, will only respond to the citizens of the electoral district for which they have been elected", something that is in our interpretation a serious conceptual mistake; the government of a 'whole' always needs decisions that transcend the interests of the 'parts'. For a review of the persistence of an ideological bias towards the conservative side in majority systems, see Colman & Pountney, 1978. Complementarily, the proposed single electoral district for the election of the President, implies granting the decision to the inhabitants of the province of Barcelona [75% of voters]. The influence on the political future of Catalonia of less populated provinces or regions [Lerida, Gerona and Tarragona, or Aran] could be nil. This could be avoided by designing a bicameral system; by indirect election of the president, ...

³⁴ This high concentration of power tends to have negative consequences, e.g., it is considered one of the main causes of the high and growing economic inequality in Western societies [see Alvira, 2017b. Annex II].

However, current debate on the legitimacy of voted collective decisions -or the legitimacy of 'placing urns on the streets'- stands as opportunity to shift the focus from the analysis of the '*right to decide solely on the independence or not of certain territories*'³⁵ to the '*right to decide*' in all matters important to citizens, and especially in the conformation of the regulatory framework [Constitution and Laws].

In order to achieve this, it is not necessary to reinvent the wheel. We have a **model** that has been functioning for a long time in a country that is close enough and similar to ours, Switzerland, whose Constitution defines a federal model with high citizen control of the design of the constitutional/legislative framework. This design **incorporates great territorial balance and has shown high stability throughout its history**³⁶.

The great interest of current debate on the democratic legitimacy [or not] of the '*right to decide*' is that **it allows us to open the debate on the need to democratize our political system, incorporating the real right of citizens to decide on most important issues**, reducing thus the negative impacts of current excessive concentration of power on a few 'representatives' [e.g., corruption, economic inequality, ...], who often do not act for the general interest but for their own.

As we have mentioned above, a democratic referendum for the independence [or not] of Catalonia is possible, but the conditions the consult should comply, make its celebration hardly anyone's interest. What matters most is taking advantage of the current situation

³⁵ It is significant that the 'right to decide' in the above described terms, is again a decision made by politicians, not by citizens; and it is mostly related to the needs of those politicians, not of the citizens. Spanish politicians [including Catalonia politicians] still try to prevent citizens as much as possible to decide what they actually want to vote.

³⁶ The evolution of Switzerland from a confederation of three cantons for the purpose of mutual defense [end of 13th century], to a federal state that integrates 26 cantons with a representative central government compatible with territorial balance and popular control, has a remarkable interest in the present moment of crisis of representative governments [or in other words, of crisis of the inadequate definition of democracy by Schumpeter, 1943]. The Swiss Constitution [SC] details all the mechanisms for citizen participation and political control [Title 4, Chapter 2, Art. 138-142], including the necessary thresholds for each procedure [something inexplicably absent in Ci proposal], in a federal state model that could easily be adapted to the Spanish case, where the Swiss cantons would be equivalent to the Spanish autonomous communities.

The Swiss model is also interesting at present time when some Spanish regions demand a differentiated framework of rights alleging 'historical' singularities. In the first place it is suitable to emphasize that a review of Spanish history shows that all regions are 'historical'. As *historic* is the Basque Country as Galicia, Asturias, Cantabria or Andalusia [Bética in Roman Hispania, and previously the location of the Kingdom of Tartessos]. So much it is Catalonia as Castilla la Mancha or Region de Murcia. Secondly, it is significant the Swiss Constitution does not state historical differences between the cantons -even if such differences exist-; *all the cantons have the same rights*.

In a Democracy, equality of political power does not only refer to citizens; it also refers to regions. Therefore, in its prologue the Swiss Constitution states the protagonism of both the Swiss people and regions ["The Swiss People and the Cantons ..."]. It is significant that Switzerland has been repeatedly considered throughout history the best example of a democratic country [Machiavelli, 1513; Rousseau, 1754; Hattersley, 1930; Schumpeter himself, 1943 ...].

to improve, Spanish citizens' framework of rights, reducing current high concentration of power in a few politicians, which is causing important dysfunction of the whole. Needless to say, this should be done through a constitutional reform³⁷.

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³⁷ We align ourselves with Aristotle [344 ACE]; the strength of the laws comes largely from their durability over time. Therefore, we are not proposing continuously modifying the fundamental articles of the Spanish Constitution, since then such precepts would lose value/strength. But it is undeniable that Spain and Spaniards have changed a lot since 1978, and in many aspects what was optimal in 1978, is no longer so. Moreover, any Constitution perfectly admits more frequent small partial reforms, which preserve most of the precepts that work properly. Going back to the origins of democracy it is significant that when Solon made public his proposal for an Athenian Constitution [ca. 594 BCE], he wrote it in wooden boards [axons] instead of carving it in stone, so that the text could not last forever and had to be updated at the very last when the wood would 'rot' [Solon suggests his Constitution should be updated at least before 100 years]. Noteworthy, this statement by Solon is made 600 years before Christ, when the world was changing much, much, much slower than nowadays...

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