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Revolutionary Constitutions: are they revolutionary in terms of constitutional design?

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Abstract
We use comparative constitutions project (CCP) data to explore whether Constitutions that follow revolutions are designed differently. We employ matching methods using 36 treatments (revolutionary Constitutions) and 162 control units (new Constitutional adoptions without a revolution). We find some evidence that revolutionary Constitutions are less rigid (i.e., their procedural barriers to amendment are weaker). Otherwise, revolutionary Constitutions seem similar to non-revolutionary ones. However, we do find strong evidence that revolutionary Constitutions are associated with a greater likelihood of *ex post* democracy. The results (less rigid, higher likelihood of democracy) hold for those not associated with ending colonial rule or the fall of the USSR. The greater *ex post* democracy result is reported for various democracy measures.

Keywords Revolutions · Constitutions · Political economy · Matching methods · Democracy

JEL Classification P00 · P48 · K00 · K40

1 Introduction

Revolutions are episodes of regime change during which a society's principal institutions are overthrown and replaced. They are characterized by "a mass siege of an established government by its own population with the aim of displacing the incumbent regime and

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substantially alerting the political or social order" (Beissinger, 2022, p. 3). Unlike coups or other types of (at least potentially) violent regime change, revolutions are typically conceived of as a "bottom-up" phenomena (Skocpol, 1979; Lachapelle et al., 2020): for example, "a mass siege of an established government by its own population with the aim of displacing the incumbent regime and substantially altering the political or social order" (Beissinger, 2022).[1]

Revolutions are often followed by a "constitutional moment," and the promulgation of a new Constitution (Arban & Samararatne, 2022).[2] In this regard Ackerman (1991, p. 206) emphasizes that a "Constitution is a natural culmination of a successful revolution." Scholars have sought to explore the nature of post-revolutionary Constitutional change (e.g., Ackerman, 2015, 2019; Albert, 2020; Gardbaum, 2017). However, their explorations have not systematically drawn upon the Comparative Constitutions Project (CCP; Elkins et al., 2009), which provides data on nearly every Constitutional text in the world. Employing the CCP data can contribute to a more rigorous study of how revolutions contribute to Constitutional and otherwise political change.

In this paper, we combine CCP data with the Beissinger (2022) "Revolutionary Episodes Dataset." We identify 36 episodes occurring between 1961 and 2011 where a revolutionary Constitution can be compared to its immediate predecessor. By employing matching methods (Rosenbuam and Rubin, 1983) we draw on up to 162 other cases of non-revolutionary Constitutional adoptions to create plausible counterfactuals.[3]

We estimate whether revolutions lead to predictably different types of constitutional design. In terms of outcomes, we consider the change in (1) overall constitutional length; also measures of the "substantive" and/or "aspirational" nature of revolutionary Constitutions: (2) relative preamble length, (3) portion of the text devoted to rights, and (4) mentions of democracy and/or democratic values. We are also interested in efforts to entrench revolutionary Constitution design. As such, we consider (5) a measure of procedural rigidity that is built into the amendment process.

Finally, though not an aspect of Constitutional design per se, we ask whether or not revolutionary Constitutions are associated with (6) de facto increases in democracy. If they do not, this might be true despite the Constitution paying greater lip service to democracy (measure (4) above). Alternatively, revolutionary Constitutions may promote greater democracy despite no greater codification of the concept. We use the country-level democracy scores from Bjørnskov and Rode (2020) to measure the de facto extent of democracy. (As a robustness check, we also consider alternative measures from the Varieties of Democracy (V-Dem) database.)

When we compare the 36 revolutionary Constitutions (alluded to above; see Table 1) to their predecessors, we see that they tend to have about the same rigidity (an average index value of 0.652 versus 0.638, out of a possible score of 1.00)[4]; they are significantly longer on average (17,528 versus 10,102 words) but have about the same percentages of

[1] The quote comes from the online "DATA DESCRIPTION" of Beissinger's "Revolutionary Episodes Dataset" (Revolutionary episodes dataset_v_1.0.zip (dropbox.com)), which we use in this paper.

[2] We will use the "big-C" form of "Constitution" do denote a *de jure* (written; codified) form (as opposed to a purely de facto constitution. The little-c-vs.-big-C distinction is utilized in political science, constitutional law, as well as economics (e.g., Brennan & Pardo 1991, Harris 1993, Michelman 1998, Elkins and Ginsberg 2021).

[3] Matching methods have been used in empirical constitutional political economy previously by Callais and Young (2021, 2022).

[4] The CCP index for rigidity will be described below in Sect. 3.

the overall text devoted to preambles (2.7% versus 2.6%) and substantive rights (13.4% versus 12.9%); revolutionary Constitutions also mention democracy and democratic values about as often as their predecessors (0.430 versus 0.454 per 1000 words). Despite the latter fact, revolutionary Constitutions are associated with a much higher democracy score than their predecessors (0.528 versus 0.139).

All of the above is based on comparisons of unconditional means. Drawing causal inferences from such comparisons is fraught with difficulties.[5] By employing matching methods, we hope to gain insight into whether revolutions actually lead to differences in Constitutional design.

This paper is structured as follows. In Sect. 2 we state in advance the dimensions of Constitutional design that our empirical analysis will focus on. In that section we also explain why those dimensions are of interest to political economists. In Sect. 3 we discuss the literature on revolutions and formulate testable hypotheses regarding revolutionary Constitutions. We elaborate on matching methods in Sect. 4 and describe the data in Sect. 5. Benchmark results are presented and discussed in Sect. 6; the same for robustness checks in Sects. 7 and 8. Our concluding remarks are contained in Sect. 9.

2 Constitutional design and political economy

There are many quantifiable dimensions along which we can consider Constitutional design. In this paper we focus on five in particular: (1) *overall length*, (2) *preamble length*, (3) *text devoted to substantive rights*, (4) *references to democracy*, and (5) *rigidity*. We choose these five dimensions to focus on based on their relevance to political economy.

To provide a backdrop for the discussion, it will be useful to understand generally how a Constitution can effectively provide a "higher law" – i.e., the meta-institutional framework within which political agents operate.[6] This is not a trivial point. A society's political agents provide governance to its individuals. Those political agents not only produce policies and institutions, but also provide for their enforcement. Alternatively, a Constitution purports to govern the governance providers. Lacking a third-party enforcer, the higher law must somehow be self-enforcing (de Lara et al., 2008; Leeson, 2011; Mittal & Weingast, 2011; Ordeshook, 1992; Young, 2019).

A Constitution can bootstrap its own enforcement by functioning as a coordination device (Hadfield & Weingast, 2014; Hardin, 1989; Ordeshook, 1992; Weingast, 1997). By codifying constraints and prescriptions, it can provide "a focal solution […] so that citizens gain the ability to act in concert and police their government" (Weingast, 2005, p. 105). Citizens face a "dilemma of collective action" that is "amplified […] by the fact that citizens first need to agree that the government is indeed transgressing the [higher law]" (Guttman et al. 2021). A Constitution codifies the higher law in a shared document, facilitating them coming to such an agreement. Furthermore, a Constitution can also serve to

[5] As simple example, consider the fact that revolutionary Constitutions are, on average, longer than their predecessors. Country-level Constitutions have, on average, been becoming longer over time (Versteeg and Zackin). Since revolutionary Constitutions are being compared to those that came before them, the difference in unconditional means may simply reflect that secular trend.

[6] Furthermore, the vast majority of countries have enacted a constitution. At its most basic level, they spend time drafting and changing them, presumably because they view them as valuable in some capacity.

Table 1 Summary statistics (treated units: revolutionary constitutions vs. their predecessors)

Variable	Obs	Mean	SD	Min	Max
Panel a: previous constitutions					
Rigidity (Prev. Constit.)	16	0.638	0.386	0.002	1.000
Length (Prev. Constit.)	21	10,102.95	5062.95	3243	22,389
Preamble (Prev. Constit.)	21	0.026	0.030	0	0.116
Rights Section (Prev. Constit.)	21	0.129	0.109	0	0.464
Mentions of Democ. (Prev. Constit.)	21	0.454	0.522	0	2.172
Democracy Scores (Prev. Constit.)	36	0.139	0.351	0	1
Panel b: revolutionary constitutions					
Rigidity (New Constit.)	16	0.652	0.403	0.0004	1.000
Length (new constit.)	21	17,528.71	1311.69	3954	59,318
Preamble (new constit.)	21	0.027	0.046	0	0.213
Rights Section (new constit.)	21	0.134	0.075	0	0.268
Mentions of Democ. (New Constit.)	21	0.430	0.366	0.140	1.733
Democracy scores (New Constit.)	36	0.528	0.506	0	1

coordinate governance providers around its provisions, facilitating their policing of one another (Young, 2019, 2021).

2.1 Overall length

With the above in mind, the overall length of a Constitution may be a determinant of whether it is an effective coordination device. As Guttman et al. (2021) note: "To attain agreement on the illegitimacy of government actions, the content of the [C]onstitution needs to be as easily and unambiguously comprehensible as possible." Only then will it provide a meaningful focal point. In this context, *easily* suggests *low cost*. Consider the US Constitution (ratified 1789). Including the Bill of Rights (ratified 1791), the document totaled 5,195 words.[7] For perspective, that is maybe 17 or 18 pages of double-spaced text: something digestible by an educated citizenry to then coordinate around. Now compare that to India's Constitution today: 146,385 words (equivalent to over 480 double-spaced pages). It is arguably unrealistic to expect citizens to have shared expectations of one another's knowledgeability of such a long document.

Another reason that Constitutional length is of interest involves claims by Tsebelis and Nardi (2016) and Tsebelis (2017) that greater length is associated with corruption and therefore lower incomes. Causality can run either way. On the one hand, political agents may attempt to capture the Constitution, pressuring drafters into including specific provisions that facilitate their efforts at rent-seeking. The resulting additional length then causes greater corruption. On the other hand, Constitutional drafters in a corrupt society may feel the need to include a large number

[7] Even today—and 17 amendments later—the US Constitution is only 7,591 words.

of detailed provisions aimed at disciplining their political agents.[8] Corruption then causes the greater length.[9]

2.2 Preamble length

As in a Constitution's overall length, the length of its preamble may be a determinant of its effectiveness as a coordination device. A preamble can serve to define the aspirations of a country, embodying its values (Frosini, 2012, Voermans et al., 2017); it can provide a "mission statement" of "core values and commitments" (King, 2013, p. 73). Such a mission statement serves to legitimize a country's values and commitments with the citizenry. Furthermore, many countries consider their preambles to have binding legal force in judicial review (Orgad, 2010; Forsini, 2012).

The cross-country variation in Constitutional preambles is large. In terms of words, at one extreme are countries such as Iran (3,073), Papua New Guinea (2,108), and China (1,071); on the other extreme there are countries such as Greece (11) and Latvia (15).[10]

2.3 Text devoted to substantive rights

To the extent that a Constitution binds, its provisions regarding substantive rights are of clear interest to political economists. For example, basic provisions for property rights – and constraints against government encroachment upon them – can serve to decrease transaction costs and facilitate the creation of wealth (e.g., Demsetz, 1967; Barzel, 1989; North, 1990).

Alternatively, provisions for positive rights may create collective obligations that political agents have neither the incentives nor information to enforce; furthermore, those obligations can only be enforced at the cost of impairing private property rights to some degree (Hayek, 1960). Also, Constitutional positive rights increase the stakes of ordinary politics, creating rent-seeking games that channel resources away from productive uses (Ginsburg, 2010b; Przeworski, 1991; Weingast, 1997). A positive right (e.g., to health care) creates questions of, on the one hand, who ends up receiving government services and, on the other, who the government contracts with to provide those services.[11]

[8] In a related argument, Bjørnskov and Voigt (2014) argue that societies with lower social trust are likely to insist on Constitutions that cover a larger number of contingencies. They report evidence cross-country evidence consistent with their hypothesis.

[9] Tsebelis and Nardi (2016) and Tsebelis (2017) present cross-country evidence supporting their hypothesized correlations. However, Bologna Pavlik et al. (2023) employ synthetic control methods to cases where countries adopted new Constitutions that were significantly longer than their predecessors. They finding no clear evidence that causation runs from greater length to greater corruption.

[10] And there is a sizeable minority (just under 20 percent) of cases where the Constitution has no preamble (Elkins and Ginsburg 2021, p. 333). Ginsburg (2010a, p. 71) notes that "socialist countries tend to devote more attention to the preamble than to the description of government organs or the promulgation of rights: of the fifteen constitutions in our sample that have preambles of more than 1000 words, five are socialist and another (Iran) is a highly ideological constitution".

[11] The empirical literature on Constitutional rights vis-à-vis economic and policy outcomes is scant. Early on, de Vanssay and Spindler (1994) consider various negative and positive ("social") rights in a cross-section of 100 countries. The only statistical significant correlation with income-per capita is for a "Bill of Rights" dummy, and it is negative. Ben-Bassat and Dahan (2008) report that the extent of social rights does not significantly correlate with public policy. Relatedly, Chilton and Versteeg (2017) report that rights to health care and education are not significantly related to government spending in those areas.

Our prior is that a greater amount of text devoted to substantive rights indicates a greater emphasis on various positive rights (e.g., rights to employment, health care, welfare and retirement) relative to (negative) property rights. This is not necessarily true – e.g., one country might use five words to say "government will protect property rights" while another might use many more words to ultimately say the same thing – but potential positive rights are legion relative to negative ones. As such, greater text devoted to rights is likely to indicate more enumerated positive rights.

2.4 References to democracy

As will be discussed below in Sect. 3, there is reason to think that democracy will be invoked in revolutionary Constitutions. And the extent of democracy in different societies has been of great interest to political economists.

The prior had long been that effective democracy facilitated economic growth. A classic paper by Barro (1996) presented evidence that, instead, it was rule of law and economic freedom that mattered; democracy just tended to be associated with them. That view has been controversial and the large number of subsequent studies have not settled on a consensus view. (See the meta-analyses of Doucouliagos and Ulubasoglu (2008) and Colagrossi et al. (2020) and the reviewed studies therein.) But the literature remains very active, including the influential contribution by Acemoglu et al. (2019) who present evidence that democratizations lead to large long-run increases in GDP per capita.

While democracy and the wealth of nations is still an open question, it clearly remains one of great interest to scholars. And we are interested to know whether revolutionary Constitutions place a greater emphasis on democracy than their non-revolutionary counterparts. Furthermore, we explore whether revolutionary Constitutions are associated with greater subsequent de facto democracy.

2.5 Rigidity

Constitutions, in large part, aim to solve an agency problem. The governed have good reasons to fear that the incentives of their political agents are not aligned with their own. There are different Constitutional design solutions to this problem, two of which Versteeg and Zackin (2016) label the *entrenched/spare* model and its *unentrenched/specific* alternative. An entrenched/spare Constitution consists of relatively few, broadly-conceived provisions that are durable over time. Durability is designed into the Constitution by rigid amendment procedures (e.g., supermajority requirements; multiple veto players). Alternatively, an unentrenched/specific Constitution contains numerous provisions that are detailed and specific; and the expectation is that they will be frequently amended over time.[12] In the unentrenched/specific case, the Constitutional design lacks rigid amendment procedures.

The two models each offer a distinct solution to the agency problem. In the entrenched/spare case, the aim is to constrain political agents to act in the interests of the governed, while making sure that special interests cannot easily amend the Constitution to the contrary (Aghion & Bolton, 2003; Buchanan & Tullock, 1962; Ginsburg & Posner, 2010; Persson et al., 1997). Alternatively, an unentrenched/specific Constitution gives political

[12] See also Tarabar and Young (2021, Sect. 2) for a comparative discussion of these two models of Constitutional design.

agents numerous, specific directives; and then allows the governed to undertake "ongoing constitutional micromanagement" by frequently amending those directives (Versteeg & Zackin, 2016; quote from p. 658).

While the entrenched/spare model emphasizes procedural rigidity as protection against Constitutional capture, it can also solve time consistency problems by facilitating credible commitments by governance providers (Elster, 1979; Holmes, 1995; Kydland & Prescott, 1977; Schelling, 1984). Such commitments are less likely to be reneged on through the amendment process. Relatedly, greater rigidity forces both the citizenry and its governance providers to deliberate over time and political space prior to any amendment. This a "cool off" period before enacting any Constitutional change (Hayek, 1960; Holmes, 1995).[13]

3 Revolutions and constitutional design

To explore revolutionary constitutionalism, we must first be clear about what we have in mind by a *revolution*. In the later twentieth century, scholars distinguished between two types of revolutions: an elite revolution "from above" (Trimberger, 1972) versus a popular revolution "from below" (Skocpol, 1979).[14] While there is no definitive conceptualization of a revolution, the latter is more prevalent.[15] We will embrace that conceptualization in this paper. In particular, we use Beissinger's (2022) data which codes based on the following: "a revolutionary episode is defined as *a mass siege of an established government by its own population with the aim of displacing the incumbent regime and substantially altering the political or social order*."[16]

Scholars will continue to debate exactly what is meant – or simply what they, in particular, mean – by a revolution. We, *qua* economists, can contribute little to that debate. Instead, we are content to (1) be clear about the Beissinger conceptualization, (2) note that it is broadly consistent with what most scholars settle on, and (3) explicitly limit ourselves to commenting on Constitutional design associated with revolutions conceived as such.[17]

Revolutions, as conceptualized above, are "bottom-up" phenomena: there is a groundswell from the citizens – most often led/organized by certain political interests – that

[13] There are few empirical studies of Constitutional rigidity in relation to economic outcomes. Callais and Young (2022) report some evidence linking greater rigidity to lower economic growth across countries. Alternatively, Callais and Young (2021) report some evidence of a negative link between rigidity and different areas of economic freedom (such as a stricter regulatory environment and worsening property rights protections); economic freedom is itself associated with higher incomes and growth: see Hall and Lawson 2014. Speaking to credible commitments, Dove and Young (2019) study nineteenth century US states and find that greater rigidity in their Constitutions was associated with less likelihood of default on public debt.

[14] Vahabi et al. (2020) given an excellent overview of the conceptualizations of "revolution" by different social scientists over time. Relative to the distinction emphasized here, Samuel Huntington (1968) made a very different one: "Western" versus "Eastern." In the former case (e.g., France in 1789; Russia in 1917), an absolute monarchy rooted in traditional society is exposed and overthrown during a crisis precipitated by modernizing forces; in the latter case (e.g., China in 1949; Vietnam in 1945), a modernizing regime—such as a dictatorship or colonial government—is overthrown. (Huntington associates greater and more sustained violence with Eastern-type revolutions.).

[15] For example, Ackerman (2015, 2019) defines revolutionary constitutionalism in terms of "revolutionary outsiders" who drive subsequent Constitution-making; as opposed to "establishment insiders" or those who are otherwise "political and social elites.".

[16] From the Beissinger codebook, p. 5.: https://www.dropbox.com/s/7zutziehohxn4g1/Revolutionary%20episodes%20dataset_v_1.0.zip?dl=0&file_subpath=%2FData+description.pdf.

[17] We will provide details on the coding of Beissinger's dataset in relation to this conceptualization.

attacks and overthrows the established regime. Revolutions, as such, are often associated with a "constitutional moment" (Arban & Samararatne, 2022). In the contemporary era, it is almost given that revolutionaries will seek to establish a new Constitution for their country.[18]

Revolutions can be successes or failures, as can constitutional moments. This assessment can be applied to, e.g., the US versus France in the late eighteenth century (Arendt, 1963). Both the American and French revolutions were successful in displacing the incumbent regime.[19] However, only in the American case was a constitutional moment with an enduring document soon forthcoming. That being said, if we focus on successful revolutions in the contemporary era, again, they are almost always associated with a new Constitution. The question posed in this paper: How do those documents differ from the ones that they replace?

Constitutions codify beliefs, norms, and conventions that the drafters hope will be meaningful to the citizenry. Generally, the aim is to coordinate citizens around those beliefs, norms, and conventions (Dove & Young, 2021; Hadfield & Weingast, 2014; Hardin, 1989; Ordeshook, 1992; Weingast, 1997; Young, 2021). If those beliefs, norms, and conventions are a feasible coordination equilibrium, then codification provides a focal solution to citizens collectively policing their government, and also political agents within the government policing themselves. Constitutions provide a reference point around which a society's citizens and political agents can coordinate. Noting this role of Constitutions is critically important because, otherwise, why would anyone take what James Maddison referred to as a "parchment barrier" seriously.[20]

Revolutionary drafters of Constitutions can benefit from taking the coordination model seriously. They need to, after a successful revolution, draft a document that appeals to the mass of citizenry that supported the effort. In particular, a revolutionary Constitution can serve to legitimize the revolutionary effort (Ackerman, 2019). As such, there are a number of testable hypotheses that we can offer for the revolutionary Constitutions versus their predecessors.

Revolutionary drafters will aim to codify their revolutionary ideals. This will include both broad themes as well as more specific expectations of the citizenry. Most generally, revolutionary leadership:

> enters [a] constituent assembly with price in the great sacrifices their followers have made for the common good; [...] they insist that it is their high obligation to constitutionalize the principles motivating their past liberation struggle in the name of the People (Ackerman, 2019, p. 40).

This leads us to the following hypothesis.

[18] Up through the eighteenth century, a written Constitution was by no means a *sine qua non* for a nation state. (Of those that came into existence before the nineteenth century, half of them went over 300 years without a Constitutional document.) That has decidedly changed: 85 percent of nation states that have formed since had a Constitution by their second year of existence; nearly 95 percent by their fifth year (Elkins et al., 2009, pp. 41–43). *De jure*/written Constitutions are now (by very far) the rule.

[19] In the case of France, this was at very least true for over two decades (or more, depending on whether one views the 1814 Bourbon Restoration as a true return of the incumbent regime, which is shaky given the constitutional nature of that monarchy).

[20] *Federalist* 48. See Hardin (1999) for views on why the coordination model makes Constitutions mattering intelligible; also—less convincingly in the authors' views—why a "contract" view might also be compelling.

H1 Revolutionary Constitutions will, all else equal, be longer.

If Constitutional drafters feel the "high obligation" to codify the revolutionary principles of the "past liberation struggle" then, all else equal, we would expect this to result in a longer text.

Furthermore, since the obligation is to codify principles – rather than, say, structural and procedural aspects of government – we also put forth the related hypothesis.

H2 The preambles of revolutionary Constitutions will be, all else equal, relatively longer.

Preambles typically provide a historical backdrop for the document, along with the core values and principles of the constituted nation. The latter include claims regarding the source of sovereignty (e.g., the parliament or "the people"), the goals which motivate the society (e.g., promoting human rights), and nationalistic claims (Orgad, 2010, pp. 715–718). Revolutionary drafters are likely to feel the need to emphasize the above elements, leading to a longer-than-typical preamble.

In addition to broad principles, revolutionary Constitutional drafters more specifically are concerned with "delivering what the people most want" (Gardbaum, 2017, p. 190). This leads us to the following two hypotheses.

H3 Revolutionary Constitutions will have more text devoted to substantive rights.

H4 Revolutionary Constitutions will more often mention "democracy" (and its variants).

Revolutionary drafters likely recognize that citizen support for their efforts was based on expectations of rights delivered. More generally, citizenry support for a revolution is most often based on "demands for democracy" (Gardbaum, 2017, p. 190). Democracy is an ambiguous term, but in the most general sense (of the citizenry having input into governance) it is ubiquitous in terms of revolutionary demands.

In relation to **H4** above, we are interested in knowing whether a greater *de jure* emphasis on democracy translates into de facto practice. This leads us to hypothesize:

H5 A society will become more democratic following a revolutionary Constitution.

As a measure of the de facto extent of democracy, we will use country-level democracy scores Bjørnskov and Rode's (2020) update and expansion of Cheibub et al.'s (2010) the Democracy-Dictatorship dataset.

The Bjørnskov and Rode/Cheibub scores are based on a "minimalist definition" of democracy: (i) whether elections are held, (ii) whether the elections make executive and legislative offices contestable, and (iii) if peaceful turnover of those offices occurs subsequently (Bjørnskov & Rode, 2020, p. 532). The primary focus is on contestation: to "distinguish regimes that allow some, even if limited, regularized competition among conflicting visions and interests from those in which some values or interests enjoy a monopoly buttressed by a threat or actual use of force" (Alvarez et al., 1996, p. 4). This can be opposed to measures working from a "maximalist definition" (e.g., those provided by Varieties of Democracy (V-Dem; Coppedge et al., 2021) that are based on a broader set of normatively desirable features of political, economic, and social life (e.g., wealth and/or income equality; rule of law; social rights).

In the context of studying revolutions, working from a "minimalist" definition seems desirable because the criteria are both more objective and more likely to be responsive to regime changes (Alvarez et al., 1996; Bjørnskov & Rode, 2020). However, in Sect. 8 we also explore **H5** using the V-Dem database. Specifically, we use their five "high-level" measures of democracy (electoral, liberal, participatory, deliberative, and egalitarian).[21]

Lastly, we consider whether revolutionary Constitutions will be more or less likely to entrench constraints and proscriptions. In other words, will revolutionary Constitutions tend to be more or less *rigid*. Having greater rigidity at the constitutional level (relative to that of ordinary politics) is often perceived to be desirable. Among the reasons why is that rigidity promotes rational deliberation and considered judgement; discouraging amendment that is based heat-of-the-moment political passions (Hayek, 1960; Holmes, 1995). However, Ackerman (2019, p. 40) argues:

> In the revolutionary scenario [...] [t]he movement leadership enters [a] constituent assembly with pride in the great sacrifices their followers have made for the common good; they do not view passionate commitment with fear and trembling[. ...]

Ackerman is speaking about the initial drafting – where it is the leadership's "high obligation to constitutionalize the principles [of the] liberation struggle"; but it also leads us to our last hypothesis.

H6 A revolutionary Constitution will be more (less) rigid than its predecessor.

While our hypotheses are tentative and subject to the data, only **H6** is stated with ambiguity in terms of "more" or "less." On the one hand, if revolutionary Constitutional drafters do not confront political passions with "fear and trembling," then they may be more likely to embrace the role of those passions in future amendments. On the other hand, if they link those passions uniquely to the post-revolutionary Constitutional moment, drafters may feel a "high obligation" to entrench the revolutionary principles.

4 Matching methods

Our goal is to estimate the effect of a revolution on Constitutional design. We have already reported some differences between revolutionary and non-revolutionary Constitutions in the raw data. However, determining whether the experience of revolution (treatment) causes differences in Constitutional design (outcomes) is a trickier matter. In particular, there are two important difficulties that we face.

First, there is the concern for selection bias. Countries that experience revolutions are not randomly selected. Rather, factors that contribute to a country's choice of constitutional design may also help to determine the likelihood of that treatment. The second concern is for endogeneity more generally. Tendencies in Constitutional design may determine the likelihood of revolution (rather than vice versa); and omitted variables are always a concern.

Our employment of matching methods can mitigate these concerns. These methods are designed, first and foremost, to mitigate selection bias (Rosenbaum & Rubin, 1983). In the

[21] More detail is provided in Sect. 8.

present context, revolutions are identified as treatments. Revolutions are singular events; they happen relatively infrequently and are large shocks to the political and social order of a country. Matching methods allow us to create a plausible counterfactual for each treated country. This is done by using another country or countries that are, prior to the treatment, as similar as possible in terms of a set of relevant covariates. This allows us to compare revolutionary Constitutional change to that which occurs in counterfactuals which were also likely to have experienced revolutions (but did not).[22] Based on all treatments, then, we can provide estimates of the average treatment effect on the treated (ATET).

Even if selection bias concerns are successfully mitigated, residual endogeneity concerns remain. These residual concerns are mitigated by focusing on *changes* in Constitutional design from the pre- to post-revolutionary periods. By focusing on these changes as treatment effects, we difference out any heterogeneity that is time-invariant. Many of the important determinants for a society's Constitutional design (e.g., the importance of international trade; the historical prevalence of civil war; the meaningful extent of democracy) tend to evolve slowly over time (importantly, outside of the experience of revolution). By focusing on change in Constitution design, we difference out those slowly-evolving determinants (similar to a panel regression model that includes fixed effects). Furthermore, out covariates include pre-revolution dimensions of constitutional design; this mitigates simultaneity concerns.[23]

4.1 Propensity score matching

We employ two different variants of matching in this paper. The first is *propensity score matching* (PSM). PSM involves estimating a logit model probability of treatment, conditional on a covariate set. Based on this estimation, each country in the sample is assigned a *propensity score* (the estimated probability of receiving the treatment). Each treated country is then matched to a non-treated country (or countries) that have a similar propensity score (or propensity scores).

In determining which non-treated country or countries to match to, we will refer to a treated country's "neighbors." A treated country's "first nearest neighbor" is the non-treated country with the closest propensity score. Likewise, the "second nearest neighbor" is that with the second closest propensity score (etc.). Based on PSM, we report results where treated countries are matched to (i) their nearest neighbor; (ii) the average of their two nearest neighbors, (iii) the average of their three nearest neighbors, and, finally, (iv) a counterfactual based on a normal kernel function (which employs all neighbors but gives larger weights to non-treated countries with closer propensity scores).

[22] More formally, we use a treatment indicator for which we assign a value of 1 (yes, a revolution occurred) or 0 (no, one did not). Then we assume there is an expectation for an outcome (the subsequent change in Constitutional design) conditional on the indicator being 1 (rather than 0), as well as other variables (the covariates).

[23] Differencing the dependent variable in regression analysis removes between-country variation and, therefore, utilizes within-country variation exclusively. However, in the present context, the within-country variation is what we want to focus on. Revolutions are singular events; cross-country comparison of revolutions versus non-revolution outcomes is sensible. Also matching methods and regression analysis are different in an important way. Matching methods compare treated and non-treated countries, conditional on pre-treatment covariate values: this takes into account within-country variation implicitly: matching is based on covariates during the pre-treatment period (including covariate variation over that time) *and then* comparing post-treatment changes.

4.2 Matching by Mahalanobis distance

An alternative to PSM is matching directly based covariate values. We employ Mahalanobis distance matching (MDM). The Mahalanobis distance metric is the Euclidian distance between covariate vector of one country and another. Using this metric, we report results where treated countries are matched to (i) their nearest neighbor; (ii) the average of their two nearest neighbors, and (iii) the average of their three nearest neighbors.

4.3 Choice of matching methods over alternatives

We conclude this section with a brief discussion of why matching methods are here preferred to available alternatives such as difference-in-differences (DID) and synthetic control method (SCM).

DID is a widely-employed approach to causal inference. However, it may be problematic in this context. Causal inference with DID is based on assuming parallel trends in treated and control groups. This assumption questionable in reference to the Constitutional design variables studied here. The outcomes are one-time changes occurring with the adoption of a new Constitution. (E.g., a country had a Constitution containing 7000 words; then it adopted a Constitution containing 8000 words.)

Furthermore, DID on its own does not address selection bias. DID compares the difference in the difference post-treatment between a group of treated units (revolutionary Constitutions) with a group of controls (all other new Constitutions). The implicit assumption is that each control unit is a reasonable counterfactual for any member of the treated group. This is likely inappropriate when considering Constitutional moments. Alternatively, while considering the largest possible (given data constraints) pool of potential controls, matching creates a unique counterfactual for each treated unit based specifically on a control unit or units that are similar in terms of other characteristics (similar income level, prior Constitutional design, etc.).[24]

Furthermore, there are certain advantages to matching methods over DID that are particularly relevant to the present context. First, DID assumes a linear functional form while matching is non-parametric. With the latter we simply estimate the ATET across treated countries. Second, matching allows for more sensitivity analysis via approaches different approaches to defining neighbors (PSM versus Mahalanobis) and various definitions of counterfactuals in terms of them (nearest neighbor; average of first two nearest neighbors; etc.). Third, adjusted standard errors can allow for proper estimates of the treatment effect, even when the number of treatments is small (Abadie and Imbens, 2008).

Another alternative to matching methods is SCM. This is a quasi-experimental methodology that focuses on a particular case study. It employs data from a large sample of non-treated units to create a plausible counterfactual (a *synthetic*) against which to compare post-treatment outcomes over time. Again, SCM is problematic in the present context where outcomes are a one-time change in Constitutional design. (There is no change "over time" in the outcome). More importantly, a case-study methodology is inappropriate to our research question. We are interested in knowing if *revolutions* are associated with differences in subsequent Constitutional design. To do so, we need to analyze a sample of as many treatments as possible. Alternatively, when SCM is applied to a specific revolution in

[24] Notwithstanding the above, as a robustness check we do report DID results in Sect. 7 below.

a specific country, an estimated result may be caused by some factor uniquely associated to that case (e.g., the particular revolutionary leader) rather than revolutions per se.[25]

5 Data

The data used in this paper is divided into three categories: treatment, outcomes, and covariates. We want to examine the effect of a successful revolution on Constitutional design. While all data are described below, we note up front that the Constitutional design outcomes of interest are changes in (i) the rigidity of the Constitution (i.e., the extent to which the document entrenches its own provisions); (ii) overall length (number of words); (iii) length of the preamble; (iv) change in the portion of text devoted to rights; (v) how often democracy is mentioned. Furthermore, since democracy and revolution have been tightly associated with one another (e.g., Colon-Rios & Hutchinson, 2012; the papers in Albert, 2020), we also look at (vi) the change in de facto democracy.

5.1 Treatment variable: revolutions and constitutions

We are interested in the fact that revolution is often followed by the promulgation of a new Constitution. However, little is known about the nature of post-revolutionary Constitutional change. To provide more knowledge we need to first identify revolutionary episodes. We use the Beissinger (2022) "Revolutionary Episodes Dataset" to gain some insight.

As stated in Sect. 3 above, Beissinger (2022) defines a revolutionary episode as "*a mass siege of an established government by its own population with the aim of displacing the incumbent regime and substantially altering the political or social order*" (codebook, p. 5).[26] As conceived of by Beissinger, revolutions differ from (a) "military coups and foreign invasions […] in the large number of civilian […] actors involved; and from (b) electoral turnovers […] and political reform from above in the specifically extra-institutional siege of government that they entail" (codebook, p. 6). To identify revolutionary episodes, Beissinger and a team of research assistants started with information multiple encyclopedias and global datasets on conflicts and nonviolent resistance (both published and online) (codebook, pp. 11–12).[27] For each potential episode identified, a short narrative was composed and its appropriateness was discussed and debated at weekly meetings held by Beissinger and his team.

Based on the above processes, the Beissinger (2022) dataset has information on 345 revolutionary episodes during the 1900–2014 period. This information includes (i) the

[25] For example, Bologna Pavlik et al. (2023) employ SCM to five cases where a country adopted a substantially (50%) longer Constitution to see whether there is an effect on corruption. The results are mixed. One of the cases where a significant increase in corruption is reported is Venezuela in 1999. However, the SCM result is ultimately based on that particular case, it is difficult to distinguish between the effect of a longer Constitution and the sort of (Hugo) "Chavez effect" reported by Grier and Maynard (2016).

[26] Codebook available at: https://www.dropbox.com/s/7zutziehohxn4g1/Revolutionary%20episodes%20dataset_v_1.0.zip?dl=0&file_subpath=%2FData+description.pdf.

[27] These were supplemented by "135 other occasional sources (newspapers, websites, and online encyclopedias) and over eight hundred scholarly books and articles" to provide information on specific episodes (codebook, p. 12).

start date and conclusion date (or whether its ongoing)[28] of a revolution and (ii) whether a revolution was successful or failed. In this paper, we focus on completed, successful revolutions.

We combine the Beissinger data with data from the Comparative Constitutions Project (CCP) (Elkins et al., 2009). The CCP provides data all national constitutions going back to 1789. We define a "treatment" as a new Constitution that is adopted within 5 years of the revolution's conclusion. (We refer to these as *revolutionary Constitutions*.) Given constraints regarding data for outcomes and covariates (see Sects. 5.2 and 5.3 below), we consider potential treatments during the 1950–2014 period. This results in 36 usable treatments, the earliest being from 1961 (Venezuela) and the latest being from 2011 (Egypt and Tunisia) (Table 2).[29] (In some specifications – as a robustness check – we will only use treatments where the Constitution is adopted in the same year that the revolution concluded. There are 14 such cases.)

There is wide variation across time and regions in our benchmark treatment set. There are 4 revolutionary Constitutions that occur in the 1960s, 8 in the 1970s and 1980s, 20 in the 1990s and 2000s, and 4 in the 2010s. Our control units (i.e., possible matches) are new Constitutions that were *not* associated with a successful revolution. After accounting for missing data, we are left with 162 usable control units.

5.2 Outcome variables

All but one of the outcome variables is the change in a measurable characteristic of a revolutionary Constitution relative to its predecessor. These measurable characteristics are drawn from the CCP database. They are (i) rigidity (difficulty of amendment), (ii) overall length, (iii) preamble length, (iv) text devoted to rights, and (v) mentions of democracy. Based on the latter, we also consider an additional outcome: the change in the country's (iv) Bjørnskov and Rode's (2020)/Cheibub et al. (2010) de facto democracy score.

For treated countries, the outcomes are changes in (i), (ii), (iii), (iv), (v), or (vi) for a revolutionary Constitution relative to its predecessor. For non-treated countries (potential matches), the outcomes are changes for a (non-revolutionary) new Constitution relative to its predecessor.

The measure of rigidity is based on CCP data and constructed by Ginsburg and Melton (2015). *Rigidity* here refers to the difficulty of amending a Constitution (which is also sometimes referred to as the degree of *entrenchment*). Ginsburg and Melton use data on the procedures for amending Constitutions, as well as the empirical amendment rates (i.e., the number of years that a Constitution is amended divided by its total years in effect). Ginsburg and Melton (2015) take amendment rates and regress them on a set of variables that code amendment procedures (e.g., thresholds for approval by the legislature; number and

[28] For example, the New People's Army Communist Revolution in the Philippines has been considered "ongoing" since 1969. As such, any constitutional change during this time period would not be considered a treatment since its success has yet to be determined. However, the Republic of Congo Civil War that started in 1997 and was considered "successful" by 1999 is coded as a possible treatment. (In this specific case, it is a treatment since a new constitution was put in place in 2001).

[29] The treatments in Table 1 are those that can, given other data constraints, be used in any single estimation. Only our measure of de facto democracy is based on all 36 of those treatments. (Each of our benchmark estimations on constitutional characteristics in Tables 5, 6, 7 below are based on a number of treatments between 16 and 21.).

type of required proposers) and other predictors of political reform. The rigidity measure is then a linear function of the procedural variables where the weights are the corresponding regression coefficients but normalized such that all Constitutions have values in the range of 0 to 1.[30]

The next four outcome variables (overall length; preamble length; portion of text devoted to rights; how often democracy is mentioned) are all based directly on the CCP data. A Constitution's overall length is measured by the number of words in the document. We log this value for both revolutionary Constitutions and their predecessors; then we take the difference between the former and the latter (approximating the percentage change in length). For preamble length, for each Constitution we take the number of words in the preamble and divide by overall length; then the difference between that number for the previous and new Constitution. Then for text devoted to rights, it is the same based on number of words in the rights section divided by overall length; and for mentions of democracy, the number of time the word "democracy" (or a variant of that word) occurs per 1000 overall words in the Constitution.

Finally, we consider the likelihood that a revolutionary Constitution is ultimately associated with a more democratic regime (regardless of whether the document mentions "democracy" more or less often). We use Bjørnskov and Rode's (2020) dataset, which is an update and expansion of the Democracy-Dictatorship data of Cheibub et al. (2010). They use six different measures in the democracy-dictatorship spectrum: (i) royal dictatorship, (ii) military dictatorship, (iii) civilian dictatorship, (iv) civilian dictatorship, (v) presidential democracy, (vi) mixed democracy, and (vii) parliamentary democracy. We re-code their measure as a "1" (democracy) and "0" (dictatorship), where presidential, mixed, and parliamentary democracies are coded as "1" and royal, military, and civilian dictatorships are coded as "0."

We consider the difference between a country's democracy score 5 years after it adopts a revolutionary Constitution and its score prior to the beginning of the revolution.[31] (For control units, it is simply a country's democracy score 5 years after adopting a new Constitution minus its pre-treatment score.) Since democracy scores are binary and either 0 or 1, the ATET can be interpreted as the increased (or decreased) likelihood of democracy that is associated with a revolutionary Constitution.

5.3 Covariates

With matching, covariates are chosen to correlate with the outcome and/or as determinants of the probability of receiving the treatment. Accounting for the correlates of an outcome is standard in all empirical methods. Alternatively, determinants of the treatment probability are fundamental to matching methods specifically.

In our baseline analysis, we use 7 covariates (asides from the pre-treatment value of the outcome variable). We include 6 indicators of the economic environment in a country. From the Penn World Tables (version 10.1, Feenstra et al., 2015), we include the level of

[30] Note that a Constitution's rigidity is not calculated based on its own amendment rate; rather, the amendment rates of all Constitutions in the sample are together used to estimate the weights placed on procedural variables.

[31] For control units, the pre-treatment score is the democracy score the year before the new Constitution. Note that if, after initial gains, there is democratic "backsliding" over the 5-year period, then a country is coded as having no change in its democracy score.

Table 2 List of treatments

Country	Year of revolution	Year of New constitution	Country	Year of revolution	Year of New constitution
Albania	1991	1991	Madagascar	1972	1973
Algeria	1962	1963	Madagascar	1991	1992
Bahrain	2000	2002	Madagascar	2009	2010
Bulgaria	1990	1991	Mali	1991	1992
Burundi	2005	2005	Namibia	1990	1990
Chad	1979	1982	Nepal	1990	1990
Chad	1996	1996	Philippines	1986	1987
Congo, Rep	1963	1963	Portugal	1975	1976
Congo, Rep	1999	2001	Romania	1989	1991
Czech Rep	1989	1993	Russia	1991	1993
Ecuador	1966	1967	Rwanda	1994	1995
Egypt	2011	2011	South Africa	1994	1994
Georgia	1993	1995	Sudan	1985	1985
Greece	1973	1974	Thailand	1973	1974
Iran	1979	1979	Thailand	1992	1997
Kyrgyzstan	2010	2010	Thailand	2008	2008
Latvia	1991	1991	Tunisia	2011	2011
Lithuania	1991	1992	Venezuela	1958	1961

GDP per capita (logged); also the investment, government, and export shares of GDP at the time of the new Constitution. We also include the pre-treatment five-year average of the annual inflation rate (GDP deflator) from the World Bank's World Development Indicators (WDI). Also from the WDI, we include, at the time of the new Constitution, the percent of a country's population that lives in an urban area.

A country's incidence of internal conflict will likely factor importantly into how Constitutional design plays out. As a covariate, then, we include a civil war measure from the Polity V database (Marshall & Gurr, 2020). This measure is coded as a 0 if there is no civil war incidence but can range from 1 (low magnitude) to 10 (high magnitude).

Finally, we include the constitutional pre-treatment values of the relevant outcome variable (level) as a covariate. For example, for estimations where the relevant outcome is the change in Constitutional length, we match based on, along with the other covariates described above, the length (logged) of the Constitution in the pre-treatment period. (For revolutionary Constitutions, this would be the logged length of the Constitution that directly preceded it.)

It would also be desirable to include additional measures of a country's pre-treatment political environment as covariates. However, doing so leads to notable decreases in the number of treatments and potential matches that we can employ. That being said, in some robustness tests, we include three more political measures. The first two of these are Freedom House's (2022) political rights and civil liberties measures. Both measures range from

1 through 7, with the lower values corresponding to greater rights and liberties.[32] Then the third measure is the regime durability measure from the Polity V database. This measure is defined as years passed since a regime change (which is defined as a 3-point or greater change in the Polity2 autocracy/democracy score over a three-year period). We use the value of this variable in the year of the new constitution for all three additional variables.

Summary statistics for all variables discussed above are reported in Table 3.

6 Results

Based on the benchmark treatment set (Table 2) we report estimates of average treatment effects on the treated (ATETs) based on both PSM and MDM for all of the outcomes of interest. (Regarding the PSM, the matching logit estimations are reported in Table 4. The coefficients are used to assign propensity scores to both treated and control countries: see Sect. 4.1 above.) Those results are contained in Tables 5, 6, 7.

For PSM estimations, we report on Chi-square covariate balance tests. The null hypotheses of these tests are that covariates are on average balanced between treated countries and their matches. If we reject the null, we have to discount the ATET estimates since this suggests the matched controls are not great counterfactuals. (This only occurs twice, in both cases, the ATET estimate is itself not statistically significant.)

We start with Table 5, which is based on examining changes in Constitutional rigidity and length. We report some evidence that revolutionary Constitutions are designed to be less rigid (entrenched). The statistically significant ATETs are only associated with the MDM estimations (though the PSM point estimates are all negative too). The MDM ATETs are associated with a 30% to 53% of a standard deviation decrease in rigidity.[33]

All rigidity ATET point estimates are contrary to what we gather from the raw data (Table 2). In terms of unconditional means, revolutionary Constitutions tend to be – if anything, and then very slightly – more rigid than their predecessors (0.652 versus 0.638). This comparison must be taken with a grain of salt: due to covariate data constraints, matching estimations are not based on all of the treatments listed in Table 2. (The rigidity estimations are a notable case: they are based on only 16 treatments, compared to 21 for most of the others.)

Recall that our hypothesis regarding Constitutional rigidity (**H6** from Sect. 3 above) is the ambiguous one in terms of the sign of the effect. The statistically significant ATETs for rigidity – and point estimates across the board – all support the idea that revolutionary Constitutional drafters are less fearful (more embracing of) the political passions that go along with a successful revolution, leading them to allow (via less entrenchment) the role of those passions in future Constitutional amendments.

Also in Table 5, we report results on the change in Constitutional length outcomes. There is no evidence that revolutionary Constitutions tend to be longer than their predecessors. While the point estimate is positive in all but one specification, there is no ATET that is statistically significant. All of the point estimates are modest. (The largest

[32] Since Freedom House data is only available from 1973 onward, including it in our baseline results would cut 23 years of potential treatments and matches. The Freedom House data can be downloaded at: https://freedomhouse.org/report/freedom-world.

[33] In making statements such as these, we are taking ATET estimates relative to the standard deviations reported for lagged outcome levels (Table 3; *Panel b*).

Table 3 Summary statistics

Variable	Obs	Mean	Std Dev	Min	Max
Panel a: outcome variables (changes)					
Rigidity (change)	98	0.028	0.191	−0.474	0.803
Length (% change)	183	0.289	0.643	−2.183	2.441
Preamble Perc. (change)	136	−0.004	0.050	−0.240	0.179
Rights section Perc. (Change)	143	0.006	0.062	−0.226	0.195
Mentions of Democ. Per 1000 (change)	168	−0.005	0.556	−2.879	2.546
Democracy scores (change)	185	0.216	0.496	−1	1
Panel b: lagged outcome variables (levels)					
Rigidity (Prev. Constit.)	116	0.686	0.357	0.000	1.000
Length (Logged, Prev. Constit.)	183	9.242	0.764	6.867	11.225
Preamble (Prev. Constit.)	154	0.031	0.044	0.000	0.255
Rights Section (Prev. Constit.)	154	0.148	0.074	0.000	0.464
Mentions of Democ. (Prev. Constit.)	171	0.495	0.500	0.000	3.330
Democracy Scores (Prev. Constit.)	185	0.184	0.388	0	1
Panel c: covariates					
Investment Share	198	0.163	0.096	0.002	0.538
Government spending share	198	0.203	0.107	0.033	0.639
Export shares	198	0.139	0.147	0.000	0.743
Inflation (5-year average)	198	79.479	382.337	−2.463	4604.250
Urban percentage	198	38.387	20.187	3.377	98.002
Civil war	198	0.303	1.080	0	6
GDP per capita (logged)	198	7.914	0.949	6.193	10.356
Civil liberties*	162	4.414	1.368	1	7
Political freedom*	162	4.636	1.786	1	7
Regime durability*	160	7.321	12.664	0	73

*Only included in the robustness test in Table 9

point estimate is 0.189 which would imply that a revolutionary Constitution is associated with an increase in length of less than 25% of a standard deviation; the smallest positive point estimate is only 0.080.)

Table 6 reports the results based on changes preamble length, and also the portion devoted of a Constitution devoted to rights. None of the ATET estimates are statistically significant. For preamble length, the point estimates are all negative, they are very small. (The largest is 0.009 which is just over 20% of a standard deviation.) The same is true for the portion of a Constitution devoted to rights.

Finally, we focus on if treatments are associated with greater mentions of democracy, and also changes in de facto democracy in Table 7. The ATETs for mentions of democracy vary in sign and are never statistically significant. For democratic institutions the point estimates are all positive and statistically significant for all but one specification (PSM: Nearest Neighbor). Recall that this variable is the change in a dummy variable, so the ATET is an estimate of the likelihood of becoming a democracy within five years post-treatment. The statistically significant ATET point estimates range from 0.198 to 0.287, suggesting that the treatment leads to a 19.8% to 28.7% greater chance

Table 4 Determinants of the probability of a revolutionary constitution

Variable	(1)	(2)	(3)	(4)	(5)	(6)
Rigidity	−0.105					
(Prev. Constit)	(0.817)					
Words		−0.327				
(Logged, Prev. Constit.)		(0.334)				
Preamble Section			−2.122			
(Percent, Prev. Constit.)			(6.864)			
Rights Section				−6.596*		
(Percent, Prev. Constit.)				(3.929)		
Democracy Words					−0.105	
(Per 1000 words, Prev. Constit.)					(0.545)	
Democracy Score						−0.751
(Prev. Constit.)						(0.575)
Investment Share	−0.757	−1.886	−1.673	−1.365	−1.339	−0.835
	(3.511)	(3.144)	(3.252)	(3.353)	(3.242)	(2.318)
Government Spending Share	1.128	0.430	1.631	2.420	0.953	0.468
	(2.744)	(2.378)	(2.669)	(2.542)	(2.375)	(1924)
Export Share	2.138	1.457	1.703	0.872	1.273	0.888
	(1.822)	(1.569)	(1.738)	(1.629)	(1.572)	(1.368)
Inflation (5-year average)	0.001	0.001	0.001	0.001*	0.001	0.001
	(0.001)	(0.001)	(0.0004)	(0.001)	(0.001)	(0.001)
Urban Percentage	−0.015	−0.012	−0.006	−0.014	−0.011	−0.019
	(0.026)	(0.019)	(0.021)	(0.020)	(0.020)	(0.016)
Civil War	0.106	0.176	0.276	0.137	0.177	0.146
	(0.241)	(0.195)	(0.220)	(0.201)	(0.194)	(0.173)
GDP per capita (logged)	0.611	0.575	0.403	0.559	0.532	0.824**
	(4.259)	(0.434)	(0.442)	(0.434)	(0.437)	(0.371)

of becoming democratic post-treatment. This is equal to about 51% to 74% of a standard deviation in the likelihood, which is not necessarily modest.

7 Robustness checks

In our baseline estimations we defined revolutionary Constitutions as those that occurred within five years of a revolution's conclusion. Given the amount of time that Constitutional conventions/drafting often take, we believe that this is a reasonable definition. However, as a robustness check we produced results based on only the treated units where the Constitution was adopted in the same year as the revolution's conclusion. This limits the number of treatments significantly; depending on the outcome variable, estimates are based on between 5 and 14 treatments. (Note that we do not drop any control units).

We report the findings of this robustness test in Table 8. A notable difference is that now all rigidity point estimates are *positive*; and one (MDM: NN3) is statistically significant. Overall length and preamble length estimates all remain statistically insignificant. For the change in the portion of a Constitution devoted to rights we now have

Table 5 Effects of a revolutionary constitution on rigidity and length

Matching method	Rigidity (change)	Cov. balance	Length (% change)	Cov. balance
PSM: nearest neighbor	−0.147	13.54*	−0.044	5.85
	(0.098)	(0.10)	(0.227)	(0.66)
PSM: nearest 2 neighbors	−0.111	3.88	0.152	2.55
	(0.095)	(0.87)	(0.215)	(0.96)
PSM: nearest 3 neighbors	−0.090	2.60	0.175	1.52
	(0.090)	(0.96)	(0.202)	(0.99)
PSM: normal kernel	−0.035	1.55	0.100	0.67
	(0.083)	(0.99)	(0.163)	(1.00)
MDM: NN1	−0.185*	–	0.080	–
	(0.097)	–	(0.165)	–
MDM: NN2	−0.106*	–	0.189	–
	(0.060)	–	(0.168)	–
MDM: NN3	−0.122*	–	0.169	–
	(0.067)	–	(0.150)	–

***, **, & * indicate significance at the .01, .05, and .10 levels, respectively. Bootstrapped standard errors are in parentheses using 200 replications for propensity score matching only. For Mahalanobis matching, Abadie-Imbens biased-adjusted standard errors are reported in parentheses. "Cov. Balance" columns report Chi-square square tests where the null is that covariates are on average balanced between treated countries and their matches

P-values for Chi-square tests are in parentheses. 16 treated units are considered for rigidity results; 21 treated units are considered for length of constitution results

one positive and large ATET estimate (1.454; MDM: NN1). This would suggest that a revolutionary Constitution is associated with a 13-fold increase in the rights portion (!). However, all PSM estimates are negative, very small, and statistically insignificant; and the remaining two MDM estimates are positive but very small (0.011 and 0.017) and statistically insignificant. Consistent with the benchmark results, there is no compelling evidence that revolutionary Constitutions tend to be – in part or in whole – longer than their predecessors.

Table 8 also includes results based on mentions of democracy and the actual (de facto) post-treatment change in democracy. The mentions of democracy results are oddly analogous to those associated with rigidity: all point estimates are negative except for one (MDM; NN1) which is positive, very large, and statistically significant. However, all of the negative estimates are statistically insignificant save for one (MDM: NN2), and that point estimate is also smaller by an order of magnitude than the MDM: NN1 estimate. There is, again, no compelling evidence that revolutionary Constitutional design is meaningfully different. Furthermore, there are no statistically significant estimates for actual post-treatment democracy scores. Focusing on the BR democracy scores, the point estimates are all positive but none are statistically significant.

When we re-run the estimations with additional political covariates (Table 9) there are no statistically significant estimates across the board. Including those additional covariates limits our treatments and potential matches meaningfully. (See Sect. 5 above.) Still, it is useful to know that this robustness check does not call into question an otherwise, largely null result.

Table 6 Effects of a revolutionary constitution on preamble and right sections

Matching method	Preamble (change)	Cov. balance	Rights section (change)	Cov. balance
PSM: nearest neighbor	−0.002	15.13*	0.007	3.85
	(0.017)	(0.06)	(0.025)	(0.87)
PSM: nearest 2 neighbors	−0.003	4.92	0.008	3.16
	(0.014)	(0.77)	(0.025)	(0.92)
PSM: nearest 3 neighbors	−0.003	5.75	0.006	3.11
	(0.013)	(0.68)	(0.024)	(0.93)
PSM: Normal Kernel	−0.002	1.77	0.008	2.15
	(0.009)	(0.99)	(0.020)	(0.98)
MDM: NN1	−0.004	–	−0.006	–
	(0.011)	–	(0.020)	–
MDM: NN2	−0.009	–	−0.006	–
	(0.011)	–	(0.019)	–
MDM: NN3	−0.003	–	−0.001	–
	(0.010)	–	(0.018)	–

***, **, & *indicate significance at the .01, .05, and .10 levels, respectively. Bootstrapped standard errors are in parentheses using 200 replications for propensity score matching only. For Mahalanobis matching, Abadie-Imbens biased-adjusted standard errors are reported in parentheses. "Cov. Balance" columns report Chi-square square tests where the null is that covariates are on average balanced between treated countries and their matches

P-values for Chi-square tests are in parentheses. 21 treatments are considered for both preamble and rights (as percentage of total constitution) results

We also report results based on not including treatments for revolutions associated with the fall of the Soviet Union and also independence from Western European imperial powers (Table 10). This, again, meaningfully limits the number of treatments to work with (between 12 and 25 rather than 16 and 36 for the benchmark estimations). However, for post-Soviet countries, starting in 1989, Constitution making may have been decidedly unique; the same may be true regarding post-colonial revolutions in the middle of the twentieth century – especially in Africa (Gardbaum, 2017). It makes sense, then, for us to check robustness to excluding these episodes. In that case, there are a couple of notable differences.

First, the rigidity point estimates are all negative and the MDM estimates are all statistically significant. This is consistent with the benchmark (Table 5) but the point estimates are notably larger in absolute value (associated with a between 94 and 125% of a standard deviation decrease in rigidity). The point estimates for the change in Constitutional length outcome are also notably larger and now one of them (MDM: NN3) is statistically significant: it implies that a revolutionary Constitution is associated with about 35% of a standard deviation increase in length.

There are no statistically significant estimates for changes in preamble length, the rights sections, or mentions of democracy. Regarding the latter, the point estimates are all very small and alternate in sign. However, five of the estimates for changes in de facto democracy scores are statistically significant (three are based on PSM; two on MDM; all point estimates are positive). These statistically significant estimates suggest a revolutionary

Table 7 Effects of a revolutionary constitution on mentions of democracy and BR democratic scores

Matching method	Mentions of Democ. (change)	Cov. balance	BR democracy scores (change)	Cov. balance
PSM: nearest neighbor	0.045	5.59	0.242	1.14
	(0.220)	(0.69)	(0.148)	(1.00)
PSM: nearest 2 neighbors	0.011	2.80	0.242*	1.31
	(0.186)	(0.95)	(0.134)	1.00)
PSM: nearest 3 neighbors	−0.007	2.84	0.283**	1.27
	(0.172)	(0.94)	(0.125)	(1.00)
PSM: Normal Kernel	−0.035	1.12	0.241**	0.88
	(0.131)	(1.00)	(0.112)	(1.00)
MDM: NN1	−0.050	–	0.198*	–
	(0.110)	–	(0.108)	–
MDM: NN2	−0.011	–	0.287***	–
	(0.119)	–	(0.104)	–
MDM: NN3	0.024	–	0.236**	–
	(0.109)	–	(0.095)	–

***, **, & * indicate significance at the .01, .05, and .10 levels, respectively. Bootstrapped standard errors are in parentheses using 200 replications for propensity score matching only. For Mahalanobis matching, Abadie-Imbens biased-adjusted standard errors are reported in parentheses. "Cov. Balance" columns report Chi-square square tests where the null is that covariates are on average balanced between treated countries and their matches

P-values for Chi-square tests are in parentheses. 21 treatments are considered for mentions of democracy; 36 treatments are considered for democracy scores

Constitution is somewhere between 22 and 28% more likely to be associated with a de facto democracy. (This result is based on 25 treatments: the most of any Table 10 estimation.) When excluding colonial-independence and Soviet-fall cases, there is evidence of revolutionary Constitutions being associated with greater de facto democracy (even if they do not mention it particularly often).

As a final robustness check, we go back to the full treatment samples and, for each outcome, we report a difference-in-differences (DID) estimation. As discussed in Sect. 4.3 above, DID may be problematic in this context. Notwithstanding, in Table 11 we report DID results. For most of the outcomes, the result is statistically insignificant. However, the estimated effect on mentions of democracy is positive and significant (10% level), and the point estimate is about 83% of a standard deviation. Furthermore, the estimated effect on BR democracy scores is significant (10% level) with the point estimate suggesting about a 16% greater likelihood of democracy.

8 Alternative democracy measures and longer horizons

There has been some evidence reported above suggesting that revolutionary Constitutions are associated with greater de facto democracy. To explore this possibility further, we consider additional de facto democracy measures from the Varieties of Democracy (V-Dem) database (Coppedge et al., 2021). The V-Dem database includes five "High Level

Table 8 Effects of a revolutionary constitution on constitutional outcomes (revolution and new constitution in the same year)

Matching method	Rigidity (change)	Length (% change)	Preamble (change)	Rights section (change)	Mentions of Democ. (change)	BR democracy scores (change)
PSM: Nearest Neighbor	0.050	0.168	−0.017	−0.029	−0.067	0.071
	(0.119)	(0.492)	(0.030)	(0.046)	(0.329)	(0.250)
PSM: Nearest 2 Neighbors	0.105	0.192	0.010	−0.038	−0.141	0.036
	(0.114)	(0.443)	(0.027)	(0.042)	(0.279)	(0.238)
PSM: Nearest 3 Neighbors	0.088	0.178	0.007	−0.036	−0.153	0.095
	(0.107)	(0.404)	(0.027)	(0.041)	(0.239)	(0.228)
PSM: Normal Kernel	0.069	0.314	0.005	−0.040	−0.165	0.151
	(0.111)	(0.313)	(0.024)	(0.040)	(0.165)	(0.207)
MDM: NN1	0.505	0.007	−0.036	1.454**	6.305***	0.063
	(0.358)	(2.140)	(0.109)	(0.646)	(2.345)	(0.315)
MDM: NN2	0.151	0.321	−0.008	0.011	−0.405***	0.132
	(0.100)	(0.380)	(0.028)	(0.028)	(0.149)	(0.192)
MDM: NN3	0.104*	0.245	−0.007	0.017	−0.068	0.094
	(0.058)	(0.364)	(0.022)	(0.025)	(0.131)	(0.159)

***, **, & *indicate significance at the .01, .05, and .10 levels, respectively. Bootstrapped standard errors are in parentheses using 200 replications for propensity score matching only. For Mahalanobis matching, Abadie-Imbens biased-adjusted standard errors are reported in parentheses. Only 5 treatments are considered for rigidity results, 9 treatments are considered for length, preamble, rights, and mentions of democracy results, and 14 treatments are considered for democracy scores

Table 9 Effects of a revolutionary constitution on constitutional outcomes (additional political system covariates)

Matching method	Rigidity (change)	Length (% change)	Preamble (change)	Rights section (change)	Mentions of Democ. (change)	BR democracy scores (change)
PSM: nearest neighbor	−0.073	0.212	−0.013	−0.001	0.154	0.074
	(0.097)	(0.257)	(0.020)	(0.035)	(0.259)	(0.196)
PSM: nearest 2 neighbors	−0.071	0.176	−0.005	−0.026	0.054	0.056
	(0.094)	(0.242)	(0.016)	(0.033)	(0.250)	(0.170)
PSM: nearest 3 neighbors	−0.045	−0.009	−0.010	−0.029	−0.068	0.012
	(0.092)	(0.240)	(0.016)	(0.032)	(0.238)	(0.164)
PSM: normal kernel	−0.066	0.051	−0.011	−0.034	−0.064	0.025
	(0.083)	(0.230)	(0.014)	(0.030)	(0.225)	(0.140)
MDM: NN1	−0.104	0.809	0.018	−0.009	0.070	0.023
	(0.076)	(0.530)	(0.013)	(0.031)	(0.193)	(0.127)
MDM: NN2	−0.100	0.411	0.016	0.0002	0.071	−0.037
	(0.077)	(0.286)	(0.012)	(0.025)	(0.140)	(0.112)
MDM: NN3	−0.106	0.285	0.005	−0.005	0.043	−0.110
	(0.070)	(0.228)	(0.010)	(0.022)	(0.118)	(0.111)

***, **, & *indicate significance at the .01, .05, and .10 levels, respectively. Bootstrapped standard errors are in parentheses using 200 replications for propensity score matching only. For Mahalanobis matching, Abadie-Imbens biased-adjusted standard errors are reported in parentheses. 14 treatments are considered for rigidity results, 19 treatments are considered for length, preamble, rights, and mentions of democracy results, and 33 treatments are considered for democracy scores

Table 10 effects of a revolutionary constitutions on constitutional outcomes (removing colonial and soviet-related revolutions)

Matching method	Rigidity (change)	Length (% change)	Preamble (change)	Rights section (change)	Mentions of democ. (change)	BR democracy scores (change)
PSM: nearest neighbor	−0.109	0.253	−0.002	−0.002	0.090	0.280
	(0.127)	(0.293)	(0.018)	(0.028)	(0.250)	(0.173)
PSM: nearest 2 neighbors	−0.162	0.226	−0.014	0.001	0.032	0.280*
	(0.118)	(0.266)	(0.015)	(0.025)	(0.231)	(0.148)
PSM: nearest 3 neighbors	−0.137	0.260	−0.011	−0.006	0.010	0.267**
	(0.117)	(0.237)	(0.014)	(0.023)	(0.223)	(0.136)
PSM: normal Kernel	−0.079	0.236	−0.011	−0.005	−0.043	0.281**
	(0.100)	(0.171)	(0.011)	(0.020)	(0.196)	(0.124)
MDM: NN1	−0.239***	0.092	−0.0001	0.005	−0.042	0.119
	(0.093)	(0.232)	(0.015)	(0.018)	(0.150)	(0.156)
MDM: NN2	−0.191*	0.251	0.001	0.015	−0.046	0.221*
	(0.099)	(0.188)	(0.015)	(0.017)	(0.142)	(0.123)
MDM: NN3	−0.179*	0.269*	−0.007	0.007	0.005	0.226**
	(0.093)	(0.147)	(0.013)	(0.020)	(0.120)	(0.114)

***, **, & *indicate significance at the .01, .05, and .10 levels, respectively. Bootstrapped standard errors are in parentheses using 200 replications for propensity score matching only. For Mahalanobis matching, Abadie-Imbens biased-adjusted standard errors are reported in parentheses. 12 treatments are considered for rigidity results, 16 treatments are considered for length, preamble, rights, and mentions of democracy results, and 25 treatments are considered for democracy scores

Table 11 Difference-in differences results

Variables	Rigidity	Length (logged)	Preamble	Rights	Mentions of Democ	BR democracy scores
Time	0.042	0.265***	−0.003	0.001	−0.012	0.175***
	(0.043)	(0.080)	(0.005)	(0.007)	(0.063)	(0.042)
Treated	0.025	−0.111	−0.001	−0.030*	−0.015	−0.011
	(0.085)	(0.114)	(0.007)	(0.015)	(0.102)	(0.063)
DiD	−0.015	−0.038	0.012	0.017	0.416*	0.163*
	(0.111)	(0.203)	(0.014)	(0.021)	(0.251)	(0.098)
Constant	0.698***	9.149***	0.036***	0.151***	0.548***	0.146***
	(0.031)	(0.059)	(0.004)	(0.005)	(0.050)	(0.027)
Observations	313	509	431	446	473	478

***, **, & * indicate significance at the .01, .05, and .10 levels, respectively. Robust standard errors are in parentheses

Table 12 Effects of revolutionary constitutions on alternative measures of democracy

	Electoral	Liberal	Participatory	Deliberative	Egalitarian
Matching method	Dem. (change)	Dem. (change)	Dem. (change)	Dem. (change)	Dem. (change)
PSM: nearest neighbor	0.127*	0.128**	0.086**	0.159***	0.073**
	(0.066)	(0.055)	(0.042)	(0.050)	(0.036)
PSM: nearest 2 neighbors	0.112**	0.104**	0.086**	0.148***	0.081**
	(0.056)	(0.052)	(0.038)	(0.048)	(0.034)
PSM: nearest 3 neighbors	0.126**	0.108**	0.091**	0.145***	0.097***
	(0.052)	(0.050)	(0.036)	(0.045)	(0.032)
PSM: normal Kernel	0.124***	0.117***	0.086***	0.127***	0.106***
	(0.046)	(0.039)	(0.031)	(0.039)	(0.028)
MDM: NN1	0.153***	0.161***	0.104***	0.146***	0.111***
	(0.037)	(0.040)	(0.026)	(0.039)	(0.026)
MDM: NN2	0.122***	0.148***	0.107***	0.127***	0.115***
	(0.044)	(0.039)	(0.027)	(0.036)	(0.028)
MDM: NN3	0.119***	0.134***	0.100***	0.127***	0.109***
	(0.041)	(0.039)	(0.027)	(0.036)	(0.027)

***, **, & *indicate significance at the .01, .05, and .10 levels, respectively. Bootstrapped standard errors are in parentheses using 200 replications for propensity score matching only. For Mahalanobis matching, Abadie-Imbens biased-adjusted standard errors are reported in parentheses. "Cov. Balance" columns report Chi-square square tests where the null is that covariates are on average balanced between treated countries and their matches. P-values for Chi-square tests are in parentheses. 37 treatments are considered for these measures of democracy. The lone exception is liberal democracy, where 36 treatments are considered

Democracy" indices that "describe democracy at the highest (most abstract) level": (i) electoral democracy, (ii) liberal democracy, (iii) participatory democracy, (iv) deliberative democracy, and (v) egalitarian democracy.[34]

Returning to matching estimations, Table 12 reports the effects of revolutionary Constitutions on all five of these democracy indices. The results are striking. The estimated effect on de facto democracy is positive and significant (10% level or better) in each and every case. The point estimates range from 0.073 to 0.161, with most of them greater than 0.100. Looking at these point estimates as percentage of standard deviation changes reveal the following results: 57–78% of a standard deviation change in electoral democracy, 60–94% change in liberal democracy, 71–88% in participatory democracy, 71–89% change in deliberative democracy, and 58–91% change in egalitarian democracy. These suggest meaningful effects.[35]

Since there is some compelling evidence – based on both BR and V-Dem measures – that revolutionary Constitutions are associated with more de facto democracy, we are lastly interested in knowing whether those effects are persistent past the 5-year horizon. In Tables 13 and 14 we report estimations for, respectively, 10-year and 15-year changes. Considering longer time horizons substantially lowers the number of treatments considered (20 or 21 in Table 13; 17 or 18 in Table 14). Still, every single point estimate is positive. For 10-year changes, there are statistically significant estimates for each and every democracy measure; and for 15-year changes, this is the case for all V-Dem measures (but not for BR scores).

9 Conclusions

Revolutions are episodes of regime change that are characterized by popular mobilization and uprising. They are very often followed by a "constitutional moment." With the eyes of the citizenry turned to them – and needing its ongoing support – revolutionaries promulgate a new Constitution that codifies their ideals and principles, and coordinates citizens around them.

By the characterizations above, revolutionary Constitutions would seem to be singular creatures. Is revolutionary Constitutional design, then, unique in identifiable ways?

When we do a simple comparison between revolutionary Constitutions and their predecessors, it is unclear that this is the case. On the one hand, they do seem to be significantly longer documents; on the other, they are similar in terms of the relative portions devoted to preambles, rights, and discussion of democracy. They also do not seem significantly different in their degree of entrenchment (rigidity). (This sort of comparison is made possible by the Comparative Constitutions Project (CCP) data, described in Sect. 5 above.)

[34] The conceptual overlap between these indices is large. However, they are distinct in what they emphasize. For example, "the liberal principle of democracy emphasizes the importance of protecting individual and minority rights against the tyranny of the state and the tyranny of the majority" while, alternatively, "[e]galitarian democracy is achieved when 1 rights and freedoms of individuals are protected equally across all social groups; and 2 resources are distributed equally across all social groups; 3 groups and individuals enjoy equal access to power" (Coppedge et al., 2021, pp. 44–45).

[35] We also ran DID estimations for each of the five V-Dem measures. The estimated effect of a revolutionary Constitution was positive and statistically significant (5% level or better) in each case. (Results available upon request).

However, all of the above is based on comparisons of unconditional means. In this paper, we have employed matching methods in an attempt to determine whether or not revolutionary Constitutional design is unique. We have provided estimates of changes in Constitutional design where, for each case, a counterfactual is created from a country or set of countries that are similar (including in that they adopted a new Constitution) but did *not* experience a revolution.

There is some evidence that revolutionary Constitutions tend to be less rigid than their non-revolutionary counterparts. The estimated effects are fairly large; this is especially true when we exclude treatments based on colonial and post-Soviet revolutions. Otherwise, there is little evidence of revolutionary Constitutional design being measurably distinct.

Is there truly nothing revolutionary about revolutionary Constitutional design? One possibility is that *revolution* (in general) is too broad a category. Rather, it may be one or more different subcategories of revolution that are relevant. Addressing this possibility is challenging. One needs to determine which subcategories (leftist? religious? ethnic? etc.) to focus on; then one needs to have sufficiently deep knowledge of each historical case to defensibly sort revolutions amongst them. The task is further complicated by the fact that subcategorization dwindles the number of treatments to work with. Challenges notwithstanding, this may be a fruitful avenue for future work.

An extreme take on the above possibility is to simply discount the type of cross-country research that the CCP data has made possible. Ackerman (2019, pp. 39–40) takes this tack:

Table 13 Effects of a revolutionary constitution on democracy scores (10-year changes)

Matching method	Electoral Dem. (change)	Liberal Dem. (change)	Participatory Dem. (change)	Deliberative Dem. (change)	Egalitarian Dem. (change)	Democracy scores (change)
PSM: nearest neighbor	0.089	0.169*	0.063	0.145	0.110	0.176
	(0.103)	(0.089)	(0.062)	(0.090)	(0.068)	(0.187)
PSM: nearest 2 neighbors	0.120	0.169**	0.083	0.169**	0.085	0.206
	(0.092)	(0.080)	(0.060)	(0.084)	(0.065)	(0.176)
PSM: nearest 3 neighbors	0.128	0.170**	0.106*	0.162**	0.109*	0.137
	(0.085)	(0.076)	(0.057)	(0.081)	(0.058)	(0.167)
PSM: Normal Kernel	0.137**	0.129*	0.100**	0.122*	0.136***	0.231
	(0.066)	(0.067)	(0.048)	(0.066)	(0.050)	(0.146)
MDM: NN1	0.118	0.139	0.086	0.121	0.099*	0.151
	(0.091)	(0.097)	(0.062)	(0.089)	(0.057)	(0.187)
MDM: NN2	0.119	0.134*	0.112**	0.136**	0.131***	0.297**
	(0.074)	(0.070)	(0.050)	(0.063)	(0.050)	(0.150)
MDM: NN3	0.137**	0.157***	0.109**	0.135**	0.130***	0.295**
	(0.056)	(0.055)	(0.043)	(0.056)	(0.045)	(0.142)

***, **, & *indicate significance at the .01, .05, and .10 levels, respectively. Bootstrapped standard errors are in parentheses using 200 replications for propensity score matching only. For Mahalanobis matching, Abadie-Imbens biased-adjusted standard errors are reported in parentheses. 21 treatments are considered for electoral, participatory, deliberative, and egalitarian democracy, 20 treatments are considered for liberal democracy, and 20 treatments are considered for democracy scores

> Computer runs on these bits and pieces can bring light to interesting patterns of evolution over time. But they cannot substitute for holistic approaches that focus on efforts by engaged participants to legitimate their authority in particular cultures and historical contexts (p. 40).

While we agree that the "bits and pieces" that can be tractably measured/coded cannot provide the entire picture, "holistic approaches" are necessarily case study-based and can be questioned in terms of generalizability and the subjectivity involved in evaluating "soft" (our term here) data.

However, while we obviously do not discount formal analysis of the "bits and pieces," we also recognize that our work is only a first step along those lines. And it is important for more work to follow. One of our compelling findings is evidence that revolutionary Constitutions significantly increase the likelihood of subsequent de facto democracy. If revolutionary Constitutions are largely no different than their non-revolutionary counterparts, why might they be associated with actual increases in democracy?

It could be because revolutionary Constitutions – no matter how generic – are simply contemporaneous to meaningful changes in de facto norms and conventions. Accounting for those norms and conventions in choosing covariates is a challenging task. However, accounting for such factors – as well as considering other dimensions of Constitutional design – may be well worth the while.

Table 14 Effects of a revolutionary constitution on democracy scores (15-year changes)

Matching method	Electoral Dem. (change)	Liberal Dem. (change)	Participatory Dem. (change)	Deliberative Dem. (change)	Egalitarian Dem. (change)	Democracy scores (change)
PSM: nearest neighbor	0.245**	0.138	0.128*	0.081	0.117	0.267
	(0.107)	(0.112)	(0.074)	(0.110)	(0.075)	(0.227)
PSM: nearest 2 neighbors	0.236**	0.180*	0.092	0.146	0.149**	0.233
	(0.099)	(0.102)	(0.069)	(0.098)	(0.069)	(0.219)
PSM: nearest 3 neighbors	0.224**	0.200**	0.120*	0.166*	0.135**	0.178
	(0.094)	(0.099)	(0.066)	(0.092)	(0.069)	(0.209)
PSM: normal Kernel	0.151*	0.162**	0.100*	0.144*	0.128**	0.151
	(0.082)	(0.082)	(0.056)	(0.082)	(0.060)	(0.174)
MDM: NN1	0.138	0.157*	0.114*	0.147	0.099	0.200
	(0.102)	(0.093)	(0.061)	(0.091)	(0.067)	(0.185)
MDM: NN2	0.139**	0.142**	0.113**	0.138*	0.124***	0.252
	(0.066)	(0.071)	(0.050)	(0.071)	(0.047)	(0.178)
MDM: NN3	0.124*	0.176***	0.106**	0.128**	0.126***	0.159
	(0.064)	(0.057)	(0.042)	(0.059)	(0.048)	(0.159)

***, **, & *indicate significance at the .01, .05, and .10 levels, respectively. Bootstrapped standard errors are in parentheses using 200 replications for propensity score matching only. For Mahalanobis matching, Abadie-Imbens biased-adjusted standard errors are reported in parentheses. 18 treatments are considered for electoral, participatory, deliberative, and egalitarian democracy, 17 treatments are considered for liberal democracy, and 18 treatments are considered for democracy scores

Why? Because countries across the globe pour large amounts of time and resources into Constitutions. Consider the fact that of nation states that came into existence prior to 1789, half of them existed over 300 years without a Constitution; now compared that to the fact that 85 percent of them, formed post-1789, had one within two years of existence (Elkins et al., 2009, pp. 41–43). Today – almost as a rule – countries have Constitutions; and they devote a lot of resources into negotiating and drafting them (as well as amending them *ex post*).

Scholars like Ackerman (2019) have emphasized that the above is *especially* true and important for cases of revolutionary Constitutions. If these efforts produce systematically and meaningful different products that matter, that is important to know. If they do not, then it is important to know that efforts at Constitutional design – particularly following revolutions – are nominal and/or wasteful.

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