Democratic Electoral Systems around the world, 1946–2020[☆]

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A B S T R A C T

This research note describes an update to Bormann and Golder's 2013 *Democratic Electoral Systems (DES)* dataset. We extend the temporal scope of the previous dataset by adding information for all legislative and presidential elections that took place in democratic states from 2011 through 2020. More significantly, the DES dataset now includes information on all elections that are considered democratic by at least one of five different measures of regime type: Democracy and Dictatorship (DD), Freedom House (FH), Polity$_5$, Boix-Miller-Rosato (BMR), and Varieties of Democracy (V-Dem). The result is that the new DES dataset has greater utility and is over 30% larger than the previous one. A brief overview of the data is presented.

1. Introduction

In this note, we describe an update and extension to Bormann and Golder's (2013) *Democratic Electoral Systems (DES)* dataset on electoral rules and party system size that covers democratic elections from 1946 (or independence) through 2020. The DES dataset has proven useful for addressing a wide range of substantive research questions in political science and beyond related to topics such as the translation of votes into seats (Shugart and Taagepera, 2017), party system institutionalization (Weghorst and Bernhard, 2014), citizen-elite political representation (Golder and Stramski, 2010), corruption (Schwindt-Bayer and Tavits, 2016), ethnic voting (Houle et al., 2019), affective polarization (Gidron et al., 2020), the political transformation of militant organizations (Acosta, 2014), irredentism (Siroky and Hale, 2016), ethnic coalition formation (Bormann, 2019), protest behavior (Brancati, 2016), democracy and war (Baum and Potter, 2015), fiscal policy (Guerguil et al., 2017), and political extremism (Bordignon et al., 2016). According to Google Scholar, the DES dataset has been cited more than 1250 times as of March 2022.

The new version of the DES dataset contains information on electoral rules and party system size for 1563 lower-house parliamentary and 592 first-round presidential elections in democracies. The number of elections is 32% larger than in the previous 2013 version of the dataset.

Among other things, our variables include indicators of the electoral system family as well as more detailed indicators of the specific electoral rules, such as the electoral formula, used in each electoral tier. Our variables also capture the number of legislative seats, the distribution of those seats across electoral tiers, average district magnitude, the effective number of electoral and parliamentary parties, the effective number of presidential candidates, and the precise dates of each election.[1] By expanding the temporal scope of the previous *DES* dataset through 2020, we make it easier for scholars to better examine the causes and consequences of electoral rules and party system size into the most recent time period. The utility of the dataset is further enhanced by the fact that we have added information across the whole time period on elections that are considered democratic by each of five different indicators of democratic regime type. This allows researchers to better identify the set of democratic elections that are most suitable for addressing their particular research question.

2. Democratic elections

The DES dataset focuses on legislative and presidential elections in *democratic* regimes. Previously, we identified democratic regimes based on the Democracy-Dictatorship (DD) classification scheme set out by Cheibub et al. (2010). According to this classification scheme, a regime
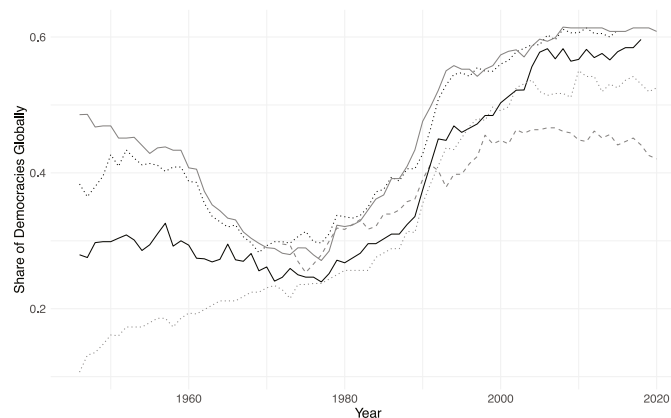
(a) Share of Global Democracies
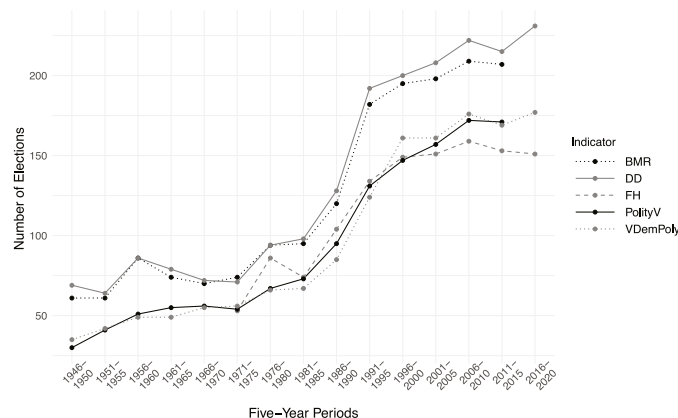
(b) Number of Democratic Elections

Fig. 1. The share of democracies and the number of democratic elections by democracy indicator, 1946–2020.

Table 1
The number of elections by the count of democracy indicators that include them (rows) and the actual democracy index (columns).

	BMR	DD	FH	Polity$_5$	V-Dem	Total
1	26	142	3	2	6	179
2	157	239	54	40	48	269
3	309	395	231	141	157	411
4	507	544	199	492	534	569
5	727	727	727	727	727	727
Total	1726	2047	1214	1402	1472	2155
Share	0.91	0.95	0.69	0.69	0.68	

Note: 'Share' indicates the proportion of democratic elections provided by each indicator of democracy after normalizing for the number of years for which data are available.

is democratic if (i) the chief executive is elected, (ii) the legislature is elected, (iii) there is more than one party competing in elections, and (iv) an alternation under identical electoral rules has taken place (alternation rule). A regime is dictatorial if any of these four conditions do not hold. The latest version of the DES dataset continues to classify elections as democratic according to these coding rules.

There is much debate about exactly how to conceptualize and measure democracy (Dahl, 1971; Bollen and Jackman, 1989; Collier and Adcock, 1999; Elkins, 2000; Pemstein et al., 2010). Different measures can produce different empirical results (Casper and Tufis, 2003; Treier and Jackman, 2008; Cheibub et al., 2010). Given this, the new version of the DES dataset also classifies elections as democratic based on four other commonly-used coding schemes as well: Boix-Miller-Rosato (BMR, 2012), Freedom House (FH, 2021), Polity$_5$ (2020), and Varieties of Democracy (V-Dem, 2021).[2]

In Fig. 1a, we show the share of countries in the world that are considered democratic over time since 1946 based on our different indicators of democracy. All five indicators capture the growth in the share of democracies in the world that has occurred since the third wave of democratization began in the early 1970s. While not identical, the BMR, DD, Polity$_5$, and V-Dem indicators all show a steady increase in the share of democracies that has begun to flatten out since the early 2000s. The similar trajectory across these four indicators is perhaps not surprising given that they all adopt a largely minimalist, procedural, and electoralist approach to classifying democracies (Schumpeter, 1942; Dahl, 1971).[3] The trajectory for democracies is slightly different according to the FH indicator, which adopts are much more substantive approach to classifying regimes that takes account of things like the level of corruption, rule of law, equality of opportunity, and property rights in a country. Specifically, the FH indicator identifies fewer democracies since the 1990s than the other indicators and seems to suggest that there has been some democratic backsliding since the early 2000s. This all fits with research suggesting that while procedural aspects of democracy around the world are continuing to improve or remain steady, more substantive outcomes related to various rights may be declining (Ding and Slater, 2021). In Fig. 1b, we show how the information in panel (a) affects the number of democratic elections per five-year period for each of our democracy indicators.

In Table 1, we provide descriptive information about the total number of elections that are coded as democratic by each of our five indicators of democracy. For example, we identify a low of 1214 democratic legislative or presidential elections based on the FH indicator and a high of 2047 based on the DD indicator. The low number of democratic elections identified by the FH indicator is largely a result of the later starting point (1973) for its time series relative to the other indicators. A total of 2155 elections are coded as democratic by at least one of our five democracy indicators. Normalizing this count by the years for which data are available on a given indicator reveals that FH (0.69), Polity$_5$

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[2] Like the original DD indicator, BMR is dichotomous and classifies countries as democratic or dictatorial. In contrast, FH, Polity$_5$, and V-Dem provide ordinal or interval measures of regime type such that we must use a cut-off for identifying when a country is considered democratic. In line with common practice, we classify a country as democratic if its Freedom House score is less than or equal to 2.5 (Free) on its 1–7 scale and if its Polity$_5$ score is greater than or equal to 6 on its −10 to +10 scale. The V-Dem project provides several slightly different measures of regime type. We focus on its *Polyarchy* measure (Teorell et al., 2019) and code a country as democratic if its *Polyarchy* score is greater than or equal to 0.5 on its 0 to 1 scale. All five indicators are available from 1946, except for FH, which only started coding democracies in 1973. The BMR and Polity$_5$ indicators stop in 2015 and 2018 respectively. We have updated the DD indicator, which stops in 2008, through 2020 ourselves.

[3] There is, in fact, some variation in the extent to which these indicators adopt a minimalist and procedural approach to classifying democracies. The DD and BMR indicators hew most closely to this approach and this helps to explain why they track each other so closely. Although Polity$_5$ is often portrayed as a procedural measure of democracy, it incorporates some substantive components such as the level of violence in a country (Vreeland, 2008). Similarly, while V-Dem's *Polyarchy* measure is the most minimalist and procedural of all the democracy indicators provided by the V-Dem project, it still incorporates multiple substantive components related to things like associational autonomy and freedom of expression (Teorell et al., 2019). These differences help to explain why the lines for these five different indicators of regime type do not track each other perfectly in Fig. 1.
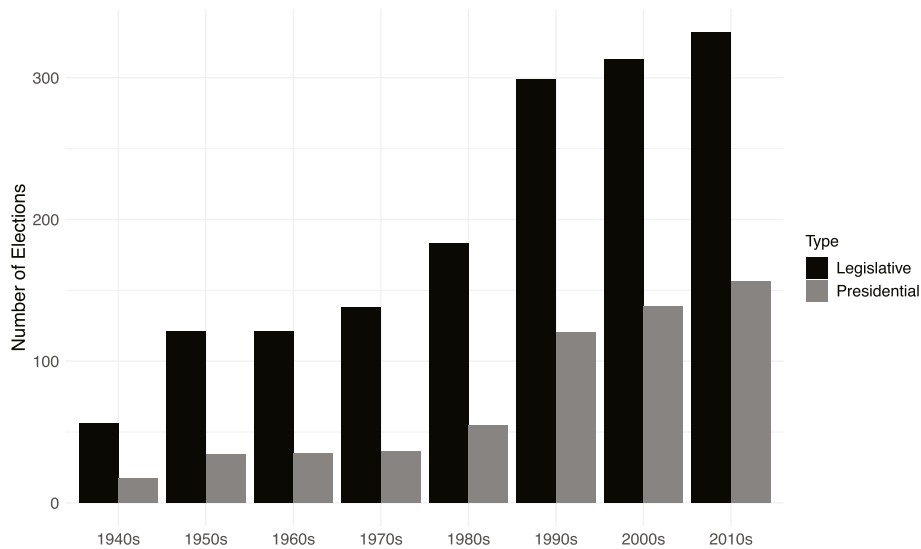
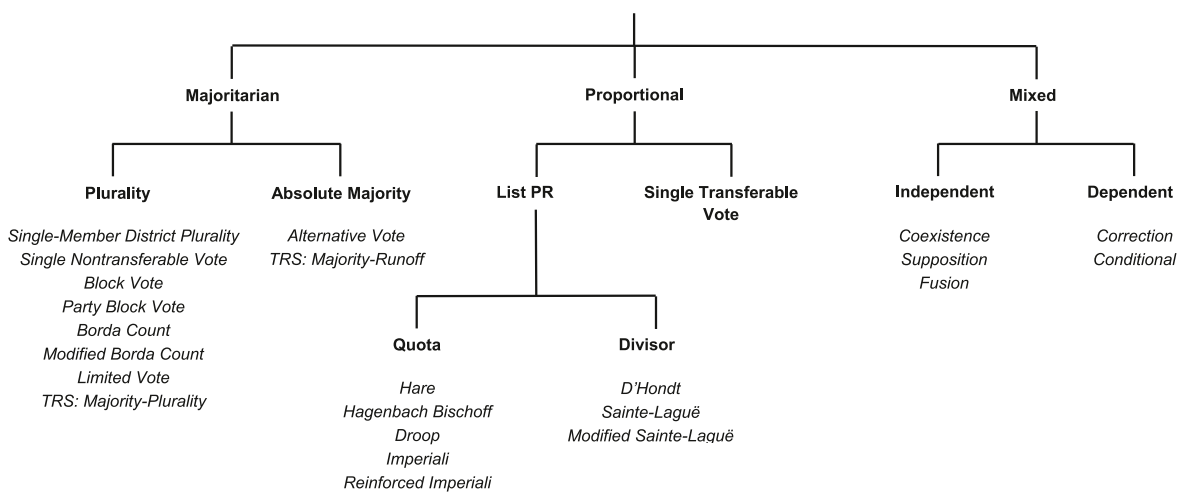**Fig. 2.** Legislative and presidential elections by decade, 1946–2020.

Fig. 3. Classification of legislative electoral systems.

(0.69), and V-Dem (0.68) each contribute about the same proportion of elections to our sample. It also indicates that the DD indicator (0.95) contributes a slightly higher proportion of elections than the BMR indicator (0.91). Although the BMR indicator does not require an "alternation rule" to be satisfied to code a country as democratic, and thus includes cases such as Botswana, South Africa, and Bosnia, it does require "free and fair" elections, which DD does not. Thus, DD includes a number of elections in countries like Nigeria, Guinea-Bissau, Armenia, Venezuela, and Sri Lanka that do not appear in the BMR data. The fact that DD's rules for democratic breakdown mostly cover coups and are somewhat vague about how to handle the slower and more incremental processes related to democratic backsliding also helps to explain why it tends to be more inclusive when it comes to identifying democratic elections than the other indicators. The rows in Table 1 indicate the number of elections identified as democratic by 1, 2, 3, 4, or all 5 of our democracy indicators. The first row (1) therefore indicates the number of elections that are uniquely identified as democratic by each of our indicators; there were 179 such elections in total. The last row (5) indicates that there were 727 elections that were considered democratic by all five of our democracy indicators.

To give a sense of the temporal distribution of democratic elections,

Fig. 2 shows the number of legislative and presidential elections by decade. Two trends stand out. First, we observe a large increase in the number of democratic elections after the 1980s that resulted from the wave of democratic transitions that occurred in Eastern Europe, Latin America, Asia, and Africa. Second, we see an increase in the number of presidential elections relative to legislative elections in the same time period due to the growing share of semi-presidential, and to some extent presidential, democracies in the world.

3. Legislative elections

As Fig. 3 indicates, we continue to classify legislative electoral systems into three main families – majoritarian, proportional, and mixed – based on their electoral formula. Each of these electoral system families are then broken down into various more detailed sub-categories. For example, proportional systems are broken down into systems that use party lists and those that do not. List systems are then further broken down into those that use various types of quota-based systems and those
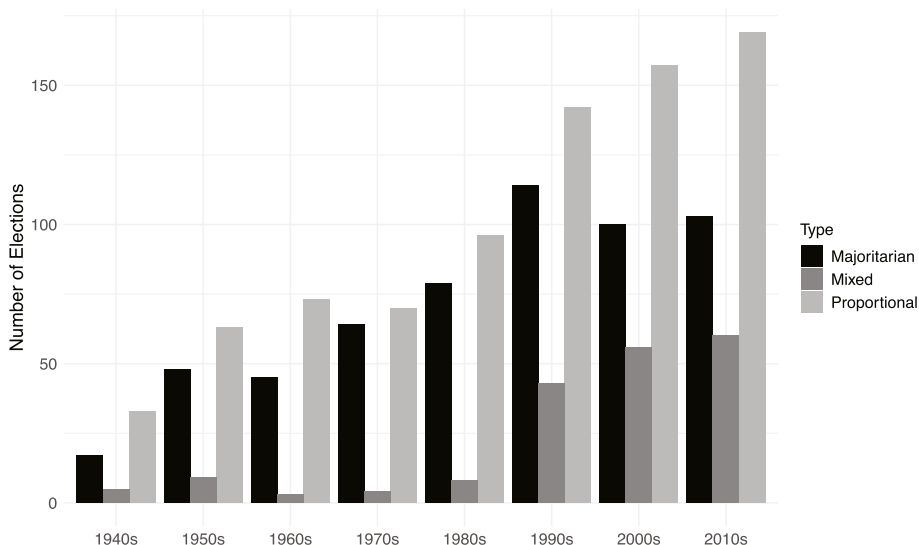
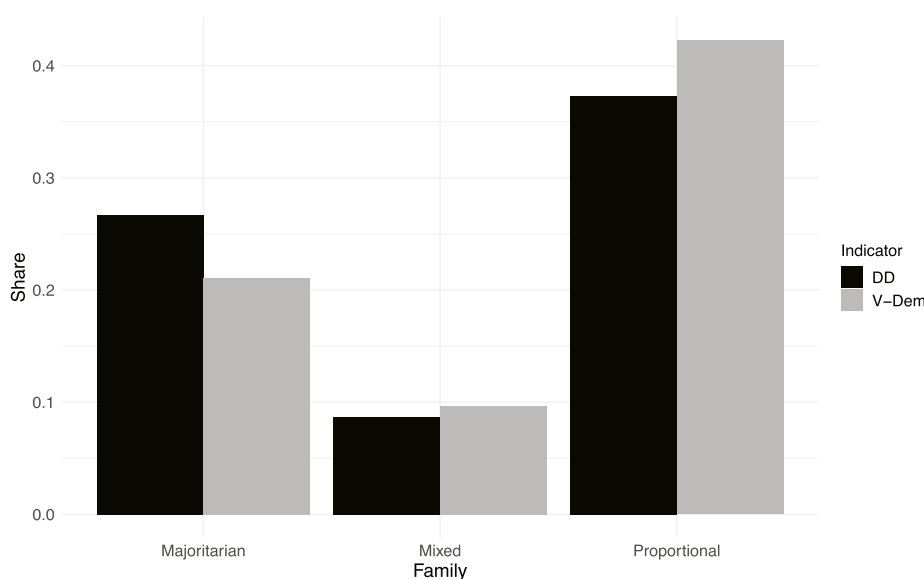**Fig. 4.** Legislative electoral system families by decade.

Fig. 5. Legislative electoral system families by two democracy indicators.

that use various types of divisor-based systems. Detailed information on all of these electoral systems, including how they work, can be found in Bormann and Golder (2013) and in our online codebook.[4] A new institutional feature that we include in the latest version of the DES dataset is a dichotomous variable indicating whether a country employs a 'majority bonus system'. On the whole, this is a relatively recent institutional innovation that only a handful of countries such as Greece, Italy, and San Marino have adopted in the 2000s and 2010s. This institutional innovation grants the largest party or coalition additional legislative seats to facilitate the government formation process and ensure government stability. Some majority bonus systems provide a fixed number of seats to the 'winning' party or coalition, while others add as many seats as necessary until a specified minimum number of seats is achieved.

In Fig. 4, we show the number of elections employing majoritarian,

proportional, and mixed electoral systems by decade. In addition to indicating how the number of democratic legislative elections has increased over time, Fig. 4 illustrates that the share of legislative elections employing majoritarian electoral rules has significantly declined while the share of those employing mixed electoral rules has increased. In the 1970s, majoritarian, proportional, and mixed electoral systems were employed in about 46.4%, 50.7%, and 2.9% of democratic elections. By the 2010s, though, majoritarian systems were employed in only 31% of elections, while mixed systems were used in 18.2% of them.

Investigating differences between the democracy indicators reveals that elections employing majoritarian electoral rules are 'underrepresented' if we rely on one of our more restrictive democracy indicators that incorporate substantive outcomes (FH, V-Dem, Polity$_5$) than if we rely on one of our two mostly procedural or minimalist indicators (BMR, DD). We graphically illustrate this in Fig. 5 by showing the proportion of elections coded as majoritarian, mixed, and proportional based on the DD and V-Dem democracy indicators. There is a difference of about 6% points or 100 elections when it comes to the share of elections employing majoritarian electoral rules across these two different
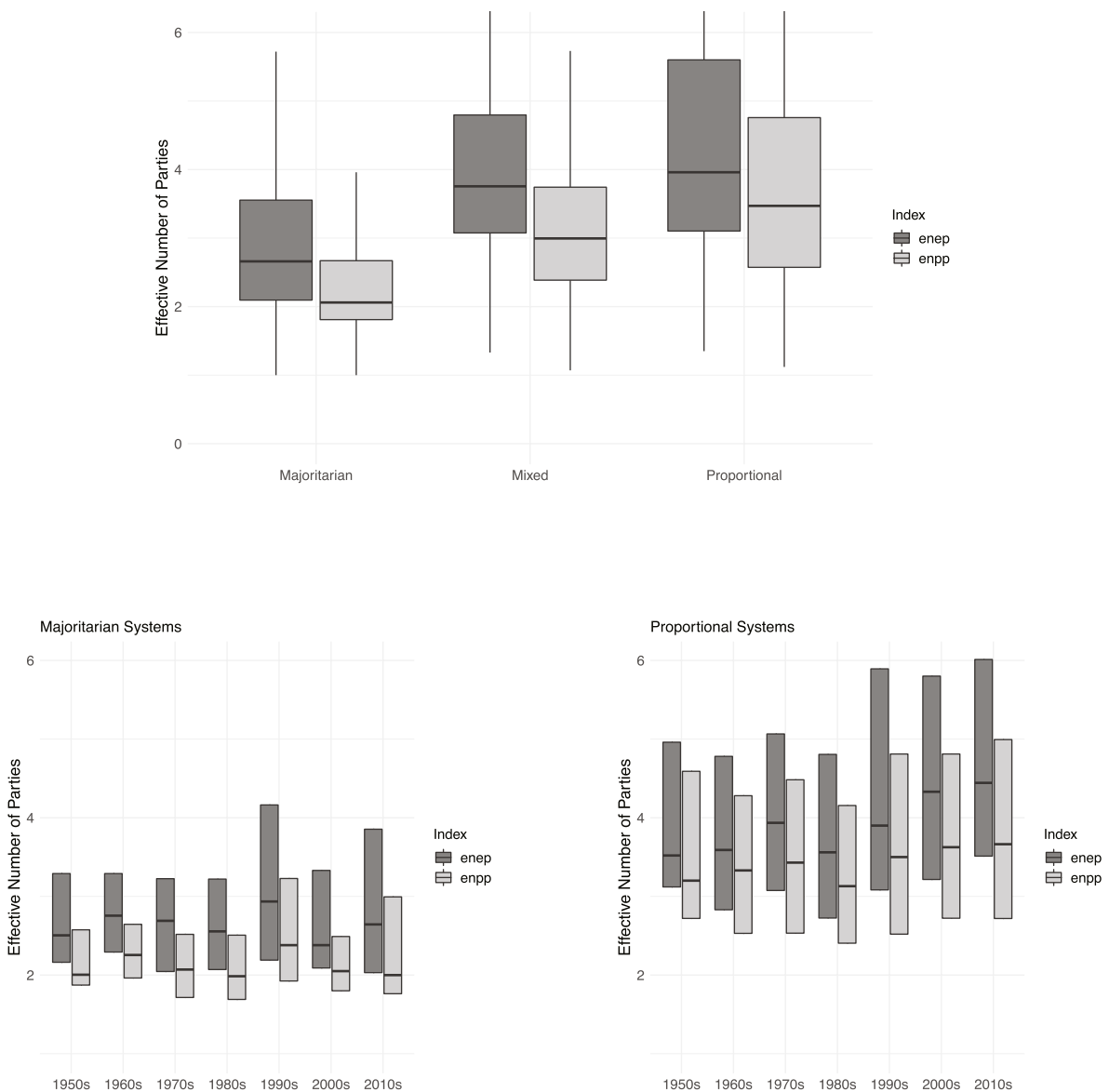
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[4] Our terminology and classification scheme are largely consistent with those found in Gallagher and Mitchell (2008), Farrell and Shugart (2012), and Herron et al. (2018).

Fig. 6. Party system size by electoral system family, 1946–2020.

democracy indicators. Following Lijphart's (1999) insight that consensus democracies are "kinder and gentler", it is perhaps not surprising that the three democracy indicators with a greater focus on substantive outcomes (FH, V-Dem, Polity$_5$) disqualify elections based on majoritarian electoral rules at a higher frequency.

4. Party system size

The new DES dataset continues to provide information about party system size. As has become "standard" in the literature (Herron et al., 2018, 3), we measure party system size in terms of the effective number of electoral and parliamentary parties.[5] The top panel in Fig. 6 provides

box and whisker plots showing party system size in terms of the effective number of electoral (enep) and parliamentary (enpp) parties across our three electoral system families. Although these plots ignore the important influence of social cleavages on party system size and they only apply to the national level, the data are largely consistent with Duverger's ([1954] 1963) theory (Clark and Golder, 2006). For example, we see that both indicators of party system size increase as we move from majoritarian systems to mixed systems to proportional systems and that the median effective number of parliamentary parties in majoritarian systems over time has been close to two. Consistent with the implications contained in Duverger's Law and his Hypothesis, the lengths of the boxes and whiskers indicate that party system size is much less variable in majoritarian systems than it is in proportional systems. The mechanical effect of electoral systems described by Duverger is also evident from the fact that the lengths of the boxes and whiskers shrink much more when we move from electoral to parliamentary parties in majoritarian systems than is the case when we do the same in proportional systems.

The two lower panels in Fig. 6 provide box plots (without the whiskers) showing how the effective number of electoral and parliamentary parties have varied over time in majoritarian (left) and

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[5] The effective number of parties has become standard because it usually agrees with our intuition about the number of 'serious' or 'relevant' parties in a system (Sartori, 1976; Taagepera and Shugart, 1989, 80). However, as a single number that is designed to parsimoniously capture a constellation of parties, scholars should be aware that it is not without its limits. It can be somewhat misleading, for example, when a single party wins more than half of the votes (Taagepera, 1999).
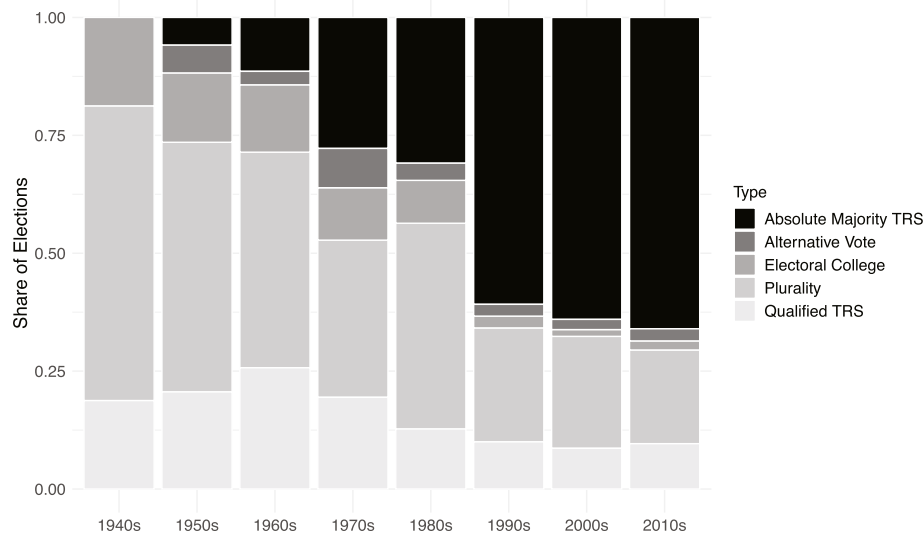
Fig. 7. Presidential electoral systems by decade.

proportional (right) electoral systems. The left panel indicates that median party system size in majoritarian electoral systems has not changed much over time. There is some evidence, though, that variation in party system size may have increased, at least if we look at the 1990s and 2010s. In contrast, the right panel clearly indicates that the level and variability of party system size have both increased in proportional systems over time, especially since the 1980s.[6] These differences are consistent with the implication of Duverger's theory that party system size will be much more responsive to changes in social pressure for new parties in proportional systems than in majoritarian ones (Clark and Golder, 2006).

5. Presidential elections

We classify presidential electoral systems into five main categories: *plurality*, *absolute majority two round system (TRS)*, *qualified two round system (TRS)*, *alternative vote*, and *electoral college*. Detailed information on these electoral systems, including how they work, can be found in Bormann and Golder (2013) and our online codebook. In Fig. 7, we show how the proportion of presidential elections employing these different electoral systems varies over time. The most notable change is the shift towards absolute majority systems for electing presidents. While absolute majority systems were employed in just 6% of presidential elections in the 1950s, they were used in 66% of elections in the 2010s.

Mirroring the case with legislative elections, a comparison across our different democracy indicators reveals that presidential elections employing plurality electoral rules are 'underrepresented' relative to those employing the more permissive absolute majority system when we rely on one of our more restrictive democracy indicators that incorporate substantive outcomes (FH, V-Dem, $Polity_5$) rather than one of our two mostly procedural or minimalist indicators (BMR, DD). On average, 30% of the presidential elections identified with BMR and DD employ plurality rules and 48% employ an absolute majority system. In contrast, the corresponding percentages are about 23% (plurality) and 55% (absolute majority) with the more substantively-inclined FH, V-Dem, and $Polity_5$.

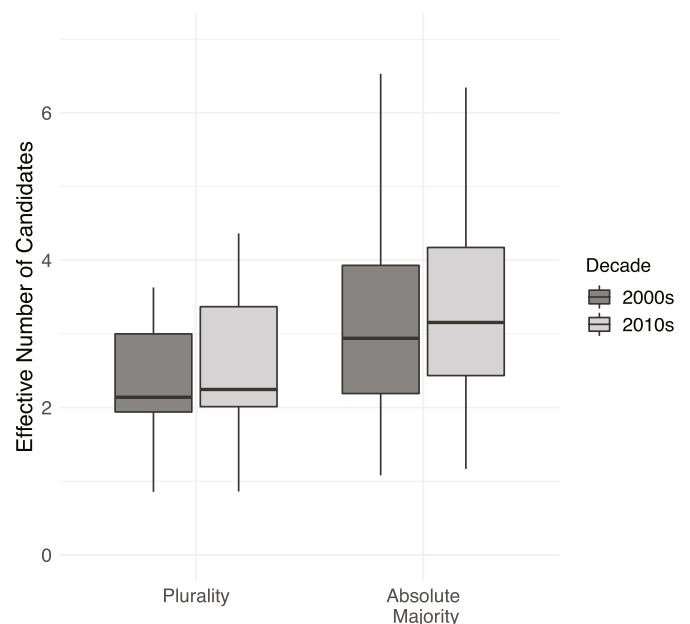In Fig. 8, we provide box and whisker plots showing the effective

Fig. 8. The effective number of presidential candidates in plurality and absolute majority systems in the 2000s and 2010s.

number of presidential candidates in plurality and absolute majority systems during the 2000s and 2010s. In line with Duverger's ([1954] 1963) theory (Clark and Golder, 2006), the median number of candidates is close to 2 and lower in plurality rule systems than in absolute majority ones (Cox, 1997; Golder, 2006). As expected, there is also less variability in the number of presidential candidates in plurality rule systems. There is some evidence in Fig. 8 that the number of presidential candidates in both types of system may have increased slightly over time.

6. Conclusion

In this short research note, we have described an update and extension of Bormann and Golder's (2013) *Democratic Electoral Systems* dataset. We have also presented a brief overview of the data. We hope that the new dataset will be of use to scholars interested in the causes and consequences of electoral and party systems broadly defined.

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[6] The emergence of Green parties along the GAL-TAN (Green-Alternative-Libertarian vs Traditional-Authoritarian-Nationalist) dimension of party competition in the 1980s and of right-wing populist parties along a globalist-nationalist cleavage after the financial crisis in 2008 fits the trends we observe in Fig. 6.

Data availability

Data will be made available on request.

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