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### **When Have Dyadic Federations Succeeded and When Have They Failed? A Comparative Analysis of Bipolar Federalism Around the World**

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# When Have Dyadic Federations Succeeded and When Have They Failed? A Comparative Analysis of Bipolar Federalism around the World

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## Abstract:

In this chapter, we study under which conditions *dyadic federations* – a genus of multinational federalism composed of two major communities – have ‘succeeded’ (i.e., survived) and under which they have ‘failed’ (i.e., broken apart). Through a fuzzy-set Qualitative Comparative Analysis of all democratic dyadic federations, past and present, we show that dyadic federations can succeed if geographical factors such as the territorial dispersion of the dominant groups play in its favour and when institutional arrangements (i.e., a proportional electoral system or a national party system) ensure fair political representation for both communities or prevent polities from being conceived in exclusively sub-national terms. In the absence of territorial dispersion, other institutional arrangements such as executive inclusiveness and an equal economic distribution between groups appear to be crucial in preventing the breakup. In general, dyadic federations that survive tend to do so for many years. By contrast, our analysis shows that a bipolar federal project is likely to fail in the absence of stabilising institutional arrangements (i.e., electoral proportionality and a national party system) and, more particularly, when economic resources are unequally distributed between communities and when these communities are clearly territorially separable. The duration of the union is, again, of importance because the dyadic federations that failed did so at their very beginning. Our results inform the literature on federalism, national diversity and democracy by showing that federalism can be a successful institutional arrangement for bipolar polities when its survival as a state is desired or without a viable alternative.

*Keywords:* *dyadic federations; bipolar federalism; divided societies; multi-nationalism; qualitative comparative analysis.*

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## Introduction

The dynamics of dyadic federations have proven to be of particular interest to scholars of federalism. One of the first among them to pay close attention to this type of federation was Ivo Duchacek (1988, p. 5) who, thirty years ago in a special issue of *Publius*, defined dyadic federations as “societies and polities in which two distinct communities clearly dominate the political arena”. Since then most of the scholarship on dyadic federations has pinpointed the tensions that these federations often embody. For example, Ronald Watts (2008, p. 184) identifies these ‘two-unit federations’ as one of the ‘pathologies of federalism’ and argues that “the experience of bipolar or dyadic federal systems is not encouraging”. At first blush, this scepticism would seem valid given the social and political dualism of dyadic federalism and the absence of relations with multiple constituent units, both of which are factors that can often lead to institutional deadlock and to societal confrontation (Schmitt, 1991). However, while several dyadic federations have indeed broken up, there is also clear evidence that, as of today, many dyadic federations have survived and even attained some degree of political stability. Consequently, the success of dyadic federations presents us with a compelling puzzle as well as a comparative question in need of an answer: how is it that some dyadic federations have succeeded (i.e., survived), while others have failed (i.e., broken apart)?

To be sure, there is research on the political dynamics of both successful and failed dyadic federations, however this research mostly entails single case studies or small-n comparisons (e.g., Milne 1988, Innes 1997, Singh 2008) and there has been but one comprehensive comparison of a large number of cases and political realities, that of Duchacek in 1988. In light of the substantive number of both existing and defunct dyadic federations as well as some major political changes that have taken place over the last thirty years (e.g., the breakup of Czechoslovakia, the collapse of the former Yugoslavia and the independence of Bosnia-Herzegovina), there is a clear need to expand and to update the comparative discussion on the conditions leading to and/or facilitating the failure and successes of dyadic federations. The present chapter does so by mapping the institutional, geographic and economic realities for all democratic dyadic federations, past and present. In so doing, this chapter aims to identify in the presence or absence of which factors dyadic federal projects have succeeded and in which they have failed.

The chapter is divided into three sections. The first section clarifies the universe of cases under analysis, expands on what is meant by the ‘success’ and ‘failure’ of dyadic federations, and briefly discusses six key factors that have been identified as being potentially responsible for these outcomes. The second section presents the chapter’s methodological framework, operationalizes the six key factors, and provides the rationale of a *fuzzy-set Qualitative Comparative Analysis* that we use to perform a systematic cross-case comparison in order to draw logical inferences about the factors and combination of factors that are most likely to contribute to the success and failure of dyadic federations. The third section presents our findings in detail. In the chapter’s concluding section, we put these findings into broader perspective and set the stage for further studies on the prospects of federalism and power-sharing in deeply diverse democracies.

## Studying the Success and Failure of Dyadic Federations

Three questions must be addressed as a preliminary step in understanding the success and failure of dyadic federations: (1) What cases can be considered as a dyadic federation and must therefore be included in this study? (2) What exactly is meant by the ‘success’ or ‘failure’ of a dyadic federation? (3) And what factors we identify as potentially accounting for the success or failure of a dyadic federation?

### Establishing the universe of cases

The defining feature of a dyadic federation is its bipolarity – both when it comes to its society and to its institutions. In societal terms, a dyadic federation’s population is composed of two major communities that are distinctly characterized by linguistic, cultural, historic and/or religious differences.<sup>1</sup> To be clear, this does not mean that these two major communities must be the only ones on the state’s territory, but they should clearly be the politically dominant and must be substantively larger in population size than other groups. Along institutional lines, dyadic federations are characterized by institutionalized self- and/or shared-rule prerogatives (whether that be in the legislative, executive and/or judicial branch of government), corresponding to the two dominant communities’ self-determination projects. In reflecting the literature’s use of these characteristics in reference to dyadic federations and, to a lesser degree, ‘bipolar’, ‘bicomunal’ or ‘two-unit’ federations, we use these four terms interchangeably.<sup>2</sup>

Based on the foregoing definition, we employed three specific selection criteria in establishing a universe of cases of dyadic federations:

1. Each case had to have two dominant communities represented in the institutional and socio-political structure of the state.
2. Each case had to have some form of accommodative communitarian mechanisms (formal or informal) within shared political organizations. Some of the cases that we selected were/are constitutionally federal, while others were/are characterized by other forms of federal power-sharing.<sup>3</sup> When cases had two major communities but had no (effective) federal or power-sharing traits, they were not included in the study.<sup>4</sup>
3. The cases under examination needed to be democracies. While this criterion is exogenous to the concept of dyadic federation *per se*, it was included to assure the comparability of cases. In determining what constitutes a democracy, we employed the Freedom House (2018) data and only included countries that were considered at least “partly free”.<sup>5</sup> Some cases (such as

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<sup>1</sup> These differences may be manifest or, at least, “imagined” (Anderson, 1983).

<sup>2</sup> Some conceived ‘dyadic federations’ as polities made of exclusively two communities and called federations with other smaller groups beside the two major ones ‘bipolar’ instead (Burgess, 2006, pp. 110-117). We use these terms interchangeably because both dyadic and bipolar federations share the major political stake that lies at the heart of this paper: the survival of their federal state despite a high potential for centrifugal pressures in their bipolar federal society.

<sup>3</sup> For example, Trinidad and Tobago is formally a unitary state, but we consider the creation of the semi-autonomous Tobago House of Assembly in 1980 as evidence of a federal accommodative mechanism.

<sup>4</sup> For example, the United Arab Republic of Egypt and Syria (1958-1971) was entirely dominated by Egypt. Similarly, the power-sharing mechanisms in the Federation of Ethiopia and Eritrea (1952-1962) were prevented from entering into force by Ethiopia.

<sup>5</sup> Examples of dyadic federations that were excluded because of their insufficient level of democratization are Burundi, Cameroun, the Federation of Pakistan, Rwanda or Yemen.

the Fiji Islands and Tanzania) failed to meet this criterion in the past but have demonstrated democratic developments in recent years. These cases were thus included in the study once they could be considered “partly free”.

In following these three selection criteria, we identified 15 cases as democratic dyadic federations. They are listed in Table 1, below.

**Table 1.** The 15 democratic dyadic federations included in the study

Polity	Dominant socio-political groups		Federal mechanisms		Degree of democratization (Freedom House)
	<i>Largest group</i>	<i>2<sup>nd</sup> largest group</i>	<i>Federal constitution</i>	<i>Power-sharing</i>	
Belgium (1970-today)	Dutch-speakers	French-speakers	●	●	Free
Bosnia and Herzegovina (1995-today)	Bosniaks	Serbs	●	●	Partly free
Canada (1987-today)	English-speakers	French-speakers	●	●	Free
Cyprus (1960-1974)	Greek-Cypriots	Turk-Cypriots		●	Free
Czechoslovakia (1990-1992)	Czechs	Slovaks	●	●	Free
Federation of Malaysia (1963-1965)	Malays	Singaporeans	●	●	Partly free*
Fiji Islands (2014-today)	Melanesians	Indo-Fijians		●	Partly free
Guyana (1966-today)	Indo-Guyanese	Afro-Guyanese		●	Free
Northern Ireland (1998-today)	Unionists	Republicans		●	Free
Saint-Kitts and Nevis (1983-today)	Kittitians	Nevisians	●	●	Free
Senegambia (1982-1989)	Senegalese	Gambians	●	●	Partly free
Serbia and Montenegro (2003-2006)	Serbs	Montenegrins	●	●	Free
Suriname (1991-today)	Hindustanis	Creoles		●	Free
Tanzania (1992-today)	Tanganyikans	Zanzibari		●	Partly free
Trinidad and Tobago (1976-today)	Indo-Trinidadian	Afro-Trinidadian		●	Free

● = present. \* Not covered by the Freedom House index but considered partly free by the authors.

### Defining the ‘success’ and ‘failure’ of a dyadic federal project

The objective of this study to identify in the presence or absence of which factors dyadic federal projects have succeeded and in which they have failed. By ‘success’, we mean the *survival* of a dyadic federation – i.e., its continued existence comprising both major communities. By ‘failure’, we mean the *breaking apart* of a dyadic federation – i.e., its demise as a result of either its dissolution or the secession of one of the two major communities. Among the cases listed above, six ‘failed’ (Cyprus, Czechoslovakia, the Federation of Ethiopia, the Federation of Malaysia, Senegambia, and Serbia and Montenegro) while ten have ‘survived.’

Two caveats need to be mentioned about this conceptualization. First, one should note that between the survival and the breakup of a state, there may be multiple degrees of (in)stability. However, measuring such a fine-grained reality is unfortunately beyond the scope of the current analysis. Second, speaking about the survival and breakup of a state always entails some degree of normativity. Traditionally, state-survival has positive connotations while the ‘break-up’ of a state has negative undertones. However, state-survival can be very problematic in the presence of unresolvable ethnic tensions (even if it is the only possible solution), just as state breakup can actually attenuate tensions between communities. In this study, our objective is primarily empirical and we do not attach any desirability to either of the outcomes *a priori*. We do nevertheless engage in making normative assessments when drawing conclusions from our empirical findings on the prospect of federalism (or particular aspects of it) as an appropriate institutional arrangement for bipolar polities.

### Identifying the factors under analysis

Existing research on dyadic federations in the form of single or small-n case studies provides a repository of factors that can potentially explain their survival or breakup.<sup>6</sup> Based on a comprehensive review of this research,<sup>7</sup> we have opted to include six factors in our comparative analysis:

1. The degree to which groups are territorially concentrated;
2. the degree of countrywide electoral proportionality;
3. the degree of nationalization of the party system;
4. the degree of inclusiveness in the state executive;
5. the degree to which economic resources are equally distributed across groups;
6. the amount of time that the dyadic federation has held together.

#### *1. Territorial concentration*

The first factor that we identified as potentially decisive for the survival of a dyadic federation is geographical in nature. In fact, one of the key concerns that needs to be resolved when dissolving a state or when dealing with the effects of secession is that of the borders between groups (Coakley, 2012, pp. 234-239). If an *intra*-state border between two communities is accepted by both of them, it may become an *inter*-state border following dissolution or secession. Conversely, if the communities' populations are so intermingled that agreeing on a state border proves to be impossible, dissolution or secession may be impossible. Consequently, we expect 'territorial heterogeneity' to contribute to the survival of dyadic federations, while we expect 'territorial homogeneity' to contribute to its failure.

#### *2. Electoral proportionality*

The second factor that we identified relates to the voting system that is used for determining the representatives in the state legislature. Traditionally, the conflict literature is divided between consociationalists who argue in favour of a group-based representation (Lijphart, 1977,

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<sup>6</sup> For single case studies on Belgium, *cf.* Beaufays (1988), Reuchamps and Onclin (2009), Deschouwer (2012), Reuchamps (2013). On Bosnia and Herzegovina, *cf.* Bieber (2002, 2003), Keil (2016), Hulsey and Stjepanović (2017). On Canada, *cf.* Leslie (1988), Watts (2000), Gagnon (2006). On Cyprus, *cf.* Bryant (2011), Trimikliniotis and Bozkurt (2012), Salih (2013), Bahcheli and Noel (2013), Özgür, Köprülü, and Reuchamps (2019). On Czechoslovakia, *cf.* Innes (1997). On the Federation of Malaysia, *cf.* Josey (2013). On Fiji, *cf.* Fraenkel (2006), Fraenkel and Grofman (2006). On Guyana, *cf.* Hinds (2011). On Northern Ireland, *cf.* Ruane and Todd (1996), Taylor (2009). On Saint-Kitts and Nevis, *cf.* Premdas (1998), Midgett (2005). On Senegambia, *cf.* Hughes (1992) and Richmond (1993). On Serbia and Montenegro, *cf.* Fraser (2003), Kim (2006). On Suriname, *cf.* Hoefte (2013). On Tanzania, *cf.* Nassor and Jose (2014) and Cameron (2019). On Trinidad and Tobago, *cf.* Premdas (2002). For low-n comparisons on Belgium and Canada, *cf.* Karmis and Gagnon (1996), Erk and Gagnon (2000), Fournier and Reuchamps (2009), Reuchamps (2011), Reuchamps (2015). On Belgium and Bosnia and Herzegovina, *cf.* Stroschein (2003). On Czechoslovakia and Serbia and Montenegro, *cf.* Macek-Mackova (2011). On Fiji, Guyana and Malaysia, *cf.* Milne (1988). On Guyana and Suriname, *cf.* Singh (2008). On Guyana, Suriname and Trinidad and Tobago, *cf.* Ryan (2002).

<sup>7</sup> This study also situates itself against the backdrop of a literature on state failure, which has largely been devoted to the comparative study of conflict and divided polities (Roeder & Rothchild, 2005; Guelke, 2012) – from an institutional (Hale, 2004; Lijphart, 2004) or a peace-building perspective (Lederach, 1997; Oberschall, 2007). Bipolar polities have hitherto received much less of such systematic attention.

2004) and centripetalists who argue in favour of electoral incentives for cross-group vote pooling (Horowitz, 1993; Reilly, 2001). Both agree, however, that an electoral system should be as proportional as possible in order to prevent groups from feeling underrepresented (or others as overrepresented). Consequently, we expect a proportional electoral system to contribute to the survival of a dyadic federation, while we expect a non-proportional electoral system to contribute to its failure.

### *3. Nationalization of the party system*

The third factor that we identified is the degree to which political parties are nationalized or regionalized – i.e., whether parties seek support on a statewide basis and across the dominant groups or whether they address the electorate of a single (region and) community only. This factor is closely related to the centripetal argument according to which parties that are institutionally obliged (or at least incentivized) to address a cross-community electorate will moderate their ethno-regional claims and, in so doing, contribute to greater statewide stability (Horowitz, 1993; Reilly, 2001). Consequently, one should expect a nationalized party system to contribute to the survival of a dyadic federation, while a regionalized party system can be expected to contribute to its failure.<sup>8</sup>

### *4. Executive inclusiveness*

The fourth factor that we have identified relates to the representation of societal groups in the statewide executive. This factor is related to the consociational argument that all groups divided by politically salient cleavages should have guaranteed access to political power (Lijphart, 1977, 2004; Reuchamps, 2007). While advocates recognize the risk of institutionally reinforcing existing societal divides, they argue that executive power-sharing will still have a pacifying effect because all societal groups feel represented in the body that executes the state's major political decisions (Lijphart, 1995). Consequently, we expect the inclusion of the dominant groups in the statewide executive to contribute to the survival of a dyadic federation, while we expect their absence or exclusion from the statewide executive to contribute to the opposite outcome.<sup>9</sup>

### *5. Equally distributed economic resources*

The fifth factor that we have identified as potentially decisive for the survival of a dyadic federation is economic in nature: the equal distribution of economic resources across groups. While the share of common wealth is an important issue in all societies (divided as well as undivided), it can be expected to be of even more importance in a dyadic federation where

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<sup>8</sup> To be clear, the degree of nationalization of a party system is influenced by the electoral system and, in a divided society, by the territorial overlap of voting constituencies and the residing area of different societal groups. Nevertheless, it is ultimately the party's decision on how it decides to seek support.

<sup>9</sup> One should note that executive inclusiveness may be a formal constitutional requirement in some cases, while it may be a tacit historical, cultural or political arrangement in others (Reynolds & Reilly, 1999; Roeder & Rothchild, 2005).

economic advantages of one community are very highly likely to also mean economic disadvantages for the other community (Elazar, 1988). More concretely, one can expect mutually reinforcing phenomena of greed – when the advantaged societal group does not want to share resources with the disadvantaged – and grievance – when the disadvantaged group feels deprived or dominated – to create instability (Gurr, 1993, 2015). Consequently, we expect that an equal distribution of economic resources across groups will contribute to the survival of a dyadic federation, while we should expect an unequal distribution of economic resources across groups to contribute to its failure<sup>10</sup>.

### 6. Long duration of the dyadic union

The sixth factor that we have identified relates to the duration of the dyadic union – i.e., the amount of time that the constituent units have shared the same state. Explaining the survival of a dyadic federation by the duration of its existence might seem tautological at first glance (Caluwaerts & Reuchamps, 2015). However, there are good reasons to believe that the duration of a federal arrangement can actually also greatly contribute to its survival. Put another way, the breakup of a dyadic federation may become increasingly less likely over time because political institutions become integrated, because economic relations between the units become interdependent, or simply because populations have started to develop closer relations and/or shared beliefs. Consequently, we should expect failed dyadic federations to have been dyadic unions of short duration. By contrast, we should expect successful dyadic federations to be either of long duration, if they are consolidated, or of short duration, if they are at their start.

### **Mapping and Explaining Cross-Case Diversity: a fuzzy-set Qualitative Comparative Analysis**

The present chapter has two main objectives, one descriptive and one analytical. At a descriptive level, its objective is to map the political, geographic and economic context of dyadic federations, both past and present. In so doing, the chapter updates existing accounts, prepares the analytical step and provides raw data for future research. At an analytical level, its objective is to bring to light the combinations of factors in the presence or absence of which dyadic federations have succeeded and in which they have failed. Based on this analysis, the chapter seeks to inform the broader literature on federalism, national diversity and democracy regarding the near and longer-term prospects of federal arrangements in bipolar polities. To achieve this, we use a *fuzzy-set Qualitative Comparative Analysis*. This method allows for systematically mapping and comparing the identified factors across all fifteen dyadic federations. In this section, we discuss (a) how the six factors under examination have been translated into fuzzy-set conditions and how data has been collected for each of them, and (b) the rationale upon which the analysis is built.

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<sup>10</sup> One should note that the distribution of economic resources involves both the *de facto* repartition of natural and economic wealth as well as the distribution of economic resources through the intermediary of national redistribution mechanisms (Gordon & Cullen, 2012).

Operationalization of the conditions and data collection

A Qualitative Comparative Analysis (QCA) is based on Boolean logic. It systematically compares ‘conditions’ that are calibrated as ‘crisp-sets’ or ‘fuzzy-sets’ (Berg-Schlosser, De Meur, Rihoux, & Ragin, 2009). Conditions are assessments of how much a phenomenon, in this case a factor, is present or absent in a given case (e.g., the degree to which electoral proportionality is present in Belgium). In set-theoretic terms, conditions assess how much a case belongs to a given set that is defined vis-à-vis a concept (e.g., the degree to which Belgiums belong to the set of electorally proportional countries) (Schneider & Wagemann, 2012). While crisp-sets assess conditions dichotomously and only allow for differentiations in kind (presence (1) vs. absence (0) of a condition), fuzzy-sets are fine-grained assessments of conditions (calibrated as ratios from 0.00 - 1.00) and allow for differentiations in both kind (0.50 being the discriminating point) and degree (e.g.,  $0.60 < 0.80$ ).

As summarized in Table 2, the six factors identified above have been translated into conditions and were calibrated as 4-point fuzzy-sets: 1.00 for the ‘full presence’ of the factor in a case, 0.67 when it was ‘rather present,’ 0.33 when it was ‘rather *not* present’ and 0.00 when it was ‘fully absent.’ An outcome condition accounting for whether a dyadic federation survived or broke up was calibrated as crisp-set: 1 when the federation survived, 0 when it broke up.

**Table 2.** Operationalization of the conditions as fuzzy-sets

Label	Conditions	Fuzzy scale	Operationalization
OUTC	Survival/Breakup of the dyadic federation	2-point (crisp-set)	<u>Qualitative assessment:</u> Survival = 1, breakup = 0.
TER.CON	Territorial concentration	4-point	<u>Qualitative assessment:</u> Fully separable = 1, rather separable = 0.67, rather not separable = 0.33, fully not separable = 0.
ELC.PROP	Electoral proportionality	4-point	<u>Mean score on Gallagher Index:</u> Anchors: 0-4 = 0.00, 5-9 = 0.33, 10-14 = 0.67, 15-20 = 1.00.
NAT.P.SYS	Nationalized party system	4-point	<u>Qualitative assessment:</u> Fully national = 1, rather national = 0.67, rather not national = 0.33, fully not national = 0.
EXE.INC	Executive inclusiveness	4-point	<u>Qualitative assessment:</u> Perfect cabinet share = 1, significant share = 0.67, ineffective share = 0.33, no share = 0.
EQ.ECO.DIS	Equal economic distribution	4-point	<u>Quantitative (GDP) and qualitative assessment:</u> Largely equal = 1, minor inequalities = 0.67, substantive inequalities = 0.33, major inequal. = 0.
LG.DUR	Long duration of the union	4-point	<u>Quantitative assessment with observation-based anchors:</u> $\geq 30$ years = 1, $\geq 20$ years = 0.67, $\geq 10$ years = 0.33, $< 10$ years = 0.

The assessment of a case’s territorial concentration was made qualitatively by the authors. A case was considered ‘fully separable’ when the dominant communities lived in territorially homogenous areas that could be separated by a clear line. The case was considered ‘rather separable’ when there was some territorial heterogeneity between the communities but when a

clear line could still be drawn. The case was considered ‘rather not separable’ when this line could not clearly be drawn. And, the case was considered ‘fully not separable’ when communities were highly dispersed territorially and no clear line could be drawn.

The assessment of a case’s electoral proportionality was made using the *Gallagher Index* (Gallagher, 2018).<sup>11</sup> More specifically, cases’ mean Gallagher score was taken for all lower house elections with available data.<sup>12</sup> During calibration, a Gallagher score of 0-4 was translated into 0.00, a score of 5-9 was translated into 0.33, a score of 10-14 was translated into 10-14, and a score of 15-20 was translated into 1.00.

The assessment of a case’s degree of party system nationalization was made qualitatively by the authors. A case was considered ‘fully national’ when the party system was exclusively national. A case was considered ‘rather national’ when the system was predominantly national. A case was considered ‘rather not national’ when the system was predominantly regional. A case was considered ‘fully not national’ when the system was exclusively regional.

The assessment of a case’s executive inclusiveness was also made qualitatively by the authors. A case was considered ‘fully inclusive’ in the presence of an (almost) perfect (or equal) sharing of the cabinet between the two dominant communities. A case was considered ‘rather inclusive’ when there was a significant sharing of the cabinet between communities. A case was considered ‘rather not inclusive’ when the sharing of the cabinet proved to be ineffective (e.g., in Fiji where the political party representing one community often refuses to sit in the cabinet with a political party representing the other community). A case was considered ‘fully not inclusive’ when there was no sharing whatsoever of the cabinet between communities.

The assessment of a case’s economic distribution was made both quantitatively and qualitatively by the authors. When available, the GDP per capita of both dominant communities was compared. In the absence of data, secondary sources (*cf. supra*) were used to classify each polity. A case was considered ‘largely equal’ when both groups could be considered of generally equal wealth. A case was considered to have ‘rather equal’ when small wealth inequalities were observed. A case was considered ‘rather not equal’ when there was a non-negligible difference in wealth between communities. And, a case was considered to be ‘fully not equal’ when a clear wealth difference between communities was observed.

Finally, the assessment of the duration of a case's intactness was made quantitatively using observation-based anchors. When mapping the number of years that the case under examination remained intact (*cf. the Appendix*),<sup>13</sup> three gaps tended to appear and were thus used to set the qualitative anchors. Cases that remained intact for over 30 years were deemed to be of ‘long duration’. Cases that remained intact for 20-29 years were deemed to be of ‘rather

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<sup>11</sup> The Gallagher Index or ‘least squares index’ calculates the degree of electoral proportionality by taking the square-root of the half of the sum of all parties’ squared difference between their share of votes and share of seats

for one election:  $Lsq = \sqrt{\frac{1}{2} \sum_{i=1}^n (\% Votes_i - \% Seats_i)^2}$ .

<sup>12</sup> For Belgium, Canada, Guyana, Saint-Kitts and Nevis, Serbia and Montenegro, Suriname, and Trinidad and Tobago, calculations were borrowed from Gallagher (2018). For Bosnia and Herzegovina, Czechoslovakia, Cyprus, Fiji, the Federation of Malaysia, Nigeria, Northern Ireland, Senegambia and Tanzania, calculations were made by the authors.

<sup>13</sup> We considered the number of years during which the case qualified for our three selection criteria, even though some cases remained together even longer. We did so because centrifugal dynamics might only come up when power-sharing agreements are entrenched and when states are democratic. Our findings remain even robust, however, even when considering longer periods.

long duration’. Cases that remained intact for 10-19 years were deemed to be of ‘rather short duration’. And cases that remained intact for less than 10 years were deemed to be of ‘short duration’.

When applying this operationalization and calibrating the collected data on all factors for the fifteen dyadic federation under examination, we obtained the final data distribution displayed in Table 3, below.

**Table 3.** Data distribution on the six conditions and the outcome for all 15 dyadic federations

ID	Cases	TER.CON	ELC.PROP	NAT.P.SYS	EXE.INC	EQ.ECO.DIS	LG.DUR	OUTC
BEL	Belgium (1970-today)	0.33	1.00	0.00	1.00	0.33	1.00	1
BAH	Bosnia and Herzegovina (1995-today)	0.33	0.67	0.00	0.67	0.33	0.67	1
CAN	Canada (1987-today)	0.67	0.33	0.33	0.67	0.67	1.00	1
CYP	Cyprus (1960-1974)	0.00	0.00	0.00	0.67	0.00	0.33	0
CZE	Czechoslovakia (1990-1992)	1.00	0.67	0.00	0.00	0.00	0.00	0
MAL	Federation of Malaysia (1963-1965)	1.00	0.00	0.00	0.00	0.00	0.00	0
FIJ	Fiji Islands (2014-today)	0.00	1.00	0.33	0.33	0.33	0.00	1
GUY	Guyana (1966-today)	0.00	1.00	0.33	0.00	0.67	1.00	1
NIR	Northern Ireland (1998-today)	0.00	1.00	0.33	0.67	0.33	0.67	1
SKN	Saint-Kitts and Nevis (1983-today)	0.00	0.00	0.67	0.00	0.33	1.00	1
SGB	Senegambia (1982-1989)	1.00	0.00	0.00	0.67	0.33	0.00	0
SAM	Serbia and Montenegro (2003-2006)	1.00	0.67	0.00	0.00	0.00	0.00	0
SUR	Suriname (1991-today)	0.00	1.00	0.33	0.00	0.67	0.67	1
TZN	Tanzania (1992-today)	1.00	1.00	0.00	0.67	1.00	0.67	1
TAT	Trinidad and Tobago (1976-today)	0.00	0.33	0.33	0.00	0.33	1.00	1

### Rationale of the fuzzy-set Qualitative Comparative Analysis<sup>14</sup>

Qualitative Comparative Analysis (QCA) has an equifinal, asymmetrical and constellational view of causality. It is equifinal in that it understands outcomes as being (potentially) produced by multiple distinct factors. It is asymmetrical in that it understands factors that explain the presence of an outcome as not necessarily explaining its absence when they are negated. And it is constellational in that it explicitly looks for the occurrence of outcomes in the presence or absence of multiple conditions that are linked by a logical AND or OR.

Drawing on Boolean logic,<sup>15</sup> QCA systematically compares cases’ condition scores and their outcome. The analysis is based on the so-called ‘truth table’ which comprises all combinations of present or absent conditions that are observed in the cases, together with the respective outcome. When conditions are operationalized as fuzzy sets, cases have partial membership in truth table rows (equal to their lowest membership in one of the conditions) and eventually belong to the only row in which their membership is higher than 0.50. The truth table is both a descriptive and analytical tool. It is descriptive in that it allows us to map all existing constellations of conditions and the outcome with which they are associated. It is analytical in that it allows us to determine which (combination of) conditions appear to be necessary and/or sufficient for an outcome to occur, and how combinations of conditions can be minimized as to obtain the most parsimonious solution for explaining an outcome (*cf. infra*).

<sup>14</sup> This section draws on Ragin and Rihoux (2009) and Schneider and Wagemann (2012).

<sup>15</sup> The Boolean operators used in this chapter are the logical AND (\*), the logical OR (+), the logical negation (~) and the logical implication (→).

In an analysis of necessity, one determines the degree to which (a combination of) conditions are (is) consistently present when the outcome occurs. In crisp-set terms, for it to be necessary one always wants condition X to be present when outcome Y occurs. When using fuzzy-sets, one wants cases' membership in X to be higher than their membership in Y. The 'consistency' of necessity (i.e., the extent to which a condition is necessary) is obtained by  $\frac{\sum_{i=1}^I \min(X_i, Y_i)}{\sum_{i=1}^I Y_i}$ . One also assesses how many cases are 'covered' by a necessary condition (i.e., the share of cases for which the condition is necessary). The coverage of necessity is obtained by  $\frac{\sum_{i=1}^I \min(X_i, Y_i)}{\sum_{i=1}^I X_i}$ .

In an analysis of sufficiency, one determines to what degree an outcome is always present when a (combination of) condition(s) is present. In crisp-set terms, for it to be sufficient one always wants outcome Y to occur when condition X is present. When using fuzzy-sets, one wants cases' membership in Y to be higher than their membership in X. The 'consistency' of sufficiency (i.e., the extent to which a condition is sufficient) is obtained by  $\frac{\sum_{i=1}^I \min(X_i, Y_i)}{\sum_{i=1}^I X_i}$ . One also assesses how many cases are 'covered' by a sufficient condition (i.e., the share of cases for which the condition is sufficient). The coverage of sufficiency is obtained by  $\frac{\sum_{i=1}^I \min(X_i, Y_i)}{\sum_{i=1}^I Y_i}$ .

When it comes to finding the most parsimonious solution that explains (is sufficient for) an outcome, the so-called 'minimization process' is involved. Based on the *Quine-McClusky algorithm*, 'similar conjunctions' are matched so that conditional specifications that logically lead to identical outcomes are excluded.<sup>16</sup> In addition, 'logically redundant prime implicants' (i.e., terms that are logically implied twice in a formula) are equally excluded.<sup>17</sup> This reduction potential is limited when the number of possible configurations (i.e., combinations of conditions) exceeds the actual number of observed configurations. Non-observed configurations (so-called *logical remainders*) reduce the number of occurring similar conjunctions and hence the possibilities of minimization. Given that a *fcQCA* with six fuzzy-sets involves 64 possible configurations,<sup>18</sup> but that the present one only comprises 11 observed configurations (*cf. infra*), 'simplifying assumptions' about the outcome of non-observed cases will be made by combining observed data with theoretical reasoning. This allows for further and final minimization. One should note that since *QCA* has an asymmetric view of causality, the occurrence and non-occurrence of the outcome have to be analysed separately.

## When Dyadic Federations Have Succeeded and When They Have Failed

The *fsQCA* analyses suggest that dyadic federations survived when the dominant communities were territorially dispersed and had, at the same time, either a proportional electoral system or a nationalized party system. In the absence of territorial dispersion, other institutional arrangements such as executive inclusiveness and an equal economic distribution appear to be important. In general, the analysis shows that dyadic federations that survive do so for many

<sup>16</sup> E.g., if  $A*B*C \rightarrow D$  and if  $A*B*\sim C \rightarrow D$ , then  $A*B \rightarrow D$  and the formula can be reduced.

<sup>17</sup> E.g., if  $A*B*C + A*B*\sim C + \sim A*B*C + \sim A*\sim B*C \rightarrow D$ , then  $A*B + \sim A*C \rightarrow D$ .

<sup>18</sup> For  $n$  fuzzy-sets, the total number of possible configurations is  $2^n$ . In this case,  $2^6 = 64$ .

years. By contrast, our results suggest that a dyadic federal project is likely to fail in the absence of stabilizing institutional factors like electoral proportionality and a national party system, especially when economic resources are unequally distributed between groups and when they are territorially clearly separable. The (short) duration of the union is important too. Table 4, below, displays the truth table upon which these results are based.<sup>19</sup>

**Table 4.** Truth table for the *fsQCA* analysis

TER.CON	ELC.PROP	NAT.P.SYS	EXE.INC	EQ.ECO.DIS	LG.DUR	OUTC	Incl.		Cases
							Prs.	Abs.	
0	1	0	1	0	1	1	1.000	0.000	BEL, BAH, NOI
0	1	0	0	1	1	1	1.000	0.000	GUY, SUR
1	0	0	1	1	1	1	1.000	0.000	CAN
0	1	0	0	0	0	1	1.000	0.000	FIJ
0	0	1	0	0	1	1	1.000	0.000	SKN
1	1	0	1	1	1	1	1.000	0.000	TZN
0	0	0	0	0	1	1	0.834	0.166	TAT
1	0	0	0	0	0	0	0.142	0.858	MAL
1	1	0	0	0	0	0	0.198	0.802	CZS, SAM
1	0	0	1	0	0	0	0.330	0.670	SGB
0	0	0	1	0	0	0	0.330	0.670	CYP

*When have dyadic federations succeeded?*

The analysis of necessary and sufficient conditions for the survival of dyadic federations (outcome = 1), summarized in Table 5, below, suggests that no condition is, on its own, truly necessary but that a few come close to or even reach sufficiency. Concerning necessity, one can see that most surviving dyadic federations are of long duration (nine out of ten) and that they are composed of territorially non-concentrated groups (eight out of ten). Consequently, both seem to be important contextual conditions for preventing the breaking apart of a dyadic federation. One should note, however, that neither of these conditions is fully necessary because two dyadic federations survived despite having territorially concentrated groups (Canada and Tanzania), and one survived although it is only a recent democratic dyadic federal project (Fiji). For the former, we will see that other stabilizing factors have been at work. For the latter, one should note that, despite democracy had only been achieved recently, the common state history of both groups dates back much longer. When looking at the sufficiency, one can see that the survival rate of dyadic federations is fairly high (not to say perfect) when they are of long duration (9/9), have an equal economic distribution between groups (4/4), have a nationalized party system (1/1) or a proportional electoral system (7/9).<sup>20</sup> This shows that these are important stabilizing factors in bipolar federal settings. However, their importance comes in combination with other factors as the constellational analysis below suggests.

<sup>19</sup> An inclusiveness threshold of 0.67 has been chosen for a case to be included in the analysis. While this comes with some deviance in degree (depending on cases' membership scores in the conditions), no row comprised deviance in kind (all cases were member of the same outcome) and all cases could be included in the analysis.

<sup>20</sup> The consistency of sufficiency does not reach 1.000 because of some deviance in degree (remember that these are fuzzy-sets).

**Table 5.** Consistency and coverage scores for conditions' necessity and sufficiency for explaining the survival of dyadic federations (Outc. = 1)

Analysis	Condition	Consistency	Coverage	RoN	PRI
Necessity	LG.DUR	0.768	0.959	0.955	-
	~TER.CON	0.767	0.885	0.864	-
Sufficiency	NAT.P.SYS	1.000	0.265	-	1.000
	LG.DUR	0.959	0.768	-	0.959
	EQ.ECO.DIS	0.938	0.499	-	0.938
	ELC.PROP	0.845	0.733	-	0.845
	EXE.INC	0.750	0.401	-	0.750

\* Only conditions whose consistency of necessity or sufficiency exceeds 0.75 are presented.

Three constellations can be identified when exploring the combination of conditions under which dyadic federations have survived, as we can see in Table 6, below.<sup>21</sup> Six out of the ten surviving dyadic federations had territorially non-concentrated groups and a proportional electoral system (1.A). One out of the ten surviving dyadic federations had territorially non-concentrated groups, a nationalized party system and was of long duration (1.B). Two out of the ten surviving dyadic federations had an inclusive executive, an equal economic distribution and lasted over time (1.C). This confirms the importance of territorial heterogeneity and shows that it is usually combined with another stabilizing mechanism – electoral proportionality or a nationalized party system. Besides, the territorially concentrated cases with a nationalized party system have also been of long duration. Something that the territorially concentrated cases with a proportional electoral system will probably be in a few years. These two paths are perfectly consistent and cover together 70% of the cases. In two cases, however, none of these factors

**Table 6.** Minimized conjunctions explaining the survival of dyadic federations (Outc. = 1)

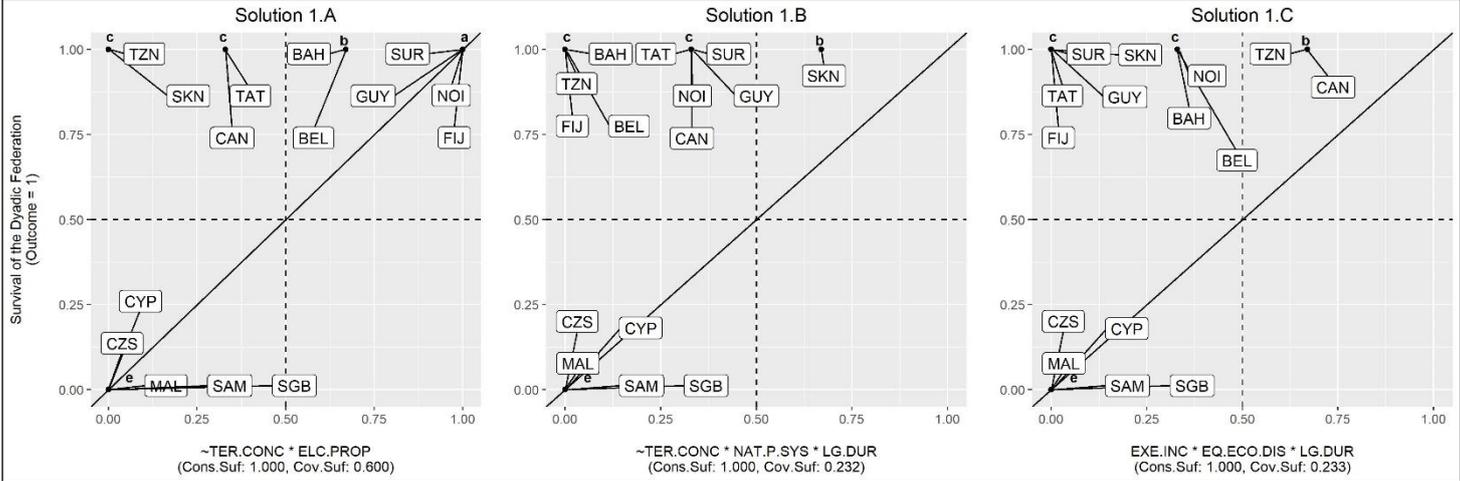
Solution Path	1			2
	A	B	C	A
Territorial concentration	⊗	⊗		⊗
Electoral proportionality	●			
Nationalized party system		●		
Executive inclusiveness			●	
Equal economic distribution			●	
Duration of the union	(●)	●	●	●
Consistency	1.000	1.000	1.000	0.948
Raw coverage	0.600	0.232	0.233	0.601
Unique coverage	0.369	0.067	0.101	0.601
Covered cases	BEL, BAH, FIJ, GUY, NOI, SUR	SKN	CAN, TZN	BEL, BAH, GUY, NOI, SKN, SUR, TAT
Contradictory cases	-	-	-	CYP (in degree)
Solution consistency		1.000		0.948
Solution coverage		0.768		0.601
Non-covered cases		TAT		CAN, TAN, FIJ

<sup>21</sup> The minimization process of solution 1.A relied on six, that of 1.B on seven, and that of 1.C on six simplifying assumptions. They were based on the directional expectation that conditions(0,1,1,1,1,-) → outcome(1).

was present (Canada and Tanzania). Instead, their survival occurred in the presence of inclusive executives and an equal distribution of economic resources between groups, in addition to the fact that they had been of long duration. Finally, there is one surviving case which corresponds to none of these constellations, Trinidad and Tobago, and which is surprising insofar as its only stabilizing factors were territorial heterogeneity and a long duration (2.A). These two factors achieve a high sufficiency across all cases  $(7/7)^{22}$  and even cover 70% of the surviving federations. But given that they are present only in a single case, we are cautious with overinterpreting their sufficiency and suggest a deeper investigation of the stability of Trinidad and Tobago, which is beyond the scope of the current analysis.

Figure 1, below, provides some additional information on the situation of the cases vis-à-vis the three main solution formulas. Guyana, Fiji, Northern Ireland and Suriname are the most typical cases for solution 1.A in that they were full members of both the conjunction and the outcome. Belgium and Bosnia and Herzegovina are still typical cases but have a slightly lower (though positive) membership in the conjunction. Solution 1.B and 1.C have no most typical cases (i.e., no full conjunction members), but Saint Kitt and Nevis, and Canada and Tanzania are the respective typical cases. As noted above, Trinidad and Tobago is the only case that is covered by none of these three solutions and is therefore deviant in coverage. Finally, Cyprus, Czechoslovakia, the Federation of Malaysia, Senegambia and Serbia and Montenegro are negative cases because they did not survive and can therefore not provide relevant information for the analysis of survival, except for their presence as logical counterfactuals. These cases are analysed in the following sub-section.

**Figure 1.** XY-Plot for the paths of the main solution explaining the survival of dyadic federations (Outc. = 1)



\* Legend: a = Most typical cases. b = Typical cases. c = Deviant cases in coverage. d = Deviant cases in consistency. e = Negative (irrelevant) cases.

When have dyadic federations failed?

The analysis of necessary and sufficient conditions for the breakup of dyadic federations (outcome = 0), summarized in Table 7, below, suggests that four conditions appear *a priori* to be close to necessary for the outcome to occur, while none is sufficient, on its own. Concerning necessity, one can see that most dyadic federations that broke up had a regionalized party

<sup>22</sup> The consistency of sufficiency does not reach 1.000 because of some deviance in degree.

system (5/5), were of short duration (5/5), had an unequal economic distribution between communities (5/5) and had territorially concentrated communities (4/5). While all of these conditions seem thus to be important for understanding when dyadic federations break up, one should note that the first three have low relevance of necessity scores (probably coming with the limited diversity of their distribution), while the last one has a contradicting case. None of these conditions can therefore be considered truly necessary. Furthermore, no single condition is on its own sufficient to explain the breaking apart of a dyadic federation.

**Table 7.** Consistency and coverage scores for conditions' necessity and sufficiency for explaining the breakup of dyadic federations (Outc. = 0)

Analysis	Condition	Consistency	Coverage	RoN	PRI
Necessity	~NAT.P.SYS	1.000	0.405	0.265	-
	~LG.DUR	0.934	0.668	0.476	-
	~EQ.ECO.DIS	0.934	0.482	0.515	-
	TER.CON	0.800	0.632	0.788	-
Sufficiency	-	-	-	-	-

\* Only conditions whose consistency of necessity or sufficiency exceeds 0.75 are presented.

Two constellations can be identified when looking for the combination of conditions under which dyadic federations have broken apart, as we can see in Table 8, below.<sup>23</sup> Four out of the five these dyadic federations had territorially concentrated groups, a regionalized party system, an unequal economic distribution between groups and were of short duration (1.A). Together, these factors achieve (almost)<sup>24</sup> perfect sufficiency (4/4). The only case not covered by this solution is Cyprus because its groups used to be territorially non-concentrated. The evidence suggests that the breaking apart of the latter occurred in the presence of a

**Table 8.** Minimized conjunctions explaining the breakup of dyadic federations (Outc. = 0)

Solution	1	
Path	A	B
Territorial concentration	●	
Electoral proportionality		⊗
Nationalized party system	⊗	⊗
Executive inclusiveness		
Equal economic distribution	⊗	⊗
Duration of the union	⊗	⊗
Consistency	0.918	0.901
Raw coverage	0.734	0.600
Unique coverage	0.268	0.134
Covered cases	CZS, MAL, SGB, SAM	CYP, MAL, SGB
Contradictory cases	BAH (in degree)	BAH (in degree)
Solution consistency	0.929	
Solution coverage	0.868	
Non-covered cases	-	

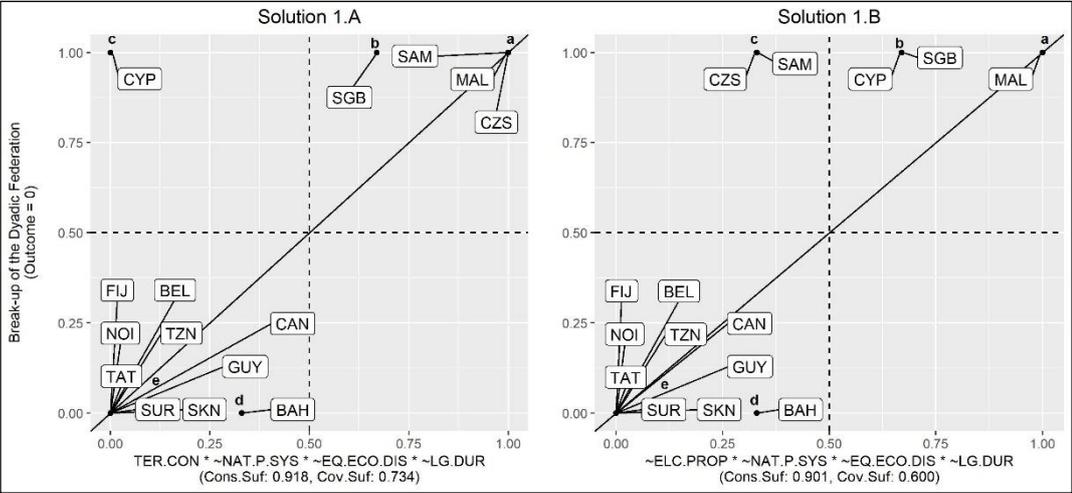
<sup>23</sup> The minimization process of solution 1.A relied on one and that of 1.B on two simplifying assumptions. They were based on the directional expectation that conditions(1,0,0,0,0) → outcome(0).

<sup>24</sup> The consistency of sufficiency does not reach 1.000 because of some deviance in degree.

disproportional electoral system, a regionalized party system, an unequal economic distribution between groups and a (rather) short duration (1.B, which were also present in the Malaysian and Senegambian cases). However, one should note that the Cypriot case is somewhat particular insofar as both its dominant groups were kin-minorities of larger external states, Greece and Turkey, and that these states had a major responsibility for the escalation of tensions between Greek and Turkish Cypriots (enforcing at some point the territorial homogeneity). The proposed solution therefore has to be read jointly with this external kin-state influence.

Figure 2, below, provides some additional information on the situation of the cases vis-à-vis the two solution formulas. Czechoslovakia, the Federation of Malaysia, and Serbia and Montenegro are most typical cases for solution 1.A in that they are both full members of the conjunction and the outcome. Senegambia is also typical but has a slightly lower (though positive) membership in the conjunction. Cyprus, as explained before, is deviant in coverage, because it is not covered by the conjunction. Bosnia and Herzegovina is a negative case but slightly deviates in consistency because it has partial membership in the conjunction (0.33).<sup>25</sup> The remaining cases are negative in both the outcome and conjunction. For solution 1.B, the Federation of Malaysia is the most typical case, while Cyprus and Senegambia are typical. Malaysia and Czechoslovakia are not covered. Bosnia and Herzegovina deviates again slightly in consistency.

**Figure 2.** XY-Plot for the paths of the main solution explaining the breakup of dyadic federations (Outc. = 0)



\* Legend: a = Most typical cases. b = Typical cases. c = Deviant cases in coverage. d = Deviant cases in consistency. e = Negative (irrelevant) cases.

**Conclusion**

This chapter has brought to light and further explored in the presence or absence of which factors dyadic federal projects have succeeded (i.e., survived) and in which they have failed (i.e., broken apart). By mapping the factors that seem crucial for their stability, we provided an

<sup>25</sup> In some way, the Bosnian case confirms the importance of kin-state influence already underlined for Cyprus. Here, however, kin-state presence served stability since Serbia is one of the guarantors of the Dayton peace agreement, together with the external conditionality ensured by the European Union.

expanded and updated account of the institutional, geographic and economic contexts of dyadic federations. By systematically comparing the importance of these factors with a *fuzzy-set Qualitative Comparative Analysis* of all democratic dyadic federations, past and present, the chapter also offered a unique comprehensive comparative assessment in a field that has tended to focus on single case studies or on small-n comparisons.

Our results inform the broader literature on federalism, national diversity and democracy by showing, like Duchacek (1988, p. 31), that federalism is not *per se* an institutional arrangement likely to fail in bipolar polities, as suggested by Watts (2008, p. 184) for example. Overall, the analysis shows that federal projects with two major communities can succeed if geographical factors such as the territorial dispersion of the dominant groups play in its favour and when the presence of institutional arrangements (i.e., a proportional electoral system or a national party system) either ensure fair political representation for both communities or prevent polities from being conceived in exclusively sub-national terms. In the absence of territorial dispersion, other institutional arrangements such as executive inclusiveness and an equal economic distribution between groups appear to be crucial in preventing the breakup of the federation. In general, dyadic federations that survive tend to do so for many years and one can reasonably expect that if a dyadic federal project makes it a few years (~20), it will make it many years. By contrast, the analysis shows that a bipolar federal project is likely to fail in the absence of stabilizing institutional arrangements (i.e., electoral proportionality and a national party system) and, more particularly, when economic resources are unequally distributed between communities and when these communities are clearly separable territorially speaking. The duration of the union is, again, of importance because the dyadic federations who failed did so at their very beginning.

Just to be clear, based on these findings, we are not arguing that the survival of a dyadic federation is inherently a good thing. Instead we argue that, under the aforementioned conditions, federalism can be a successful institutional arrangement for a bipolar polity when its survival as a state is desired or without a viable alternative.

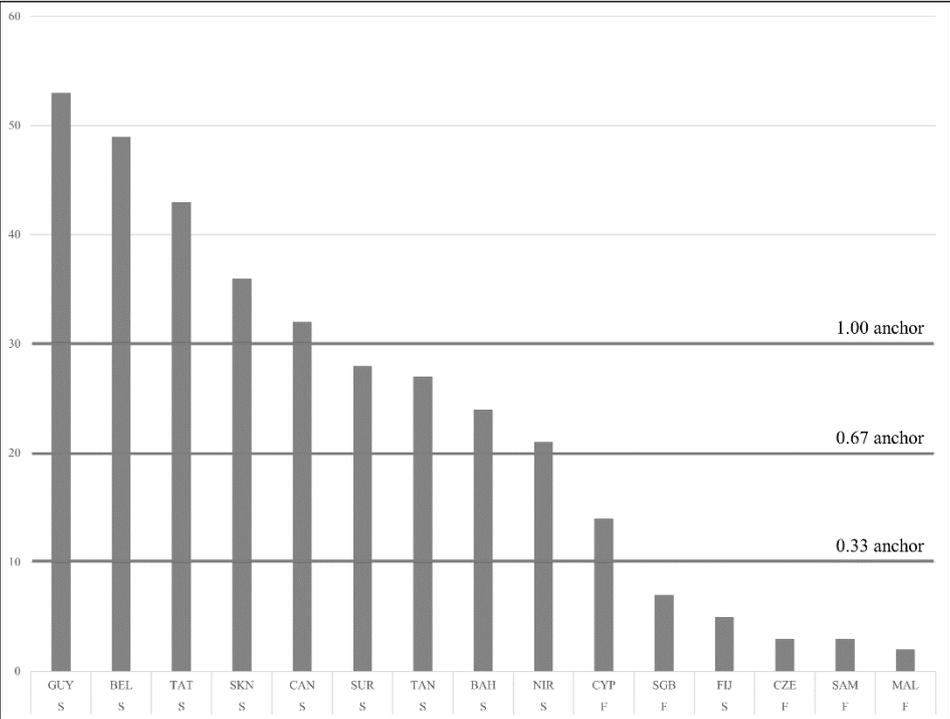
These findings have several implications for existing and future studies. First, the findings reaffirm the necessity for political scientists to pay attention to the geographic particularities of the territory they are studying (Coakley, 2012). That the stabilizing potential of political geography is often imposed rather than chosen can be interpreted as yet another paradox of democratic peace. Second, the findings cut through the debate between consociationalists and centripetalists in that both approaches could probably live with our findings. It appears indeed that group-based (executive inclusiveness), cross-group (national party systems) and mixed accommodative mechanisms (electoral proportionality) all contribute to the stability of dyadic federations, and that even for the latter, consociationalism and centripetalism might be ‘rather friends than foes’ (Bogaards, 2019). Third, the ‘political economy of regionalism’ (Keating, 2013) is a concept that can very well be applied to the study of dyadic federation when an equal distribution of economic resources is envisioned as a stabilizing factor preventing both greed and grievance (Gurr, 1993, 2015). Finally, the analysis shows that there seems to be something like a ‘seven-year itch’ for dyadic federations. Among the five failed federations identified in this study, four broke up within seven years (Czechoslovakia, the Federation of Malaysia, Senegambia, and Serbia and Montenegro). Only Cyprus made it a little longer (14 years) and may have perhaps remained intact longer without external kin-state influence (*cf. supra*).

Before fully concluding this study, two nuances are necessary. First, while the explanation of when dyadic federations survived relied on a rather solid set of cases that was well distributed on the different conditions, the number of cases explaining when dyadic federations broke up is somewhat limited. Therefore, counterfactual reasoning for this group of cases was not possible in some instances and the accompanying conclusions should be thus interpreted accordingly. Secondly, the cases under study are not immovable realities and even if political engineering solutions are path-dependent (Pierson, 2000), this does not discount the possibility of exogenous shocks or of endogenous conditions changing extremely fast and deeply. After all, between Duchacek’s study in 1988 and today, quite a few cases evolved and some in quite dramatic ways. Needless to say that other cases might also evolve in the future.

It is not necessary though to wait for these changes to occur in order to continue studying dyadic federations. In light of the present findings, future studies might for instance want to dig further into particular cases like Trinidad and Tobago (to explain why this federation did not break up despite what one would have expected from a comparative perspective). Additionally, this study’s findings also open the possibility for a comparison with non-dyadic federations or bipolar polities without federal power-sharing agreements with the aim of assessing the prospects of dyadic federalism vis-à-vis alternative institutional arrangements or contexts. We hope that this chapter paved some of the way to these and other potential studies on the prospects of federalism and power-sharing arrangements in deeply diverse democracies.

**Appendices**

**Appendix 1.** Number of years that the cases remained intact as of today



\* S = succeeded, F = failed.

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