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ORCID:

RA: 0000-0002-7785-7817

On the influence of the electoral system in the political conflict in Catalonia and its reform as a tool for mitigation

Approaches to the conflict, evaluation of the influence of the electoral system, and estimate of the impact of alternative designs on the 2012, 2015, and 2017 regional elections

RICARDO ALVIRA

University of Murcia, Spain

E-mail: ricardo.alvira@um.es

Abstract. Since the Spanish Constitution was approved in 1978, several politicians and public figures in Catalonia have challenged Catalonia's position within the Spanish state, asserting the need to move towards greater self-government and even independence. This demand has led to constant negotiations between the Catalan government institutions, almost always in the hands of Catalan nationalist parties since 1978, and the central government. The increase in the negotiating power of Catalan nationalist parties since 1993, when they became pivotal in electing the Spanish government, led to a notable and growing increase in Catalonia's autonomy. Nevertheless, this progressive autonomy has also faced criticism from other Spanish regions, as well as from within Catalonia itself, particularly from those who maintain that Catalonia should remain integrated within the Spanish state under conditions comparable to those of the other regions. This clash of positions led to extreme ideological polarization at the end of the 2010-2020 decade, which persists in a somewhat attenuated form today, with the potential to resurface given that its causes have not been resolved. This article summarizes the different positions on the conflict, showing that many of them are related to the majoritarian design of the political system, with the electoral system being particularly relevant. This suggests that reforming the electoral system could be a way to mitigate the conflict. To test this hypothesis, the parliaments created in the 2012-2017 regional elections by the current electoral system are compared with those that would have been produced, under certain assumptions, by six alternative electoral designs. The results confirm that the current majoritarian model is contributing to the conflict, and that alternative electoral system designs could significantly reduce ideological polarization. The results of this study could be applicable in multiple contexts in Europe to mitigate the increasing ideological polarization.

Keywords: electoral systems, democracy, ideological congruence, nationalism, ideological polarization, Catalonia, Spain.

1. ON THE DIVERSITY OF APPROACHES TO THE NATURE OF THE CONFLICT IN CATALONIA

In recent decades, political debate in Spain has been strongly dominated by the political conflict in Catalonia, or Catalan conflict, the intensity of which has increased to the point of provoking considerable institutional instability and the blocking of numerous political decisions at both regional and national levels. Although in recent years the conflict appears to have been attenuated, the structural causes of the conflict remain unresolved (Oller et al., 2023). However, social, political and academic actors disagree about the nature and, consequently, the causes and possible solution of the conflict. In order to shed light on this matter, we group the different positions according to two broad approaches:

- A first approach focuses on identity and cultural issues, as well as the will of the individuals/groups who lead each of the identities to maximise their own political power, as the primary cause of the conflict.
- A second approach points to an inadequate design of the political system, which would be key to defining the model of political competition and the nature of collective decisions.

Within the first approach that emphasises identity and cultural issues, there are also two opposing perspectives. From a first perspective, defended by supporters of Catalan identity, it is described as a conflict between a *united Catalan people* and a Spanish State, which would be imposing a lack of freedom on said people. This oppression would go back at least until 1640, when *Els Segadors* revolt against Philip IV's troops, yet it would become harsher after Barcelona surrendered to Philip V's troops on September 11th, 1714, and Catalonia was integrated into the centralist state model operating in the rest of the Spanish regions, its autonomous governing institutions being abolished.

From this approach, it is stated that the current Spanish Constitution, approved in 1978, severely hinders Catalonia's self-government, which, in conjunction with the centralist tendencies from the central government, would be the reason for the much higher competence conflict between the Catalan and the central governments compared with other regions of Spain (Harguindeguy et al., 2017). Likewise, a strong politicization of the judiciary is alleged, which is signaled as a tool that allows the central government to impose a centralist State model. Its maximum expression would be the Constitutional Court repeal in 2010 of several articles of the

last Statute of Catalonia¹, despite having been approved in 2006 by the *Parlament* of Catalonia, then the Congress of Deputies, and then the *Catalan citizenry*².

Therefore, from this perspective, the solution to the conflict requires completely recovering the Statute of Catalonia and holding a referendum where the *Catalan citizenry* can express regarding independence or remaining in Spain³. Furthermore, it is alleged that the high support for independence shown in the 2014 and 2017 consultations confirms the discontent of the *Catalan people* with the current situation, and their willingness to embark on a new path outside Spain.

Opposed to the above, a second approach, advocated by supporters of Spanish identity, places the origin of the conflict in the will of Catalan nationalist politicians to increase their power, being 'independence' a means to achieve it. These politicians would have participated in the drafting of the current Spanish Constitution, not aiming to define a framework allowing Catalonia's full development within Spain, but to obtain as many powers as possible as the first step towards independence, and even the subsequent creation of a broader state that would integrate the rest of Spanish regions where Catalan is a native language⁴.

With this goal, the Catalan nationalist politicians would have sought the lack of definition of the territorial model⁵, and maximizing decentralization of powers. After the Constitution's approval, they would have used

¹ Specifically, through STC 31/2010 (appeal filed by the Popular Party, PP); STC 137/2010 (appeal filed by Spain Ombudsman, appointed by the PSOE); and STC 138/2010 (appeal filed by La Rioja government). The review of the repealed articles provides a vision of the main areas of conflict, being: the recognition of Catalonia as a Nation (preamble); the prevalence of the Catalan over Spanish as official language (Art 6) breaking their current equal status; the control of the Judicial Power in Catalonia and appointment of judges (Title III); the elimination of the Spanish Ombudsman action in Catalonia (Art 78); the prevalence of the Catalonia Government in conflicts regarding shared powers with the Central Government (Art 111); and the reduction of taxes assigned to the State (Arts. 206, 218 and Additional Provision Seven).

² The term 'citizenry' designates "the group of people who live in a particular city, town, area or country" (Cambridge Dictionary, 2020). This definition is close to the description of Catalans in Art 6 of the 1979 Statute of Catalonia, which are the "Spanish citizens who, in accordance with the General Laws of the State, have an administrative neighborhood in any of the municipalities of Catalonia".

³ However, the conditions that would allow such a referendum to be conducted would also be the subject of intense debate (Alvira, 2017).

⁴ In order to achieve this, the Catalan nationalist would have coined by the end of the 19th century the term 'Catalan countries', encompassing the three Catalan-speaking states of the former Crown of Aragon (Principality of Catalonia, Kingdom of Valencia and Kingdom of the Balearic Islands), yet excluding the Kingdom of Aragon.

⁵ The design of the territorial organization model produced the greatest confrontation in the drafting of the current Spanish constitution. Leaving some ambiguity in the Constitution was the means to achieve its approval (AAVV, 1976).

the Executive and Legislative powers to gradually raise a barrier between Catalonia and the rest of the Spanish regions where Catalan is not a mother tongue, *de facto* turning Catalonia into an independent region before claiming *legal* independence. This barrier would have been based on three axes:

- *The first axis would be the design and construction of a ‘national’ identity incompatible with the Spanish identity.* In this regard, it is telling that the first law passed by the Catalan parliament in 1980 (Law 1/1980) had the sole objective of establishing 11 September as the National Day of Catalonia, implicitly equating the Spanish monarchy in its preamble with the oppression and loss of freedoms in Catalonia⁶. Also, it would be evident in the election of *Els Segadors* as the anthem in 1993, a song that calls the Catalan peasants to arms against the Spanish troops stationed in Catalonia, held responsible for Catalonia’s impoverishment.
- The second axis would have been *prioritizing the Catalan language and hindering the use of Spanish*, thus breaching the constitutional (Art 3 SC) and statutory (Art 3.3, Statute 1979) balance between both languages. The goal would have been to reinforce the sense of community between Catalans, and differentiation from the rest of Spaniards, but also *to create a closed community to the inhabitants of the rest of Spanish regions where Catalan is not a native language, yet open to the inhabitants of those regions where it is*⁷.
- And the third axis would have been *the use of education to instil in current generations a concept of sovereignty and right to self-determination contrary to the shared sovereignty among all Spaniards.* This would have been greatly reinforced through the design of a

⁶ Since the 15th century the biggest festival in Catalonia had been Sant Jordi (April 23rd), a day that had no political significance, which election would have been politically neutral. By choosing September 11th, the Catalan nationalist politicians would have made clear, as early as 1980, their desire to build a Catalan identity incompatible with the Spanish identity.

⁷ This would have been sought through the successive legislation of the parliament. E.g. Art 2 of the *Law 1/1998, of January 7, Language Policy* and Art 6 of the 2006 Statute of Catalonia, declared the preferential character of Catalan over Spanish. Likewise, the barrier would have already been built to a great extent by imposing Catalan as the only vehicular language for public education (which makes it difficult for middle or working-class non-Catalan-speaking families with children to move to Catalonia for work reasons), and the requirement of high levels of Catalan in the examinations for access to public positions (the higher the rank, the higher the required level of Catalan, *Decree 161/2002 of the Generalitat*), which *de facto* excludes those not born in Catalan-speaking regions, from accessing the public function and high decision levels in Catalonia, which according to critics, could be breaching the Constitutional Framework.

Catalan identity that identifies permanence in Spain with a situation of oppression and poverty for the Catalans.

Consequently, from this perspective, the problem would not be the lack of freedom in Catalonia, but the persistent ambition of nationalist politicians to increase their power, making the most of the current constitutional framework⁸, and once the current framework has been exhausted, openly starting the process towards independence.

The second approach emphasises structural issues of the political model and its influence on political competition, both at the regional level (Catalonia) and national level (Spain), encompassing its institutional architecture, electoral systems and decision-making procedures⁹. Thus, Mueller (2019) proposes that the conflict can be understood as a succession of “cooperation failures”, and attributes responsibility to the *majoritarian design*¹⁰ of Catalonia’s, but also Spain’s, political system, given that this type of design disincentivises cooperation between parties, in contrast to other models.

This majoritarian nature of the political system would be of great importance at the regional level, where the citizenry is strongly divided on the nationalist question. Steps towards independence would be disregarding an important part of the citizenry. *The bias of the Catalan electoral system, which systematically grants the nationalist parties parliamentary majorities without obtaining 50% of the vote, and the capacity of these majorities to make decisions without taking account of the remaining parliamentarians, would be the tool that would allow independentists to advance towards their objective whilst disregarding the actual preference of the citizenry.*

⁸ Especially since 1993, when the Catalan nationalist parties acquire a kingmaker role for central governments, which gave them greater bargaining power and allowed them to obtain greater decentralization of powers.

⁹ The Spanish and Catalan electoral systems display medium-to-high disproportionality – around 9–11% in the Spanish Congress and 7–10% in the Catalan assembly during the period under review. This combines with majoritarian institutional features, notably the capacity of relatively narrow parliamentary majorities to adopt far-reaching decisions without cross-bloc consensus requirements (Mueller, 2019), producing a persistent representational bias that favors particular political blocs.

¹⁰ See Lijphart, 2000, for a description of majoritarian and consociational models, as limits of a scale of political models in terms of distribution of political power. The majoritarian model prioritizes the capacity of public authorities to make decisions, by concentrating power. To do so, it generates governing majorities with extensive executive, and sometimes legislative, powers, frequently resorting to certain disproportionality in the electoral system, and setting low thresholds for approving decisions. This allows a small majority, often artificial, to direct the design of the regulatory framework and main policies towards a state that may even be highly rejected by a large part, which could amount to a majority, of society, magnifying confrontation in dimensions where opposing positions exist.

Table 1, Catalan citizenry support to different constitutive projects,

	Census	Turnout		Support		
		N° voters	%	N° votes	% / Voters	% / Census
Constitution 1978 (a)	4,398,173	2,986,790	67.91	2,701,870	90.46	61.43
Statute 1979 (b)	4,421,965	2,639,951	59.70	2,327,038	88.15	52.62
Statute reform 2006 (c)	5,310,103	2,594,167	48.85	1,899,897	73.24	35.78
Consultation 9-N (d)	6,228,531	2,305,290	37.01	1,861,753	80.76	29.89
Consultation 1-0 2017 (e) *	5,313,564	2,286,217	43.03	2,044,038	89.41	38.47

Source: Own calculation based on data from: (a) the Congress of Deputies; (b) BOE no. 269, of November 9, 1979; (c) BOE no. 158, of July 4, 2006; (d) <http://www.participa2014.cat/> and <https://elpais.com/>; (e) and Generalitat de Catalunya (note: the 2017 figures have been questioned by various media outlets due to inconsistencies with the preliminary published results, and the absence of oversight by an impartial authority; see, e.g., Cadena SER, 2017; El Periódico, 2017),

Moreover, the absence of minority protection mechanisms, such as those that exist in countries or regions with differentiated identities (e.g., Belgium or Northern Ireland), which adopt *consociational* models, would be allowing the pursuit of a path towards independence and confrontation with the rest of Spain that would have only been supported by half – or less – of Catalans. This interpretation would explain the reduced citizen support for the 2006 reform of the 1979 Statute, and the 2014 and 2017 consultations, in a percentage far below half of Catalans, and much lower than the consensus achieved in the approval of the 1978 Constitution and the 1979 Statute¹¹ (Table 1).

Furthermore, the majoritarian design would have allowed a significant departure from citizens' preferences in certain major decisions by political representatives, calling into question their own democratic legitimacy¹². The existence of *consociational mechanisms* would make it possible to avoid this type of decision that runs counter to citizens' preferences.

But factors from the majoritarian design would also be intervening at the level of the Spanish State, where

mechanisms of counterbalance are lacking, and which would enhance the consensual selection of key figures. For example, the inadequate design of the Senate and the absence of a chamber in which regions could express themselves (similar to the Bundesrat or the Swiss Council of States/Consiglio degli Stati), allowing their voice to be heard at the national level; likewise, a federal-type supreme judicial court, composed of judges from all regions, could incorporate the different perspectives of each region.

Therefore, the *majoritarian* political model would be an important cause of the conflict (Mueller, 2019), by enabling political representatives elected by a bare majority of voters – often less than 50% – to impose their preference on all citizens within Catalonia, but also by enabling central governments with very different territorial preferences to impose their ideology in Catalonia, thus challenging in both cases the preference of an important part of Catalans through the decisions of public authorities (central and regional).

Within these issues arising from the structure of the political system, questions related to electoral competition between political parties must be understood, which have been identified as one of the principal causes of the conflict. Political parties, for reasons of electoral competition, have modified their priorities without a corresponding change in their voters (Rodríguez-Teruel & Barrio, 2021), generating high *affective polarisation* among citizens, which has had a high social cost (Balcels, Daniels & Kuo, 2023), and has deepened the conflict, since affective polarisation has become part of the conflict itself.

Understanding these questions of electoral competition requires understanding the coexistence in Spain – and Catalonia – of two ideological dimensions: the Left-

¹¹ For this group, the reduced support for the Statute reform in 2006 (much lower than 50% of voters), and to the 2014 and 2017 consultations, raises doubts about their validity to repeal existing constitutive norms (Constitution of 1978 and Statute of 1979), whose approval received very superior support. Consequently, where the Statute of 2006 and the consultations of 2014 and 2017 do not agree with these texts, the provisions of the Spanish Constitution and Statute of 1979 should remain in force.

¹² For example, when the parliament urgently approved the laws for holding the referendum of 1 October 2017, polls indicated that more than 60% of Catalonia's citizens opposed this manner of calling the referendum (La Vanguardia, 2017). And that same percentage opposed declaring independence based on said referendum (Noguer, 2017). Therefore, the authorities who designed and organised the referendum and subsequently declared independence (albeit provisional) did so against the will/preference of the majority of citizens -according to La Vanguardia data- whose freedom they proclaimed to seek.

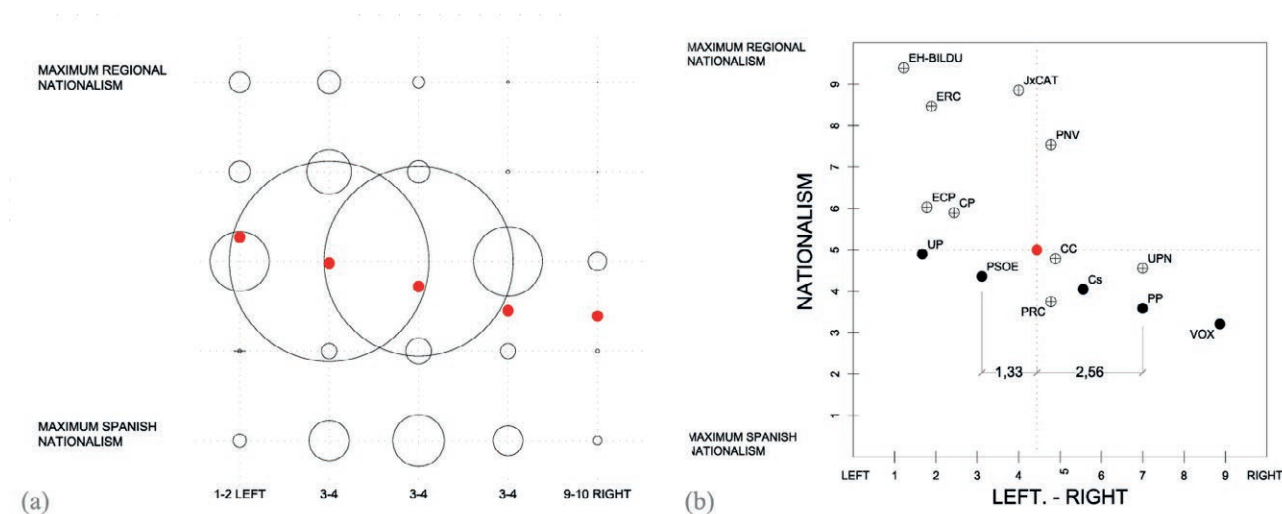


Figure 1. Positioning of Spain citizens and parties in left-right and nationalism dimensions (April 2019). (a) Ideological positioning of Spanish citizens (includes Catalonia). The percentage of citizens who position themselves at each point of the ideological space is represented with empty circles, while the red circles represent the center of gravity for each vertical of the Left-Right dimension. It can be observed the shift to the right coincides with an increase in Spanish Nationalism. (b) Ideological positioning of Spanish parties. Filled circles are national parties; empty circles with an inside cross are regional parties; the red circle marks the position of the median citizen. If we add the distance in the nationalist dimension of the two parties that so far have led Spain central governments (PSOE and PP) to each of the other parties, we obtain a 24.08 value for PSOE while 29.80 value for PP; i.e., 1.24 times greater for the latter. This explains the greater difficulty of sustaining right-wing governments in the current context of high polarization in the territorial dimension. Source: Own elaboration based on CIS ES 3248. P 33 y P37.

Right dimension and the Nationalism dimension¹³, but also understanding that the distribution of parties across the ideological space formed by these two dimensions is not isotropic. The location of parties shows an *attractor* that makes the distance in the ideological nationalism dimension between right-wing parties greater than that existing between left-wing parties (Figure 1). If we examine the data for 2019, it is observed that *the difficulty of reaching a pact in the right-wing ideological space is greater because the ideological distance in the Nationalist dimension of the right-wing national parties with respect to regional parties is 1.24 times greater than between the left-wing parties.*

This greater distance between the right-wing parties would have been offset by the mutual need in the case of both minority central and regional governments (usually CiU government with PP external support in Catalonia, coexisting with a PP central government with CiU external support), but it would have been the reason for very complicated minority governments in Catalonia in 2000 and 2011 when the PP could lead a majority central government¹⁴.

¹³ In fact, the prevalence of both dimensions in most regions was already identified by Sani and Sartori, 1980.

¹⁴ In this way, coalitions at both levels produce a de facto consociational dynamic; but when one party no longer needs the other's cooperation,

In 2000, the PP majority central government would have begun a recentralizing strategy, which would have been responded from Catalan parties starting to draft a more nationalist statute, and would have caused the electoral defeat of CiU in 2003 regional elections, and seven years of PSC (PSOE) government, supported by ERC. During these seven years, the positions of CiU, traditionally supporting the maintenance of the autonomist model, would have shifted for reasons of electoral competition with ERC towards more independentist theses without there being a similar change in the ideology of their voters (Rodríguez-Teruel & Barrio, 2021). Furthermore, the absolute majority achieved by the PP in 2011 in the central government with a renewed recentralising intention once again placed CiU in a delicate position, as it governed Catalonia as a minority from November 2010 with external support from the PP¹⁵. CiU could no longer counter the centralist policies of PP central government, yet it remained subject to PP control in Catalonia, which in the past led to very negative electoral results for CiU (Rico & Liñeira, 2014).

the system reverts to majoritarian logic.

¹⁵ It is relevant that in November 2010 (i.e., five months after the TC 31/2010 ruling), CiU still preferred proximity to PP in the right-wing space to sustain its government, to proximity to ERC in the Catalan nationalism dimension. This changed after 2011 national elections.

The Catalan government's weakness would force CiU to call early elections, and CiU would not be able to sustain future coalition governments with the PP based on the proximity in the Left-Right axis. Should CiU want to lead the next government it would have to obtain ERC's support. To do so, CiU needed to make a CiU government the only one acceptable to ERC. This was achieved by CiU approaching ERC in the two dimensions of the ideological space, and strongly polarizing the nationalist dimension, building an *approval threshold*¹⁶ around self-determination, which separated PSC and ERC, and that the PSC (the only party that had managed to challenge CiU for power to date) could not cross¹⁷ (Figure 2).

This would prevent the recurrence of the PSC-ERC-ICV left-wing government that had governed Catalonia between 2003 and 2010, hence maximizing the likelihood that CiU remained in power. The high attendance of citizens at the nationalist demonstration of September 11th, 2012, would have provided support to this CiU electoral strategy, which moved towards extreme Catalan nationalism and established as a fundamental theme for the following elections the holding of a consultation about independence.

Additionally, the financial crisis that began in 2008, contributed to the intensification of the Catalan conflict. Since November 2010, CiU was governing in Catalonia, and it implemented the EU austerity policies, including the reduction of public salaries, medicine copayments, the closure of health facilities, and increases in university costs (Ricoma & Muñoz in Rico & Liñeira, 2014). The citizens' trust in institutions and politicians reduced to a minimum, and in May 2011 the 15M movement was born, challenging the political system and demanding more redistributive and social policies to lessen the impact of the crisis on the population.

The growing public disaffection with the traditional parties (PSOE and PP in Spain, and CiU and PSC in Catalonia) due to their poor performance, evidenced by the severity of the 2008 financial crisis in Spain -and Catalonia- compared to other European countries or

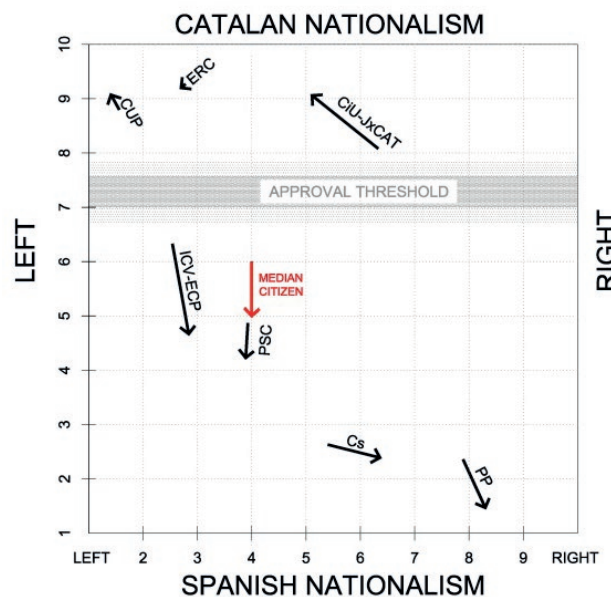


Figure 2. Ideological displacement of the parties in the 2012-2017 period. CiU moved towards ERC reducing its ideological separation by almost half. At the same time, the high ideological polarization regarding National parties built an approval threshold that eliminated the possibility of re-issuing an ERC-ICV-PSC government. The graph shows the centrifugal displacement of the parties in this period, the sum of their distances to the median citizen increasing by 12%. Source: own elaboration from CIS ES 2970 and 3202.

regions¹⁸, led to a reduction in their vote percentage, generating more fragmented parliaments (Figure 3).

Faced with this situation, the CiU government would have sought to divert attention from the Left-Right axis to the nationalist axis, arguing that it was the excessive centralization of Spain and *Catalonia's discriminatory tax treatment* that had generated Catalonia's negative socioeconomic situation. The focus was shifted from decisions made in Catalonia to decisions made outside Catalonia, and the central government was required to *remedy the grievance* that involved denying Catalonia a tax agreement similar to those of the Basque Country and Navarra¹⁹. The growing nationalist tension and independence demands would have then

¹⁶ As defined by Prados-Pardo and Dinas (2010), which makes two agents (people, political parties,) located on each side of the threshold to consider those located on the same side as friends and those located on the other side as enemies, preventing any deal crossing the threshold.

¹⁷ This would explain why the process of affective polarisation was asymmetric and stronger among voters of Catalan nationalist parties than among voters of non-nationalist parties, as detected by Rodríguez-Teruel and Barrio (2021). The designation of *botifler* (traitor) to any "Catalan" who was not in the Catalanist camp served to intensify the impermeability of this threshold.

¹⁸ It is significant that whilst countries such as Germany recovered their pre-2008 GDP in just 2 years, Spain did not recover it in real terms until 11 years later (i.e., until 2019).

¹⁹ The Basque Country and Navarra have a privileged socioeconomic situation, which most authors link to their fiscal agreement different than the other regions, including Catalonia. For instance, unemployment in Basque Country rose from 5.6% in 2006 to 16.6% in 2012, while in Catalonia it rose from 7.5% to 23.8% (Elias & Mees, 2017). Overall Spain's unemployment rate was 8.3% in 2006 and 25.8% in 2012.

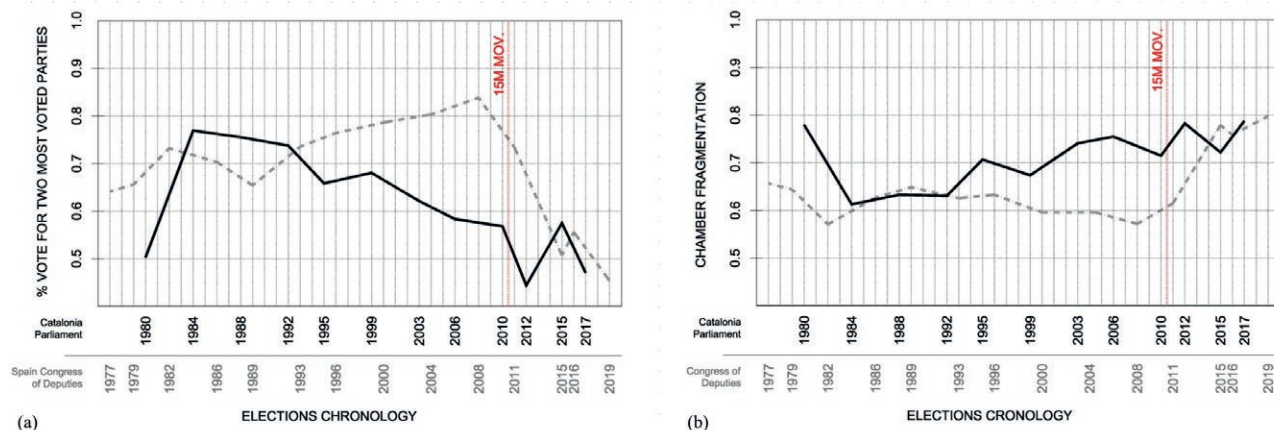


Figure 3. Votes and seats concentration (1978-2019). (a) Vote percentage of two most voted parties. Until 2011, different dynamics are detected at the national and regional levels. From 1984 to 2011, the vote percentage for traditional parties in Catalonia progressively decreased, while from 1989 at the national level there was a progressive concentration. Yet in both cases, the vote for the two most voted parties drops sharply since 2011 (Note: for Catalonia 2015 it has to be taken into account the first party was a coalition of two parties, therefore, the value actually encompasses the vote percentage of the three most voted parties). (b) Congress and Parliament fragmentation. Again, different dynamics are detected at the national (dashed line) and regional (solid line) level. In both cases, we find a high fragmentation at the start which is significantly reduced in subsequent elections, when voters learn how the electoral system works. Subsequently, while fragmentation at the national level is reduced, it experiences constant growth in Catalonia. In both cases, since 2011 the highest fragmentation values are reached. Additionally, the electoral chronology shows, after 2011, the regularity and duration average of the legislatures is reduced in both cases. Source: Parlament from Generalitat de Catalunya; Congress of Deputies from Crespo et al (2019: 417,428-429).

been a means to force the central government to accept said tax agreement.

This issue made it even more difficult after November 2011 to sustain the CiU minority government with the support of a PP that, from the central government, denied the fiscal reform, therefore forcing CiU to call early elections. Furthermore, if CiU wanted to remain at the helm of forthcoming governments, and nationalist tension was the means to achieve the fiscal agreement, then the natural political strategy for CiU would be to approach ERC, its possible ally in the Catalan nationalist dimension. Especially since citizen disaffection made it unlikely the vote would concentrate again on the traditional parties, and therefore, CiU should not expect to achieve a parliament majority in forthcoming elections.

2. THE POSSIBLE INFLUENCE OF THE ELECTORAL SYSTEM ON THE CONFLICT

The above review shows the complexity of the conflict, whose cause is explained very differently by different actors. However, it is not the purpose of this text to review all the dimensions involved in the conflict, but rather to evaluate the effect of the electoral system upon it.

In the ‘democracy’ paradigm prevailing in most Western countries, it is maintained that adequate rep-

resentation of the citizenry in the composition of Representative Chambers implies that their decisions are the will of the citizenry. However, it is also emphasized that *the sovereign in a decision is the one whose preferences prevail in that decision*²⁰, therefore it is also widely accepted that the democratic nature of the system requires that the decisions of said Chambers coincide with, or are very similar to, the preference of the citizenry²¹. Therefore, electoral systems, as mechanisms that allow citizens to express their preferences and transform them into a certain composition of the Chambers, stand as a fundamental part of the political system. The electoral system that best achieves a chamber composition whose ideology reflects the citizenry’s preference will be then the more democratic one²².

²⁰ The term *Sovereign* means “having the highest power or being completely independent” (Cambridge Dictionary, 2020)

²¹ Thus, Droop (1869: 482/483) described the fundamental principle of democratic representation “the claim of a representative assembly to have the decisions of a majority of its members accepted as the decisions of the whole country, depends upon the theory that these decisions do in general correspond to what the majority of the whole body of electors in the country would decide, if they had leisure sufficiently to investigate each of the questions to be decided, and an opportunity of voting upon it (...) we therefore want an assembly which shall decide each of (the) different questions in accordance with the opinions of the majority of the whole body of electors”.

²² Since 1970, several authors propose mathematical mechanisms to assess the ideological congruence between Representatives and Repre-

However, since at least the 4th century BC (Plato, *Laws*, cited in Alvira, 2019) it has been known that electoral systems can be designed to increase the probability that persons of a particular ideological persuasion will be elected, regardless of the preferences of the citizenry. Different *electoral systems design can introduce significant deviations between the ideology of the citizenry and the Representative Chambers*²³, and several studies in recent decades have detected regular patterns in such deviations:

- Regarding *majoritarian electoral systems* (e.g., single-member districts), Rae (1971: 98) detected that in the nationalist dimension they favor local candidates, an issue which could be behind the nationalist conflict in Quebec²⁴. In the Left-Right dimension, Colman and Pountney (1978) found a bias to the right (1966 British General Elections), a finding confirmed by Achen (1978) in the USA where the electoral system generated two main parties displaced from the median voter to the conservative side.
- Regarding *proportional electoral systems*, Kurrild-Klitgaard (2008) found a conservative bias in the Danish electoral system. Besides, several studies have detected a bias towards the right and Spanish nationalist in the electoral system for the Congress of Deputies, a proportional system with some majoritarian bias in the least populated regions (Nohlen, 1977; Capo, 1999; Urdánoz, 2014; Author, 2019)²⁵.

The above is of the utmost importance since *the existence of an ideological bias implies that the collective*

sented (e.g., Weissberg, 1978). In a secondary sense, mechanisms that maximise the probability that the decisions of the chambers align with citizens' preferences emerge as tools in the most advanced democratic models, as I&R tools (e.g. Switzerland & Italy).

²³ Downs (1957:141) defines *ideologies* as “verbal images of ‘the good society’ and of the chief policies to be used in creating it”. The definition reminds us of the ‘attractive, encouraging horizons’ whose achievement political action must seek (Ortega & Gasset, 1931). The failure of the Chamber of Representatives to represent the citizenry ideology implies its actions are aimed at creating a different world from the one preferred by the citizens. This was at the core of nineteenth-century debates on electoral reform (Mill, 1861; Hare, 1869).

²⁴ The bias favoring the local nationalism side of single member electoral systems has been recently confirmed in the 2019 General British Elections in Scotland, where a 45% of the votes enabled the Scotland Nationalist Party (SNP) to achieve more than 81% of the seats.

²⁵ In Spain, an effect similar to that detected by Achen (1978) in the US, is detected since the shift of the PP (2.56) to the right from the median citizen approximately doubles that of the PSOE to the left. (1.33). Likewise, both parties locate below the median citizen in the Spanish Nationalism-Regional Nationalism dimension, confirming the centralist bias. Besides, several previous studies have shown a similar bias in regional electoral systems with high proportionality in Spain (Alvira, 2018; Torroglosa, 2022), with the high 5% legal threshold being the determining element, and in the Spanish Senate's limited approval voting electoral system, in which electors as a general rule nominate three candidates in districts with 4 eligible members (Alvira, 2019).

preference of the Chamber departs from that of the citizenry, therefore, its decisions would differ from those the citizens would make if they voted on the issue, challenging the principle of democratic representation. Thus, assessing the presence or absence of a bias in the Catalan electoral system would provide information about its influence on the conflict.

Additionally, the reviewed data suggests that *part of the current conflict derives from electoral strategies of the parties.* By increasing polarization in the nationalism dimension, an approval threshold would have been created between pro-independence and anti-independence parties, which enabled CiU to remain at the helm of Catalan governments since 2012 until 2021. The current high polarisation in Catalonia, but also in the rest of Spain, could be largely due to mere electoral strategies.

This is key because experts agree that a fundamental objective of electoral system design is to prevent (or at least, mitigate) polarization and conflict²⁶. However, single-vote electoral systems generate artificial cleavages that parties exploit to emphasize division and difference between groups as electoral strategy, promoting centrifugal dynamics that increase citizenry polarization²⁷. Each party's strength in parliament depends only on those who vote for it as their most preferred option, so the parties have no incentives to respect the preferences of those who do not vote for them.

Therefore, in societies with differentiated nationalist identity some authors (e.g., Reilly, 2002; 2006) have argued for the benefits of preferential voting systems, as they promote centripetal dynamics. *These systems allocate more seats to parties close to the median voter, thus encouraging parties to approach moderate positions acceptable to most voters*²⁸. Since the role of CiU in moving towards the extreme in the nationalist dimension was central to the intensification of the conflict and citizenry polarization (Rico & Liñeira, 2014), it makes it

²⁶ By polarization mitigation we do not mean limiting citizens' pluralism or their ideological diversity, nor their expression of divergent views. Rather, we refer to reducing the division of citizens into opposing camps, especially when such divisions are amplified by institutional arrangements beyond what their underlying social basis would warrant.

²⁷ Droop (1869) considered that the American electoral system produced increased political polarization than existing in American society, thus contributing to the Civil War. Also, most experts found the electoral system of the II Spanish Republic promoted greater political polarization than that existing in the society facilitating the Civil War (Montero et al., 1992; Colomer, 2004; Cebrián, 2015). Reilly (2006) also found this similar type of polarizing and divisive electoral strategy was often used by parties in societies with ethnic divides.

²⁸ This can be also advocated from Social Choice Theory, voting is a mechanism for approximating conflicting interests (Young, 1995). Then the composition of the representative chamber should constitute an intermediate state between the diversity (polarization) of society and the democratic or consensual outcome (the median voter/position).

necessary to review whether the current electoral system fails to provide incentives that would discourage electoral strategies based on increasing political polarization, thus hindering the resolution of the conflict.

Finally, the preceding review has highlighted the modification of the party system due to the high citizen disaffection since 2011. Citizens' disaffection has been linked by many authors to the large ideological distance between the decisions of institutions and governments and citizens' actual preferences²⁹. Besides, studies have shown lower citizen disaffection in societies where most parties are close to the median voter, which highlights again the importance of the electoral system discouraging centrifugal party movements of parties³⁰.

We therefore raise the possibility that the current electoral system both significantly influences the conflict and hinders its resolution. The current electoral system may be producing a persistent ideological bias in the Catalan parliament; failing to discourage ideological polarization as an electoral strategy, and generating significant citizen disaffection. Below, we review whether these effects are actually taking place, and if so, what impact other designs of alternative electoral systems could have.

²⁹ Several authors (Anderson & Guillory, 1997; Kim, 2009; Reher, 2015; Mayne & Hakhverdian, 2017) have found a direct relationship between citizens' satisfaction and their ideological distance from government institutions.

³⁰ Notably, it has been argued on statistical grounds that the median voter does not capture the shape of the distribution in polarized contexts. In this text, however, the median is used as the democratic choice when preferences develop along one dimension (Black, 1948). Black himself proved that if the preference space has more than one dimension, a Condorcet winner may not exist. Yet if we shift from eligible options – i.e., candidates or parties – to the ideology underlying political decisions, the median value on the ideological scale for each dimension – itself an eligible ideological position – can be understood as a Condorcet winner in that dimension: it is the ideological position preferred by a majority when confronted with any other position in that dimension. This property holds regardless of distribution shape. Moreover, as Young (1995) demonstrated, optimal voting rules converge toward the median, making it the mathematical expression of majority preference. Under high polarization, the median additionally represents moderation, approaching Aristotelian virtue. Nevertheless, the text also provides descriptives of the shape of the distribution. Given ongoing disagreement on ideological congruence measures for many-to-many comparisons (e.g., Miller & Stokes, 1963 versus Golder & Stramski, 2010), it incorporates multiple measures beyond the median: polarization within parliament (D3, D4), citizen-representative distance (D5, D6), and graphical representations allowing readers to observe patterns directly. See the Annexes.

3. THE ADEQUACY OF CURRENT CATALAN ELECTORAL SYSTEM FOR THE PARLIAMENT

We assess the adequacy of the current Catalan electoral system by examining the Parliaments it produced in the three recent regional elections (2012, 2015, and 2017). We focus on this period for several reasons:

Firstly, the three elections were held in an exceptional environment in the nationalist dimension. The 2012 elections were called ahead of schedule, and CiU promised the resulting *Parlament* would organize an independence consultation. The 2015 elections were again called early and framed as a de facto independence referendum (Martí & Cetrà, 2016; Real Instituto Elcano, 2019) the 2017 elections were again called early by the central government, during the temporary suspension of Catalonia's autonomous government under Art 155 SC.

Secondly, 2012 was the first *Parlament* elected after the implementation of the EU austerity policies (Rico & Liñeira, 2014), which led to high citizen disaffection, increased vote fragmentation, reduced support for traditional parties (CiU and PSC), and increased support for minority (e.g., Cs, ERC) and new parties (e.g., CUP), located at nationalism extremes (Rico & Liñeira, 2014).

Thus, this period showed great instability and polarization in the nationalism dimension, and exceptionally short duration of legislatures. Regarding the independent variables, we measure several ideological distances whose relevance is accepted by most experts:

- To assess the *ideological congruence*, we measure the ideological distance between the median representative and median citizen (it captures the expected distance between the collective decision of the chamber and the citizenry)³¹.
- To assess the *degree of polarization of the chamber*, we measure the distance between the central ideological values (center of gravity, c.o.g.) of each representatives' half on each side of the median value.
- To assess the *expected citizen dissatisfaction with Parliament's decisions*, we measure the distance between the central ideological values (c.o.g.) of each representatives' half and the ideologically most opposed half of citizens³².

We begin by reviewing the ideology of the Catalan citizens.

³¹ If ideological space is one-dimensional, the median citizen is the democratic decision (Black, 1948). The distance between the median deputy and citizen as a measure of ideological consistency was proposed by Huber and Powell (1994).

³² Balcells et al., (2023) point out how high affective polarisation generates disaffection, so both variables are related.

3.1. Ideology of the Catalan citizens during the 2012-2017 period

We review the Catalan citizens' ideology in every dimension, highlighting the position of the median citizen -which represents the democratic choice-, and the distance between the c.o.g. of the two halves of individuals on each side of the median value, which reflects the degree of polarization among citizens (Figure 4).

Figure 4 shows important differences in citizens' ideology in each dimension. In the Left-Right dimension, we observe a stable, approximately single-peaked distribution centred around value 4. In the Catalan Nationalism dimension, a pattern of strong ideological polarization (higher values at the extremes than in the center) which has intensified throughout the period, reaching extreme values (distance between two halves of citizens close to 6)³³ is detected, while the median value has slightly decreased.

Citizens' ideological characterization provides us the reference values to assess the adequacy of the current electoral system, which should build a chamber of representatives such that:

- its median representative locates as close as possible to the median citizen (so the chamber decisions mimic those the citizenry would make if it voted on the issue);
- the distance between the two ideological opposed halves of representatives should be smaller than the distance between the two ideological opposed halves of citizens (the electoral system should both reduce society's polarisation and discourage polarisation as an electoral strategy);
- the distance between both ideological half of representatives and their opposed half of citizens should be similar, and smaller than the distance between the two ideological opposed halves of citizens (it should minimize citizens' alienation and dissatisfaction). Let us check then to what extent the current Catalan electoral system achieves these goals.

³³ Building on several authors (Castles & Mair, 1984; Hazan, 1995; Knutsen, 1998), Alvira (2019) proposed the following approximate thresholds to interpret what ideological distance means in terms of polarization. Distances lower than 2 are irrelevant; distances 2-3 have reduced importance; distances 3-4 acquire relevance; distances 4-5 they become quite relevant; above 5, the conflict becomes palpable; above 6, the conflict becomes extreme. However, a high ideological distance may generate less polarisation, if consociational instruments exist that encourage negotiation between representatives in the face of conflict and bring decisions closer to the median voter (e.g., investiture rules based on preferential rules or the tools of Initiative and optional Referendum).

3.2. Current Catalan electoral system for parliament

The electoral system is a semi-proportional system with some majority bias in the least populated provinces (Lleida and Girona). In the three reviewed regional elections, it produced the following parliaments (Table 2).

To assess the suitability of the current electoral system, we compare the preferences of the *Parlaments* with the citizens' preferences expressed at each election. Firstly, we compare the location of the median representative and citizen (Figure 5).

Figure 5 shows that the collective preference of the *Parlaments* built by the current electoral system departs from the citizenry preference. *The electoral system exhibits a persistent ideological bias, building Chambers whose collective ideology is positioned further to the right and more Catalan nationalist than the citizenry.* However, while this bias has been moderate in the Left-Right dimension (D2=2.23; 0.56; 1.11), *in the Nationalism dimension the ideological distance between representatives and citizens' preferences has shown increasingly extreme values (D1=2.16; 3.86; 4.15), the collective preference of the parliament increasingly departing from that of the citizenry*³⁴.

Secondly, we assess the polarization we expect the parliament to generate, that we relate to the ideological distance between the two most ideologically distant halves of representatives (D3 and D4), and defines the likelihood representatives may achieve broad agreements. We also measure the maximum distance between the c.o.g. of each half of representatives and that of the most ideologically opposed half of the citizens (D5 and D6), which allows us to estimate citizens' disaffection and social conflict that may emerge from the ideological difference between the citizenry and *Parliament's* decisions (Figure 6).

Figure 6 shows again notably different political polarization in both ideological dimensions of the *Parlaments* built by the current electoral system. While polarization is moderate in the Left-Right dimension, in the nationalism dimension it reaches increasingly extreme values (D1=3.85; 5.24; 5.83), making it increasingly unlikely that parliamentarians will reach broad agreements on nationalist issues. Besides, Figure 6 shows that the number of representatives defending intermediate positions in this conflict gradually decreased, while

³⁴ The decreasing polarization in the Left-Right Dimension between 2012 and 2017 is due to the strong shift to the left by CiU / JxCAT to approach ERC (see Figure 02). The much-reduced value for 2015 is due to the JxSI coalition (integrated by left-wing ERC and right-wing CiU/PDCat-, whose union positions the coalition near the median voter). Similarly, the growing polarization in the Catalan nationalist dimension matches the parties' centrifugal movement between 2012 and 2017.

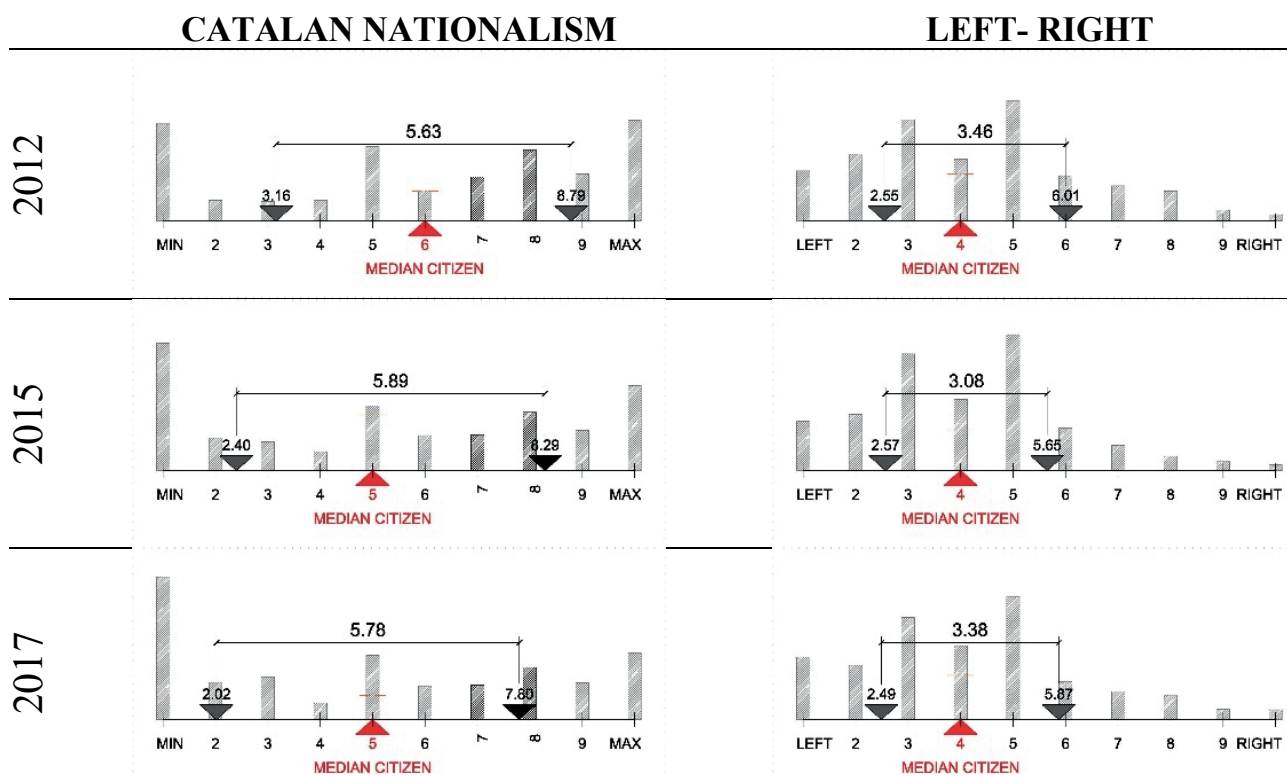


Figure 4. Ideology of Catalonia citizenry. Source: Own elaboration using ideological self-location of respondents in CIS ES 2970, 3113, and 3202. (see Annex I for detailed calculation methodology).

Table 2. Seats allocation by current electoral system.

Political parties			Electoral results and seats assignments					
2012	2015	2017	2012		2015		2017	
			Votes	Seats	Votes	Seats	Votes	SEATS
Cs	Cs	Cs	275,007	9	736,364	25	1,109,732	36
CiU	JxSi	JxCAT	1,116,259	50	1,628,714	62	948,233	34
ERC		ERC	498,124	21			935,861	32
PSC	PSC	PSC	524,707	20	523,283	16	606,659	17
ICV-EUiA	CSQP	CatComu	359,705	13	367,613	11	326,360	8
CUP	CUP	CUP	126,435	3	337,794	10	195,246	4
PP	PP	PP	471,681	19	349,193	11	185,670	4
Other parties			210,354	-	149,388	-	49,607	-
Total			3,582,272	135	4,092,349	135	4,357,368	135
Null votes			33,140		15,952		16,092	
Blank Votes			52,898		21,895		19,431	
Abstention			1,745,558		1,380,657		1,161,564	

Source: Generalitat of Catalonia. Although some parties changed their names (and even two presented as a coalition in 2015), the main political parties remained throughout this period.

the number of representatives defending the extreme positions gradually increased, leaving a wide empty strip (from 4.67 to 9.06 in the 2017 elections). *The electoral*

system fails to discourage polarization as an electoral strategy, which makes it unlikely that the current conflict

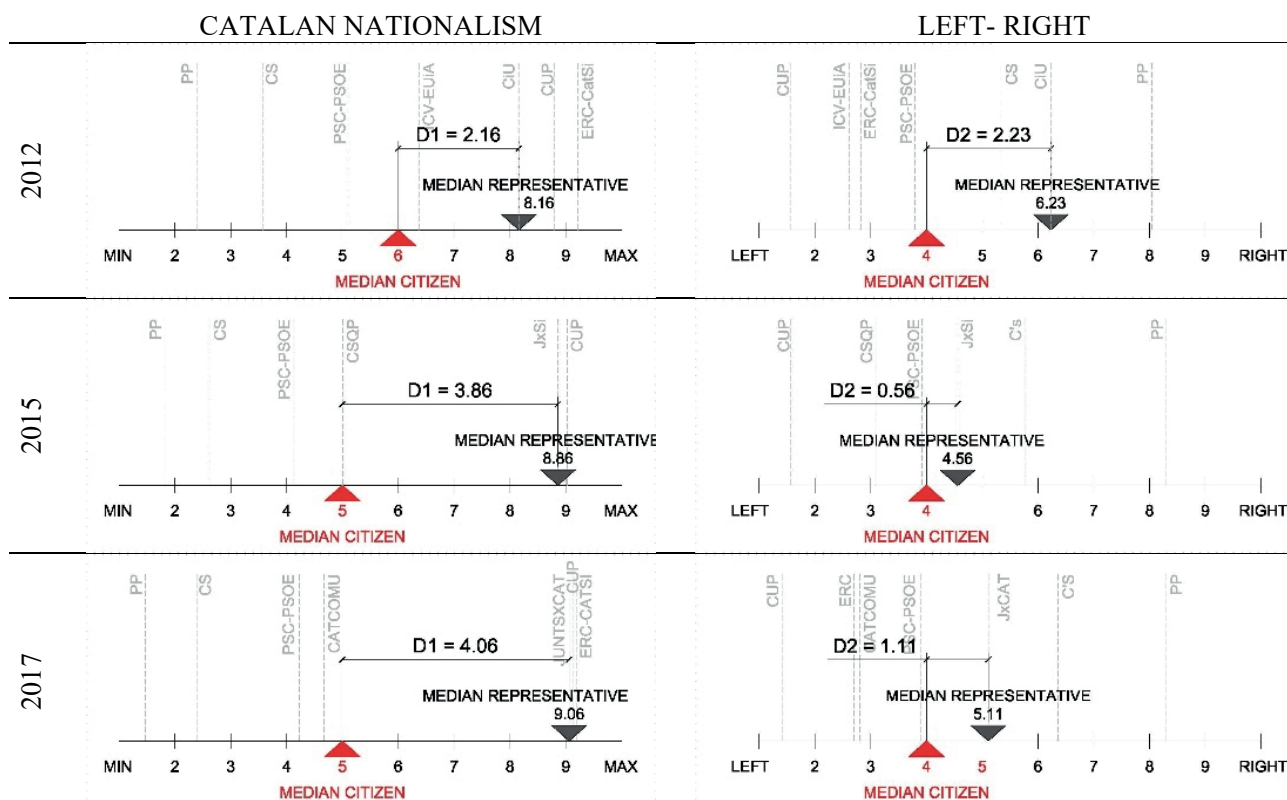


Figure 5. Ideological congruence parliament-citizenry. Source: Own elaboration using data from CIS Studies 2970, 3113, and 3202. Each political party is located at its average position according to its voters (see Annex I for detailed calculation methodology).

will abate and the main actors approach intermediate positions acceptable to all parties.

Furthermore, Figure 6 shows increasing and extreme distance (D5= 5.36; 6.49; 7.13) between the most Catalan nationalist half of representatives (which supported the Catalan government from 2012 to 2024) and the least Catalan nationalist half of citizens, pointing to a highly alienated non-nationalist half of the citizenry.

The analysis confirms the *inadequacy of the current Catalan electoral system*, which failed to adequately represent citizenry preference, did not discourage political polarization as an electoral strategy, and could be producing disaffection among an important part of the citizenry. This leads us to question whether a more adequate electoral system could be designed which contributed to the appeasing of the conflict, an issue we review below.

4. COMPARATIVE ANALYSIS OF ELECTORAL SYSTEMS

To assess the impact of other electoral systems on the conflict, six alternative electoral system designs are

reviewed, based on the following voting rules³⁵: Proportional (full proportionality of votes-seats), Single Transferable Vote, Approval Vote, Borda Count (Borda, 1784), Evaluative or Score vote (Heckscher, 1892), and Prll (Alvira, 2016). Below we summarise the average values of the relevant variables for the current and alternative electoral systems (Table 3).

Table 3, in which the best values -that is, those lower than both the average value and half the range- have been highlighted, shows substantial differences across the three variables, across the seven electoral systems analysed. Firstly, the serious inadequacy of the Catalan electoral system in the period reviewed is confirmed, having produced Parliaments highly unrepresentative of

³⁵ All the rules -except Prll- are currently used in collective decision processes. The Single Transferable Vote is used for Congressional elections in Ireland, Malta, and Australia. The Approval Vote is used in the Senate elections of Spain, the United States, and Argentina, and some Swiss cantons. The Borda Count is used in the South Pacific islands and was used in Spain in some UP Citizen Councils. Several forms of Evaluative or Score Vote are used outside the political sphere (e.g., Economic Society). However, all rules have been modeling on the basis of party lists, while the current use of some of them (e.g., STV) is nominative voting.

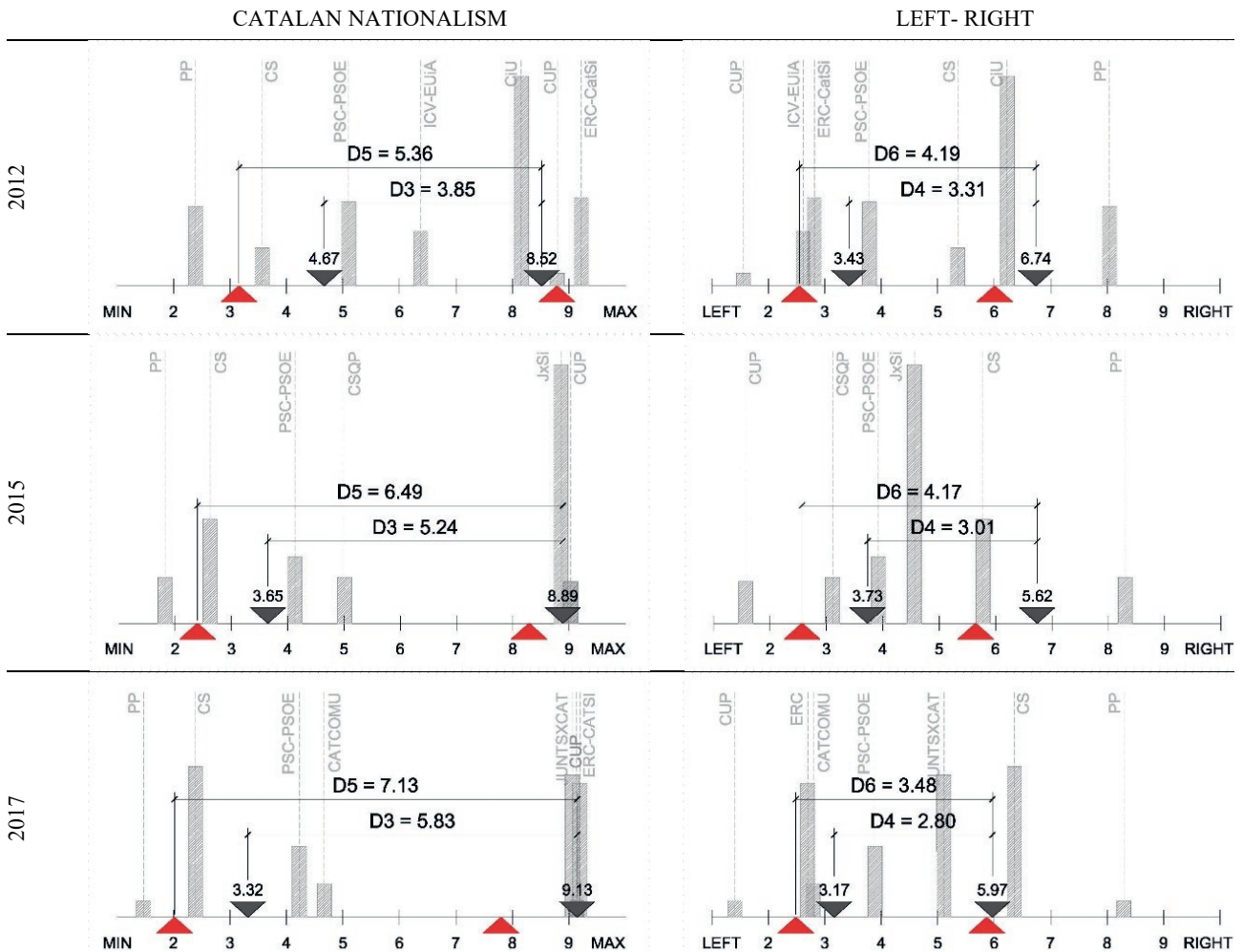


Figure 6. Political polarization and citizens disaffection emerging from parliament composition. Notes: Own elaboration from CIS Studies 2970, 3113, and 3202. The gray bars show the percentage of seats of the parties with representation in parliament in their ideological location. Inverted black triangles indicate the c.o.g. of each half of the representatives on each side of the median representative. Upward red triangles indicate the c.o.g. of each half of citizens (see Figure 04).

the Catalan citizenry, with moderate bias to the right yet extremely high Catalan nationalist bias. Likewise, it should be expected that these *Parlaments* generate high ideological polarization, owing to the large ideological gap between the half of representatives with capacity to legislate and the most ideologically opposed half of the citizens.

The data confirm that the current identity-based political conflict does not have its origin in ideological differences between citizens but in those between the political representatives (Colomer, 2018; Rodríguez-Teruel & Barrio, 2021), and to a significant extent, it derives from the flawed design of the electoral system that generates an extremely high Catalan nationalist bias in the parliament with respect to the citizenry. This nationalist

bias becomes critically important given the majoritarian design of the system (Mueller, 2019).

Faced with this, other alternative systems would assign a very different percentage of seats to each political party, which would imply different decisions than those made by the *Parlaments* built by the current electoral system. It is confirmed that *the choice of the type of preferences citizens are allowed to express and the rule used to aggregate them, allows for the construction of Chambers with very different collective ideology and, consequently, whose decisions would seek to build very different states of society. Some of these rules would reduce the intensity of the conflict, since they discourage polarization as an electoral strategy, supporting the thesis that electoral reform is a way to advance towards the resolution of the conflict.*

Table 3. Analysis of the parliaments built by the analyzed electoral systems.

[Concept]	Ideological congruence		Expected polarization		Expected citizens disaffection	
[Variable]	Distance median MP - Citizen		Distance between MPS		Distance MP-Citizenry	
	Nationalism (D1)	Left-Right (D2)	Nationalism (D3)	Left-Right (D4)	Nationalism (D5)	Left-Right (D6)
Current system	3.36	1.30	4.97	2.67	6.32	3.57
Proportional	2.12	1.01	5.17	2.81	6.28	3.59
Single transferable vote	0.83	1.01	5.17	2.82	6.27	3.59
Approval voting	2.08	0.46	4.76	2.96	6.24	3.29
Borda count	0.83	0.46	4.47	2.86	5.95	3.27
Score voting	0.83	0.13	4.73	2.99	6.13	3.31
PRLL	0.83	0.46	4.33	2.78	6.14	3.36
Mid of range	2.10	0.72	4.75	2.83	6.13	3.43
Average	1.56	0.69	4.80	2.84	6.19	3.42

Source: Own elaboration (see Annex I for detailed calculation methodology). The average values for the three electoral contests reviewed for each of the rules are included. The best values have been highlighted in bold, that is, those lower than both the average value and half the range. Borda Count and Prll rules stand out as the best electoral systems.

One possible reform would be to implement a fully proportional votes-to-seats electoral system. However, the analysis shows the Parliaments generated by this system would have had a notable rightward and nationalist bias (D1-D2). Furthermore, political polarization could have increased, as the ideological distance between representatives increases (D3) with minimal reductions of half-of-representatives/half-of-citizens distances (D5 and D6).

In contrast, we see the rules built on preferential vote that take into account the complete preference orderings (i.e., Borda Count, Score Voting, and Prll) show the highest adequacy. The electoral systems based on these rules would have built Chambers whose collective preference would have closely reflected that of the citizenry, and they would have generated lower political polarization and citizenry disaffection, consistent with findings from previous studies in other contexts³⁶. However, these systems present an unresolved issue: they encourage party fragmentation, which can lead to an atomized party system with uncertain effects on governability (Black, 1949)³⁷.

³⁶ Chamberlin and Courant (1983) and Monroe (1995) also proved the greater optimality of the Borda Count compared to the single vote. For comparison of the three rules as electoral systems for Spain (see Alvira, 2019). Only the Prll rule satisfies the Condorcet criterion which is a desirable property of voting systems in the assignment of seats to the parties (Van Deemen, 1993): if when pairwise comparing parties there is a party preferred to every other party, then said party should receive more or equal seats than any other party.

³⁷ The reduction in seats that these rules would have allocated to JxSí in 2015, compared to the higher number of seats assigned to CiU / JxCAT and ERC when running separately (in 2012 and 2017), is empirical evidence of this issue.

As an alternative, the Single Transferable Vote (STV) also uses preferential voting, although it mostly relies on the first-choice preference for seat allocation, with subsequent preferences playing a role in the allocation of only a few seats. While the improvement in ideological congruence, polarization, and citizen disaffection – as shown in the previous table – is lower than that produced by full preferential rules, some experts (e.g., Reilly, 2002; 2006) argue that experience shows STV encourages political moderation among parties (e.g., in Northern Ireland), as they have centripetal effects on the party system, since parties increase their seat share by moving closer to the median voter's position. This leads us to expect better outcomes than those shown in the table³⁸.

Additionally, the STV also eliminates wasted votes (the review of the three elections shows an average of 3.6% of votes cast for parties that fail to gain representation, that is, citizens whose preferences are not taken into account in the formation of the parliament). Besides, the fact that STV is currently in use, even in a nominative rather than list-based form, reduces uncertainties. Its implementation is also valuable in that it helps citizens become familiar with preferential voting and could thus serve as an intermediate step toward the future adoption of full preferential rules, once their potential adverse effects are better understood and managed.

³⁸ The static comparison in Table 3 does not capture these dynamic effects – the table shows initial seat allocation, but the real benefit of preferential systems emerges through their effect on party strategy and positioning in subsequent elections. Even moderate improvements in centripetal incentives can have cumulative effects over time, particularly regarding ideological congruence and median representation.

Therefore, modifying the current Catalan electoral system toward a Single Transferable Vote (STV) system based on party lists would imply an improvement over the current situation and a step towards the resolution -or at least moderation- of the conflict.

Lastly, the findings suggest the implementation of other tools associated with the consociational model, to mitigate the conflict and so that the ideology of representatives more closely approximates that of the median citizen³⁹. Firstly, by using rules for the election of individual positions that promote consensus figures which approach the median voter, both at regional level (e.g. President, Sindic de Greuges, etc.) and at state level (e.g., President, Attorney General, Ombudsman, etc.). To do so, current government appointments could be replaced with parliamentary election using preferential voting rules, e.g., Majority Judgement (Balinski & Laraki, 2007). These rules: eliminate the veto power of ideologically extreme parties; incentivise the moderation of candidates, since the probability that a candidate is elected depends on all parliamentarians, not just a narrow majority; and bring the ideology of representatives closer to the median voter, therefore, improving representation.

5. CONCLUSION

The main causes of the Catalan conflict, as identified by specialists and the media, have been reviewed and organized under two broad analytical approaches. Among the issues detected, the focus has been placed on those where the design of the political system – and, significantly, the Catalan electoral system – may have had an influence. Three concepts and variables to assess this influence have been defined:

- Ideological congruence, assumed to decrease as the ideological distance between the median representative and the median citizen increases.
- Degree of polarization of the chamber, assumed to increase as the distance between the ideological center of gravity of each half of representatives on either side of the median increases.
- Expected citizen dissatisfaction with the Parliament's decisions, assumed to increase as the distance between the ideological center of gravity of each

half of representatives and the ideologically most opposed half of citizens increases.

These variables have been used to test how the current electoral system and six alternative designs may have influenced the conflict in the period 2012–2017.

To this end, polarization and the collective preference of the citizenry were first reviewed. The analysis showed that the median citizen held a moderate position on Catalan nationalism in 2012 (md=6 on a 1–10 scale) and adopted a slightly less nationalist stance in the 2015 and 2017 elections (md=5). This indicates that *the collective preference of Catalan citizens represents a balance between Spanish and Catalan nationalism*. Additionally, the data reveal a highly polarized population along the nationalist axis with significant distance between the ideological centers of gravity of the two most ideologically distant halves of the citizenry.

Secondly, in order to assess the adequacy of the current electoral system, the composition of the parliaments produced in these three elections has been evaluated using the three proposed variables. The analysis revealed the inadequacy of the current Catalan electoral system, which has consistently produced parliaments biased toward the right and Catalan nationalism. This implies that many of the decisions made by these parliaments were most likely different from those the citizenry would have made, had they been asked to vote on these specific issues directly⁴⁰.

Likewise, the review has revealed that the current Catalan electoral system fails both to discourage political polarization as an electoral strategy and to prevent citizen disaffection. The Catalan parliament exhibits both a significant ideological gap among representatives on the Catalan Nationalism dimension (greater than that found among citizens) and a considerable distance between the half of parliamentarians with decision-making and legislative power and the half of citizens who are most ideologically distant. This latter issue may help explain why “politicians” are considered the main problem by 40% of Catalans (CIS ES-3263).

Given the prominent role that the Catalan parliament has had in the conflict, the following question arises: *Would a different electoral system lead to a different composition of parliament, one whose aggregate preference is closer to that of the median citizen, less ideologically polarized, where more moderate voices carry greater weight in political debate, and where the resulting citizen disaffection could be expected to be lower?* To answer this

³⁹ The departure of the representatives' priorities from those of the citizens is confirmed by polls. For example, in September 2019, the three most important problems according to Catalans were: politicians [40.5%], unemployment [36%], and economic issues [30%]. Catalonia's independence was mentioned by only 16% of respondents (CIS Survey Es-3263). However, it was asserted as the main concern of citizens by several prominent politicians.

⁴⁰ For instance, as stated before, in the approval of the laws calling for the referendum in September 2017, the parliament's decision was directly opposed to the preference expressed by the majority of citizens in polls.

question, we estimated the composition of parliament that would have resulted from six alternative electoral system designs and compared the variation in the three proposed variables with those generated by the current electoral system.

Preferential rule-based systems would have produced parliaments that are much more ideologically congruent with the citizenry and less polarized, but they could have encouraged party fragmentation, with consequences that are difficult to foresee⁴¹. Among the systems that do not produce this effect of fragmentation, the analysis shows that an electoral system based on the Single Transferable Vote (STV) using party lists could contribute both to increasing ideological congruence between parliament and the citizenry and to reducing political polarization along the nationalist dimension, by providing centripetal features.

The Catalan crisis (2012–2017) has been used as an empirically tractable case to examine how majoritarian institutional designs can amplify political divisions under specific conditions (e.g. Colomer, 2004; Reilly, 2006). In contrast, the alternative systems discussed here are well-established arrangements with extensive records in consolidated democracies. These systems include preferential and proportional electoral rules, especially in contexts characterised by social or territorial divisions.

Finally, the intensity of the conflict also suggests introducing other measures that bring the political system closer to a consociational model, such as modifying the rules for the election of individual positions by the *Parlament* using preferential rules that take into account the votes of all parliamentarians. Furthermore, the majoritarian structure of the Spanish political system as a whole suggests that the conflict would be reduced even further, if these reforms towards a more consociational model were introduced at the level of the entire state.

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⁴¹ Nevertheless, the considerable interest of these rules warrants proposing their controlled implementation in order to better understand their effects. By way of example, they could be applied to university councils, professional associations, etc.

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