

Provisions of Power-Sharing: Assessing the Impacts of Segmental Autonomy

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Abstract

How can we better understand the effects of segmental autonomy on democratization, levels of social trust, and conflict rates? Using a new dataset on power-sharing provisions, I analyze the substantive effects of segmental autonomy across ethnically fractionalized states. Segmental autonomy allegedly operates by proliferating the number of political focal points in a state, targeting concessions to regional minorities, and allowing those minorities to serve as checks and balances on the central government. The need to study power-sharing provisions arises from existing studies' tending to present nuanced approaches to defining and measuring these broad concepts. As such, quantitative and qualitative reviews of the effectiveness of power-sharing agreements seem difficult to reconcile both terminologically and conceptually. In addition to assessing the impacts of segmental autonomy, I offer a conceptual mapping of the forms of power-sharing in terms of their provisions in order to better understand the relationship between these concepts. In doing so, I generate an empirical framework within which other provisions of power-sharing may be better understood. Though my overall findings are mixed, evidence suggests that the implementation of segmental autonomy in ethnically fractionalized states serves to enhance democracy and, when employed alongside other provisions, may increase social trust levels while reducing conflict rates. Disaggregation both improves generalizability and will allow for accumulated findings moving forward. Policy-wise, this paper highlights the potential successes of segmental autonomy and the bundling of complementary provisions in ethnically diverse states.

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1 Introduction

In 2018, the warring parties in South Sudan signed the Revitalized Agreement on the Resolution of the Conflict in the Republic of South Sudan (R-ARCSS). This document re-establishes a transitional government, a truth commission, and outlines the general provisions of the new government. Among those provisions, the agreement calls for the recognition of thirty-two counties—drawn to accommodate the various ethnic groups in the state—and grants them substantial autonomy.¹ The people of South Sudan, having been in the midst of ethnically-driven conflict since 2013, view this agreement with cautious optimism. Though a similar reserve is shared by signatories of the agreement and international observers, many believe that the extent of the agreement’s inclusivity, and its significant local and regional ownership, are likely to create peace following its implementation.²

South Sudan, in proposing the implementation of regional autonomy for their thirty-two counties, joins a growing number of ethnically diverse states in employing power-sharing institutions. These broadly defined institutions are designed to address a number of issues associated with emerging democracies, especially those with salient ethnic cleavages.³ First, power-sharing is designed to accommodate ethnic group demands through devolving power to subnational factions. Second, and often as an alternative to devolution, power-sharing can help integrate regional groups into a central government. This often takes the form of coalition cabinets or reserved executive positions for certain groups. In both cases, power-sharing is a tool to abate conflict, lessen tensions among politically salient ethnic or minority actors, and ultimately help states transition into full democracy. While, at present, uncertainty surrounds the political trajectory of South Sudan, we see power-sharing presented as a plausible solution to conflict in an ethnically fractious society.

The case of South Sudan highlights two issues associated with the power-sharing literature. First, it is difficult for scholars to draw meaningful conclusions on the effectiveness of power-sharing, consociationalism, and other forms of nation-building, when the concepts themselves are subjective and contested. This conceptual disparity hinders our ability aggregate results and generate cumulative findings.⁴ Second, there is a paucity of micro-level analysis focusing on the disaggregated provisions of power-sharing institutions. We do not know, for example, whether certain individual arrangements are more likely to cause peace than others nor in what ways these arrangements work. This paper sets out to address and reconcile these gaps in the literature by first analyzing the substantive effects of an individual provision of power-sharing and second, by establishing a framework which will allow for cumulative and more generalizable findings moving forward.

Though many concepts in the comparative politics literature face some level of conceptual disagreement,

¹Intergovernmental Authority on Development 2015; Vhumbunu 2019.

²Vhumbunu 2019; Njoroge 2019.

³Horowitz 1985; Lijphart 1969; Esman 1973; Nordlinger 1972.

⁴Dunning, Humphreys, et al. 2020.

other concepts do not suffer from the same magnitude of terminological discrepancy and ambiguity. Recent large-N studies of power-sharing have sought to standardize the concept to a degree, though the same issues exist when one compares these datasets. For example, Strøm et al. (2017) encapsulate the universe of power-sharing cases by categorizing them into inclusive, dispersive, and constraining agreements. Conversely, Jarstad and Nilsson (2008) have coded their IMPACT database to distinguish political, military, territorial, and economic power-sharing agreements. While these large datasets do a good job of covering power-sharing institutions, they are not reproducible when applying the measurements from other works, though they purportedly analyze the same concepts. Despite the noticeable variation in the existing conceptions of power-sharing, there is a great deal of overlap within the provisions stipulated by consociational political systems and power-sharing accords. These provisions have yet to be studied in great depth, though doing so could allow one to empirically compare forms of power-sharing. As such, one may be able to both evaluate their effectiveness and understand in which contexts these provisions are most prevalent.

Broadly speaking, power-sharing falls into two camps. Firstly, when certain power-sharing provisions are embedded in, or amended into, a constitution, we have what is generally understood to be consociational democracy. States that are often cited as being consociational in nature include the Netherlands from 1917 to 1967, Cyprus from 1960 to 1963, and Lebanon from 1943 to 1975, and from 1989 onwards.⁵ Secondly, non-consociational power-sharing provisions can be written into a peace agreement following a conflict. This is what the more recent literature focuses on.⁶ Power-sharing in these instances are implemented via accord and address civil tensions in a given state. Agreements can be, as Hartzell and Hoddie (2003, 2007) suggest, political, economic, territorial, or military in nature. While consociational democracy differs conceptually from power-sharing institutions found in peace accords, they serve the same purpose—that is, to ensure peace within socially diverse states—and their underlying provisions often overlap.

Disaggregating the provisions of power-sharing allows for two novel areas of exploration. Firstly, it allows for the standardization of previous conceptions of power-sharing, power-dividing, and partition, which in turn allows for, to some degree, the comparison and reconciliation of the vast literature on peacebuilding and institutional design. Secondly, assessing the provisions of power-sharing allows for a deeper understanding of which provisions are used, in which contexts they are implemented, and which provisions may be the most effective for ensuring lasting peace, preserving democracy, and reducing intergroup tensions. Thirdly, disaggregation, as I will discuss more thoroughly in Chapter 4, uncovers the issue of inconsistent measures between these micro-level provisions. As if a microcosm of the issues associated with the broad conceptions of power-sharing, measurements of the various disaggregated provisions exhibit low correlation between supposedly similar concepts, and generate completely different outcomes when analyzed in parallel.

⁵Andeweg 2000; Lijphart 1977; Picard and Heydemann 2000.

⁶Strøm et al. 2017; Graham, Miller, and Strøm 2017; Jarstad and Nilsson 2008; Mukherjee 2006.

One provision that warrants particular analysis is segmental autonomy. Sometimes referred to as regional autonomy, it is a form of decentralization that grants specific powers to minority, geographically constrained, groups.⁷ Given that segmental autonomy has a far broader conception than, say, mutual veto, there are markedly more polities that exhibit some form of segmental autonomy over time. Perhaps more importantly, regional autonomy appears in several authors' typologies of power-sharing, allowing us to transcend these constraining conceptualizations. This allows for the expansion of Ram and Strøm's (2014) approach to analyzing power-sharing provisions, while also moving away from a reliance on case-study and summary statistics toward more rigorous quantitative methods.

Segmental autonomy was first conceptualized by Lijphart as a provision allowing groups to "transcend cleavages and to join in a common effort with the elites of rival subcultures".⁸ In essence, by granting minority groups some level regional autonomy, cross-cutting social cleavages, and officially recognizing these newly autonomous group, the provision serves as a concession to those groups and thus abates tension and conflict. Lijphart expands upon this idea in later works, highlighting the importance of the minorities' rule over itself, and adds that segmental autonomy can be implemented in a territorial or non-territorial federation, or a political system that allows for substantial delegation to segmental groups.⁹

Through analyzing the disaggregated forms of power-sharing, we are able to ask new questions about the nature of power-sharing. Specifically, I ask two questions pertaining to segmental autonomy and its effect on prolonged peace, democratization, and social trust. Building off of existing studies, I theorize that segmental autonomy operates in three distinct ways: through proliferating political focal points; through targeting concessions toward regional minorities; and by allowing regional groups to serve as checks and balances on the central government. Given these mechanisms, I hypothesize that the implementation of segmental autonomy exerts a positive effect on prolonged peace, a state's level of democracy, and the reduction of tension within an ethnically fractionalized society. Existing studies of power-sharing and consociationalism produce mixed results regarding its effectiveness, though many qualitative case-study analyses seem to point to the possibility that power-sharing in certain circumstances can be effective. By developing a framework in which to analyze the provisions themselves, I will be able to uncover which provisions are most effective at causing peace and why. I add to my initial hypothesis by looking at the effects of segmental autonomy when employed alongside other power-sharing components. This hypothesis is borne from Norris's (2008) argument that power-sharing is moderated by multiple provisions, insofar as the impact of power-sharing is magnified when more provisions are implemented. My study extends this claim by looking at the interaction effects of the provisions and understanding which are the most effective in relation to my outcome variables.

In order to study the substantive effects of segmental autonomy, I generate a dataset that covers

⁷It is worth noting that segmental autonomy is *not* the same as federalism. For an in-depth study of the relationship between regional autonomy and federalism, see Lluch 2012.

⁸Lijphart 1969, p. 216.

⁹Lijphart 1977; Lijphart 1985.

various provisions of power-sharing from 1975 to 2010 for 183 distinct countries. I then identify three distinct dependent variables that serve to evaluate the effectiveness of those provisions: democracy scores, social trust indices, and conflict rates. Using ordinary least squares regression and Cox survival models, I find mixed evidence for my hypotheses. Segmental autonomy is positively associated with democratization and reduced conflict rates. And though segmental autonomy itself does not contribute significantly to social trust levels, the implementation of multiple consociational provisions in addition to segmental autonomy leads to increased social trust levels. From a policy perspective, these findings suggest that effectively combatting deep-rooted ethnic grievances necessitates a mix of dispersive and integrative methods. From an academic perspective, the disaggregated approach to studying power-sharing will hopefully allow scholars to better identify exactly which provisions are most effective in generating positive outcomes for citizens.

This paper contributes to the growing body of large-N quantitative studies on power-sharing in three ways. First, this paper allows for a better understanding of substantive effects of segmental autonomy from a global perspective using several different—and formally competing—measures of its success. Second, it allow us to study segmental autonomy in relation to other provisions of power-sharing as opposed to relying on broad conceptions. This allows us to understand interaction effects, and cases where the implementation of multiple provisions is more beneficial than just one form of power-sharing. Third, this paper proposes a methodological framework for analyzing the provisions of power-sharing moving forward. A nascent body of literature emphasizes the importance of improving the generalizability of studies—particularly those of an experimental nature—and the need for more replication in the social sciences.¹⁰ In the same vein, this paper can be seen as an attempt to enhance the external validity of observational research.

The remainder of this paper is structured as follows. Chapter 2 covers the existing formulations of regional autonomy in more depth and introduces my conceptual map of the power-sharing literature, broken down by the components that make up the broader concepts. Chapter 3 presents my theoretical framework and my hypotheses. Chapter 4 summarizes the data collection process for both the ontology and the Provisions of Power-Sharing (PSP) dataset, as well as the statistical methods used to analyze the data. Chapters 5 and 6 present the results of my statistical analysis as well as a discussion of my findings and potential trajectories of future research.

2 Conceptualizing Power-Sharing

The concept of consociationalism was promulgated by Arend Lijphart in his seminal work “Consociational Democracy”. Lijphart develops his own typology of existing democratic structures, stating that “[c]onsociational democracy means government by elite cartel designed to turn a democracy with a

¹⁰Dunning, Humphreys, et al. 2020; Dunning and Hyde 2014.

fragmented political culture into a stable democracy,” and outlining several favorable conditions of consociationalism’s success.¹¹ The core provisions include segmental autonomy, mutual veto, grand coalition, and proportionality, though Lijphart’s typology has expanded since its inception. It has been met with intense scrutiny over the years, with particular attention paid to its tautological nature, extensive and fluid conditions for success, and various country case studies where consociationalism has apparently failed.¹² Debates surrounding consociationalism seem to serve as a microcosm for the debates on power-sharing writ large as Andeweg (2000) states that “the level of abstraction of many contributions to (and critiques of) consociationalism is rather low, perhaps because the theory has largely been developed inductively from empirical case studies”.¹³ Existing studies range from the necessity of consociationalism in ethnofederal polities,¹⁴ to the modes which purportedly ensure a successful implementation of a peace pact,¹⁵ to the tautological nature, and irrelevance, of consociational and power-sharing practices.¹⁶ Some go as far as to argue that consociationalism serves as a platform for fundamentalism and may actually provoke ethnic conflicts, though the pro-consociational camp make the same argument for integrationist policies.¹⁷ There is clearly a great deal of disagreement over power-sharing’s effectiveness and whether it is required at all.

As mentioned, perhaps the most striking issue associated with the concept of power-sharing is its fluidity. There is no clear differentiation between consociationalism, power-sharing, power-dividing, and partition. There seems to be four broad camps regarding power-sharing design: those who focus on power-sharing as a form of democracy;¹⁸ those who focus on power-sharing through peace agreements and policy;¹⁹ and those who favor integrationist versus accommodating provisions. Within all four groups, there is disagreement on what constitutes power-sharing, and what its main areas of focus are and should be. The purpose of power-sharing is also disputed, with many authors using different formulations of the dependent variable; one author who claims that power-sharing is effective because it abates conflict is disputed by another who argues it is ineffective as it does not include all ethnic identities in a government. Of the recent empirical literature, the authors highlight entirely different conceptions of power-sharing.²⁰ Hartzell and Hoddie (2003, 2007) suggest that multidimensional power-sharing institutions, that is, those institutions with several power-sharing provisions, are more likely to see positive results regarding democratization and cessation of conflict than fewer, though fail to explore in depth the provisions themselves.²¹

More pertinent to my own study, there is a slowly growing body of literature that focuses on the

¹¹Lijphart 1969, p. 216.

¹²Andeweg 2000; Bogaards 1998; Seaver 2000; Tull 2005.

¹³Andeweg 2000, p. 531.

¹⁴Lijphart 1969; Lijphart 1977; O’Leary 2005.

¹⁵Walter 2002; Walter 2003; Hartzell and Hoddie 2003; Hoddie and Hartzell 2003; Mukherjee 2006.

¹⁶Andeweg 2000; Bogaards 1998; Roeder and Rothchild 2003.

¹⁷O’Leary 2005.

¹⁸Barry 1975; Lijphart 1974; Norris 2008a; Steiner 1981.

¹⁹Hartzell and Hoddie 2003; Hartzell and Hoddie 2007; Mukherjee 2006.

²⁰Hartzell and Hoddie 2003; Hartzell and Hoddie 2007; Graham, Miller, and Strøm 2017; Jarstad and Nilsson 2008; Mattes and Savun 2009; Strøm et al. 2017; Walter 2002.

²¹Hartzell and Hoddie 2003, pp. 325–332.

comparison and reconciliation of the various power-sharing datasets and the consolidation of the various conceptions of power-sharing institutions and political systems. There is also at least one study on an individual provision of power-sharing. Given the data that exist, studying the provisions of power-sharing is problematic. As Ansorg et al. (2013) note, of the two-hundred and fifty-seven datasets on institutions and conflict in divided societies, “[t]ransparency was an issue for 28.4 percent of [them]”.²² Many do not have codebooks, there are few sources referenced, and detailed operationalization is lacking. As such, any attempt to compare findings of the success of power-sharing, as well as the actual contents of the power-sharing institutions, is challenging. The issues of vague data are less pertinent with the large country-level datasets such as the Database of Political Institutions (DPI), Varieties of Democracy (V-DEM), and Quality of Governance (QOG), but are far more prevalent in datasets create for the purpose of academic articles.²³ Further, Binningsbø, (2013) compares recent quantitative and causal approaches to power-sharing, arguing that while the designs are similar, “they use somewhat different reasoning explaining the relationship” between power-sharing, peace, and democratization.²⁴ While it is undoubtedly necessary for nuanced approaches to be taken in order to better understand the causes, outcomes, and conditions of power-sharing, these studies exist in their own defined universes, making comparison and cross-validation somewhat challenging. Strøm et al. (2017) note a similar issue: “[o]nce we recognize that powersharing can be disaggregated in such ways, however, it is entirely possible that its different components do not always work in concert or reinforce one another”.²⁵ Though they agree with Binningsbø, (2013) on the possibility of disaggregation, the roles of the provisions, and their overlap with the various conceptions of power-sharing, is not explored further.

One recent paper by Ram and Strøm (2014) uses this disaggregated approach to power-sharing. They focus on analyzing one type of consociational provision—mutual veto—and their findings are both enlightening and warrant further exploration into the other provisions of consociational democracy and power-sharing agreements. Their initial findings seem to undermine, or at least disagree with, the current debate on consociationalism. While the debate focuses on consociationalism as either a panacea for fractious societies or an inevitable roadblock to democratic survival, Ram and Strøm (2014) find that, in the case of mutual veto, the provisions of consociationalism are simply not common. “[M]utual veto provisions are a rare form of power-sharing,” they suggest, and only eleven polities have implemented such provisions between 1975 and 2010.²⁶ Descriptively, states that have employed mutual veto provisions have experienced mildly reduced conflict rates, yet, somewhat counterintuitively, mutual veto provisions are “most common in relatively prosperous and institutionally stable societies”.²⁷ It is interesting, then, that

²²Ansorg et al. 2013, p. 12.

²³With the latter, in some cases, links and references to data used in the paper are broken, and codebooks unfinished, and one dataset used in a successful book on power-sharing institutions has over sixty-nine percent missingness.

²⁴Binningsbø 2013, p. 101.

²⁵Strøm et al. 2017, p. 6.

²⁶Ram and Strøm 2014, p. 345.

²⁷Ram and Strøm 2014, p. 355.

Lijphart and others would be so adamant of the essentiality of mutual veto provisions in consociational democracy in spite of their minimal prevalence and their emergence in non-conflictual democracies. We can assume that the success of consociational systems, and other power-sharing arrangements, must emerge from some sort of interaction effect, or perhaps by a particularly salient, as of yet unexplored, provision.

The small sample of mutual veto states means that statistical analysis is not a feasible option. One advantage of studying segmental autonomy in particular is that there are notably more observations to study, lending itself to both case study and large-N analyses. This will be explored further in the next section.

2.1 Segmental Autonomy

I apply Ram and Strøm’s (2014) disaggregating approach to the provision of segmental autonomy. The concept of segmental autonomy has expanded vastly since its conception. Far from the vague parameters of Lijphart’s earlier work, segmental autonomy can now be further disaggregated into religious, ethnic, and racial autonomy, educational autonomy, and, as mentioned, is defined as being laterally separated from federalism. Norris’s (2008) and Kelly’s (2019) meta-analyses both do an excellent job in reconciling the literature on consociational theory and developing a theoretical framework to better understand the favorable conditions of segmental autonomy. Kelly (2019) cites the work of Steiner (1981) and Halpern (1986) in establishing the core requirements of autonomy necessary for consociationalism, namely, distinguishable cultural groups with their own identities and their own political organization, political relevance, within-group marriage, and a widely perceived legitimacy within the state.²⁸ Both authors reach a similar conclusion regarding power-sharing and inclusive constitutional design. Kelly (2019) suggests that, when adopting a qualitative approach, segmental autonomy can be “conducive to stability in plural societies,” though regression models suggest that segmental autonomy can be “destabilizing”.²⁹ Norris (2008), too, states that “power-sharing arrangements are the best chance of success for sustaining democracy” but that it should be “interpreted cautiously, with many qualifiers” given the mixed results from state to state.³⁰ Much like the broader discussion of power-sharing and consociationalism, a firm conclusion on the efficacy of individual provisions is frustrated by country-specific characteristics and contestation over the implementation of these provisions. That said, a more fine-grain understanding of the provisions of power-sharing is necessary to evaluating power-sharing as a response to ethnically divided and conflictual states.

It is perhaps because of the broadly-encompassing nature of this provision that segmental autonomy is cited in several different and competing power-sharing typologies. Subnational autonomy, as it is coined,

²⁸Kelly 2019; Steiner 1981; Halpern 1986, p. 30.

²⁹Kelly 2019, p. 3.

³⁰Norris 2008b, p. 222.

can be found in Charron’s (2009) discussion of vertical power-sharing in ethnofederalist states. When assessing the saliency of ethnofederal arrangements, they suggest that “the more diverse the state, the stronger the predicted benefit that an ethnofederation produces in terms of [quality of governance]”.³¹ Regional autonomy is a core provision in territorial power-sharing, according to Hartzell and Hoddie (2007). Various forms of “subnational authority” are facets of Strøm et al.’s (2017) so-called dispersive power-sharing. Perhaps most interestingly, regional autonomy is also cited as a component in partition, according to Berg and Ben-Porat (2008), Roeder and Rothchild (2005), and Kuperman (2004), the former arguing that “[f]ederal autonomy extends beyond consociationalism towards partition”.³² The latter conception is particularly interesting, as partition is often presented as an alternative to power-sharing though they both share autonomy as a provision.³³

Before moving forward, it is worth clarifying some conceptual definitions. First, I conceptually define power-sharing provisions as the underlying mechanisms within a constitution or peace agreement that allow for military, political, economic, social, and territorial inclusion and accommodation for a state’s minority groups. Second, I define segmental autonomy in line with Lijphart (1969, 1977), Norris (2008), and Kelly’s (2019) definition. That is, minority groups, with government-recognized autonomy over specific and salient political issues. For the purposes of this paper, subnational units must have *de jure* regional autonomy to be included in my analysis. Though it will be discussed more in Chapter 4, this conception of segmental autonomy can be operationalized using a dichotomous measurement, where a state that employs regional autonomy will have a value of 1, and 0 otherwise.

2.2 Partition, Power-Dividing, and Ethnofederalism

It is worth acknowledging the concepts of partitioning and power-dividing as they relate to the literature on institutions of peace. Though less of the literature focuses on these two concepts, they are inextricably linked to power-sharing (in that they are often presented as an alternative to power-sharing) and exhibit similar terminological discrepancy. Proponents of power-dividing as an alternative to power-sharing include Roeder and Rothchild (2005), who define power-dividing institutions as those that “stress the importance of civil liberties that limit government, separation of powers that create multiple majorities, and checks and balances that limit each majority”.³⁴ Conversely, Hartzell and Hoddie (2007) talk about the successes of power-sharing and power-dividing institutions as similar or interchangeable institutions.³⁵ What is more, when one breaks down both power-dividing and the various conceptions of power-sharing, one finds that many of the individual provisions are strikingly similar. Civil liberties, multiple majorities, checks and balances, and separation of powers are indicative of Roeder and Rothchild’s (2005) conception

³¹Charron 2009, p. 600.

³²Berg and Ben-Porat 2008, p. 33.

³³Berg and Ben-Porat 2008; Roeder and Rothchild 2003.

³⁴Roeder and Rothchild 2003, p. 52.

³⁵Hartzell and Hoddie 2007, pp. 150–152.

of power-dividing, though are also present in Ström et al.'s (2017) conception of inclusive power-sharing, and Hartzell and Hoddie's (2003, 2007) conception of political power-sharing.

Kuperman makes two arguments that further muddy the debate on power-sharing versus alternative forms of institutionalizing peace. Firstly, they argue that there are "six cases of *true* power sharing" based on the presence of regional autonomy, peace enforcement, disguised victory, non-ethnic schisms, and a pause in fighting.³⁶ Secondly, they argue in favor of partition—partition *de jure*, adjusted borders, and or regional autonomy—in the case of the conflicts in Bosnia. Specifically, they argue that regional autonomy would be the most effective method; "close to *de facto* partition, without the prize of independence. It is a compromise solution".³⁷ However, regional or segmental autonomy is a key provision in several different conceptions of power-sharing in peace agreements and in political systems. Though partition is purported to be a "a solution of"last resort" and as a "meeting point between the needs for self-determination and territorial expression", the provisions by which it is deemed to be successful are shared by an opposing institution: power-sharing.³⁸ Given the overlap between the provisions of not just the forms of power-sharing, but also other methods of institutionalizing peace, it seems logical to assess which of these provisions are most common, and which are most effective.

Ethnofederalism is another dimension of power-sharing that incorporates regional autonomy. Despite the name, ethnofederalism is more closely related to regional or segmental autonomy than it is to federalism; ethnofederal arrangements are designed to devolve power among minority groups within specific geographic jurisdictions.³⁹ Roeder is highly sceptical of ethnofederal arrangements, suggesting that by privileging certain ethnic identities, states run the risk of escalating conflict into "acute nation-state crises".⁴⁰ Though perhaps providing short-term relief to conflictual and ethnically divided states, Roeder argues that proponents of ethnofederalist arrangements fail to account for the long term implications of making concessions to politically marginalized groups. These implications range from regional minorities making more demands, to increased conflict rates, to complete secession of that region. However, like the provision of mutual veto, ethnofederalism is relatively uncommon. From 1945 through to today, there have been eleven states that have generally been understood to be ethnofederal, including Czechoslovakia, Nigeria, Uganda, and India.⁴¹ We also see regional autonomy and decentralization viewed as a detriment to democratic progress in the context of ethnofederalism, yet seen as a potential solution to conflictual states in the context of partition.⁴² In sum, the efficacy of these broadly-conceptualized peace institutions are heavily disputed. That provisions such as segmental autonomy are common across many of these concepts of power-sharing, we may be able to better understand what exactly leads to peace by disaggregated the

³⁶Kuperman 2006a, emphasis added.

³⁷Kuperman 2006b.

³⁸Berg and Ben-Porat 2008; Waterman 1987, p. 32.

³⁹Roeder 2007; Roeder 2009.

⁴⁰Roeder 2009, p. 206.

⁴¹Lake and Rothchild 1996.

⁴²Roeder and Rothchild 2003; Roeder 2007; Roeder 2009.

broad definitions and studying the individual mechanisms therein.

2.3 Mapping Power-Sharing Concepts

In addition to creating a large-N dataset on the provisions of power-sharing, I have formulated an conceptual map (Figure 1) of the different formulations of power-sharing, power-dividing, and partition. Starting with Lijphart’s (1969) seminal work and moving forward, I have attempted to classify and categorize each different definition and their purported provisions. Many of these provisions could be further sub-categorized, and there is marked variation in the specificity of the provisions across conceptions, but this ontology provides a broad but solid overview of the similarities and differences between the existing conceptions of peace institutions. To supplement the broad concept, I have also created a visualization of provisions that overlap between concepts which can be seen below.⁴³ That way, the contested and fluid nature of these provisions can be more easily interpreted.

This conceptual mapping adds to the literature on power-sharing in a number of ways. First, as mentioned, it visually establishes the discrepancies in the existing literature, and allows us to compare the provisions of each concept of power-sharing. Second, it provides a roadmap of how power-sharing may be better understood. While this paper analyzes only one provision of power-sharing, there is still much more to be explored. There are currently seventy-eight provisions when broken down by author, and yet these works often fail to highlight the relevance of the provisions themselves. We do not know whether all of the provisions of, say, coercive consociationalism or inclusive power-sharing, exert the same effect, whether some are redundant, or whether, when it comes to the institutionalization of peace, a simple case of “more is better” applies. While these questions lie outside of the scope of this paper, I believe that a deeper analysis into the interactions of all known provisions—as opposed to the broader concepts themselves—will produce fascinating findings.

Authors who have conducted meta-analyses on power-sharing institutions such as Andeweg (2000), Bogaards (1998), and Norris (2008), include sections on the development of conceptions over time, allowing me to easily integrate terms into the conceptual map. Further, I have provided citations for each provision, and suggested a range of variables that could be utilized for measuring each provision. As mentioned, given that some of these provisions are inherently broad, not all provisions have been assigned a variable and, as such, unlock an avenue for further research. For pedagogical purposes, I have assigned upper-level nodes to be one of three possible parent classes: “political systems” such as liberal consociationalism, integrative consociationalism, and the like; “power-sharing arrangements”—characterized as institutions implemented via peace agreements—such as territorial, economic, and military power-sharing; and “power-sharing alternatives” which encompass partition and power-dividing; concepts that are often posited in opposition to power-sharing institutions.⁴⁴

⁴³The large concept map can be found in the appendix.

⁴⁴The code and data for reproducing the ontology visualization can be found in the appendix of this paper.



Figure 1: Regional Autonomy Across Conceptualizations

To conclude, while there is much disagreement over the broad conceptions of power-sharing, analyzing the disaggregate provisions of power-sharing make identifying causal mechanisms and outcomes far easier. It also allows for the reconciliation of conflicting studies on power-sharing. Segmental autonomy in particular is cited as a core provision across several conceptions of power-sharing, consociational democracy, and partition. Understanding this provision may serve to partially reconcile the power-sharing literature and provide insight into the causal mechanisms behind the implementation of power-sharing in ethnically divided and developing states.

3 Theory and Hypothesis

Given that segmental autonomy is relatively common across countries, and continues to be implemented in conflictual societies today, governments and citizens must consider the provision effective to some degree. I hypothesize that states employing segmental autonomy provisions along with other provisions of power-sharing, either through peace accord or constitutional reform, are more likely to experience reduced intergroup tensions, prolonged peace, and ultimately, democratization. But how does the implementation of regional autonomy in a ethnically fractious and politically unstable state lead to peace? In other words, what are the underlying mechanisms that allow segmental autonomy to work in such a state? Building off of existing studies, I suggest that regional autonomy works in three distinct ways: through proliferating political focal points, through targeting concessions to regional minorities, and by allowing regional minorities to serve as checks and balances on the central government. In an ethnically fractionalized state, where certain groups may have faced powerlessness or discrimination, the implementation of regional autonomy—be it through regional elections, educational authority, linguistic autonomy, or otherwise—can be seen as a concerted effort by the central government to bring about peace. Assuming this basic logic, I lay out a more nuanced theory and causal mechanism, before presenting my core hypotheses.

The causal chains that justify the implementation of segmental autonomy in ethnically diverse states come from the work of Lijphart (1969), Nordlinger (1972), and Esman (1973). They argue that provisions such as regional autonomy and other forms of power-sharing serve to “reduce the long-range political salience of communal solidarities,” though each embed this outcome in a slightly different framework.⁴⁵ Moving beyond these broad theoretical arguments, I identify segmental autonomy operating in three distinct—but often overlapping—ways.

3.0.1 Proliferation of Focal Points

Regional autonomy increases the number of political focal points in a state. By proliferating the number of autonomous regions, the central government can reduce the possibility of any one faction having power over another. As a result, the likelihood that one group feels disadvantaged or oppressed by another is

⁴⁵Esman 1973, p. 55.

reduced. Increasing the number of political focal points not only reduces inter-faction tensions, it also takes pressure off of the central government as the newly autonomous regions can act independently, such as by implementing their own tax, education, or language policies. Demands are thus less likely to be aimed at the central government, given that matters related to the ethnic group are in the hands of the subnational political bodies. We see the proliferation of subnational units in states such as Uganda and Nigeria as examples of a central government's attempt to reduce the political salience of any given ethnic or regional group. The dispersive aspect of regional autonomy might reduce ethnic conflict and grievances by "tak[ing] the heat off of a single focal point".⁴⁶ In dispersing political focal points and creating new outlets for political competition, regional autonomy might also allow the central government to consolidate power. Consolidation is particularly useful for new governments and governments in the midst of a conflict or political crisis. In these instances, regional autonomy essentially serves to draw attention away from the government, giving politicians manoeuvrability and allowing the central government to tighten their grip on the state through reconfiguring their power.⁴⁷

3.0.2 Targeted Concessions to Regional Minorities

The implementation of segmental autonomy provisions can serve as a concession to marginalized ethnic groups, potentially reducing the risk of conflict involving the central government or other ethnic groups. It is sometimes referred to as "cooptation".⁴⁸ In order to avoid the breakup of a state or a conflict, regional autonomy can abate political instability by meeting the needs of a dissatisfied group. As above, this can manifest as the group exerting substantial control over regional policymaking. One common argument against regional autonomy as a concession is that it opens the floodgates to more serious demands such as secession, and may increase ethnic violence. Roeder makes a convincing argument against autonomy as it relates to ethnofederalism, stating that "[e]thnically homogeneous cantons that divide ethnic communities may encourage inter-regional competition within ethnic groups," strengthening regional identities and discouraging state consolidation.⁴⁹ While this is clearly a potential threat, two points are worth noting. Firstly, secession itself is incredibly rare, and, whether successful or unsuccessful, secession is unlikely to be directly attributed to increased demands in autonomous locales.⁵⁰ Secondly, segmental autonomy is designed in part to balance any regional power disparities, and so additional demands are likely to come from groups who perceive themselves as being left behind. As Lluch (2012) argues, autonomism succeeds because of its hybridity and multiplicity: "it can perfectly balance its anti-federalist stances with its grounding in the federalist principle of multiple levels of government within the same state apparatus, complemented by its anti-secessionism stance".⁵¹ There is clearly a mixed track record with

⁴⁶Horowitz 1985, p. 598.

⁴⁷Seely 2001; Gasper 1989.

⁴⁸Seely 2001.

⁴⁹Roeder 2009, p. 219.

⁵⁰Mehler 2013; Roeder 2014.

⁵¹Lluch 2012, p. 155.

dispersive forms of power-sharing and ethnofederalism. As such, this warrants empirical analysis of regional autonomy in order to establish what exactly makes decentralization effective or harmful in ethnically diverse states.

3.0.3 Checks and Balances on the Central Government

Segmental autonomy is not just dispersive in nature. In ethnically fractionalized states in particular, segmental autonomy is most effective when it allows ethnic minorities to act independently of the central government while also giving that group some level of representation and control in the central government. Regional elections are a perfect example of such a mechanism. In implementing regional elections for geographically distinct ethnic minorities, previously powerless or discriminated groups are able to elect representatives of the same ethnic group who might then implement policies appropriate to the groups' needs. These elected members also serve as checks on the central government, thus legitimizing the regime. In granting more autonomy to salient regions, the central government might be perceived as more democratic and inclusive. Of course, attributing perceptions of democracy to the integration of regional actors into a central government is challenging to establish, but we do see decentralization improving public perceptions of democracy in various countries.⁵² Beyond just perception, legitimization may in fact improve democracy given that regional actors, if integrated successfully, can serve as meaningful checks and balances on the central government.

3.0.4 Interactions Between Provisions

Lastly, in employing segmental autonomy alongside other consociational provisions, one can balance out the potential pitfalls of one mechanism with another. For example, the “accommodating” provisions of mutual veto and segmental autonomy, which grant additional powers to minority political actors may, as mentioned, entrench ethnic identities and potentially lead to conflict. By implementing more inherently “integrative” measures—those designed to break down ethnic identities and force cooperation—such as coalition cabinets and proportional representation, the potential for deepened ethnic divisions are reduced. Both Hartzell and Hoddie (2007) and Norris (2008) speak to the effectiveness of using multiple complementary power-sharing provisions. Given this, I expect to see any positive effects on my outcome variables either maintain a positive relationship or experience an increase in the relationship when incorporating multiple dimensions of power-sharing in addition to segmental autonomy.

With these theoretical mechanisms and assumptions in mind, I present my two core hypotheses:

H₁: *Ethnically diverse states that employ segmental autonomy provisions, either through peace accord or constitutional reform, will experience reduced intergroup tensions, prolonged peace, and democratization.*

H₂: *For ethnically diverse states that employ segmental autonomy provisions along with other provisions of power-sharing, we expect to see the employment of additional provisions moderate the effect*

⁵²Escobar-Lemmon and Ross 2014; World Values Survey 2007.

of segmental autonomy of intergroup tensions, prologued peace, and democratization.

In proliferating political focal points, responding to regional group demands, and integrating regional minorities into the central government, segmental autonomy can serve as an effective remedy to ethnically diverse states. In implementing multiple power-sharing mechanisms, the weaknesses of segmental autonomy may be counterbalanced by more inherently inclusive provisions such as coalition cabinets and proportional representation. Conversely, if my results do not confirm my hypothesis, I will fail to reject the null:

H₀{Null}: *There will be no significant relationship between the implementation of segmental autonomy provisions and the reduction in intergroup tensions, prolonged peace, and democratization in ethnically diverse states.*

3.0.5 Alternative Mechanisms

I also acknowledge some alternative theoretical arguments and potential threats of segmental autonomy. As mentioned, a common criticism of segmental autonomy is that it could lead to more aggressive demands, increased conflict, and potentially secession. The separation of groups along ethnic lines could reduce intergroup interactions to the point that prejudice and scapegoating may become the norm.⁵³ Keller and Smith (2005) share a similar concern to Kelly (2019) in that segmental autonomy may go beyond political decentralization and group self-determination, instead exacerbating intergroup tensions and oppositional identities, and incentivizing more extreme concessions by the central government. They suggest that “[t]he long-term implications of [subnational autonomy] are unclear, but in the short term there has been a tendency for increased demands for further autonomy among distinct groups within regions”.⁵⁴ While these are issues that undoubtedly need to be considered during the planning and implementation of regional autonomy provisions, there are a number of issues with these claims. First, segmental autonomy is seldom a completely dispersive institution. As we have seen, provisions such as regional elections are both accommodative and integrative in nature, and so it is unlikely that ethnic groups will be partitioned to the point that they are unable to interact with one another. Second, Keller and Smith (2005) use Ethiopia to argue against the effectiveness of segmental autonomy. Ethiopia is an interesting case given that there were calls for secession and hostile intergroup relations well before the implementation of ethnofederalism in 1991.⁵⁵ Moreover, much of the ethnic conflict that followed the regional autonomy in 1991 arose because of the incomplete nature of its implementation, rather than the provisions therein. Certain ethnic groups were still discriminated, and the central government committed acts of violence against these marginalized groups.⁵⁶ It is therefore important to supplement case studies with more rigorous empirical methods to avoid misleading extrapolation. In any case, ethnically fractionalized states with marginalized populations will, in some respect, benefit from increased autonomy and state recognition. The degree to which this is the case will be analyzed in Chapter 5.

⁵³Kelly 2019.

⁵⁴Keller and Smith 2005, p. 240.

⁵⁵Vogt et al. 2015.

⁵⁶Vogt et al. 2015.

4 Quantitative Methodology

We have seen, through a qualitative lens, the potential effectiveness of regional autonomy in ethnically divided societies. In order to confidently attribute regional autonomy to the reduction of conflict and democratization, more rigorous empirical methods should be employed. This section describes my large-N analysis, where I study multiple ethnically diverse societies from 1975 through to 2010 in order to quantitatively test my hypotheses.

4.1 Data Collection

Data collection began with a broad overview of existing datasets on power-sharing in existing papers. As mentioned, Ansorg et al.'s (2013) expansive study on existing datasets was of great help in my own evaluation of existing datasets. Their findings very much parallel my own experiences with these political datasets: they are often hard to obtain; they often do not contain all the information required to fully understand the data; they are often conceptualized and parameterized differently, making comparison especially challenging; and there is often little information on how the variables were coded, reducing the credibility of these data. Moreover, many of the datasets suffer from significant missingness, again potentially reducing the accuracy of the authors' findings. As mentioned, I have created a visual mapping of the provisions of power-sharing based off of my literature review. It contains the core provisions of power-sharing, power-dividing, and partition, the source author, and any variables that relate to the provisions. After identifying datasets that contained variables or potential proxies for the provisions that have been conceptualized in the literature, I merge them to create a second unique dataset.⁵⁷ I use StrÅm et al.'s (2017) "Inclusion, Dispersion and Constraint Dataset" as it is arguably the most complete dataset on power-sharing provisions—despite only covering data from 1975 through to 2010. Other datasets included in the final merge are Norris (2008), Hartzell and Hoddie (2007), and Jaarstad and Nilsson (2008), as well as datasets from the Database of Political Institutions, Varieties of Democracy, Quality of Governance, and Ethnic Power-Relations. I elaborate on the nature of the data and future endeavors in the scope and limitations section of the paper.⁵⁸

Given that many of the prominent datasets have high percentages of missingness, this is something that has to be accounted for in my own analyses. Where possible, I have filled out missing observations for the variables used in my statistical analysis and summary plots. Visualizations of the merged data's missingness can be found in the appendix.

⁵⁷See the appendix at the end of this paper for a link to my replication archive.

⁵⁸It should be noted that all the code written for this project have been formatted as R Markdown files, a link to which can be found in the appendix of this paper.

4.2 Measurements

4.2.1 Dependent Variables

In my attempt to partially reconcile the literature on power-sharing, I run statistical tests on three main dependent variables and several supplemental dependent variables. I use QOG’s index score which represents the average of all country-survey scores available within each country-year and is measured from 0—no social trust—to 100—complete trust in others. I also use two other index scores measuring satisfaction with democracy and support for democracy—again in the QOG dataset—as supplements to measure whether these values change with the implementation of segmental autonomy provisions. These are also aggregate indices of survey data at the country-year level. My second dependent variable is the PolityIV project’s polity score, a twenty-one-point score that captures a state’s level of democracy, anocracy, or autocracy. In line with my core hypothesis, I use this variable to understand whether there is a statistically significant relationship between the presence of regional autonomy and changes in democracy. My final dependent variable comes from the Uppsala Data Conflict Program (UCDP) and addresses the relationship between conflict rates and autonomy. I utilize a binary and continuous measurement of state conflict for robustness. The binary variable captures whether, in a given country-year observation, there were over one-thousand battle deaths, while the continuous variable captures the severity of that conflict by the number of deaths, with fewer than one-thousand being considered minor, and over one-thousand being considered a war. The variable is not lagged; conflicts that occur within a calendar year are entered into that year. For robustness, I run a one-year lag and a five-year lag in order to identify any latent effects of conflict.

4.2.2 Independent Variables

My core independent variable is the implementation of segmental autonomy. I utilize other dataset’s conception of autonomy as well as my own variable for robustness. In all cases, the measurement of autonomy is dichotomous. Firstly, I use DPI’s measurement of autonomous regions as my primary independent variable. DPI conceptualizes the measurement as follows:

Autonomous regions are not the same as states, provinces, etc. An autonomous region is recorded if a source explicitly mentions a region, area, or district that is autonomous or self-governing. Furthermore, they must be constitutionally designated as “autonomous” or “independent” or “special”. Federal Districts or Capital Districts do not count as autonomous regions. Disputed autonomy is not recorded. Indian reservations are not counted as autonomous. **Deviating from convention, no information recorded as 0.**⁵⁹

I supplement these core assessments of the presence of autonomous regions by running simple bivariate regressions using different measures of regional autonomy from Ethnic Power Relations and the Regional Autonomy Index. Though I have already assessed the correlation between these variables, it seems logical to assess their predictive power with regards to our outcome variables of interest. The results of these

⁵⁹Keefer and Scartascini 2018, emphasis in original.

bivariate regressions can be found in the results section.

4.2.3 Control Variables

The impetus behind including my control variables comes from existing empirical studies and the necessity of country controls.⁶⁰ By including these potentially confounding variables, I am able to account for the issues of omitted variable bias and reverse causality between my dependent, independent, and control variables. As such, I have included variables from QOG on political stability, the Gini Index, population, and polity score.⁶¹ Additionally, I calculate a new variable that measures the presence of other consociational provisions. This takes a value of one when any of the other core provisions of consociational democracy—mutual veto, proportionality, or grand coalition—are present in any country-year observation, and I use this to calculate interaction effects in my models.

4.3 Empirical Conceptions of Segmental Autonomy

While it is important to understand the substantive effects that provisions of power-sharing exhibit when implemented, an equally important question is how the field operationalizes these concepts and whether these measures can be considered construct valid. As such, I utilize measurements of constructs from four different datasets in order to better understand the construct validity of regional autonomy. These datasets include DPI,⁶² Ethnic Power Relations (EPR),⁶³ Inclusion, Dispersion, and Constraint (IDC),⁶⁴ and the Regional Autonomy Index (RAI).⁶⁵ The Local Autonomy Index⁶⁶ and PA-X⁶⁷ measurements are not included in the analysis given that their units of analysis cannot easily be manipulated to align with the other datasets. Based on the codebook descriptions for these variables, we expect the variables that measures forms of segmental autonomy to exhibit high correlation amongst one another and low correlation between constructs that are theoretically different—namely, those that measure subnational authority. Table 2 shows Pearson correlations for these variables.

Intuitively, among measures of subnational authority, we see relatively high levels of correlation (0.65 - 0.81). Less intuitively, however, among the three measures of regional autonomy, there is relatively low correlation across all three models (0.24 - 0.41). We also see that the index measurement of segmental autonomy from RAI correlates highly with measures of subnational authority, between which we should theoretically be able to distinguish. These findings hearken back to Adcock and Collier’s (2001) discussion on establishing equivalence across context-specific observations.⁶⁸ In other words, different country-specific

⁶⁰Hartzell and Hoddie 2007; Kelly 2019; Norris 2008a; Strøm et al. 2017; Walter 2002.

⁶¹I exclude polity score from the model where the dependent variable is also polity score

⁶²Keefer and Scartascini 2018.

⁶³Vogt et al. 2015.

⁶⁴Strøm et al. 2017.

⁶⁵Hooghe et al. 2016.

⁶⁶Ladner and Keuffer 2018.

⁶⁷Bell and Badanjak 2019.

⁶⁸Adcock and Collier 2001, pp. 534–535.

contexts make generalized measurements especially difficult, exemplified by the fact that three supposedly theoretically convergent constructs have been operationalized in such a way so as to be weakly correlated with one another and more strongly correlated with theoretically and conceptually different constructs.

Where does this leave us? Though I am unable to reconcile or aggregate existing measures of regional autonomy, these findings still advance the power-sharing literature. Moreover, these findings necessitate heightened caution and care when drawing inferences and making conclusions based on statistical results. Regional autonomy is not—as we saw with the debate on consociationalism—a well-defined concept, and the implications of which must be addressed in my methodology. Section 5 will address these conceptual discrepancies from an empirical standpoint.

	<i>auton</i> (DPI)	<i>n_RAI</i> (RAI)	<i>reg_aut</i> (EPR)	<i>subtax</i> (IDC)	<i>subed</i> (IDC)	<i>subpolice</i> (IDC)	<i>author</i> (DPI)
<i>auton</i> (DPI)	1						
<i>n_RAI</i> (RAI)	0.24	1					
<i>reg_aut</i> (EPR)	0.32	0.41	1				
<i>subtax</i> (IDC)	0.20	0.86	0.46	1			
<i>subed</i> (IDC)	0.15	0.7	0.35	0.78	1		
<i>subpolice</i> (IDC)	-0.05	0.83	0.35	0.76	0.65	1	
<i>author</i> (DPI)	0.18	0.79	0.38	0.77	0.65	0.81	1

Table 1: Pearson’s Correlation of Segmental Autonomy and Authority Measurements

4.4 Models

Prior to running statistical models, I generate simple cross-sectional time-series plots that show the relationship between the percentage of years each state has spent with *de jure* implementation of segmental autonomy and levels of social trust, polity score, and conflict intensity within the state. These summary statistics can be found in the appendix of this paper. As these cross-sectional visualizations include all states in the dataset, we do not see any significant trends across time, though it does give some insight into how prevalent segmental autonomy is across the world’s states.

I begin my statistical analyses by subsetting the data to those states that exhibit high levels of ethnic fractionalization (characterized by states that have an ethnic fractionalization score of above the world median value), and then running several iterations of robust ordinary least squares (OLS) regression on my cross-sectional time-series dataset on three distinct dependent variables. For conflict duration as the dependent variable, I run a Cox proportional hazards model to assess whether the implementation of regional autonomy serves to reduce the length of a conflict. For each dependent variable—levels of social trust, conflict intensity, and polity score—I run three iterations of the regression: A simple bivariate with country fixed effects; a multivariate with country and year fixed effects and control variables; and a multivariate with all of the preceding components plus an interaction effect. For all models—excluding my cross-section time-series plots—I include country fixed-effects, and for the latter two iterations, I include year fixed-effects. Lastly, to ensure my estimates are robust, the OLS regressions are clustered by

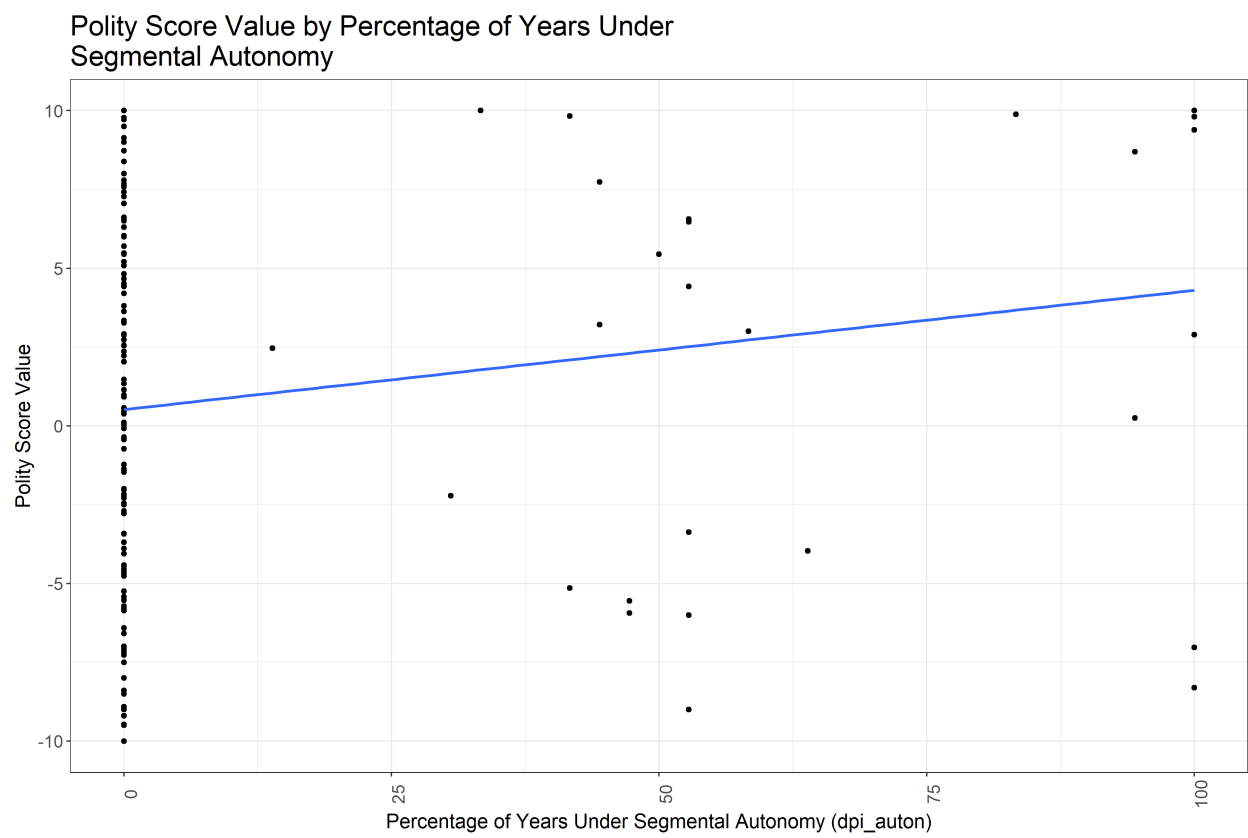


Figure 2: Global Relationship Between Segmental Autonomy and Polity Score

standard error. I start by estimating a pooled cross-sectional model with fixed effects:

$$Y_{it} = \beta_0 + \beta_1 SegAut_{it} + \beta_2 OtherProvis_{it} + \gamma_i + \lambda_t + \mathbf{X}'_{it} + \epsilon_{it}$$

where Y_{it} represents one of my three outcome variables for a given country i in a given year t , β_x denotes my independent and control variables (segmental autonomy and other consociational provisions respectively), and ϵ_{it} is the error term for each country-year observation. γ_i and λ_t denote country fixed effects and year fixed effects respectively. \mathbf{X}'_{it} represents a matrix of control variables for each country-year observation, all of which can be seen in the regression tables in Chapter 6.

Model 2, the most constrained OLS model, containing fixed effects, the matrix of controls, and an interaction effect between segmental autonomy and other consociational provisions, takes the following functional form:

$$Y_{it} = \beta_0 + \beta_1 SegAut_{it} + \beta_2 OtherProvis_{it} + \beta_3 (SegAut_{it} * OtherProvis_{it}) + \gamma_i + \lambda_t + \mathbf{X}'_{it} + \epsilon_{it}$$

The most constrained Cox proportional hazards model can be written as:

$$h(t) = h_0(t) \exp[\beta_0 + \beta_1 SegAut_{it} + \beta_2 OtherProvis_{it} + \beta_3 (SegAut_{it} * OtherProvis_{it}) + \gamma_i + \lambda_t + \mathbf{X}'_{it} + \epsilon_{it}]$$

where $h(t)$ is the expected hazard at time t and $h_0(t)$ is the “baseline” hazard. The baseline hazard represents the hazard when each of the predictor variables (β_0 , β_1 , β_2 , et cetera) are equal to zero. Note that my predictor variables are the same for both the ordinary least squares and the Cox proportional hazards model.

5 Results

The three core models provide mixed support for my hypotheses. I start by analyzing my OLS and Cox model results and then move into assessing measurements of regional autonomy and robustness checks. Table 3 shows the impact of segmental autonomy on social trust levels for all country-year observations that fall above the median ethnic fractionalization value for all states in my dataset. Here, social trust is taken to be the average of all country-survey scores available within each country-year observation, with 0 representing the lowest possible trust levels, and 100 representing the highest possible trust levels. The results are mixed. The first hypothesis posits that regional autonomy, in granting ethnic groups more political power and serving as a concession to marginalized ethnic groups, reduces political grievances and intergroup tensions. A simple bivariate regression indicates that regional autonomy exerts a statistically

significant positive effect on levels of social trust across states, however, the inclusion of control variables and year fixed effects flips the direction of regional autonomy—from a 0.4-point increase to a -30.8-point decrease—and renders it not statistically significant. We see that the presence of other consociational provisions exert a negative and statistically insignificant effect on levels of social trust in a state, though this becomes positive and significant at the ten-percent level when we interact this variable with the regional autonomy measure. The adjusted R^2 values across models suggest that the Model 3 is able to explain up to 51% of the total variance in the data, though there is not much change in the R^2 and adjusted R^2 values across models. Similarly, the root mean squared error (RMSE)—standard deviation of the unexplained variance—does not differ significantly across models, indicating that additional control variables do not better explain the variation in the outcome variable.

	Model 1	Model 2	Model 3
(Intercept)	49.65*** (0.00)	22.38 (12.09)	22.38 (12.09)
Regional Autonomy	0.40*** (0.00)	-30.83 (23.94)	-30.83 (23.94)
Political Instability		4.89 (5.03)	4.89 (5.03)
Gini Index		0.49 (0.32)	0.49 (0.32)
Population		0.00 (0.00)	0.00 (0.00)
Polity Score		0.77 (0.82)	0.77 (0.82)
Other Provisions		-12.28 (3.39)	-12.28 (3.39)
Regional Autonomy:Other Provisions			29.00* (5.98)
Country Fixed Effects?	Y	Y	Y
Year Fixed Effects?	N	Y	Y
R^2	0.51	0.58	0.58
Adj. R^2	0.47	0.51	0.51
Num. obs.	598	409	409
RMSE	11.47	11.53	11.53

***p<0.001, **p<0.01, *p<0.05

Table 2: Segmental Autonomy's Effect on Social Trust

The second hypothesis posits that regional autonomy—again serving as a concession to marginalized and potentially de-stabilizing groups—reduces conflict in ethnically fractious regions. Table 4 uses a dichotomous conflict measurement as the dependent variable; it takes a value of 1 when there is a significant conflict occurring in a given year, and 0 otherwise.⁶⁹ Again, we do not see segmental autonomy exert any statistically significant effect on conflict intensity levels in ethnically diverse states. Similar to

⁶⁹UCDP defines "significant" as a conflict with over 1000 battle-related deaths. For the purposes of this study, the value is subsetting to only internal conflicts. A number of issues arise with this coding of conflict and they will be addressed in a later section.

the results in our OLS on social trust levels, the interaction effect between regional autonomy and other consociational provisions serve to reduce conflict to a statistically significant degree. The Cox model indicates that these variables reduce conflict by a factor of 47%.⁷⁰ Though this is only weakly statistically significant, these findings do provide some evidence that the presence of autonomy, when implemented alongside other provisions of power-sharing, may reduce conflict rates in ethnically diverse polities.

	coef	HR = exp(coef)	95% CI	p-value
Regional Autonomy	0.38	1.47	[0.83, 2.59]	0.19
Other Provisions	0.58	1.79	[1.20, 2.67]	0.00**
Political Instability	-0.04	0.96	[0.77, 1.20]	0.73
Gini Index	0.00	1.00	[0.98, 1.03]	0.79
Population	-0.00	1.00	[1.00, 1.00]	0.49
PolityIV Score	-0.02	0.98	[0.95, 1.01]	0.20
Regional Autonomy:Other Provisions	-0.64	0.53	[0.25, 1.12]	0.10 .

***p<0.001, **p<0.01, *p<0.05, .p<0.1

Table 3: Cox regression model, $n = 245$, number of events = 195.

Perhaps the most compelling finding of this study is the effect that the presence of segmental autonomy has on democratization in an ethnically fractionalized state, as shown in Table 5. Recall that segmental autonomy can serve to legitimize a regime by granting power to a diverse range of actors, and that legitimization may extend from just positive perceptions of democracy to actual improvements of democratic performance. Using PolityIV polity score, a twenty-one point index of democratic indicators, we can assess the substantive effects of regional autonomy. Across all three models, the implementation of segmental autonomy correlates with increased polity scores, and when accounting for control variables and interaction effects, the statistical significance of the presence of segmental autonomy increases. Somewhat counterintuitively, the interaction effect between regional autonomy and other consociational provisions reduces democracy levels with weak statistical significance. This will be discussed in the following section.

5.1 Discussion

The OLS and Cox regression models provide some convincing evidence in support of my hypotheses. Regarding levels of social trust, we see segmental autonomy provisions alone having no significant effect, though we do see the presence of multiple consociational provisions increasing levels of social trust with statistical significance. The high RMSE value and R^2 value explains fifty percent of the variance in the relationship between autonomy and social trust, and so when accounting for country and year fixed-effects and our control variables, these core provisions explain a good amount of the underlying patterns in the data. While I will elucidate further in the next section, issues such as a lack of data when controlling for all independent variables may indeed have affected my results. These results could also be function of our measure of social trust, which does not have complete country coverage and is an index of existing

⁷⁰Cox regression models calculate the association between "survival" time and a given independent variable. Here, a hazard ratio coefficient of 0.53 reduces the hazard by 47%.

	Model 1	Model 2	Model 3
(Intercept)	-7.27*** (0.00)	-4.07 (2.96)	-4.07 (2.96)
Regional Autonomy	2.94 (3.67)	0.24 (1.55)	11.53*** (1.69)
Political Instability		0.87 (0.65)	0.87 (0.65)
Gini Index		0.02 (0.05)	0.02 (0.05)
Population		0.00 (0.00)	0.00 (0.00)
Other Provisions		0.65 (0.77)	0.65 (0.77)
Regional Autonomy:Other Provisions			-6.20* (2.67)
Country Fixed Effects?	Y	Y	Y
Year Fixed Effects?	N	Y	Y
R^2	0.64	0.82	0.82
Adj. R^2	0.63	0.79	0.79
Num. obs.	2379	758	758
RMSE	4.27	2.35	2.35

***p<0.001, **p<0.01, *p<0.05

Table 4: Segmental Autonomy’s Effect on Democratization

surveys rather than an exact measure. Though it provides the best coverage overall, future research should focus on aggregating fine-grain, cross-country, survey data focusing specifically on attitudes toward fellow ethnic groups pre- and post-decentralization.

Similarly interesting results emerge when evaluating conflict. As discussed, we see that regional autonomy plus a mix of other consociational provisions—either mutual veto, grand coalition, or proportionality—reduces conflict rates by a factor of 47%, while regional autonomy alone does not seem to exert a statistically significant effect either way. Of course, different measures of conflict could be used to assess this hypothesis, but a simple binary provides sufficient evidence of the potential of segmental autonomy when employed alongside other provisions.

The final dependent variable, polity score, seems to correlate well with the presence of segmental autonomy. As mentioned, it does seem counterintuitive for more power-sharing provisions to exert a negative effect, though I identify two possible explanations. First, ethnically fractionalized and conflictual polities, ones which inherently register low on PolityIV’s index, may attempt to implement broader consociational institutions. Examples of this include Iraq’s 2004 constitution and the Addis Ababa Agreement in Sudan in 1972. Second, including an interaction effect reduces the number of observations in a regression, and so these results could be a function of a lower N rather than a substantive effect of the interaction. That said, the high adjusted R^2 values and relatively low RMSE values suggest that these models do a good job of predicting the outcomes and explaining the variance within the data. The results

presented in Table 5 are especially compelling given that country fixed effects and clustered standard errors are designed to account for any possible confounding variables and alternative explanations. The fact that such a strong relationship exists across the two multivariate regressions in spite of the threat of type II error suggests that the effect of regional autonomy on democracy scores is salient.

5.2 Robustness Checks

I run two robustness checks on my regression models to probe the reliability and validity of my findings. First, I assess alternative explanations. One potential alternative explanation to the results in Table 5 is that decentralization could be a component of the polity score index. In other words, if regional autonomy or decentralization is a subcomponent of PolityIV’s index measurement of democratization, then the finding of a statistically significant relationship between the measure of autonomy and democracy score would be tautologically true. To account for this, I run the same regression as in Table 5, but swap out the dependent variable for a measure of free and fair elections in Table 6.⁷¹ This variable comes from V-Dem, and asks: “Taking all aspects of the pre-election period, election day, and the post-election process into account, would you consider this national election to be free and fair?”⁷² It is an ordinal variable where 0 indicates the election was not free or fair, and 4 indicates that the election was free and fair. Logically, we see that polity score is correlated with free and fair elections, given that the latter is a component of the former. More interestingly, we see that, as with the results in Table 5, the presence of regional autonomy increases free and fair elections by 1.8 points and is statistically significant at the $p < 0.001$ level. The presence of other consociational provisions also increases democracy when using this measure as a proxy. These results suggest that, irrespective of our measure of democracy, the implementation of regional autonomy serves to improve democracy in ethnically fractious regions. One final point: the interaction effect of regional autonomy and other provisions, is, as was the case in the previous model, negatively associated with democracy, though it is statistically insignificant. This seems to be at odds with Norris (2008) who suggests that the more power-sharing provisions implemented, the better. As mentioned, this could simply be a function of the inherent characteristics of states where regional autonomy is employed, or of a lower N compared to the preceding models.

Second, I assess and compare various measures of regional autonomy from existing datasets. Table 7 provides an assessment of the different measures of autonomy’s predictive validity. As discussed, much of the existing power-sharing literature purports that autonomy will either have a null or positive effect on democratization.⁷³ This is through the generation of multiple focal points that simultaneously reduces political pressure on the central government while also legitimizing the regime. When I take the most demanding regression model from the main results section—incorporating clustered standard errors,

⁷¹This measurement embodies the Schumpeterian conceptualization of democracy found in Schumpeter 1950

⁷²Coppedge, Gerring, and Knutsen n.d.

⁷³Lijphart 1969; Lijphart 1974; Nordlinger 1972; Norris 2008a; Kelly 2019; Roeder and Rothchild 2003.

	Model 1	Model 2	Model 3
(Intercept)	-1.39*** (0.00)	-0.64 (0.64)	-0.64 (0.64)
Regional Autonomy	0.04 (1.56)	-0.50 (0.33)	1.80*** (0.36)
Political Instability		0.04 (0.08)	0.04 (0.08)
Gini Index		0.00 (0.01)	0.00 (0.01)
Population		-0.00 (0.00)	-0.00 (0.00)
Polity Score		0.05** (0.01)	0.05** (0.01)
Other Provisions		0.41* (0.15)	0.41* (0.15)
Regional Autonomy:Other Provisions			-0.22 (0.29)
Country Fixed Effects?	Y	Y	Y
Year Fixed Effects?	N	Y	Y
R^2	0.69	0.92	0.92
Adj. R^2	0.68	0.91	0.91
Num. obs.	2111	753	753
RMSE	0.81	0.36	0.36

***p<0.001, **p<0.01, *p<0.05

Table 5: Alternative Measure to PolityIV Score (Free and Fair Elections)

country and year fixed effects, and control variables—and use PolityIV’s polity score measurement as the dependent variable, I find that each measurement exerts a completely different effect on polity score. The Ethnic Power Relations measurement of regional autonomy (which, like DPI’s measurement, is a binary variable) suggests that the presence of regional autonomy in ethnically diverse states exerts a weakly negative and statistically insignificant effect on democratization. Similarly, the Regional Autonomy Index variable exerts a negative and statistically insignificant effect on democratization. Both alternative measurements remain insignificant when interacting with other consociational provisions, leading to questions of construct validity. These findings seem to be in line with the core of my argument. Recall that the simple correlation table suggested that measures of regional autonomy were not well correlated with each other, whereas measures of subnational authority (a distinct but theoretically related concept) showed much higher correlation rates across different measurements. Given that existing measures of regional autonomy are not well correlated, it seems logical that we would see contrasting results in our regression model.

How do we reconcile this disconnect? To start, is worth noting that the Regional Autonomy Index does not have the same country-coverage as the DPI and EPR measures, so it is likely that the discrepancy in results is partly due to this difference in coverage. RAI is also a bounded continuous rather than a binary variable, which could also contribute to the differing results across measurements. The discrepancy

between DPI's and EPR's measurement is a little harder to pin down, though it is most likely related to three distinct features of the dataset: the unit of analysis, and the broader conceptualizations of ethnic groups and of regional autonomy. Given that EPR's unit of analysis is country-year-ethnic group, there is more fine-grain information on regional groups and their power-relations. EPR's codebook states that an ethnic group is included in the dataset "if either at least one significant political actor claims to represent the interests of that group in the national political arena or if group members are systematically and intentionally discriminated against in the domain of public politics".⁷⁴ This conception has far greater coverage of ethnic groups compared with DPI, and as their regional autonomy measure is based on each coded ethnic group, there are more recorded instances of regional autonomy overall. Lastly, EPR's conception of regional autonomy specifies different state levels of autonomy as well as types of autonomy—language, education, tax, and spending—and thus contains more cases of autonomy. Here we get to the root of the issue, the Inclusion, Dispersion, and Constraint, dataset uses DPI's measurement for regional autonomy and supplements it with measures of subnational tax, education, and police autonomy, suggesting that regional autonomy and regional authority are different concepts. Put differently, EPR's measure of regional autonomy amalgamates autonomy and authority, reducing the construct validity of the measure. In sum, these results suggest that, even with the use of indices and other aggregate measurements, the concept of regional autonomy is difficult to pin down. In a bid to ensure robust results, these discrepancies in the measurement of regional autonomy cast a shadow over the validity of my findings. In the next section I present various avenues for future research that address the issue of instable measures.

5.3 Scope and Limitations

Several potential limitations with the study need to be addressed. First, given that my study relies on the data of other authors, there is a great deal of variation within the merged data. As my study shows, authors often conceptualize and parametrize their datasets differently, which makes comparison and merging data somewhat challenging. Further, there exists great variation of the frequency of each variable. Sometimes this is because the unit of analysis does not translate well to the standard country-year, though oftentimes there is no real explanation. While it is not worth relying on these variable in statistical analyses, the very fact that there exists so much missingness is a, albeit probably unsolvable, finding in itself. Certain conceptualized provisions might be rare in the real world, which, if we refer back to Ram and Ström's (2014) work, raises questions as to its saliency and interactions with other provisions. Alternatively, it could be that some variables are particularly subjective and difficult to code correctly, which provides a potential area of exploration moving forward.

Second, and as previously mentioned, there exists a great deal of variation in terms of the quality

⁷⁴Vogt et al. 2015.

	Model 1	Model 2	Model 3
(Intercept)	-4.07 (2.96)	-4.23 (2.86)	
DPI	11.53*** (1.69)		
EPR		-0.25 (0.68)	
RAI			-8.19 (8.35)
Political Instability	0.87 (0.65)	0.71 (0.65)	0.33 (0.48)
Gini Index	0.02 (0.05)	0.02 (0.05)	-0.06 (0.07)
Population	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
Other Provisions	0.65 (0.77)	0.07 (0.70)	-3.94 (8.35)
DPI:Other Provisions	-6.20* (2.67)		
EPR:Other Provisions		-1.55 (2.11)	
RAI:Other Provisions			8.60 (8.25)
Country Fixed Effects?	Y	Y	Y
Year Fixed Effects?	Y	Y	Y
R^2	0.82	0.81	0.77
Adj. R^2	0.79	0.79	0.73
Num. obs.	758	773	221
RMSE	2.35	2.38	1.03

***p<0.001, **p<0.01, *p<0.05

Table 6: Comparison of Measures of Regional Autonomy

of the available data. Many of the datasets are missing codebooks, and many give vague explanations of their coding practices and parameterizations. As such, in line with Ansorg et al.’s (2013) findings, results should be approached with caution. It is my hope that by aggregating the various datasets and by comparing the reporting of variables across datasets, I can account for, to some degree, the issue of internal and external validity among power-sharing datasets.

Third, it is challenging to disaggregate the different provisions of power-sharing. Again, this relates to the terminological discrepancies between the different formulations of power-sharing, as well as there being no consensus on what constitutes a provision. For example, Lijphart’s (1969) “grand coalition” is a relatively broad provision which, one assumes, could be further disaggregated. StrÅm et al.’s (2017) dispersive provision of “subnational police authority” is, conversely, fairly specific and unlikely to warrant further disaggregation. While the levels of the provisions themselves may not be completely aligned, this paper analyzes the smallest given level of provision, so in that sense, the levels of analysis are equal. One potential area of future research is to look at the different levels of analysis for these provisions, and to incorporate this into the existing power-sharing concept map. While not necessarily a limitation of this paper, it is worth noting that there are many other controls that are worth exploring as they pertain to power-sharing provisions. For example, Bormann et al. (2014) evaluate the importance of *de facto* versus *de jure* power-sharing institutions.⁷⁵ They frame power-sharing in terms of inclusive, dispersive, and constraining institutions and generate mixed findings. It is worth noting that many of the issues I have faced in my own study are common in many of the papers that I have cited. Given the subjective and contested nature of power-sharing, coupled with the fact many facets of power-sharing do not lend themselves to quantitative classification, a lack of reliable and complete data is an ongoing issue. The recent quantitative, large-N, studies of power-sharing provide some hope for the standardization of the topic, but there is still a lot of progress to be made in terms of the operationalization and validity of future studies and datasets.

6 Conclusion

Studies that assess regional autonomy within the broader conceptions of power-sharing generate mixed findings. Some argue that autonomy is a “quick-fix” to conflictual states that fails to provide any long-term solution to causing peace. Others suggest that autonomy entrenches differences between groups, opening the door to increased conflict and even secession. Those in favor of dispersive methods of power-sharing state the opposite: it can reduce conflict and integrate various competing factions in an inclusive and democratic way while allowing groups to act independently of the central government. Given the importance of these outcome variables, understanding the role that segmental autonomy plays in a power-sharing agreement becomes essential. In ethnically fractious states, segmental autonomy seems

⁷⁵Bormann et al. 2014.

to operate in three distinct ways: First, in granting more political manoeuvrability to regional actors, segmental autonomy reduces the likelihood of any one regional group exerting dominance over another; second, ethnic minorities may view regional autonomy as concession to their demands; allowing them to act in their own interests with relatively little constraint from the central government; and third, autonomy, by integrating regional actors into the central government, allows for more checks and balances and ensures that the central government does not exclude marginalized voices. In this way, segmental autonomy can both reduce conflict rates and, over time, improve both perceptions and levels of democracy in a state. My quantitative and qualitative analysis shows that states that employ regional autonomy provisions are more likely to experience democratization. These findings are robust, and maintain strong statistical significance when using different measures of the dependent variable. My findings also suggest that, when employed alongside other consociational provisions, segmental autonomy may serve to improve levels of social trust and reduce conflict rates.

This paper's goals have been twofold. It first aimed to assess the substantive effects of segmental autonomy in ethnically fractious polities and second, served to reconcile some of the conceptual discrepancies within the topic of power-sharing. Existing power-sharing, power-dividing, and partition literature present three fundamental issues. First, authors conceptualize and operationalize power-sharing and related terms differently when presenting their arguments, making comparison across cases extremely difficult. This lack of standardization and agreement over these concepts makes many of the arguments for and against power-sharing somewhat redundant. Second, the provisions of power-sharing are presented as a given, and few studies have addressed the significance of each provision and their interactions. As we have seen, the few existing studies of the provisions of power-sharing suggest that they are not as common and as effective as previously thought. Third, coding practices for the curation of power-sharing datasets leaves much to be improved. To fully understand power-sharing and peace institutionalization, we need to understand what provisions are utilized, how they are implemented, how they interact with other provisions and institutions, and how they might lead to peace.

In addition to the above, this paper makes three important contributions to the broader discussion of power-sharing. First, this paper has served to generate a more robust evidence base of the use and effectiveness of segmental autonomy. In addition to uncovering the measurement issues surrounding power-sharing and segmental autonomy itself, this paper has sought to provide a more fine-grain analysis of the mechanisms, outcomes, and examples of autonomy provisions in diverse states. This rich evidence base could well be of use to policymakers. My findings suggest that there is merit to moving away from the broad conceptions of power-sharing and moving toward analysis at the disaggregated provision level. Moving forward, the implementation of power-sharing arrangements would benefit from more careful and informed selection, and the understanding that certain arrangements complement one another while others might not. A related policy-oriented implication is that policymakers and impact-evaluators must acknowledge

the various ways in which we can assess the effectiveness of regional autonomy beyond just conflict and democratization. Autonomy exhibits trade-offs between institutional change and societal perceptions of the government and of other citizens, all of which must be accounted for in actual power-sharing designs.

Second, using a micro-level approach to power-sharing mechanisms improves the generalizability of my findings. From an academic standpoint, this framework might serve to reconcile some of the serious disparities in the literature. Not only is this advantageous from an academic perspective in allowing for accumulated findings, from a policy perspective, improved generalizability means that one can apply this framework elsewhere in order to ascertain where segmental autonomy may or may not work. Given that forty-two percent of the worlds' states are ethnically diverse, it is paramount that we are able to apply a standardized framework by which we can measure the effectiveness of power-sharing.⁷⁶ With that said, this micro-level approach has uncovered serious discrepancies across measurements of supposedly similar concepts, so caution must be exercised when using a measurement that claims to capture the construct of segmental autonomy.

Third, my findings point to the importance of incorporating other literatures into the study of power-sharing institutions. Segmental autonomy (and essentially all other forms of power-sharing) is veritably a "top-down" approach to the dynamic issues in ethnoplural societies. The null findings between segmental autonomy and social trust prompt future power-sharing studies to explore "bottom-up" approaches; community-driven strategies to nation-building that avoid international interventions and emphasize ethnic group cooperation and integration.⁷⁷ In sum, top-down approaches may affect positive, large-scale, institutional change at the expense of ground-level perceptions of the government and of regional and minority groups.

Of course, these results should be interpreted with caution. First, many of my findings are only weakly statistically significant, suggesting that there may be other mechanisms at play that explain the relationship between autonomy and my outcomes of interest. Second, my regression models show sign-flips that are not in line with my theory, again suggesting that there may be other factors at play. Third, as is the case with many of these large-N analyses, we cannot, with certainty, rule out potential reverse causality or unobserved confounding variables. Alternatively, these results could be a result of noise, omitted variable bias, a genuinely weak relationship between my dependent and independent variables, or a mixture of all three. Though I have tried to intentionally and pragmatically select control variables, there will always exist the possibility that we are missing potentially important variables. Thus, one should be cautious about drawing strong conclusions given the inevitable limitations that inhere in cross-national, observational designs. Until naturally occurring or real randomization materializes, these results must be considered tentative. Instead, this paper should be seen as an attempt to both hone in on

⁷⁶This statistic is calculated using the number of internationally recognized polities with an ethnic fractionalization score above the global median.

⁷⁷Such approaches can be found in progress in Somalia. See Arteh and Mosley 2016.

a disaggregated provision of power-sharing and, in doing so, to reconcile a disparate literature.

How, then, do we proceed? I identify two broad areas of future research. First, studies should focus on analyzing other disaggregate provisions of power-sharing in order to understand their substantive effects when implemented in ethnically diverse and conflictual states. That the literature is so uncertain of the efficacy of power-sharing as a solution to conflict and division, warrants a deeper exploration into the finer mechanisms at work. This also means that more time and care should be given to developing standardized measures of these provisions. As we have seen, several measures of segmental autonomy exist that purport to measure the same construct, though each measurement returns different results when empirically assessed. Only once a standard measurement for these disaggregated provisions exist, can we effectively engage in cumulative learning and policy analysis.

Second, future research would benefit from focusing on the theoretical mechanisms by which these provisions work. Though I sought to identify three main causal mechanisms, neither my case study analysis nor my large-N component can effectively isolate *which* mechanism or mechanisms are causing the outcomes we observe. Causal inference research designs such as the difference-in-difference or the synthetic control method, coupled with more case study analyses, would undoubtedly enhance the power-sharing literature.

We have reason to be hopeful when states like South Sudan, in an attempt to abate ethnic conflict and establish a trajectory toward democracy, propose employing forms of regional autonomy. The cautious optimism that surrounds the implementation of the Revitalized Agreement is warranted, given the mixed track-record of both segmental autonomy and previous peace agreements in the region. Though as we have seen, there is good reason to believe segmental autonomy, through its ability to devolve power to regional groups while incorporating them into the central government, could serve to improve democracy and quell ethnic tensions not just in South Sudan, but across many other ethnically fractious states that seek to transition into full democracies.

7 Appendices

7.1 Codebook

Below is a list of the main variables used in the summary statistics and models of this paper. The first section of the variable name, before the first underscore (e.g. **qog__**) indicates the dataset from which the variable originates. Any variable starting with **tb__** is the creation of the author. In the replication package, the file 01_tjbrailey_wrangle_data.Rmd elucidates the process of joining these variables together to create the final Provisions of Power-Sharing dataset.

7.1.1 Basic Country Variables

country	Country name.
year	Year of country observation.
cowc	Correlates of War country code (character).
cown	Correlates of War country code (numeric).

7.1.2 Populations

qog_al_ethnic	Ethnic fractionalization.
qog_hum_trust	Index of social trust survey questions.
qog_hum_supdem	Index of support for democracy survey questions.
qog_hum_satdem	Index of satisfaction with democracy survey questions.
qog_gle_pop	Population by year.

7.1.3 Democracy and Political System

dpi_system	Political system.
polity4_polity_score	PolityIV's polity score index.
vdem_v2elfrfair	Free and fair elections (continuous).

<code>qog_wbgi_pve</code>	Political instability (continuous).
<code>qog_wdi_gini</code>	Gini Index.

7.1.4 Measures of Segmental Autonomy and Authority

<code>idc_subtax</code>	Subnational tax authority.
<code>idc_subed</code>	Subnational education authority.
<code>idc_subpolice</code>	Subnational police authority.
<code>idc_fedunits</code>	Change in federal units.
<code>dpi_auton</code>	Presence of autonomous regions.
<code>dpi_author</code>	Provinces with authority over spending, taxing, or legislating.
<code>epr_reg_aut_dum</code>	Regional autonomy for salient ethnic groups (binary).
<code>epr_reg_aut_cont</code>	Regional autonomy for salient ethnic groups (interval).
<code>rai_n_RAI</code>	Regional autonomy index.

7.1.5 Other Provisions of Power-Sharing

<code>idc_mveto</code>	Mutual veto.
<code>gcman</code>	Mandated grand coalition.
<code>gcimp</code>	Grand coalition implemented.
<code>dpi_pr</code>	Proportional Representation.
<code>tb_other_provis</code>	Presence of other consociational provisions (binary).

7.1.6 Conflict

vdem_e_miinterc	Armed conflict (interval).
vdem_e_civil_war	Civil war (binary).
ucdp_side_a	Government in conflict.
ucdp_side_b	Opposition actor in conflict.
ucdp_territory_name	Territory over which the conflict is fought.
ucdp_intensity_level	Intensity level of the conflict (interval).
ucdp_cumulative_intensity	Intensity level of the conflict, accounting for time (binary).
ucdp_type_of_conflict	Type of conflict: Extrasystemic, interstate, internal.
prio_onset	Onset of conflict (binary).

7.2 Summary Statistics

7.2.1 Tabulated Summary Statistics

Table 8 presents basic summary statistics for some of the key dependent and independent variables in my study. The variable names are written as they are found in the dataset.

Variable	n	Min	q₁	\tilde{x}	\bar{x}	q₃	Max	s	IQR	#NA
polity4_polity_score	5269	-10.0	-7.0	3.0	1.1	9.0	10.0	7.5	16.0	664
ucdp_cumulative_intensity	990	0.0	1.0	1.0	0.8	1.0	1.0	0.4	0.0	4943
qog_hum_trust	1936	2.4	22.1	34.2	34.8	46.1	92.6	16.3	24.0	3997
dpi_auton	5796	0.0	0.0	0.0	0.1	0.0	1.0	0.3	0.0	137
qog_fe_etfra	5199	0.0	0.2	0.5	0.5	0.7	1.0	0.3	0.5	734

Table 7: Tabulated Summary of Main Variables

7.2.2 Map

I include one basic map (Figure 3) to show the geographic distribution of the Tuareg minority population in Mali and Niger. Note that there are significant Tuareg populations in other African states, but the contiguity of Mali and Niger makes for a more convincing parallel case study.

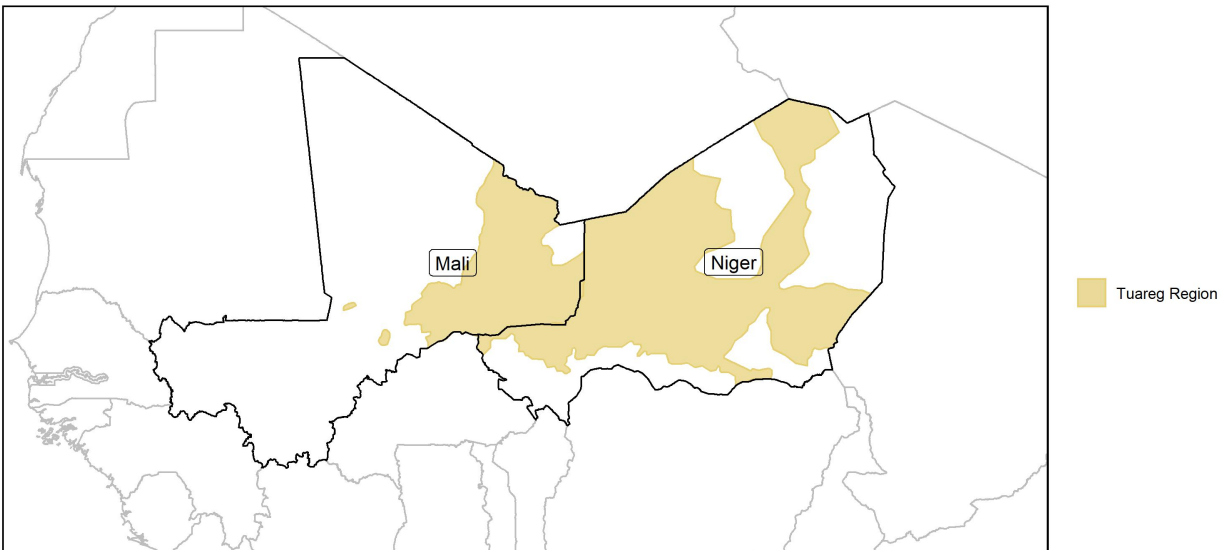


Figure 3: Geographic Spread of Tuareg in Mali and Niger

7.2.3 Cross-Sectional Time-Series Plots

These cross-sectional time-series plots (Figures 4 and 5) are the same as the plot in Chapter 5, though they look at my two other dependent variables; social trust and conflict intensity.

Social Trust Value by Percentage of Years Under Segmental Autonomy

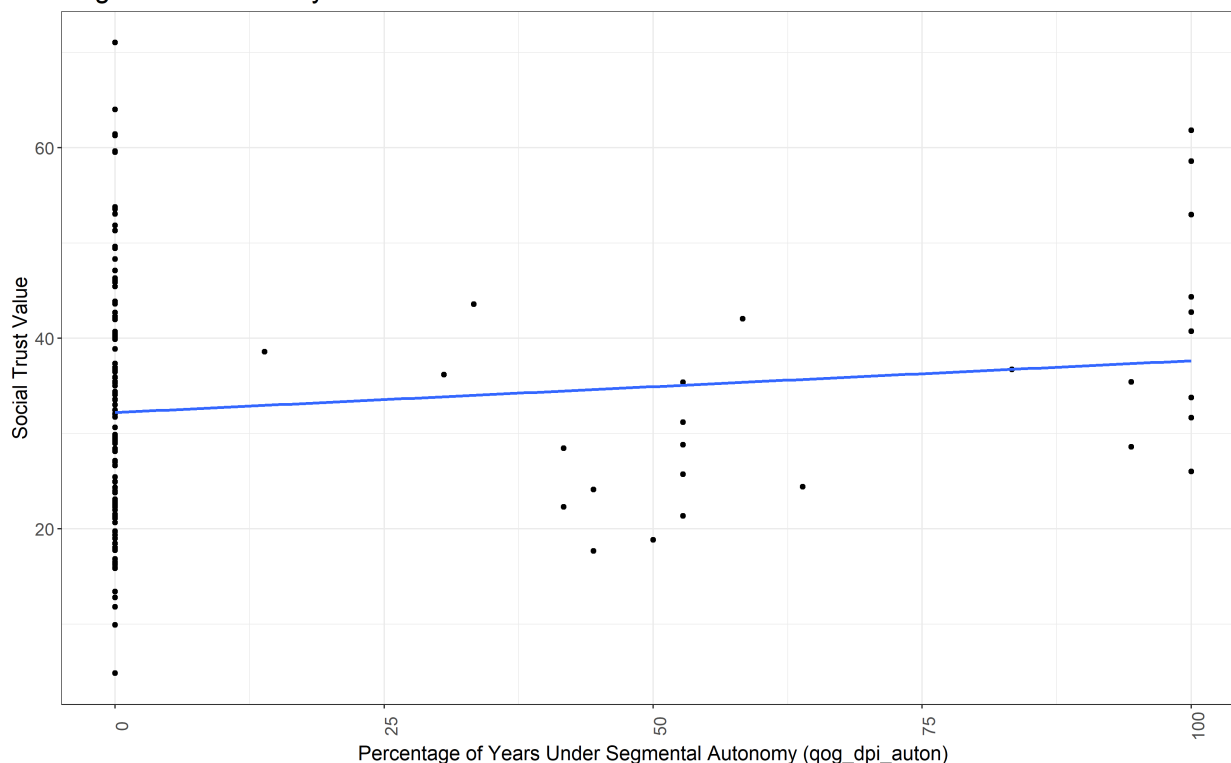


Figure 4: Global Relationship Between Segmental Autonomy and Social Trust

7.2.4 Missingness Plots

Figure 6 shows the overall missingness for the cleaned and recoded version of the Provisions of Power-Sharing dataset. Note that several of the variables with the largest percentage in missingness actually just have very few cases. This includes *idc_federal*, which takes a value of one when there is a year in which a new subnational unit was created, and NA otherwise.

7.3 Ontology

Figure 7 presents the full conceptual map of power-sharing from the literature review that I conducted. The first node is the parent node, and the second node denotes the broad category within which each conceptualization of power-sharing lives. The third node contains the author's conceptualizations of power-sharing, partition, and power-dividing, and the fourth node are the disaggregated provisions therein.

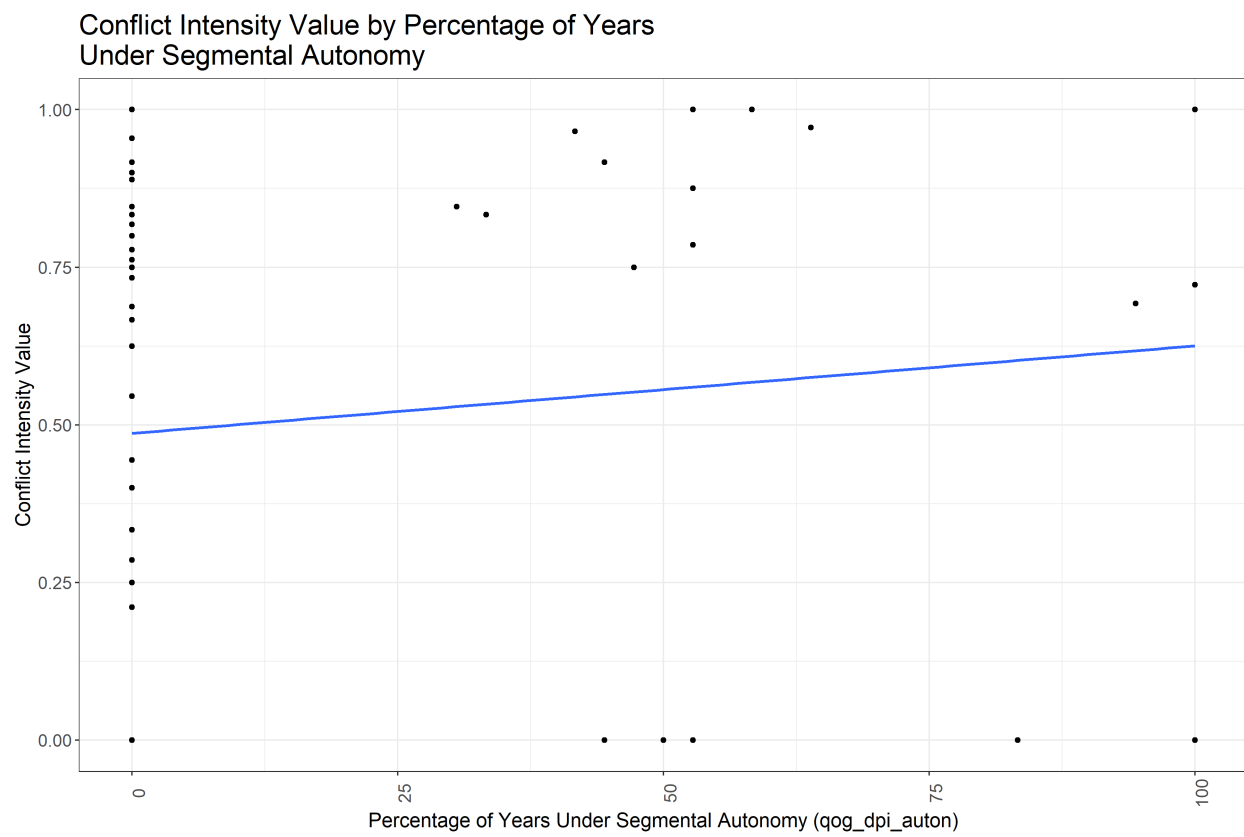


Figure 5: Global Relationship Between Segmental Autonomy and Conflict Rates

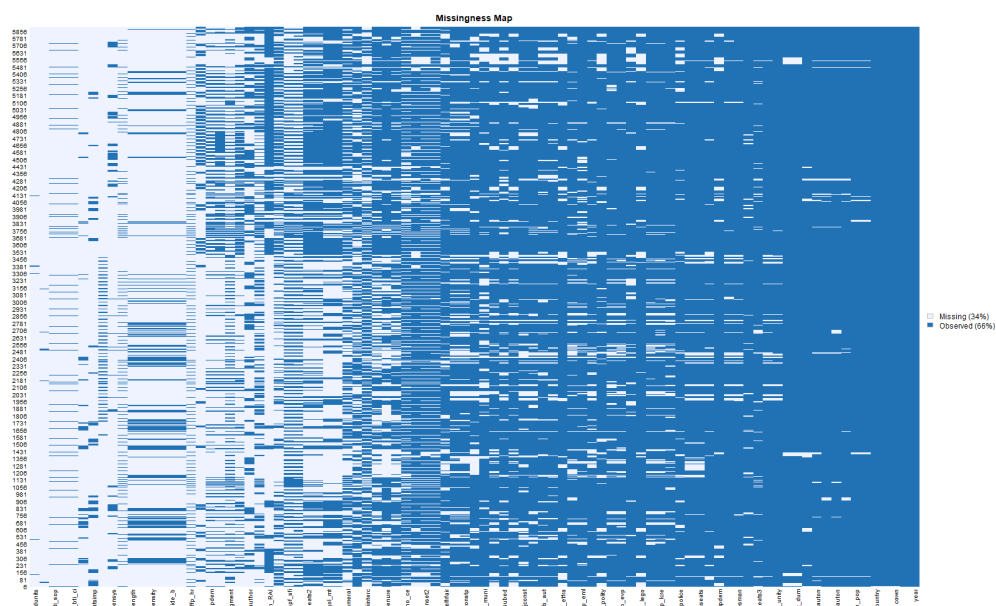


Figure 6: Dataset Missingness

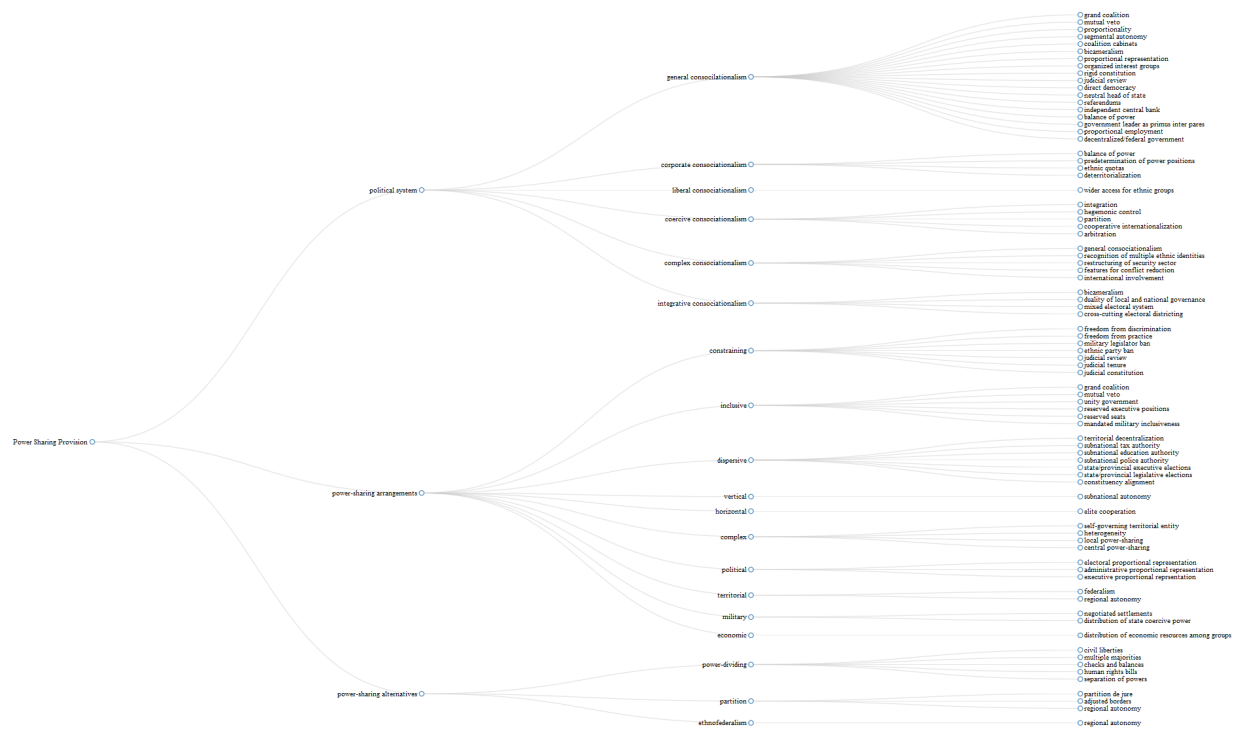


Figure 7: Full Ontology of Power-Sharing Provisions

7.4 Replication Package

A full replication package for this project can be found on my GitHub account.⁷⁸ This package contains markdown files that cover the data-building, analysis, and visualization stages, and allow for the replication of all tables, plots, and figures found in this manuscript.

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⁷⁸<https://github.com/tjbrailey/SeniorThesis>

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