

A Computational Analysis of Constitutional Polarization

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This Article is the first to use computational methods to investigate the ideological and partisan structure of constitutional discourse outside the courts. We apply a range of machine-learning and text-analysis techniques to a newly available data set comprising all remarks made on the U.S. House and Senate floors from 1873 to 2016, as well as a collection of more recent newspaper editorials. Among other findings, we demonstrate (1) that constitutional discourse has grown increasingly polarized over the past four decades; (2) that polarization has grown faster in constitutional discourse than in nonconstitutional discourse; (3) that conservative-leaning speakers have driven this trend; (4) that members of Congress whose political party does not control the presidency or their own chamber are significantly more likely to invoke the Constitution in some, but not all, contexts; and (5) that contemporary conservative legislators have developed an especially coherent constitutional vocabulary, with which they have come to “own” not only terms associated with the document’s original meaning but also terms associated with textual provisions such as the First Amendment. Above and beyond these concrete contributions, this Article demonstrates the potential for computational methods to advance the study of constitutional history, politics, and culture.

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INTRODUCTION

The United States Constitution says nothing about political parties.¹ The political parties, however, routinely say things about the Constitution. Ever since the Founding, appeals to the canonical text by elected officials and other actors in the party networks have helped to shape policy debates, define public values, and advance competing visions of the nation.² “The written Constitution,” according to one familiar formulation, supplies a highly salient “‘common ground’ for all Americans” and thus “a ‘focal point’ for social coordination” and contestation.³ Within certain domains, “constitutional discourse has come to constitute the terms of political discourse.”⁴ For students of American law, politics, and culture, understanding the partisan dimensions and historical evolution of constitutional discourse is of immense interest.

A persistent challenge for scholarship on this subject is that appeals to the Constitution in public life are *so* common that it is all but impossible to gain anything approximating a systematic or synoptic grasp of them using traditional methods of legal research. Case studies can provide insight, but they necessarily cover only a small fraction of the terrain. In this Article, we marshal computational methods to address this challenge and illuminate the anatomy of extrajudicial constitutional debate. Applying a range of machine-learning and text-analysis techniques to a newly available data set comprising all remarks made on the U.S. House and Senate floors from 1873 to 2016, as well as a collection of *New York Times* and *Wall Street Journal* editorials from 1993 to 2018, we explore broadly how the constitutional utterances of different partisan and ideological camps have evolved in comparison with one another.⁵ Like all empirical projects, this

¹ See Nathaniel Persily, *Toward a Functional Defense of Political Party Autonomy*, 76 N.Y.U. L. REV. 750, 813 (2001) (“Political parties are absent from the constitutional text”); see also Daryl J. Levinson & Richard H. Pildes, *Separation of Parties, Not Powers*, 119 HARV. L. REV. 2311, 2320 (2006) (“The idea of political parties . . . was famously anathema to the Framers . . .”).

² A vast literature touches on these themes. Recent intellectual and political histories of constitutional discourse beyond the courts include PAUL W. KAHN, *LEGITIMACY AND HISTORY: SELF-GOVERNMENT IN AMERICAN CONSTITUTIONAL THEORY* (1992); MICHAEL KAMMEN, *SOVEREIGNTY AND LIBERTY: CONSTITUTIONAL DISCOURSE IN AMERICAN CULTURE* (1988); Ken I. Kersch, *The Talking Cure: How Constitutional Argument Drives Constitutional Development*, 94 B.U. L. REV. 1083 (2014); and ANDREW BUSCH, HERITAGE FOUND., *CONSTITUTIONAL DISCOURSE AND AMERICAN GOVERNMENT* (2008), <https://www.heritage.org/the-constitution/report/constitutional-discourse-and-american-government> [<https://perma.cc/NMG5-VY5M>].

³ Akhil Reed Amar, *American Constitutionalism—Written, Unwritten, and Living*, 126 HARV. L. REV. F. 195, 197 (2013); see also *McCulloch v. Maryland*, 17 U.S. (4 Wheat.) 316, 407 (1819) (noting that the Constitution was meant to be a populist document, “understood by the public,” rather than a technocratic “legal code”); Reva B. Siegel, *Text in Contest: Gender and the Constitution from a Social Movement Perspective*, 150 U. PA. L. REV. 297, 322 (2001) (“[O]fficial pronouncements about the meaning of the Constitution elicit special forms of engagement from citizens and so become a focal point of normative contestation.”); David A. Strauss, *Common Law Constitutional Interpretation*, 63 U. CHI. L. REV. 877, 910–19 (1996) (arguing that the written Constitution serves as a “focal point” for coordinating behavior).

⁴ Michael J. Sandel, *Moral Argument and Liberal Toleration: Abortion and Homosexuality*, 77 CALIF. L. REV. 521, 538 (1989); cf. Bruce A. Ackerman, *The Storrs Lectures: Discovering the Constitution*, 93 YALE L.J. 1013, 1072 (1984) (asserting that constitutional law “has always provided us with the language and process within which our political identities could be confronted, debated, and defined”).

⁵ We describe our data sources *infra* Part II and our principal methodology *infra* Part III. We have made all of the data and code that we use publicly available at <http://www.pozentalleynyarko.com>. An Online

Article’s methodology and data have inherent limitations, and we detail many of them below. Nevertheless, our approach affords a novel and informative lens through which to study constitutional discourse—and discord—with heretofore unattainable granularity and scale.

We draw inspiration from an emerging body of (noncomputational) constitutional scholarship that advances or implies descriptive claims about the historical development and substantive content of constitutional discourse in relationship to partisan politics and political ideology.⁶ Our approach allows us to test some of these claims for the first time, both quantitatively and qualitatively. It also generates a rich portrait of the constitutional vocabularies that members of different political groups have deployed over the course of modern U.S. history. Our main findings include the following:

First, constitutional discourse has grown increasingly polarized over the past four decades. Relative to the early and mid-twentieth century, it has become substantially easier for an algorithmic classifier to predict, based *solely* on the semantic content of a constitutional utterance,⁷ whether a Republican/conservative or a Democrat/liberal is speaking.⁸ If “Democrats and Republicans now speak different languages”⁹ in ordinary political discourse, they speak different constitutional languages as well.

Second, constitutional discourse has polarized at least as rapidly as (and on most measures more rapidly than) nonconstitutional political discourse over this four-decade period. There is a debate among legal theorists as to whether framing arguments in constitutional terms ought to dampen, amplify, or reproduce political disagreement.¹⁰ We provide mixed evidence on this score. While appeals to the canonical text clearly have not in the aggregate been acting as a brake on polarization—and on the contrary may be exacerbating it—particularly detailed discussions of the Constitution appear to bear fewer markers of partisanship.¹¹

Third, conservatives have been the driving force behind much of the recent uptick in constitutional polarization. In the 1960s and early 1970s, liberal Democrats in Congress generated the most distinctive partisan constitutional rhetoric. Beginning around 1980, however, the constitutional utterances of relatively conservative Republicans began to catch up (and then some),

Appendix containing additional tests and results, not displayed in the Article, is available at the same website.

⁶ See *infra* section I.A.

⁷ Our study design requires us to determine which documents within our corpora include “constitutional” utterances and which do not. We utilize several different protocols to make these determinations, as described *infra* section III.A.

⁸ See *infra* Part IV. Versions of this Turing-test-like method of measuring partisanship have been used in several recent political science papers. See *infra* notes 53–55 and accompanying text (summarizing this literature and how our project builds on, and departs from, it).

⁹ Matthew Gentzkow, Jesse M. Shapiro & Matt Taddy, *Measuring Group Differences in High-Dimensional Choices: Method and Application to Congressional Speech* 25 (Nat’l Bureau of Econ. Research, Working Paper No. 22423, 2018), <https://www.nber.org/papers/w22423> [<https://perma.cc/VM4W-6E7N>].

¹⁰ See *infra* notes 25–27 and accompanying text.

¹¹ See *infra* fig. 8 and accompanying text.

becoming much more distinctive than in prior years.¹² Relatedly, we demonstrate that conservatives in recent Congresses have developed an especially coherent constitutional vocabulary, with which they have come to “own” not only terms associated with originalism and the Framers but also terms associated with textual provisions such as the First Amendment.¹³

And *fourth*, members of Congress whose party is out of power, either in the sense of not controlling the presidency or not controlling their own legislative chamber, are more likely than their counterparts across the aisle to invoke the Constitution in any given speech. Although modest across years, this differential has been magnified in certain historical eras. In particular, congressional Democrats were significantly more likely to invoke the Constitution during the Taft, Harding, Coolidge, and Hoover Administrations, and congressional Republicans were *far* more likely to do so during the Obama Administration.¹⁴ These results lend soft support to the “separation of parties, not powers” thesis that interbranch dynamics depend upon party-unified versus party-divided government¹⁵—but with an asymmetric twist in specific eras as between the two major parties. They suggest, further, that constitutional rhetoric functions less as a device for consolidating authority than as a weapon of the weak in periods of highly polarized legislative politics.

These findings—which explore only a fraction of the constitutional issues potentially implicated by our corpora¹⁶—contribute to legal knowledge along multiple dimensions and, in our view, amply repay the effort to investigate extrajudicial constitutional discourse through a computational approach.¹⁷ Digital text analysis of the sort we perform cannot substitute for the traditional “analog” methods of research into legal history, politics, and culture. But it can be a powerful complement. Some of our findings corroborate previously unverified hypotheses or assumptions, adding texture and detail to a more or less fuzzy standard picture.¹⁸ Other findings shed light on genuinely open or opaque ground. And still others may generate new hypotheses and

¹² See *infra* section V.A.

¹³ See *infra* section V.D.

¹⁴ See *infra* section V.B.

¹⁵ See generally Levinson & Pildes, *supra* note 1.

¹⁶ For some preliminary suggestions of follow-on research projects, see *infra* notes 153–158 and accompanying text.

¹⁷ In theory, our principal methodology or something close to it could be applied to judicial discourse as well. For example, it might be possible to ask whether one can predict, using solely the semantic content of a circuit court opinion, the composition of the panel according to standard scoring protocols such as the party of the nominating president or Martin-Quinn scores. Yet as compared to the policymakers and pundits we study, judges have much less discretion about which topics to discuss and whether to discuss them in constitutional terms. And because all of the opinions in any given case (majorities, concurrences, and dissents) tend to be compelled to engage the same set of legal sources and arguments, simply as a function of the case’s procedural posture and norms of judicial disputation, we are uncertain how much light computational analysis can shed on ideological disparities. In any event, we leave such inquiries for future research.

¹⁸ For an amusing and instructive general rebuttal to the claim that digital history does not “tell us anything new,” see Lincoln A. Mullen, *Isn’t It Obvious?*, LINCOLN A. MULLEN BLOG (Jan. 10, 2018), <https://lincolnmullen.com/blog/isnt-it-obvious> [<https://perma.cc/X8CL-TJR7>].

research projects of their own.¹⁹ More broadly, our findings on the rise of constitutional polarization are so strong and so stark, when taken together, that they raise unsettling questions about the overall state of American constitutionalism. Participants in contemporary political debates are not simply talking in different ways about the Constitution. They largely appear to be talking past one another.

Our analysis proceeds as follows. Part I reviews the existing literatures in law and adjacent disciplines on constitutional discourse, constitutional polarization, and digital text analysis. Part II describes our data, drawn principally from the Congressional Record and secondarily from the *New York Times* and *Wall Street Journal*. Part III explains our research design for distinguishing constitutional from nonconstitutional subject matter (with additional details in Appendix A) and for using computational techniques to measure polarization. Part IV supplies illustrative examples of changes in constitutional discourse over the past four decades and then presents our core results on polarization in Congress. Part V explores some possible drivers of the polarization that Part IV reveals, from the changing composition of the Republican Party to the introduction of C-SPAN in the House (1979) and Senate (1986). Part VI demonstrates that our core results do not appear confined to the floor of Congress, as similar trends have occurred in national newspaper editorials. The Conclusion offers some preliminary thoughts on the significance of our findings and the potential for our methodology to advance the study of constitutional phenomena.

I. FRAMING THE INQUIRY

As indicated above, students of American law, public culture, and political development have a longstanding interest in the role of constitutional discourse in congressional debates, newspaper editorials, and other extrajudicial forums.²⁰ The existing empirical literature is thin. Recent scholarship on constitutional conflict and partisan politics, however, suggests a number of hypotheses that might be tested, at least in part, through computational text analysis.

A. *Motivations and Research Questions*

The question motivating this Article is whether and to what extent major political blocs in the United States have diverged in the ways they think and talk about the Constitution—a phenomenon we define as *constitutional polarization*. In particular, we wish to investigate whether and to what extent Democrats/liberals and Republicans/conservatives use language differently when invoking the canonical document. Such differences may well be indicative of in-group cohesion, out-group animosity, and other phenomena associated with “polarization,” but our focus is on discourse. The

¹⁹ To take just one, we observe that congressional references to the Constitution in general, and to jury trial rights in particular, spiked dramatically in the early 1960s—an observation that might imply that studies of the civil rights revolution ought to pay closer attention to debates concerning juries. *See infra* notes 77–80 and accompanying text. Bruce Ackerman’s 400-plus-page study of the constitutional politics of this period, for instance, contains only a few scattered references to juries and no entry for them in the index. *See generally* 3 BRUCE ACKERMAN, *WE THE PEOPLE: THE CIVIL RIGHTS REVOLUTION* (2014).

²⁰ *See supra* notes 2–4 and accompanying text.

Article’s working conception of polarization, accordingly, might be characterized as discursive-differentiation-as-polarization.²¹

As is well known, the Democratic and Republican parties have moved further apart from each other since the 1970s across a range of policy issues.²² The constitutional piece of (or parallel to) this polarization story is less well known. Yet according to careful legal scholars, the two parties have developed “fundamentally different” constitutional agendas since the end of the Warren Court, in 1969, with increasingly inharmonious positions on the Supreme Court and on subjects such as criminal procedure, race, religion, and reproductive rights.²³ “In addition to becoming more ideologically coherent and distinct,” it seems, “the parties have also become more *constitutionally* coherent and distinct over the past several decades.”²⁴

These observations lead us to predict that constitutional discourse has grown more polarized in the post–Warren Court era. Appeals to the Constitution in prominent political settings, we anticipate, have devolved into increasingly easy-to-categorize camps depending on whether a Republican or a Democrat is speaking. Such discursive polarization may involve certain constitutional terms becoming increasingly “owned” or “dominated” by one political party, or certain modes or styles of constitutional rhetoric becoming increasingly associated with particular sets of speakers.

The prospect of constitutional polarization raises a host of subsidiary questions. For instance, how does the partisanship of constitutional argument compare with that of nonconstitutional argument? More specifically, does “constitutionalizing” a moral or policy debate tend to aggravate or alleviate partisan discord? Legal scholarship furnishes contradictory hypotheses on this score. Some scholars assert that constitutional text and doctrine provide a relatively apolitical, legalistic

²¹ While commentators have described “polarization” in a variety of ways, this conception fits comfortably with standard dictionary definitions of the term, *see, e.g., Polarization*, OXFORD LIVING DICTIONARIES: ENGLISH, <https://en.oxforddictionaries.com/definition/polarization> [<https://perma.cc/7LZ7-RLTJ>] (“Division into two sharply contrasting groups or sets of opinions or beliefs.”), as well as with scholarship on what is sometimes called “discursive polarization,” *see, e.g.,* Michael S. Kang, *Race and Democratic Contestation*, 117 YALE L.J. 734, 778 & n.159 (2008); Philip Leifeld, *Reconceptualizing Major Policy Change in the Advocacy Coalition Framework: A Discourse Network Analysis of German Pension Politics*, 41 POL’Y STUD. J. 169, 192–93 (2013); Justus Uitermark, Vincent A. Traag & Jeroen Bruggeman, *Dissecting Discursive Contention: A Relational Analysis of the Dutch Debate on Minority Integration, 1990–2006*, 47 SOC. NETWORKS 107, 111–14 (2015).

²² *See, e.g.,* Richard H. Pildes, *Why the Center Does Not Hold: The Causes of Hyperpolarized Democracy in America*, 99 CALIF. L. REV. 273, 277 (2011) (“The parties have become purer distillations of themselves. They are internally more unified and coherent, and externally more distant from each other, than anytime over the last one hundred years.”); *id.* at 276 n.2 (collecting political science studies, by Alan Abramowitz, Barbara Sinclair, and many others, documenting the emergence of hyperpolarized parties).

²³ H.W. Perry, Jr. & L.A. Powe, Jr., *The Political Battle for the Constitution*, 21 CONST. COMMENT. 641, 641–89 (2004); *see also, e.g.,* Mark A. Graber, *Judicial Supremacy and the Structure of Partisan Conflict*, 50 IND. L. REV. 141, 168 (2016) (“The contemporary Republican and Democratic Parties champion very different constitutional approaches and visions.”).

²⁴ Joseph Fishkin & David E. Pozen, *Asymmetric Constitutional Hardball*, 118 COLUM. L. REV. 915, 965 (2018).

grammar for bridging partisan divides and disciplining disagreement²⁵—which implies that constitutional polarization ought to be less pronounced than political polarization generally. Other scholars, however, assert that constitutionalizing a debate raises the stakes and fosters corrosive, winner-take-all dynamics²⁶—which implies the opposite. Still other scholars assert that constitutional argument is essentially an epiphenomenon of political argument²⁷—which implies that constitutional polarization and political polarization ought to move in lockstep. Investigating whether the rate of polarization in constitutional discourse has lagged, exceeded, or tracked the rate of polarization in nonconstitutional discourse might enable us to begin to adjudicate among these competing claims.

Other questions concern the substance and sources of constitutional polarization. Many political scientists argue that the Republican Party has driven polarization in Congress since the 1970s, as Republicans have moved significantly further to the right than Democrats have moved to the left in their overall roll-call voting behaviors.²⁸ An influx of very conservative Republican

²⁵ See, e.g., Reva B. Siegel, *Constitutional Culture, Social Movement Conflict, and Constitutional Change: The Case of the De Facto ERA*, 94 CALIF. L. REV. 1323, 1350 (2006) (suggesting that “American constitutional culture supplies practices of argument that channel the expression of disagreement into claims about the meaning of a shared tradition, teaching advocates to express claims of partisan conviction in the language of public value” and thereby “disciplin[ing] these claims”).

²⁶ See, e.g., Jamal Greene, *The Supreme Court, 2017 Term—Rights as Trumps?*, 132 HARV. L. REV. 28, 34 (2018) (suggesting that U.S.-style constitutional argument “forces us to deny that our opponents have [rights]” and “leav[es] us farther apart at the end of a dispute than we were at the beginning”); David E. Pozen, *Constitutional Bad Faith*, 129 HARV. L. REV. 885, 940–54 (2016) (suggesting that constitutional argument under contemporary U.S. conditions is marked by “mutual mistrust” and accusations of bad faith); see also Adam M. Samaha, *Talk About Talking About Constitutional Law*, 2012 U. ILL. L. REV. 783, 792–95 (hypothesizing ways in which “constitutionalizing arguments” might “drive[] down the probability of compromise and trust” and “have other alienating and aggravating effects,” but noting that these hypotheses are untested and are implicitly rejected by certain constitutional theorists).

²⁷ See, e.g., Frederick Schauer, *Ashwander Revisited*, 1995 SUP. CT. REV. 71, 94 (suggesting that “constitutional considerations in congressional decision making” are “epiphenomenal [in] nature,” as “Congress is substantially motivated by its view about what the best policy would be”).

²⁸ For overviews of the evidence, see THOMAS E. MANN & NORMAN J. ORNSTEIN, *IT’S EVEN WORSE THAN IT LOOKS: HOW THE AMERICAN CONSTITUTIONAL SYSTEM COLLIDED WITH THE NEW POLITICS OF EXTREMISM* 51–58 (paperback ed. 2016); Michael Barber & Nolan McCarty, *Causes and Consequences of Polarization*, in AM. POLITICAL SCI. ASS’N, *NEGOTIATING AGREEMENT IN POLITICS* 19, 19–26 (Jane Mansbridge & Cathie Jo Martin eds., 2013); and Cynthia R. Farina, *Congressional Polarization: Terminal Constitutional Dysfunction?*, 115 COLUM. L. REV. 1689, 1695–701 (2015).

legislators is often cited as a primary cause,²⁹ among a range of potential candidates.³⁰ One of us has argued, together with Joseph Fishkin, that the practice of “constitutional hardball” has followed a similar trajectory and that “Republican politicians and activists have promoted their [constitutional] themes—originalism, strict construction, judicial restraint—far more vigorously than Democrats have promoted any alternative high-level constitutional vision” over this period.³¹ Prominent scholars have challenged each of these arguments.³² But if the theories of “asymmetric polarization” and “asymmetric constitutional hardball” are to be believed, they would seem to imply that any recent uptick in the polarization of constitutional discourse has likewise been driven by developments within the Republican coalition.

To the extent that Republicans’ constitutional rhetoric has become increasingly distinctive, a possible contributing factor that lends itself readily to text analysis is the rise of originalism on the right and the propagation of associated argumentative tropes. Whereas liberals and Democrats largely remain wedded to a philosophy of “living constitutionalism” and the precedents of the Warren Court, conservatives and Republicans have been at the vanguard of a movement since the 1970s to interpret the Constitution according to its “original” meaning.³³ Anecdotal evidence suggests that contemporary Republican officials may invoke the Framers’ Constitution more fervently as well as more frequently than their Democratic counterparts. The Republican Party’s

²⁹ See, e.g., Farina, *supra* note 28, at 1698 (“The predominant view is that ideological divergence has been driven not by incumbents shifting their ideological position, but rather by the influx of new Members—especially Republicans—who are more extreme than their predecessors.”); Nolan McCarty, Keith Poole, Howard Rosenthal & Chris Hare, *Polarization Is Real (and Asymmetric)*, MONKEY CAGE (May 15, 2012), <http://themonkeycage.org/2012/05/polarization-is-real-and-asymmetric> [<https://perma.cc/8WRM-7Y9T>] (“[T]he data are clear that [contemporary congressional polarization] is a Republican-led phenomenon where very conservative Republicans have replaced moderate Republicans and Southern Democrats.”).

³⁰ See generally Barber & McCarty, *supra* note 28, at 23–35 (noting that “[a]lthough there is a broad scholarly consensus that Congress is more polarized than any time in the recent past, there is considerably less agreement on the causes of such polarization,” and reviewing possible causes).

³¹ Fishkin & Pozen, *supra* note 24, at 966.

³² See, e.g., Adam Bonica, *Mapping the Ideological Marketplace*, 58 AM J. POL. SCI. 367, 379 (2014) (finding that congressional Democrats moved further to the left than Republicans moved to the right in recent decades using a measure of ideology based on campaign contributions rather than voting patterns); David E. Bernstein, *Constitutional Hardball Yes, Asymmetric Not So Much*, 118 COLUM. L. REV. ONLINE 207 (2018) (disputing the asymmetric constitutional hardball thesis on conceptual and historical grounds).

³³ See, e.g., Fishkin & Pozen, *supra* note 24, at 967 (“Republican officials going back to President Nixon have agreed on the necessity of restoring the Constitution’s true, real, lost meaning in the face of subversion by liberal judges and politicians.”); Jamal Greene, Nathaniel Persily & Stephen Ansolabehere, *Profiling Originalism*, 111 COLUM. L. REV. 356, 373 (2011) (“Eighty-five percent of originalists [in surveys from 2009 and 2010] identify as or lean toward Republican . . . , whereas 21% of nonoriginalists identify as or lean toward Republican”); Robert Post & Reva Siegel, *Originalism as a Political Practice: The Right’s Living Constitution*, 75 FORDHAM L. REV. 545, 554–74 (2006) (describing the rise of originalism as a political practice on the right). Within the past decade, a small but possibly growing number of liberals and Democrats appear to have embraced the language of originalism, whether sincerely or strategically. See, e.g., JACK M. BALKIN, *LIVING ORIGINALISM* 20 (2014) (arguing that originalism and living constitutionalism “are two sides of the same coin”); see also Jeremy K. Kessler & David E. Pozen, *Working Themselves Impure: A Life Cycle Theory of Legal Theories*, 83 U. CHI. L. REV. 1819, 1844–47 (2016) (discussing the “impurification” of originalist theory).

2012 and 2016 presidential platforms, for instance, declared it to be “the party of the Constitution.”³⁴ The Democratic Party’s platforms contained nothing comparable.³⁵ Republican voters, moreover, are commonly described as caring more about the Supreme Court,³⁶ and “the idea that the Republican Party is the sole party of the Constitution has found resonance within the Republican Party at both its most elite and its most populist.”³⁷

A separate strand of legal scholarship suggests that the structure of constitutional discourse and discord within Congress turns not just on political ideology but also on broader political alignments. In their influential article *Separation of Parties, Not Powers*, Daryl Levinson and Richard Pildes claim that interbranch political dynamics tend to be determined less by the constitutional distinction between the legislative and executive branches than by the distinction between party-unified and party-divided government.³⁸ Others have challenged this claim, seeking to show the continuing vitality of legislative-branch loyalties and the Madisonian conception of separation of powers.³⁹ To the extent that Levinson and Pildes are correct that members of Congress are more apt to check the president when she is from the other political party, congressional discourse may reflect this pattern through a differentially greater proclivity among such members to invoke the Constitution.

* * *

In sum, we are interested in a series of interrelated questions about the nature, degree, and determinants of constitutional polarization; the relationship of constitutional polarization to nonconstitutional polarization; and the implications for the separation of powers. These questions are teed up by, yet untested in, the existing legal literature. Insofar as they can be translated into hypotheses about measurable patterns of discourse in Congress or in leading newspapers, our corpora and our methods allow us to shed new empirical light on them. The effort to enhance understanding of constitutional rhetoric and constitutional conflict seems especially important at a time when many worry that political polarization “ranks as the most critical threat facing the United States”⁴⁰ and that “Americans on both the left and the right . . . have come to view the

³⁴ REPUBLICAN PLATFORM COMM., REPUBLICAN PLATFORM 2016, at 9 (2016), <https://prod-cdn-static.gop.com/static/home/data/platform.pdf> [<https://perma.cc/367A-7EJX>]; REPUBLICAN PLATFORM COMM., 2012 REPUBLICAN PLATFORM: WE BELIEVE IN AMERICA 9 (2012), <https://assets.documentcloud.org/documents/414158/2012-republican-national-convention-platform.pdf> [<https://perma.cc/LQU6-795V>].

³⁵ Richard Primus, *The Republic in Long-Term Perspective*, 117 MICH. L. REV. ONLINE 1, 12 n.27 (2018).

³⁶ See, e.g., Michael J. Gerhardt, *Practice Makes Precedent*, 131 HARV. L. REV. F. 32, 39 (2017) (discussing “the singular importance of the Supreme Court to Republican voters”).

³⁷ Primus, *supra* note 35, at 12.

³⁸ See generally Levinson & Pildes, *supra* note 1.

³⁹ See, e.g., JOSH CHAFETZ, CONGRESS’S CONSTITUTION: LEGISLATIVE AUTHORITY AND THE SEPARATION OF POWERS 28–35 (2017); David Fontana & Aziz Z. Huq, *Institutional Loyalties in Constitutional Law*, 85 U. CHI. L. REV. 1, 33–37 (2018); Richard A. Epstein, *Why Parties and Powers Both Matter: A Separationist Response to Levinson and Pildes*, 119 HARV. L. REV. F. 210 (2006).

⁴⁰ Dina Smeltz, Joshua Busby & Jordan Tama, *Political Polarization the Critical Threat to US, Foreign Policy Experts Say*, HILL (Nov. 9, 2018), <https://thehill.com/opinion/national-security/415881-political-polarization-is-the-critical-threat-to-us-foreign-policy> [<https://perma.cc/A38M-PGML>]; see also, e.g.,

Constitution not as an aspirational statement of shared principles and a bulwark against tribalism, but as a cudgel with which to attack [political] enemies.”⁴¹

We focus mainly on constitutional polarization in the postwar period to keep the scope of this study manageable. But we emphasize that our corpora and our methods may be put to many other uses.⁴² Above and beyond any substantive findings or technical innovations developed here, we hope that this Article will inspire others to build on its approach and thereby shape a new research agenda, or set of agendas, for public law scholarship.

B. Other Prior Literature

In addition to the scholarship summarized in the previous section, a diverse group of prior works have used traditional research methods to investigate questions related to ours. A smaller but growing number of works have used methods related to ours to investigate different questions. To date, the literature applying computational analysis to extrajudicial constitutional discourse has been nearly nonexistent.

Mainstream scholarship in law and the humanities has explored many discrete aspects of extrajudicial constitutional discourse and its relationship to political ideology. Law professors, for instance, have offered close qualitative studies of the constitutional rhetoric and beliefs of particular groups and social movements, such as the Tea Party⁴³ and the National Rifle Association.⁴⁴ Historians have written about the politics of memory, with application to constitutionally freighted topics such as slavery and the Civil War.⁴⁵ A few historians and legal

Steven Levitsky & Daniel Ziblatt, *How Wobbly Is Our Democracy?*, N.Y. TIMES (Jan. 27, 2018), <https://www.nytimes.com/2018/01/27/opinion/sunday/democracy-polarization.html> [<https://perma.cc/647R-GDJZ>] (“Extreme polarization can wreck even established democracies. America is no exception. As long as Americans do not overcome their deepening partisan animosities, democracy remains at risk . . .”).

⁴¹ Amy Chua & Jed Rubenfeld, *The Threat of Tribalism*, ATLANTIC (Oct. 2018), <https://www.theatlantic.com/magazine/archive/2018/10/the-threat-of-tribalism/568342> [<https://perma.cc/2MD4-KFM9>]. Consequentialists may also glean useful insights from our inquiry. It is well established within positive political theory that increased levels of partisanship in deliberative settings can yield different outcomes—for example, by altering incentives for acquiring information or forming consensus solutions. Although some ideological diversity can lead to more informed decisions, “too much” partisanship can undermine deliberation, producing negative consequences for welfarist values as well as solidarity and trust. See, e.g., Matthew Spitzer & Eric Talley, *Left, Right, and Center: Strategic Information Acquisition and Diversity in Judicial Panels*, 29 J.L. ECON. & ORG. 638 (2013) (developing a model of appellate court panels to this effect); see also Gentzkow, Shapiro & Taddy, *supra* note 9, at 25 (noting reasons to suspect that the effects of “growing partisanship of language” in Congress “could be profound”).

⁴² In the Conclusion, we suggest a variety of additional constitutional hypotheses that might be explored with our corpora and methods.

⁴³ E.g., Jared A. Goldstein, *The Tea Party’s Constitution*, 88 DENV. U. L. REV. 559 (2011).

⁴⁴ E.g., Reva B. Siegel, *Dead or Alive: Originalism as Popular Constitutionalism in Heller*, 122 HARV. L. REV. 191 (2008).

⁴⁵ E.g., DAVID W. BLIGHT, *RACE AND REUNION: THE CIVIL WAR IN AMERICAN MEMORY* (2002).

theorists have studied the deployment in constitutional discourse of particular high-level concepts, such as sovereignty or self-government.⁴⁶

More recently, digital text analysis has made inroads into a number of public law fields.⁴⁷ Comparative constitutional law scholars, for instance, have used automated content analysis to identify patterns across written constitutions.⁴⁸ An interdisciplinary team of authors has used computational techniques to identify the writing styles of Supreme Court justices.⁴⁹ Corpus linguistics has become increasingly common in originalist and textualist circles.⁵⁰ Our colleague Kellen Funk, together with Lincoln Mullen, published an article in the *American Historical Review* this past year employing digital text analysis to trace the migration of the Field Code across the American South and West during the late nineteenth century.⁵¹ Closer to this Article's concerns, a student note has applied unsupervised topic modeling to a set of U.S. newspapers from 1866 to 1884 to evaluate Bruce Ackerman's theory of non-Article V constitutional amendment.⁵²

Outside of law, political scientists and computer scientists have used a variety of techniques to mine the texts of political speeches and manifestos. The majority of these studies seek to exploit the texts as a means to measure the ideology of their creators.⁵³ In contrast, our primary focus lies

⁴⁶ E.g., KAHN, *supra* note 2; KAMMEN, *supra* note 2.

⁴⁷ Two of us have used digital text analysis extensively in our scholarship on private law subjects. See *infra* notes 83–85 (citing recent works). For an overview of recent scholarship using digital text analysis in fields ranging from life sciences to literary criticism, see Matthew Sag, *The New Legal Landscape for Text Mining and Machine Learning*, 66 J. COPYRIGHT SOC'Y U.S.A. (forthcoming 2019), <https://ssrn.com/abstract=3331606> [<https://perma.cc/RVL8-HR7K>] (manuscript at 4–9).

⁴⁸ E.g., David S. Law, *The Global Language of Human Rights: A Computational Linguistic Analysis*, 12 L. & ETHICS HUM. RTS. 111 (2018).

⁴⁹ Keith Carlson, Michael A. Livermore & Daniel Rockmore, *A Quantitative Analysis of Writing Style on the U.S. Supreme Court*, 93 WASH. U. L. REV. 1461 (2016); see also *id.* at 1472–73 (discussing “a nascent movement” in the legal literature to apply computational stylistic analysis to judicial opinions); *id.* at 1467–68 (reviewing other applications of computational analysis to Supreme Court–related texts); Michael A. Livermore, Allen B. Riddell & Daniel N. Rockmore, *The Supreme Court and the Judicial Genre*, 59 ARIZ. L. REV. 837, 841 (2017) (using topic modeling to study whether the Supreme “Court’s writings as a whole have grown more semantically distinctive over the course of the twentieth century, as compared to the judicial opinions issued by other American courts”).

⁵⁰ E.g., Thomas R. Lee & Stephen C. Mouritsen, *Judging Ordinary Meaning*, 127 YALE L.J. 788 (2018); James C. Phillips, Daniel M. Ortner & Thomas R. Lee, *Corpus Linguistics and Original Public Meaning: A New Tool to Make Originalism More Empirical*, 126 YALE L.J. F. 21 (2016).

⁵¹ Kellen Funk & Lincoln A. Mullen, *The Spine of American Law: Digital Text Analysis and U.S. Legal Practice*, 123 AM. HIST. REV. 132 (2018).

⁵² Daniel Taylor Young, Note, *How Do You Measure a Constitutional Moment? Using Algorithmic Topic Modeling to Evaluate Bruce Ackerman’s Theory of Constitutional Change*, 122 YALE L.J. 1990 (2013); cf. David S. Law, *Constitutional Archetypes*, 95 TEX. L. REV. 153, 164 n.31 (2016) (stating that as of August 6, 2015, a search of Westlaw’s database of law reviews and journals yielded only one result—Young’s note—for the term “topic model” and zero results for the terms “automated content analysis” and “text analysis”).

⁵³ See, e.g., Daniel Diermeier, Jean-François Godbout, Bei Yu & Stefan Kaufmann, *Language and Ideology in Congress*, 42 BRIT. J. POL. SCI. 31 (2011) (using Support Vector Machines to predict the ideology of senators based on speeches in the 101st to 108th Congresses); Mohit Iyyer, Peter Enns, Jordan Boyd-Graber & Philip Resnik, *Political Ideology Detection Using Recursive Neural Networks*, PROC. 52ND

not in finding a good proxy for political ideology per se, but in comparing the ease with which speakers from different partisan and ideological camps can be predicted over time.

This Article is most closely related to a new paper by Matthew Gentzkow, Jesse Shapiro, and Matt Taddy, who use machine-learning methods to classify remarks made by members of Congress and find that the partisanship of their language has “exploded” since 1994.⁵⁴ We build upon and extend Gentzkow, Shapiro, and Taddy’s pioneering work in multiple ways. Schematically, as the first authors to examine the entire Congressional Record over multiple decades, their paper is largely exploratory, whereas we focus on a set of hypotheses derived from legal scholarship. Methodologically, rather than relying on a generative model of discourse, we use the predictive quality of machine-learning algorithms to estimate and quantify polarization. In so doing, we follow a nascent trend in the literature on digital text analysis to measure polarization based on the quality of automated classifiers.⁵⁵ And substantively, we identify and analyze a particular subset of remarks that relate to the Constitution, with nonconstitutional remarks functioning as a kind of control group benchmark. As far as we are aware, this Article is the first to use computational techniques to investigate constitutional polarization—or, for that matter, any other question concerning the ideological or partisan structure of constitutional discourse outside the courts.

II. DATA SOURCES

Our principal data set consists of a “substantially verbatim” transcript of remarks made by U.S. senators and representatives on the floors of the Senate and the House of Representatives from the

ANN. MEETING ASS’N COMPUTATIONAL LINGUISTICS 1113 (2014) (creating a corpus of sentences and phrases from congressional debates that were hand-annotated by human coders for the predicted ideology of the speaker, then using a recursive neural network to estimate the speaker’s ideology); Michael Laver, Kenneth Benoit & John Garry, *Extracting Policy Positions from Political Texts Using Words as Data*, 97 AM. POL. SCI. REV. 311 (2003) (using a word-scoring technique to determine the policy positions of political parties in Britain, Ireland, and Germany based on their party manifestos and legislative speeches); Jonathan B. Slapin & Sven-Oliver Proksch, *A Scaling Model for Estimating Time-Series Party Positions from Texts*, 52 AM. J. POL. SCI. 705 (2008) (using a scaling algorithm to locate German political parties on a left–right spectrum based on party manifestos).

⁵⁴ Gentzkow, Shapiro & Taddy, *supra* note 9, at 3, 17. Their paper appears to be “the first to use statistical predictability in a probability model of speech as a metric of differences in partisan language between groups.” *Id.* at 4.

⁵⁵ Of particular note, see Andrew Peterson & Arthur Spirling, *Classification Accuracy as a Substantive Quantity of Interest: Measuring Polarization in Westminster Systems*, 26 POL. ANALYSIS 120, 120 (2018) (demonstrating that “machine learning ‘accuracy’” at predicting the party affiliation of parliamentary speakers “provides an informative measurement instrument for the degree of aggregate polarization in the UK House of Commons over time”); and Joseph Engelberg, Matthew Henriksson & Jared Williams, *The Partisanship of Financial Regulators* (July 10, 2018) (unpublished manuscript) (on file with authors) (employing machine-learning classifiers to analyze the partisanship of speeches by Securities and Exchange Commission (SEC) commissioners and Federal Reserve Board governors since the 1930s, and finding a significant increase at the SEC over the past two decades).

43rd Congress (beginning in 1873) through the 114th Congress (beginning in 2015).⁵⁶ These data were recently made available by Gentzkow, Shapiro, and Taddy, who cleaned and parsed the text of the Congressional Record.⁵⁷ Extensions of Remarks, used by members of the House to insert statements and materials not read aloud on the House floor,⁵⁸ are excluded, as are all other unspoken statements and materials inserted in the record and all remarks made by nonlegislators (for example, a chaplain or a clerk).⁵⁹ Even though much of the work of Congress occurs in committees and attendance at floor debates may be spotty, these debates are of potential interest to nonattending members, executive and judicial actors, journalists, voters, and interest groups, among other audiences, and have been found to be “crucial” to congressional deliberation and the development of legislation.⁶⁰

Consistent with the literature on digital text analysis, we will refer to the individual remarks in the data set as “documents.” The overall collection of remarks is the “corpus.” Each document in the corpus is complemented with additional information, including the speaker’s name and political party affiliation, the date, and the chamber in which the remark was made.

The original creation of the corpus relied on optical character recognition (OCR) to convert images of Congressional Record pages into machine-encoded text. While OCR processes have become increasingly precise, accuracy still varies with the quality of the image and the font used in the original text. Upon inspection, it became apparent that the word “Constitution” was either misspelled or miscoded several hundred thousand times, primarily in the early periods of observation. To avoid time-dependent inaccuracies when scanning the text for references to “Constitution” and similar terms, we identified and corrected these misspellings using a procedure that makes use of word embeddings.⁶¹

⁵⁶ See MILDRED L. AMER, CONG. RESEARCH SERV., 93-60 GOV, *THE CONGRESSIONAL RECORD: CONTENT, HISTORY, AND ISSUES* 6 (1993) (describing the Congressional Record as “a substantially verbatim account of the proceedings of Congress” and “an account of everything that is said and done on the floors of the House and Senate”).

⁵⁷ Matthew Gentzkow, Jesse M. Shapiro & Matt Taddy, Congressional Record for the 43rd–114th Congresses: Parsed Speeches and Phrase Counts, Stanford SSDS Social Science Data Collection (Jan. 16, 2018), https://data.stanford.edu/congress_text [<https://perma.cc/H32H-7UWD>]. For a detailed description of this process, see Gentzkow, Shapiro & Taddy, *supra* note 9, at 6–8 & Online App.

⁵⁸ See AMER, *supra* note 56, at 8.

⁵⁹ See Gentzkow, Shapiro & Taddy, *supra* note 9, at 6. Following Gentzkow, Shapiro, and Taddy, we use the bound edition of the Congressional Record through the 111th Congress and the daily edition thereafter. *See id.*

⁶⁰ GARY MUCCIARONI & PAUL J. QUIRK, *DELIBERATIVE CHOICES: DEBATING PUBLIC POLICY IN CONGRESS* 6 (2006); *see also* STEVEN S. SMITH, *CALL TO ORDER: FLOOR POLITICS IN THE HOUSE AND SENATE* 237 (1989) (noting that “floor speeches are used by members to explain their votes and advertise themselves; and, what is perhaps just as important, discussion at the floor stage contributes to the sense of legitimacy and fairness of congressional decisions”).

⁶¹ Word embeddings are vector representations of words that preserve the words’ semantic meaning relative to other words—a process that can be used to generate approximate synonyms based on contextual usage. We calibrated a common word-embedding model on the entire Congressional Record and queried our model for the 5000 most similar terms to the word “Constitution” and its variants. This calibration resulted in many instances of misspelled terms, such as “Contitution” or “Constiution.” We then used an automated process to correct for these misspellings where they appeared. A manual audit suggests that our

Like virtually all very large textual data sets, the corpus contains dozens of common multiword phrases (or n-grams). The informational content of these phrases is different from the informational content of their individual terms, a fact that is of particular importance when predicting a speaker’s political affiliation. For instance, a phrase such as “eminent domain” might be especially popular among conservative or Republican speakers, even if the terms “eminent” and “domain” on their own have no determinate political valence. To account for this possibility, we trained and applied a well-known phrasing model that identifies common phrases and connects their component parts with an underscore (“_”).⁶² Once joined, such multiword phrases can be treated as a single term. In addition, before analyzing the corpus, we cleaned the textual data using a variety of standard text-processing protocols designed to convert or remove certain characters to allow for accurate analysis.⁶³

Table 1 provides a summary of all remarks with an identified speaker.⁶⁴ Overall, the data set includes 13.5 million documents, comprising a total of 1.8 billion words spoken by 37,059 senators and representatives between 1873 and 2016.

process successfully corrected virtually all misspellings. Our trained word embeddings are available at <http://www.pozentalleynyarko.com>.

⁶² See Tomas Mikolov, Ilya Sutskever, Kai Chen, Greg Corrado & Jeffrey Dean, *Distributed Representations of Words and Phrases and Their Compositionality*, 26 ADVANCES NEURAL INFO. PROCESSING SYS. 3111, 3115–16 (2013).

⁶³ These preprocessing steps include (1) converting all words to lowercase, (2) removing all punctuation and special characters, and (3) shortening words to their grammatical stems. Steps 1 and 2 are self-explanatory. Step 3 involves removing prefixes and suffixes from individual words, leaving only the word stem. The motivation for stemming is that terms originating from the same word stem should be treated the same, as morphological affixes are substantially the product of grammatical rules and conventions rather than the actual meaning of the word.

By way of illustration, consider the following sentence: <Our study explores statements in Congress, making use of text analysis!>. After preprocessing, the sentence is mapped to: <our studi explor statement in congress make use of text analysi>. Each resulting term represents a grammatical stem from which many tenses or other word forms might emanate. For example, “studi” effectively stands in for “study,” “studying,” “studies,” and “studied.”

Another common step in preprocessing is to remove so-called stop words, such as common conjunctions and prepositions, as these words are generally assumed not to contain important information yet render analysis more complex. We opted against utilizing this procedure. A critical step in our analysis involves scanning the text for common constitutional phrases, and some of these phrases include stop words: for instance, “bill of rights.” Because omitting these stop words would increase the probability of false positives, we preserve them.

⁶⁴ A small percentage of the documents in the corpus (typically between one and three percent per Congress) do not have identifiable speaker information associated with them. See Gentzkow, Shapiro & Taddy, *supra* note 9, at Online App. 9 tbl.1 (“Match rate” column). We exclude these documents from all analyses.

Table 1: Summary Statistics of Congressional Record Corpus

	Total Number of Remarks				Average Number of Remarks per Congress (Standard Deviation)				Average Length of Remarks per Congress (Standard Deviation)			
	Overall	Republicans	Democrats	Other Parties	Overall	Republicans	Democrats	Other Parties	Overall	Republicans	Democrats	Other Parties
House	6,948,729	3,329,459	3,566,290	52,980	96,510 (33,797)	46,242 (18,839)	49,532 (19,445)	768 (1,079)	124 (348)	117 (348)	130 (347)	113 (390)
Senate	6,597,629	2,963,678	3,554,774	79,177	91,634 (38,535)	41,162 (17,928)	49,372 (27,704)	1,147 (1,907)	140 (392)	136 (381)	144 (400)	147 (445)
Before 1900	1,892,233	968,781	872,520	50,932	67,580 (18,703)	34,599 (9,149)	31,161 (15,049)	1,819 (2,379)	98 (405)	96 (399)	100 (409)	114 (442)
1900–1940	4,387,229	2,211,877	2,137,247	38,105	109,681 (42,200)	55,297 (25,107)	53,431 (25,039)	953 (1,286)	81 (279)	76 (260)	87 (297)	97 (325)
1940–1980	4,634,858	1,844,510	2,754,896	35,452	115,871 (25,230)	46,113 (11,442)	68,872 (19,715)	886 (1,396)	130 (340)	129 (334)	131 (343)	154 (421)
1980–Present	2,632,038	1,267,969	1,356,401	7,668	73,112 (23,568)	35,221 (13,604)	37,678 (12,581)	256 (284)	236 (485)	228 (490)	243 (479)	327 (672)

Although this Article focuses on the remarkably rich and politically pivotal Congressional Record data set, we are mindful that constitutional discourse occurs in many other extrajudicial venues. As a robustness check on some of our results from Congress as well as an inquiry of independent interest, we also draw on a more limited data set of editorials in two of the leading newspapers on the liberal and conservative sides, respectively: the *New York Times* and the *Wall Street Journal*. Using the ProQuest and Factiva databases, we harvested the content of every editorial by each newspaper’s editorial board (rather than a named op-ed contributor) that was published from 1993 to November 2018,⁶⁵ cleaning and parsing these data in a similar manner as with the text of the Congressional Record. The resulting corpus, discussed in Part VI, contains 57,884 editorials. Approximately 42% of the editorials are from the *Journal* and 58% from the *Times*, with an average length of slightly over 500 words per document.

III. RESEARCH DESIGN

The central goal of this Article is to use machine-learning techniques to capture and trace the evolutionary path of constitutional polarization in the text of congressional remarks (and secondarily newspaper editorials). Accordingly, our analysis must make distinctions along three principal dimensions:

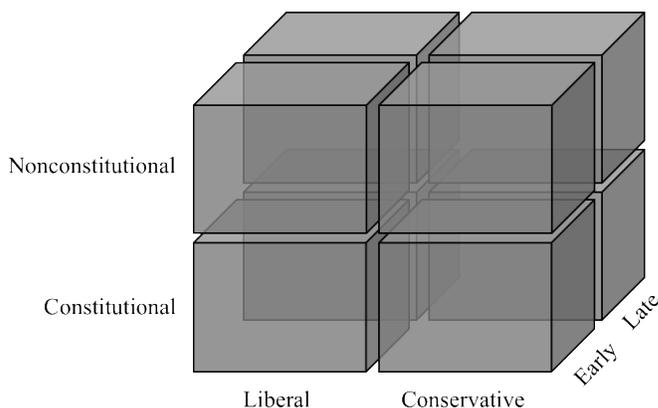
- (1) *Constitutional subject matter*. We focus on “constitutional” documents, using “nonconstitutional” documents as a benchmark for comparison.
- (2) *Speaker ideology*. We distinguish between “liberal” and “conservative” and between Democratic and Republican voices.
- (3) *Dynamic effects*. We evaluate trends over time and the extent to which the trends appear to be driven by any specific party or ideology.

These three dimensions are captured heuristically by Figure 1 below. Rows capture the content of a document (whether it has constitutional subject matter). Columns capture the ideology of the

⁶⁵ Specifically, we harvested the content of every editorial in this period for which full-text extraction was available and the author was either anonymous or identified as “Editor” or “Editorial Board.”

speaker (liberal versus conservative; or alternatively, Democratic versus Republican). The depth dimension captures time (whether the document occurs early or late in the observation period). It is important to note that Figure 1 reflects the simplest possible rendering of these three dimensions by breaking them into “binary” groups. In actuality, our data allow us to subdivide each dimension along more granular margins. For example, the ideology of congressional speakers might be represented by continuous political “scores” on the Poole-Rosenthal scale;⁶⁶ the “constitutionalness” of a document might be captured by the intensity with which it invokes constitutional terms; and time might be measured on a far more refined scale such as day/month/year/Congress.

Figure 1: Heuristic 2x2x2 Design



Two of these dimensions, Early/Late and Liberal/Conservative, are relatively intuitive. But at least two aspects of our enterprise are more complex. First, our inquiry requires us to devise a means for identifying and distinguishing between “constitutional” and “nonconstitutional” documents (the rows of Figure 1). Second, we must advance a plausible and reliable measure of “polarization” that is also sufficiently scalable to evaluate large corpora such as the Congressional Record. We discuss these two challenges and our proposed solutions in turn.

A. *Constitutional Versus Nonconstitutional Subject Matter*

The first hurdle that our study design presents is how to determine what it means for a document to have *constitutional* subject matter. There is no off-the-shelf solution. Leading scholars have described the U.S. Constitution as “a model instance of . . . an essentially contested concept,” which “few treat . . . as having an easily knowable, fixed identity.”⁶⁷ It is not hard to

⁶⁶ See generally KEITH POOLE & HOWARD ROSENTHAL, CONGRESS: A POLITICAL-ECONOMIC HISTORY OF ROLL CALL VOTING (1997).

⁶⁷ SANFORD LEVINSON, CONSTITUTIONAL FAITH 124 (2d ed. 2011) (internal quotation marks omitted); see also MICHAEL J. GERHARDT ET AL., CONSTITUTIONAL THEORY § 1.01, at 3 (4th ed. 2013) (“A colleague likes to say that ‘the trouble with constitutional law is that nobody knows what counts as an argument.’ It may be more accurate to say that plenty of people think they know what does or should count, and that they often disagree.”); Anne Meuwese & Marnix Snel, *‘Constitutional Dialogue’: An Overview*, 9 UTRECHT L. REV. 123, 123 (2013) (noting that “the academic and the practical legal community still appears to be unsure what qualifies as a ‘[constitutional] dialogue’ either in practice or in theory”).

imagine how two constitutional lawyers might read the same document—say, a speech about the history of the civil rights movement that never invokes the Constitution by name—and come to different conclusions about whether the document sounds in a constitutional register. Accordingly, in classifying the documents in our corpora as “constitutional” or “nonconstitutional,” we must take care to pursue a strategy flexible enough for us to vary our classification criteria for the sake of testing robustness, all the while preserving replicability.

In general, several approaches are possible for attempting to classify documents in a corpus by subject matter. The simplest and most intuitive approach asks whether a document utilizes a specified combination of terms within a designated lexicon (or “dictionary”) defined by the researcher.⁶⁸ An alternative approach, sometimes called supervised learning, exposes human coders to a random subset of documents and asks them to make subject matter classifications directly and subjectively. That coded subset can then be used to train an algorithmic classifier to identify similar syntactical patterns in the remainder of the corpus. Supervised learning approaches have been shown to have considerable power in parsing legal texts, as they can leverage the expertise of human classifiers in interpreting nuance and context.⁶⁹

Although we experimented with variants of both techniques, we ultimately settled on a dictionary-driven approach for numerous reasons. First, supervised learning necessarily entails using contemporary human coders to classify documents, yet our study design requires us to track the evolution of constitutional polarization over multiple decades (indeed centuries). As one goes back further in time, the reliability of supervised learning for distinguishing constitutional from nonconstitutional content breaks down: turns of phrase that would be clear markers of constitutional discourse to a reader today might have had very different connotations a half century ago, and vice versa.⁷⁰ Second, even within a given historical era, the constitutional judgments made by human coders might be affected by unconscious and unobservable ideological conditioning, whose bias we can neither measure nor predict. Finally, in investigating the polarization of constitutional discourse, our chief interest lies in identifying *unambiguously* constitutional arguments tied to the canonical document itself. Given this interest, as well as the perpetual disagreement over the nature of constitutionalism and the legitimate sources of constitutional meaning, it is all the more important to employ a highly transparent and replicable classification strategy, even if the strategy ends up being somewhat mechanical as a result.

We thus employ a series of dictionaries of constitutionally relevant expressions to determine whether—and to what degree—a document is deemed “constitutional.” These dictionaries, which we created prior to analysis, generally have a nested structure, such that each successive dictionary (with one exception) incorporates its predecessors and then adds additional terms. Appendix A

⁶⁸ This approach can also be extended through word embeddings, which use the dictionary as a seed to train an algorithmic protocol to “learn” functional synonyms of the specified key words. *See supra* note 61 and accompanying text.

⁶⁹ *See* Eric L. Talley, *Is the Future of Law a Driverless Car? Assessing How the Data-Analytics Revolution Will Transform Legal Practice*, 174 J. INST. & THEORETICAL ECON. 183, 196–203 (2018).

⁷⁰ Because a time machine was not within our allocated research funds for this project, we were unable to recruit human classifiers from the relevant historical eras.

contains the full text of the dictionaries, along with an explanation of how they were constructed.⁷¹ None of them is tied to the Congressional Record, and all could be ported to other research projects. In addition to enabling the present inquiry, it is our hope that these dictionaries will enable future inquiries by scholars from diverse disciplines into the constitutional dimensions of textual data. The dictionaries' composition is as follows:

- **Minimal.** This is the simplest and starkest dictionary, limited to the term “constitution” and all variants and stems thereof (“constitutional,” “unconstitutional,” “nonconstitutional,” “extraconstitutional,” “constitutionally,” “unconstitutionally,” and so forth).⁷² Using the Minimal dictionary, a document would be deemed constitutional if and only if it explicitly mentions this term.
- **Textual.** This dictionary includes the Minimal dictionary and, in addition, the titles of all constitutional articles, amendments, and clauses, both in their standard legal formulations (for example, “second amendment”) and in well-recognized colloquial synonyms (for example, “right to bear arms amendment”).
- **Extended Textual.** This dictionary includes the Minimal and Textual dictionaries and, in addition, dozens of phrases that appear in the text of the Constitution and lack a common extraconstitutional usage (for example, “advice and consent,” “equal protection,” and “searches and seizures”).
- **Originalism.** This dictionary consists of a variety of terms associated with the constitutional founding and the Constitution’s original meaning (for example, “founding fathers,” “original intent,” and “philadelphia convention”). This dictionary does not build on the others and is an outlier among our set; we constructed it specifically to investigate the rise of originalism.⁷³
- **Expansive.** This dictionary includes the Minimal, Textual, Extended Textual, and Originalism dictionaries and, in addition, over 100 important constitutional concepts that are at least several decades old (for example, “administrative state,” “freedom of contract,” “judicial review,” “separate but equal,” and “separation of powers”). The construction of this dictionary involved a considerable amount of subjective judgment. Some version of this dictionary is indispensable, however, if one wishes to investigate not only what constitutional scholars call the “big-C,” “large-C,” or “written”

⁷¹ In general, as Appendix A explains, each of our dictionaries was constructed in an expansive fashion, resolving doubts about the “constitutional-ness” of a term in favor of inclusion. However, at the risk of losing some potentially interesting information, we opted against including case names in any dictionary because of their inherent time-boundedness. For a similar reason, we omitted judicial neologisms that would not have appeared in constitutional discourse before they were introduced in recent cases.

⁷² The preprocessing of the text, described *supra* notes 61–63 and accompanying text, renders punctuation and capitalization irrelevant and guarantees that we capture all variants of the word stem “constitut.” At the same time, we took care not to stem words such as “constitute,” “constitutes,” and “constituted” to avoid conflation. Our approach does run the risk of capturing invocations of foreign constitutions and the fifty states’ constitutions, but everything we have seen from our data suggests that such invocations are very rare on the floor of Congress relative to references to the U.S. Constitution—and remarks about U.S. state constitutions, at least, arguably deserve to be included for purposes of this study.

⁷³ See *supra* note 33 and accompanying text.

Constitution—the canonical document that dates from 1787 and is the focus of the other dictionaries—but also what is known as the “small-c” or “unwritten” constitution, or “the web of documents, practices, institutions, norms, and traditions that structure American government.”⁷⁴

The baseline results presented in Parts IV and V rely on the Minimal dictionary. Our principal justification for this limitation is that it supplies the most straightforward and uncontroversial means of identifying “constitutional” documents. It also efficiently captures the possibility, implicated by many of the hypotheses we explore, that explicit invocations of the Constitution serve a distinctive role in political rhetoric. Moving beyond the Minimal dictionary reduces the risk of false negatives (failing to classify constitutional documents as such), but it increases the risk of false positives and introduces concerns about potential arbitrariness and bias in our estimates.⁷⁵ Consequently, our baseline approach can be described as deliberately underinclusive. That said, we recognize that relying on the Minimal dictionary may be too crude and conservative in some respects, and that documents in our corpora may contain terms and themes that are widely understood to be of constitutional import even if they never once mention variants of the word “constitution.” We therefore use the larger dictionaries as a robustness check and also, in Part V, as a tool for illustrating in greater detail the content of constitutional polarization.

Using any given dictionary, we can ask not only *whether* the expressions in that dictionary appear in a document but also *how often* they appear. In this way, we can extract a constitutional “score” (ρ) for each document. Its functional form is:

$$\rho = \frac{\text{number of occurrences of dictionary terms in document}}{\text{total number of terms in the document}}$$

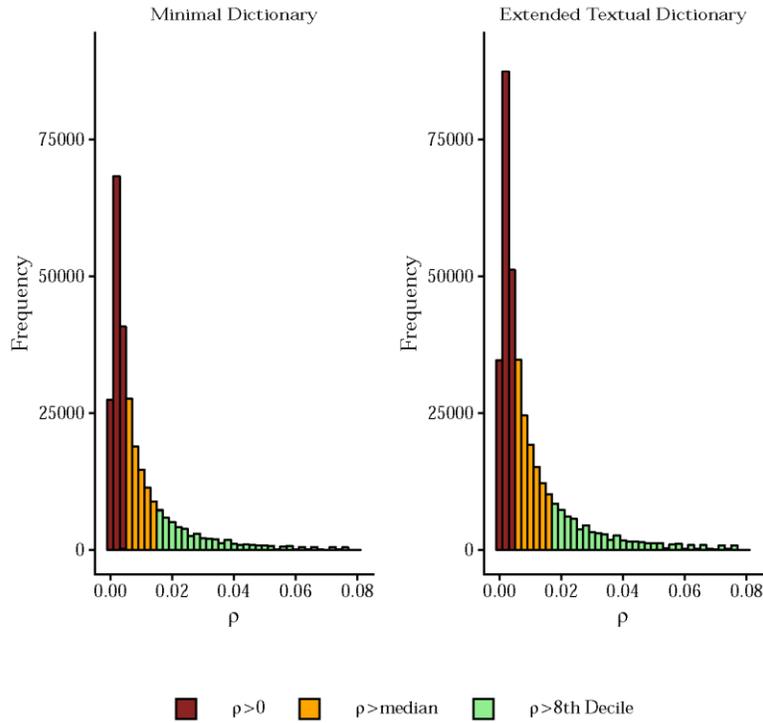
The resulting score is always between 0 and 1, and it can be interpreted as a “density” measure of constitutional content for each document. The greater the fraction of total terms in the document that are found in the relevant dictionary, the higher the value of ρ .

Figure 2 illustrates the frequency distribution of ρ for Congressional Record documents. The left-hand panel of Figure 2 uses the Minimal dictionary. The right-hand panel uses the Extended Textual dictionary. In Parts IV and V, we rely especially on the Extended Textual dictionary for robustness checks because it contains many more terms than the Minimal dictionary while still remaining tightly tied to the Constitution’s text.

⁷⁴ Richard Primus, *Unbundling Constitutionality*, 80 U. CHI. L. REV. 1079, 1082 (2013); *see also, e.g.*, AKHIL REED AMAR, *AMERICA’S UNWRITTEN CONSTITUTION*, at xi (2012) (describing the “unwritten Constitution” as a set of extratextual practices, precedents, and norms that help to “fill in [the] gaps” of and “to stabilize” the written Constitution); David E. Pozen, *Self-Help and the Separation of Powers*, 124 YALE L.J. 2, 33 (2014) (describing the small-c constitution as “the relatively stable set of rules, practices, and arrangements that are not housed in the constitutional text but nonetheless are thought to serve a constitutional function because they are important to the structure of government or because they reflect fundamental American values” (internal quotation marks omitted)).

⁷⁵ Consider again the example of a speech about the history of the civil rights movement that never invokes the Constitution by name (and the debate that might be had over whether this speech is best understood as a “constitutional” document or not). *See supra* text accompanying note 67.

Figure 2: Conditional Distribution of Constitutional Scores (ρ)



The great majority of documents in the corpus contain no terms from either dictionary (98% and 97%, respectively) and thus have a score of $\rho = 0$. For purposes of illustration, Figure 2 excludes these zero-score documents, displaying a relatively smooth “conditional” distribution for the population of documents with positive ρ scores.⁷⁶

For a given dictionary, our key criterion for distinguishing constitutional from nonconstitutional subject matter hinges on where a document’s ρ score sits relative to a series of hypothesized “cutoff” values. All documents with ρ scores exceeding the specified cutoff are deemed to involve constitutional discourse. Documents with scores of 0 are deemed in all cases to be nonconstitutional. Documents with scores greater than 0 but below the specified cutoff are deemed ambiguous and therefore excluded from the analysis. The higher the level at which the cutoff is fixed, then, the more restrictive is the test for inferring constitutional subject matter.

Because there is no inherently correct way to select the cutoff, we make use of the flexibility that a score-based approach affords to vary the classification criteria, effectively modulating between narrower and broader conceptions of what counts as constitutional discourse (holding constant the dictionary). For our baseline results using the Minimal dictionary, we fix the critical cutoff at 0, such that any mention of a stem of the term “constitution” results in the document being classified as constitutional. For our robustness checks using the Extended Textual dictionary, we set the cutoff at three progressively restrictive values. First, as with the Minimal dictionary, we fix

⁷⁶ To promote readability, we also exclude from both plots 3110 documents (0.0002% of the corpus) with extreme values of $\rho > 0.08$.

the cutoff at 0. Next, we set the cutoff at the conditional median, such that half of the documents with positive scores are classified as constitutional. This point occurs at a critical value of around $\rho = 0.005$. Finally, we set the cutoff at the conditional eighth decile, such that only the highest-scoring 20% of documents with positive scores are classified as constitutional. This point occurs at a critical value of approximately $\rho = 0.017$.

Figure 3: Share of “Constitutional” Documents (by Congress)

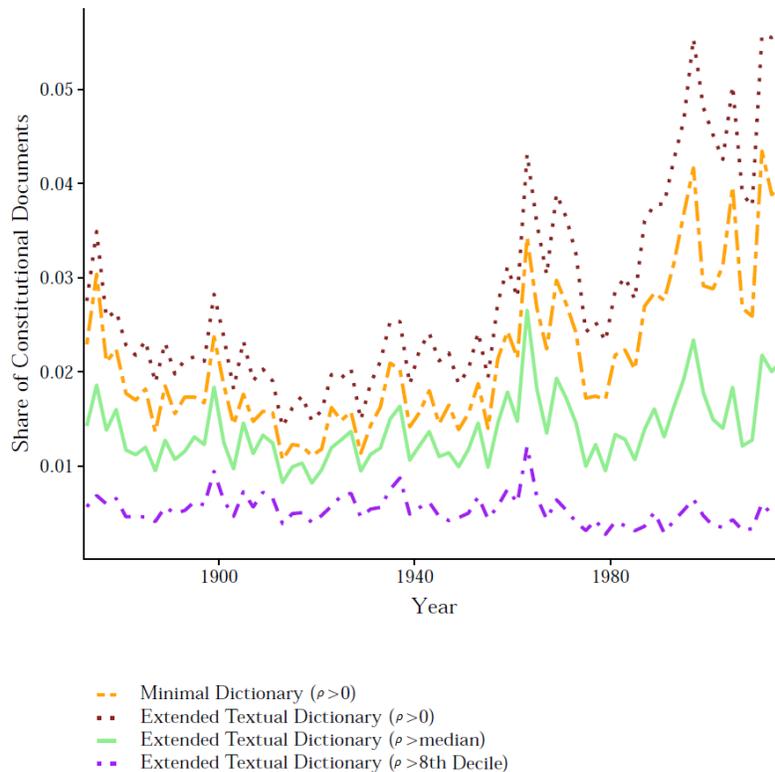


Figure 3 depicts the relative frequency of “constitutional” documents in the Congressional Record over time, pursuant to each of the approaches just described. The most permissive approach uses a cutoff of 0. Again, this is equivalent to defining a document as constitutional if any term from the applicable dictionary is mentioned. The brown dotted line is higher than the golden line because the Extended Textual dictionary contains more terms than the Minimal dictionary. Naturally, definitions based on the median and eighth-decile cutoffs lead to fewer documents being classified as constitutional. Under the most restrictive standard, fewer than 1% of documents are deemed to involve constitutional discourse. While the overall frequencies of constitutional documents may appear low (by any measure), the gargantuan size of the Congressional Record ensures that there are still an ample number of remarks to work with.

We have not yet reached our results, but Figure 3 itself unveils a trove of new information for constitutional scholars and historians. For instance, it reveals that on multiple measures, levels of constitutional discourse in Congress surged in the immediate postwar period, reaching their apogee in the 88th Congress of 1963 and 1964 (for the green and purple lines). The underlying data show that among all of the terms in the Extended Textual dictionary apart from “constitution” itself,

congresspersons invoked “fourteenth amendment,” “equal protection,” and “bill of rights” most frequently in that Congress.⁷⁷ If one looks at these congresspersons’ use of additional terms from the Expansive dictionary, one finds that they invoked “civil rights,” “trial by jury,” and “jury trial” most frequently.⁷⁸ These findings might be seen to support Ackerman’s claim that the civil rights movement and the passage of the Civil Rights Act of 1964 together amounted to a transformative “constitutional moment.”⁷⁹ At the same time, they suggest that constitutional debate has never taken up a large percentage of congressional floor time and that the absence of juries from Ackerman’s constitutional narrative is a significant omission.⁸⁰

More broadly, Figure 3 demonstrates that even as the share of all remarks made on the House and Senate floors that mention the Constitution or a specific provision thereof has generally been rising since the early 1900s, the share of all remarks that include a large number of terms present in the Constitution ($p > 0.017$) has generally been declining since the mid-1900s. This may imply that while contemporary members of Congress are more likely than their predecessors to invoke the Constitution in any given remark, they also tend to do so in a relatively superficial manner.

B. Assessing Polarization Through Classification

Having established both a set of dictionaries and criteria for identifying constitutional subject matter, we turn to the critical measure of interest for this study: the degree of “polarization” manifested in a document’s textual content. Here as well, several avenues suggest themselves. One obvious candidate is to ask human coders to read and score each document (or a random subset) on a partisanship scale. As before, such an approach faces severe constraints. The first is the sheer size of the Congressional Record corpus, a full or even remotely thorough reading of which would require an infeasible amount of time and labor. Another concern is coding error, a risk that may be exacerbated by repetitive tasks. Human coders may also disagree about the partisan or ideological nature of a particular document, leading to inconsistent classifications. And, as noted above,⁸¹ because human coders are unavoidably creatures of their historical era, they may be too tethered to contemporary linguistic and social cues to generate reliable measures over time.

Given these concerns, we pursue an alternative means for measuring polarization—through algorithmic classifiers. Specifically, we propose to measure polarization by evaluating how easy or hard it is for a machine-learning algorithm to predict a speaker’s political ideology or party

⁷⁷ Online App., tbl. OA.1.

⁷⁸ *Id.*

⁷⁹ See 3 ACKERMAN, *supra* note 19, at 118–19.

⁸⁰ See *supra* note 19. On the intersection of local jury practices and the civil rights struggle during this period, see, for example, Leo Adde, *American Jury System: Reexamination and Change*, in 2 EDITORIAL RESEARCH REPORTS 686, 695 (1972), <https://library.cqpress.com/cqresearcher/document.php?id=cqresrre1972091300> [<https://perma.cc/5P62-K74F>] (“The American jury system endured one of its severest crises during the height of the civil rights movement in the South during the 1960s. When civil rights violations, including murder, were prosecuted, it became obvious that a double standard for meting out justice existed.”).

⁸¹ See *supra* text accompanying note 70.

affiliation based solely on the text of her remarks.⁸² If the algorithm has a difficult time making such predictions, it suggests a lack of polarization, as even speakers from opposing camps tend to share a common vocabulary and utilize the same focal concepts. If the algorithm has an easy time making such predictions, in contrast, it suggests that speakers from opposing camps are no longer employing similar or overlapping rhetoric and are instead “talking past” one another.

Two of us have previously employed machine-learning methods to assess large data sets of securities disclosures,⁸³ M&A agreements,⁸⁴ and other commercial contracts,⁸⁵ and we pursue a similar strategy here. A simplified description should suffice for conveying its basic elements and motivating intuitions.⁸⁶ Examining the set of documents from each two-year Congress separately, we proceed in four incremental steps:⁸⁷

- (1) We divide documents at random into a “training set” and a “test set.”
- (2) Using only the training set, we calibrate a statistical algorithm that identifies which semantic characteristics of the text are most useful for distinguishing “Conservative” (or alternatively, Republican) speakers from “Liberal” (or alternatively, Democratic) speakers. This training step results in a calibrated probabilistic estimate as to whether each document came from a Conservative or Liberal speaker.
- (3) We then apply the trained classifier to the test set of documents, generating predictions of speaker ideology for those previously “unseen” documents.

⁸² See *supra* notes 54–55 and accompanying text (discussing recent political science studies employing related approaches). As Andrew Peterson and Arthur Spirling put it in their study of UK Members of Parliament (MPs): “Our central logic is to conceive of [MPs] from different parties as being more or less distinguishable over time, in terms of what they choose to say. How distinguishable they are in practice is determined by a set of machine learning algorithms.” Peterson & Spirling, *supra* note 55, at 121.

⁸³ Gabriel Rauterberg & Eric Talley, *Contracting Out of the Fiduciary Duty of Loyalty: An Empirical Analysis of Corporate Opportunity Waivers*, 117 COLUM. L. REV. 1075 (2017); Talley, *supra* note 69, at 188–201.

⁸⁴ Eric Talley & Drew O’Kane, *The Measure of a MAC: A Machine-Learning Protocol for Analyzing Force Majeure Clauses in M&A Agreements*, 168 J. INST. & THEORETICAL ECON. 181 (2012).

⁸⁵ Julian Nyarko, *We’ll See You in . . . Court! The Lack of Arbitration Clauses in International Commercial Contracts*, 58 INT’L REV. L. & ECON. 6 (2019).

⁸⁶ Readers interested in the more technical aspects of this approach are referred to the abovementioned articles and the code we have made available online. For an excellent introduction to the fundamentals of machine learning, see TREVOR HASTIE, ROBERT TIBSHIRANI & JEROME FRIEDMAN, *THE ELEMENTS OF STATISTICAL LEARNING: DATA MINING, INFERENCE, AND PREDICTION* (2d ed. 2009).

⁸⁷ In contrast to the preprocessing that we performed on the textual data for purposes of determining the “constitutional-ness” of each document, see *supra* note 63, for this exercise we did not use text stemming. The reason is that stemming loses a small amount of information that may be relevant for analyzing polarization. For instance, it is possible that there is a difference in the way Democrats and Republicans use the word “Constitution” in comparison to the word “constitutional,” but stemming would reduce both words to “constitut.” With that said, whether we stem the text or not is of no significant relevance to the performance of our classifier.

- (4) Finally, we assess the classifier’s performance on the test set in terms of its classification accuracy rate as well as other diagnostic measures.

Step 1 is straightforward and is applied to all documents for which the speaker is known. Each iteration of Step 1 typically specifies an 80%–20% split between training and test sets.⁸⁸ To perform Step 2, there are now several classification algorithms available within the machine-learning literature for researchers wishing to train a predictive classifier. For analysis of text, the Multinomial Naive Bayes (MNB) classifier works particularly well.⁸⁹ In rough terms, the MNB classifier tabulates the frequencies of various terms’ use by each group (here, Conservatives and Liberals). It does so across all terms and then uses Bayes’s theorem to invert the process, extracting the “reverse conditional” probability of speaker ideology given the terms used.⁹⁰ When the dust settles, every term in the training set will be associated with an estimated probability that it came from a Conservative versus a Liberal speaker.⁹¹

In Step 3, the probabilistic predictive model calibrated in Step 2—the trained MNB classifier—is applied to the documents in the test set, with the MNB classifier once again rendering a probabilistic prediction of ideology conditional on the terms used. Finally, in Step 4, we evaluate

⁸⁸ Specifically, we consider several possible divisions of training data and test data using a process known as *5-fold cross validation*. The data are randomly assigned to one of five different subsets, each containing roughly 20% of observations. The test set is one of these subsets; the remaining four subsets constitute the training set. After evaluating the classifier’s performance on the test set once, we repeat the process but with a different test set, cycling through the process five times. For instance, in iteration 1, the training set is {*Subset1, Subset2, Subset3, Subset4*} and the test set is {*Subset5*}. In iteration 2, the training set is {*Subset1, Subset2, Subset3, Subset5*} and the test set is {*Subset4*}. And so on. The performance metrics reported below thus reflect average measures across all five “folds” in the validation.

⁸⁹ Even so, our results appear to be robust to other types of classifiers. In addition to the MNB classifier, we examined the quality of the Multilayer Perceptron classifier, the K-Neighbors classifier, the Gaussian Process classifier, the Decision Trees classifier, and the C-Support Vector Classification (C-SVC) classifier for predicting speakers’ party affiliation for constitutional documents in selected periods. Only the C-SVC classifier, we found, sometimes slightly outperforms the MNB classifier (by about three percent based on the “correct classification rate”). However, the training duration of the C-SVC classifier is more than twenty times that of the MNB classifier. For large data sets such as the Congressional Record, its implementation is thus computationally infeasible.

⁹⁰ The MNB classifier is called *naive* because it assumes that the probabilities of any two terms appearing together are independent. This assumption seems overly strong. For instance, the probability that the word “constitution” appears in a document is higher if the word “framers” appears in the document. However, it is a well-known property of the MNB classifier that the independence assumption—strong as it seems—tends to have negligible impact on the overall quality of predictions. See, e.g., Harry Zhang, *The Optimality of Naive Bayes*, PROC. 17TH INT’L FLA. ARTIFICIAL INTELLIGENCE RESEARCH SOC’Y CONF. 562, 562 (2004) (investigating the “surprisingly good performance” of naive Bayes classifiers in many machine-learning applications).

⁹¹ In predicting a congressional speaker’s political party, we remove the 132,157 documents (0.007% of the corpus) that identifiably originate neither from Republicans nor Democrats (for example, remarks by Independents). While it is possible in principle to predict “third-party” affiliation, this would require the training of a multilabel classifier. Multilabel classification is a significantly more complex and less accurate task that does not allow for the implementation of our preferred classifier. Because only 0.007% of documents originate from speakers not from the two main political parties, we decided that the costs of this undertaking outweighed the benefits.

the performance of the classifier with a variety of diagnostic measures that capture the difficulty/ease of predicting the political ideology or party affiliation of the speaker based on the text.

We focus on three well-known measures of classifier performance, which in turn serve as measures of polarization. The first is the fraction of documents that are correctly classified, or the “correct classification rate” (CCR): the sum of “true positive” and “true negative” classification rates.⁹² The CCR is intuitively attractive and easy to understand, but it can also be misleading because it can become skewed with unbalanced initial samples. Suppose, for instance, that the test set contains ninety-nine spoken statements by Liberals and only one by a Conservative. A classifier that simply labels every document “Liberal” would achieve a CCR of 99% even though it always incorrectly classifies Conservative statements. Accordingly, it is common in the literature to complement the CCR with alternative performance measures that are less vulnerable to such pitfalls.

The second performance metric is commonly known as F_1 . It is a performance measure that more comprehensively combines true positives, true negatives, false positives, and false negatives into a single score.⁹³ F_1 scores are bounded between 0 and 1, with higher numbers indicating higher classification quality.

The third performance metric we employ is known as the Area Under the Curve of the Receiver Operating Characteristic function (AUC-ROC). This measure generalizes a step further, by recognizing that the very definition of true/false positives/negatives turns critically on the background criterion used to map the classifier’s probabilistic output onto a categorical assignment. For example, it seems intuitive to classify a document as “Conservative” if the MNB classifier returns a probability of greater than 50% that the speaker is conservative (and vice versa for “Liberal” assignments). Indeed, both CCR and F_1 use this criterion. However, nothing is sacrosanct about 50%, and one could easily imagine using a 43% or 68% cutoff instead if (say) one placed differential weights on the costs of false positives versus false negatives. Each successive cutoff would generate a different set of true/false positive/negative rates and thus different CCR and F_1 measures. The ROC function sidesteps this problem by eschewing a single cutoff criterion and instead considering *all* of them. Specifically, the ROC plots the true positive rate (“specificity”) against the false positive rate (1 minus the “specificity”) as one continuously moves the cutoff criterion from 0% to 100%. In technical terms, the ROC curve represents a nonparametric indication of how well the classifier can discriminate between speakers across assignment criteria. The AUC is bounded between 0 and 1, with higher numbers again reflecting better overall classification.

⁹² To convert this standard statistical jargon into party classification, we (arbitrarily) define a “true positive” (TP) as a correctly classified Republican document, a “true negative” (TN) as a correctly classified Democratic document, a “false positive” (FP) as a Democratic document classified as a Republican document, and a “false negative” (FN) as a Republican document classified as a Democratic document.

⁹³ Formally, F_1 scores are defined by the expression: $F_1 = \frac{2*TP}{2*TP+FN+FP}$.

In presenting our results, we typically show how our classifier performs on all three of these metrics over time, effectively using each as an alternative lens through which to visualize the polarization of constitutional discourse.

IV. MEASURING POLARIZATION IN CONSTITUTIONAL DISCOURSE

This Part demonstrates that constitutional polarization, as captured by the above-described measures, has exploded in Congress over the past four decades. Based solely on the semantic content of a constitutional utterance made on the floor of Congress, it has become increasingly easy for a machine-learning classifier to predict whether a Republican/conservative or a Democrat/liberal is speaking. This result is robust across multiple classifiers, multiple tests of classifier performance, and multiple tests of what counts as constitutional rhetoric. On most measures, the polarization of constitutional discourse is now every bit as extreme as the polarization of nonconstitutional political discourse, if not more so.

A. Qualitative Examples

Before turning to these empirical results, let us first offer a peek into the contents of some of the documents they classify. If constitutional discourse was so much less polarized in the past than it is today, what did that sound like to listeners? Our approach in this Article is in many ways the antithesis of a case study, and detailed historical research would be needed to recover the texture and tenor of constitutional discourse in any given era. Nevertheless, it may be helpful to consider some illustrative examples of actual floor speeches, to give a feel for the micro-level phenomena that underlie our macro-level results.

To do so, we generated probabilistic classifications of all congressional documents triggering the Minimal dictionary from 1959 to 1976 (earlier period) and, separately, from 1999 to 2016 (later period) on a spectrum ranging from most likely to be Republican to most likely to be Democratic. We then extracted the ten documents closest to the average of all documents predicted to be Republican and to the average of all documents predicted to be Democratic. That is, we looked at a sample of what might be considered the most generic or emblematic Republican and Democratic constitutional remarks from each period.⁹⁴

In the earlier period, several emblematic Democratic remarks express constitutional sentiments that today might be thought to have a conservative cast. The most substantial remarks involved discussions: of the Supreme Court’s “deeply disturb[ing]” ruling in *Engel v. Vitale*⁹⁵ that public schools may not hold official recitations of prayers;⁹⁶ of the perils of military assistance to Communist countries and the proposition that “under the Constitution our foreign policies are the prerogative of the President”;⁹⁷ of the inability of Congress to “exercise its proper constitutional

⁹⁴ For the full results of this inquiry, see Online App., tbl. OA.2.

⁹⁵ 370 U.S. 421 (1962).

⁹⁶ 110 CONG. REC. 3404 (1964) (statement of Sen. A. Willis Robertson). *Engel* is not named in Senator Robertson’s remarks, but it is clearly the case he means to criticize.

⁹⁷ 113 CONG. REC. 32,977 (1967) (statement of Rep. Otto Passman).

role” in the budgetmaking process owing to “deceptive information, ground into pabulum and spoon fed to us by the [Office of Management and Budget]”;⁹⁸ and of the “humiliating experience” for states such as Alabama of being subject to the Voting Rights Act’s preclearance regime and thereby “convicted of discrimination without a trial.”⁹⁹

The emblematic constitutional remarks by Democrats in the later period have a different tone and ideological valence. They include discussions: of the nontreaty status of the North American Free Trade Agreement and the Uruguay Round of the General Agreement on Tariffs and Trade;¹⁰⁰ of the constitutional value of legislation to end federal raids on state-licensed medical marijuana dispensaries;¹⁰¹ of the “audacity” and unfairness of Republican filibusters of President Obama’s judicial nominations;¹⁰² and of how in the 2004 federal elections, unlike in the 2000 elections, “we are going to be prepared and we are going to utilize every aspect of the Constitution, the Voting Rights Act of 1965, and local jurisdictional law . . . to make sure that every vote is counted.”¹⁰³

In the earlier period, the emblematic Republican remarks are diverse and not easy to characterize. They include recognizably “conservative” discussions of a state judge’s “great affection for the Constitution and for the historic American concept of freedom of the individual”;¹⁰⁴ and of the “doubt . . . in the minds of good lawyers as to the constitutionality” of Title IV of the (never enacted) Civil Rights Act of 1966, which would have barred racial discrimination in the sale and rental of all housing.¹⁰⁵ Yet they also include harder-to-place discussions of the importance of passing a law allowing eighteen-year-olds to vote, notwithstanding the serious “constitutional questions” raised by such a law;¹⁰⁶ and of the likely constitutionality and “acceptab[ility] to many on both sides of the aisle” of the (never enacted) Cooper-Church amendment meant to bar reintroduction of U.S. armed forces into Cambodia, provided that the amendment “do nothing . . . that impugns the President’s constitutional power as Commander in Chief.”¹⁰⁷

The emblematic constitutional remarks by Republicans in the later period are more uniform in their ideological content and more combative in style. They include discussions: of how “the framers of our Constitution wanted the process of lawmaking to be difficult” and “inefficient”;¹⁰⁸ of President Bush’s opportunity and responsibility, as “Commander in Chief on the domestic front,” to call Congress into special session if it fails to act on a stimulus bill before the 2001 winter recess;¹⁰⁹ of how opponents of the Class Action Fairness Act of 2003 give “the impression that the

⁹⁸ 119 CONG. REC. 7740 (1973) (statement of Sen. Edmund Muskie).

⁹⁹ 116 CONG. REC. 7105 (1970) (statement of Sen. James Allen).

¹⁰⁰ 145 CONG. REC. 20,154 (1999) (statement of Rep. Dennis J. Kucinich).

¹⁰¹ 152 CONG. REC. 12,967 (2006) (statement of Rep. Maurice Hinchey).

¹⁰² 160 CONG. REC. S1225 (daily ed. Feb. 27, 2014) (statement of Sen. Harry Reid).

¹⁰³ 150 CONG. REC. 18,491 (2004) (statement of Rep. Sheila Jackson Lee).

¹⁰⁴ 106 CONG. REC. 1642 (1960) (statement of Sen. Barry Goldwater).

¹⁰⁵ 112 CONG. REC. 18,397 (1966) (statement of Rep. Gerald R. Ford).

¹⁰⁶ 116 CONG. REC. 20,166 (1970) (statement of Rep. Thomas Railsback). Later that year, in *Oregon v. Mitchell*, 400 U.S. 112 (1970), a divided Supreme Court would strike down the provision of the Voting Rights Act of 1970 lowering the minimum voting age to eighteen in state and local elections.

¹⁰⁷ 116 CONG. REC. 19,186–87 (1970) (statement of Sen. Robert Dole).

¹⁰⁸ 145 CONG. REC. 14,973 (1999) (statement of Rep. David Dreier).

¹⁰⁹ 147 CONG. REC. 26,451 (2001) (statement of Rep. John Hayworth).

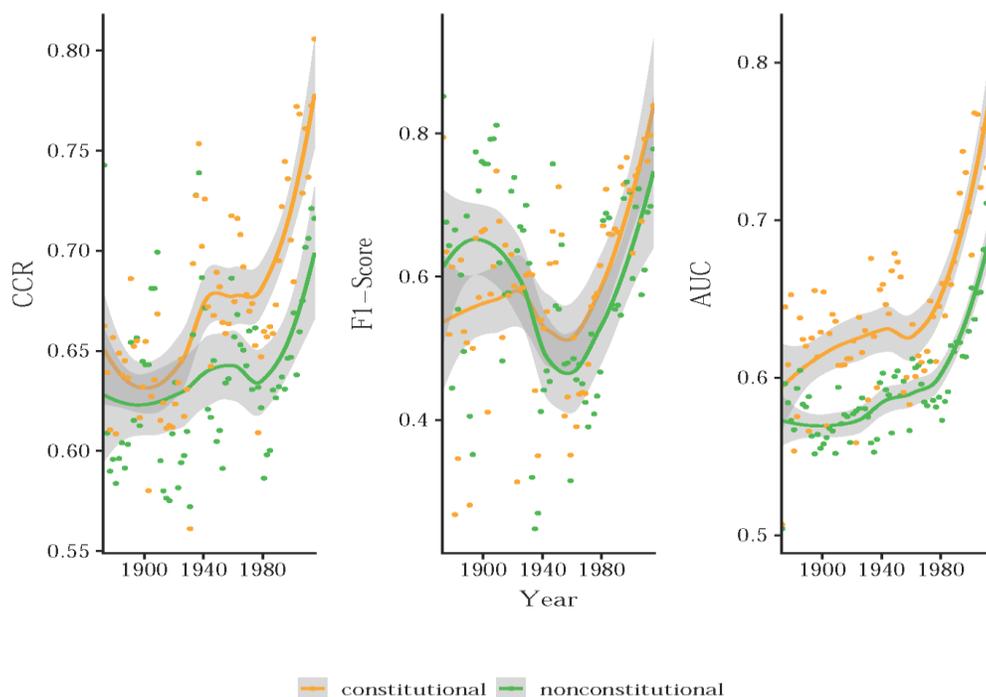
interstate commerce clause was designed to allow Congress to regulate all violent crime, and any other subject that touches Congress’s fancy and that happens to poll well—any subject, that is, except for interstate commerce”;¹¹⁰ of George Mason’s and James Madison’s views on the selection of House members;¹¹¹ and of President Obama’s “unconstitutional and unilateral decisions . . . to ignore our Constitution.”¹¹²

These examples are illustrative only. But they give a sense of what the polarization of constitutional discourse in Congress might look like under a magnifying glass. As we show below, these qualitative impressions persist when we zoom out to a larger scale.

B. Baseline Results

We now turn to our principal results. Figure 4 shows the evolution of partisan polarization in Congress (as measured by classifier performance) for constitutional versus nonconstitutional remarks, with any remark that triggers the Minimal dictionary treated as constitutional.

Figure 4: Predicting Party Affiliation by Textual Content



The horizontal axis plots time in two-year increments, corresponding to each Congress since 1873. The vertical axis plots, in each successive panel, the three different metrics that we use to assess our classifier’s performance: from left to right, CCR, F₁ scores, and AUC-ROC.¹¹³ Each dot in the

¹¹⁰ 149 CONG. REC. 25,509–10 (2003) (statement of Sen. Jon Kyl).

¹¹¹ 150 CONG. REC. 11,297 (2004) (statement of Rep. Tom Feeney).

¹¹² 161 CONG. REC. H1550 (daily ed. Mar. 3, 2015) (statement of Rep. Jody B. Hice).

¹¹³ See *supra* section III.B.

figure represents an average performance score for constitutional or nonconstitutional remarks in that Congress. To facilitate interpretation, we also fit each set of dots with “smoothed” LOWESS-curve trend lines and associated 95% confidence bands around the lines.¹¹⁴

A few aspects of these results immediately stand out. First, they lend little support to the notion that framing arguments in constitutional terms tends to discipline disagreement and dampen partisanship.¹¹⁵ On the contrary, congressional remarks that invoke the Constitution appear to be even more polarized than those that do not. Second, the polarization of congressional discourse has grown dramatically since the late 1970s for both constitutional and nonconstitutional remarks. And third, the growth rate of constitutional polarization has tended to equal or exceed the growth rate of nonconstitutional polarization.

Beginning around 1980, our classifier thus finds it increasingly easy to predict the *political party* of a congressional speaker. As noted in Part I, the Democratic and Republican parties have become more internally unified and externally divided during this period.¹¹⁶ It is possible that the increasing ideological coherence of the parties is itself driving Figure 4’s results: even if “liberal” and “conservative” members of Congress sound exactly as distinct from each other as they did before, Figure 4’s results could trend upward because all of the liberals have been leaving the Republican Party for the Democratic Party and vice versa. Another (not mutually exclusive) possibility, however, is that liberal and conservative legislators have been speaking in increasingly distinctive ways.

Figure 5 tries to tease apart these alternative narratives by showing our classifier’s performance at predicting the *political ideology* of a congressional speaker independent of party affiliation. For this purpose, we use Poole-Rosenthal (PR) scores, which are designed to capture the ideological leanings of each member of Congress based on her voting behavior.¹¹⁷ We label each speaker

¹¹⁴ Alternatively, confidence intervals could be obtained through bootstrapping. In this case, however, a full bootstrapping process is computationally very intensive and takes several months to complete. We have conducted a preliminary test with fewer observations and were able to confirm that the recent increase in polarization is significant. Results on the full data set will be included in the Online Appendix as they become available.

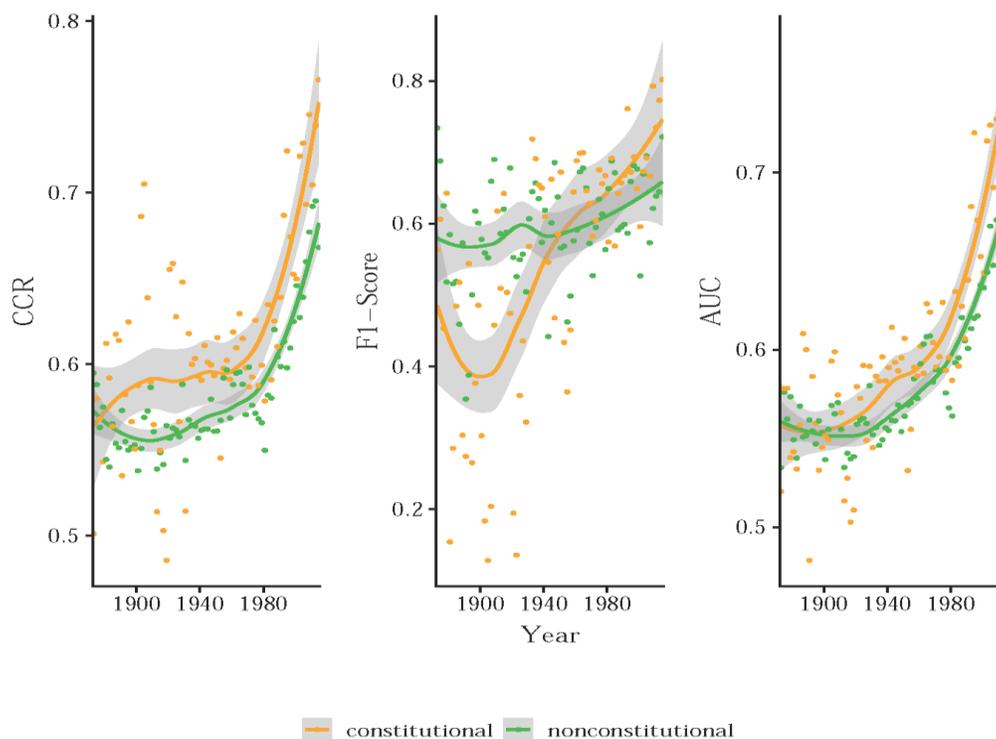
¹¹⁵ See *supra* note 25 and accompanying text.

¹¹⁶ See *supra* note 22 and accompanying text; see also Jessica Bulman-Pozen, *Executive Federalism Comes to America*, 102 VA. L. REV. 953, 958 (2016) (explaining that while in the mid-twentieth century the “Democratic and Republican parties were internally diverse confederations,” today they “are instead sharply polarized” and “partisanship and ideology have become closely aligned”); *id.* at 958 nn.12–14 (collecting political science sources documenting this transformation).

¹¹⁷ See *supra* note 66 and accompanying text. More precisely, we use the first dimension of PR scores based on the dynamic, weighted nominal three-step estimation procedure known as DW-NOMINATE. See Royce Carroll, Jeff Lewis, James Lo, Nolan McCarty, Keith Poole & Howard Rosenthal, *DW-NOMINATE Scores with Bootstrapped Standard Errors*, VOTEVIEW.ORG (Sept. 17, 2015), <http://www.voteview.org/dwnomin.htm> [<https://perma.cc/W5NF-9APC>]. We do not use the second (subsidiary) dimension of PR scores, as it has been of little help in classifying ideology since the late 1960s. See NOLAN MCCARTY, KEITH T. POOLE & HOWARD ROSENTHAL, *POLARIZED AMERICA: THE DANCE OF IDEOLOGY AND UNEQUAL RICHES* 26 (2006) (“From the late 1960s onward, . . . the second dimension has abruptly declined in importance. In the Bill Clinton and George W. Bush eras, it improves classification only by about one percent.”).

“liberal” or “conservative” depending on the relative position of her PR score within the distribution of her temporal peers. A speaker is labeled liberal if her PR score lies to the left of the median PR score of her chamber in a given Congress; a speaker is labeled conservative if her PR score lies to the right of the median. ¹¹⁸ Our classifier then predicts the speaker’s ideology without reference to party.

Figure 5: Predicting Liberal/Conservative Ideology by Textual Content



The results in Figure 5 largely parallel the results in Figure 4. Both constitutional remarks and nonconstitutional remarks have become dramatically more polarized in recent decades, and the polarization of the former has, if anything, been more extreme. This suggests that the partisan polarization shown in Figure 4 is *not* simply a function of the parties’ post-1960s realignment (with liberals fleeing the Republican Party and conservatives fleeing the Democratic Party). Rather, the partisan polarization shown in Figure 4 has been driven to some significant extent by the growing distinctiveness of liberal versus conservative speech.

In creating Figures 4 and 5, we do not control for any attributes of the underlying documents. One might harbor concerns that the constitutional and nonconstitutional documents differ in ways that are orthogonal to the constitutional/nonconstitutional distinction yet still affect our classifier’s performance. In particular, longer texts—simply by dint of their length—tend to provide more opportunities for a classifier to identify distinctive phrases or patterns of speech that are predictive

¹¹⁸ Consequently, the labels are dynamic in that an individual’s status as a “liberal” or “conservative” could change over time if the median legislator in her chamber moves to the right or the left.

of ideology or party. And constitutional documents might tend to be longer because, for example, they are less likely to involve merely procedural or commemorative content.

Figure 6: Mean Document Length over Time

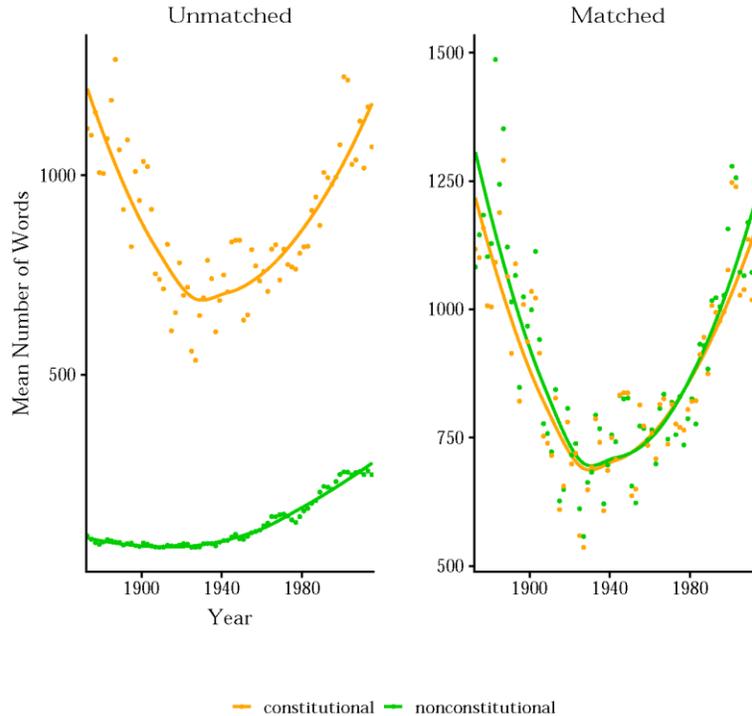


Figure 6 suggests that this concern is warranted. The left-hand panel shows a time-series plot of the average length of constitutional documents and nonconstitutional documents. While the average length of constitutional documents fluctuates between 500 and 1300 words per Congress, the average length of nonconstitutional documents fluctuates between 100 and 300 words. It therefore seems plausible that our protocol for identifying constitutional subject matter inadvertently introduces a spurious factor (length) that affects our measure of polarization. That said, it is not at all obvious that length should be considered spurious, insofar as the choice to give a longer-than-usual speech and the choice to invoke the Constitution are causally related to one another—for instance, because constitutional arguments take more time to elaborate or because efforts to make arguments that are (or appear) especially serious or scholarly are more likely to invoke the Constitution toward that end.

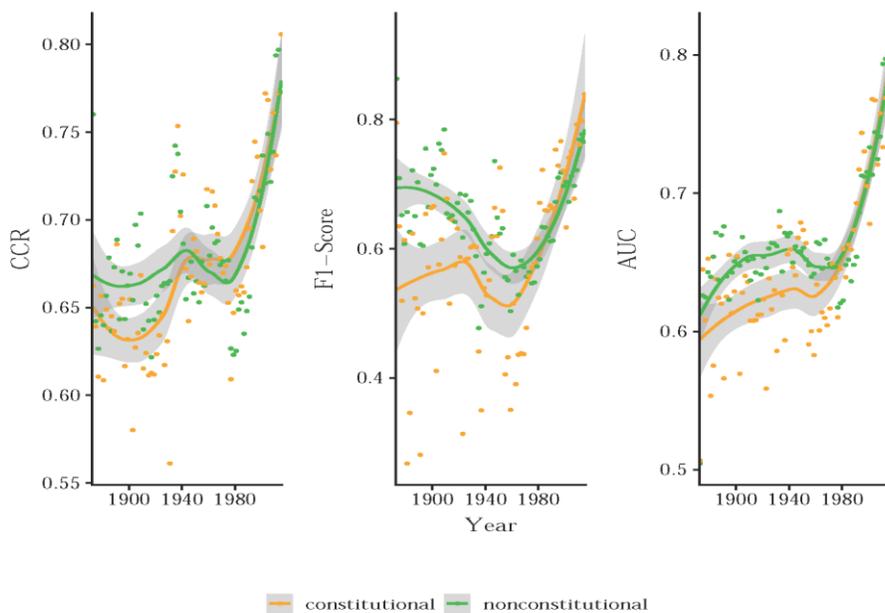
While some might therefore believe it better *not* to control for length, to address any concerns on this score we resample our data using a matching technique designed to eliminate differences between constitutional and nonconstitutional documents based on length. Our protocol for doing so is as follows. For every document deemed constitutional, we match it with a nonconstitutional document from the same Congress that has the same word count. If there is no nonconstitutional

document with the exact same word count, we choose the one that is closest;¹¹⁹ if there are multiple matching nonconstitutional documents of equal length, we select one at random. Nonconstitutional documents that are never matched are dropped from the analysis. The right-hand panel of Figure 6 illustrates differences in word length after matching. As can be seen, matching successfully removes any meaningful differences in length between constitutional and nonconstitutional documents. We then rerun the analyses behind Figures 4 and 5 on the length-matched data set. Figure 7 shows the results. (Figure 7A corresponds to Figure 4; Figure 7B corresponds to Figure 5.)

Controlling for document length, it turns out, does not significantly alter our findings. As before, both constitutional and nonconstitutional remarks have grown increasingly polarized since around 1980. And as before, the rate at which constitutional remarks have become polarized is at least as high as the rate for nonconstitutional remarks. Intriguingly, these length-controlled comparisons suggest that polarization historically has been lower in constitutional discourse than in nonconstitutional discourse, but that in recent decades this gap has disappeared or slightly reversed. In short, controlling for document length not only substantiates our baseline results but also makes them appear even starker in certain respects.

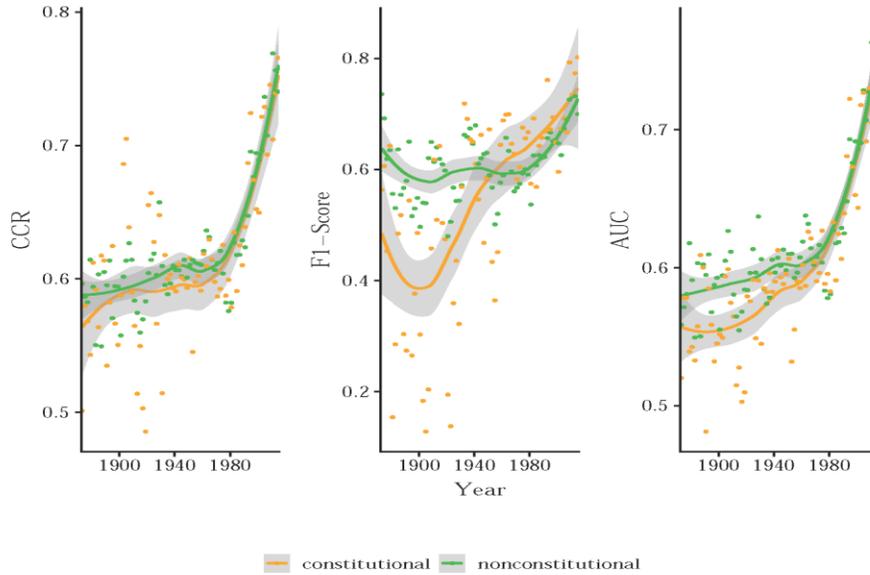
Figure 7: Predicting Speakers by Textual Content (Matched Data)

7A. Party Affiliation



¹¹⁹ This nonconstitutional document could be slightly longer or shorter than the constitutional document with which it is matched. We choose the nonconstitutional document that minimizes the absolute difference in word count.

7B. Liberal/Conservative Ideology



C. Robustness Checks Using Different Dictionaries

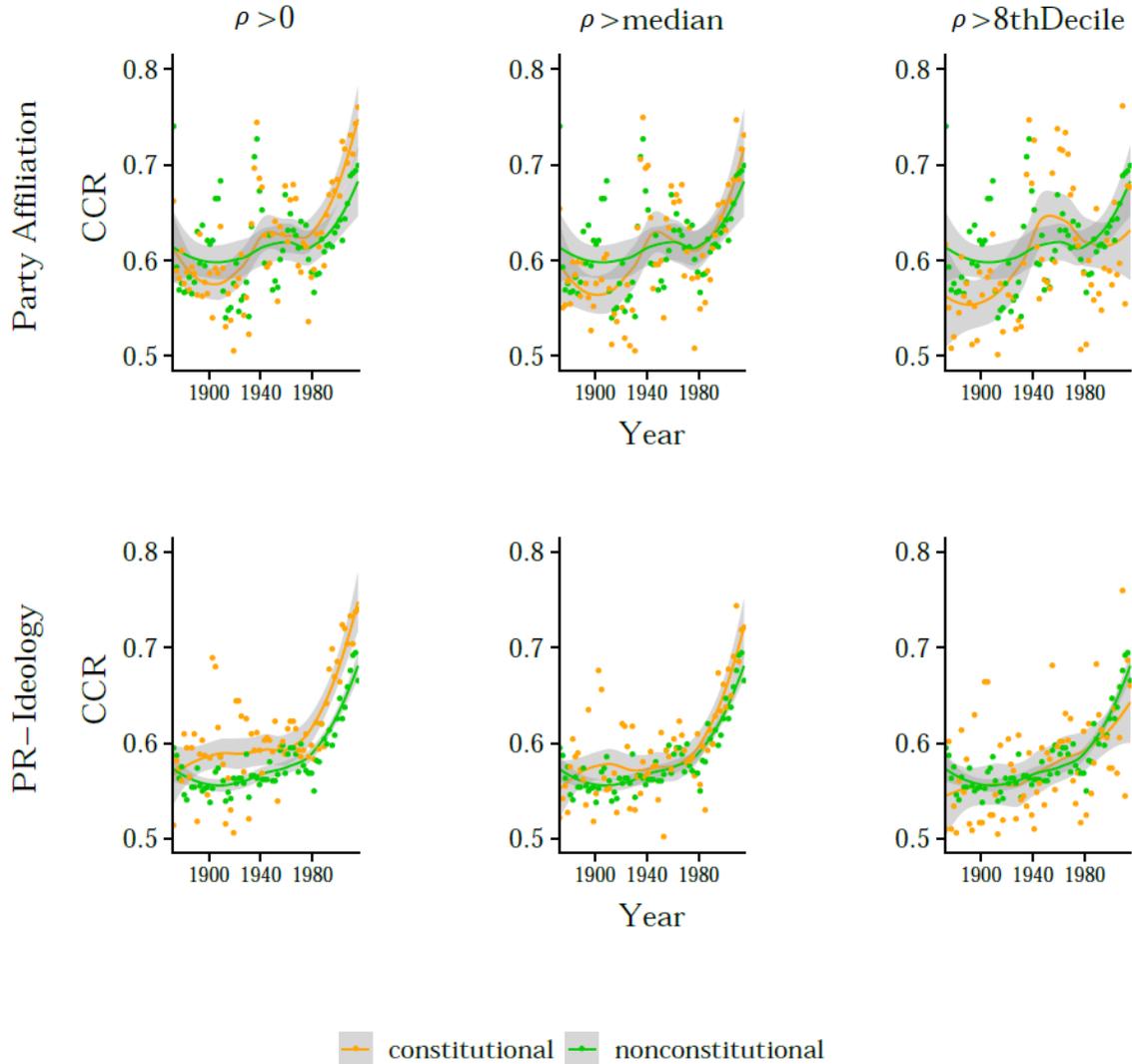
As an additional means to check the robustness of our results, we employ alternative tests for distinguishing between constitutional and nonconstitutional documents. Up to this point (in Figures 4, 5, and 7), we have deemed a document constitutional if and only if it contains a stem of the term “constitution” and thus triggers the Minimal dictionary. This baseline approach has much to commend it in terms of transparency, replicability, and simplicity, as described in section III.A, but it reflects a narrow conception of constitutional discourse. Accordingly, we explore the possibility that changing the test for what counts as constitutional subject matter changes the ultimate portrait of polarization.

Figure 8 shows the results of rerunning the analysis with the Extended Textual dictionary and three different cutoff criteria for identifying constitutional subject matter. The Extended Textual dictionary, recall, includes not only the term “constitution” but also the titles of constitutional articles, amendments, and clauses as well as dozens of phrases that appear in the text of the Constitution and lack a common extraconstitutional usage.¹²⁰ In all of the analyses for Figure 8, we use the length-matched data set, controlling for document length across constitutional and nonconstitutional remarks. The top row of Figure 8 shows our classifier’s performance, as measured by CCR, at predicting a speaker’s political party. The bottom row shows its performance at predicting a speaker’s liberal/conservative ideology. Within each row, the left-hand panel shows the results when we deem a document constitutional if any term in the Extended Textual dictionary appears in it. The center and right-hand panels show the results when we increase the cutoff criterion to the conditional median and the conditional eighth decile of ρ scores, respectively, such

¹²⁰ See *supra* notes 71–73 and accompanying text.

that a document is deemed constitutional only if its “density” of constitutional content is in the top half or top fifth of all documents that trigger the Extended Textual dictionary.

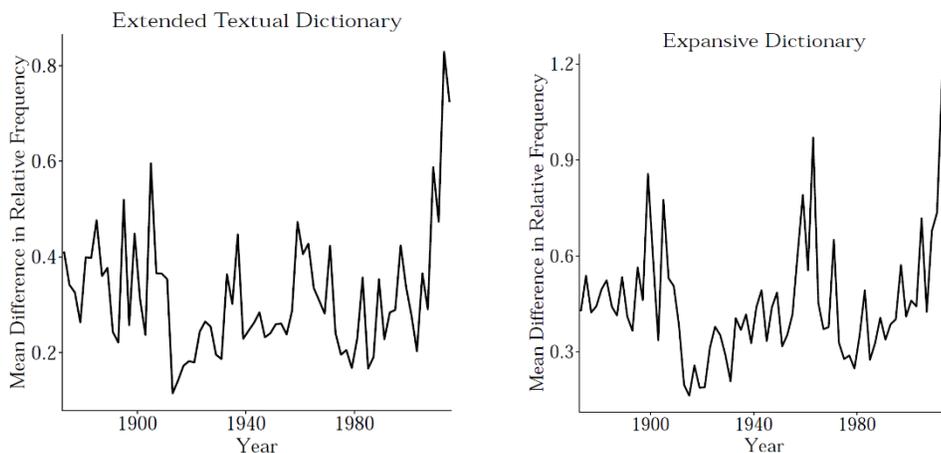
Figure 8: Results with Extended Textual Dictionary (Matched Data)



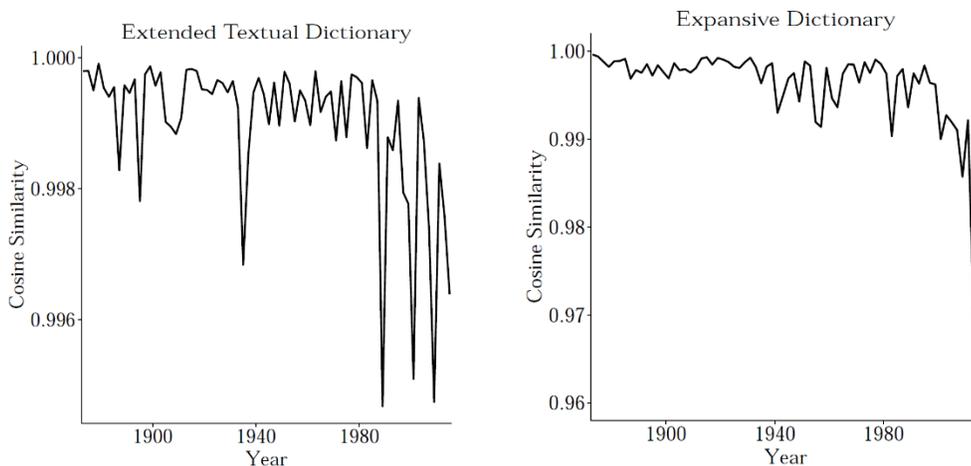
The results in Figure 8 are broadly consistent with the results in Figure 7. The left-hand panels show the same explosive growth in polarization, and especially constitutional polarization, since around 1980. The one significant difference between Figure 7 and Figure 8 appears in the right-hand panels, which show the recent rate of polarization of constitutional discourse lagging rather than equaling or exceeding that of nonconstitutional discourse. The discrepancy between the left-hand and right-hand panels in Figure 8 is intriguing. It suggests that whereas relatively superficial discussions of the Constitution tend to be *more* partisan than remarks that have zero constitutional content, particularly detailed discussions of the Constitution may bear fewer markers of partisanship.

Figure 9: Talking Past Each Other

9A. Average Absolute Differences



9B. Cosine Similarity



Using a broader dictionary also facilitates other types of diagnostic measures for polarization that are not possible with the Minimal dictionary. In particular, a broader dictionary allows us to compare how Democrats and Republicans differentially draw on various terms. Figure 9 explores this alternative measure of polarization using the Extended Textual dictionary (left-hand charts) and the Expansive dictionary (right-hand charts). These charts are generated solely from documents deemed constitutional if they contain any terms from the dictionary (i.e., a cutoff criterion of 0). For each term in the dictionary and for each Congress, we compute the average frequency with which the term appears in remarks made by Democrats versus the average frequency with which the term appears in remarks made by Republicans. In Figure 9A, we plot the average absolute difference between Democrat and Republican usage across all terms in each dictionary, thereby generating a measure of “disjointness” in how the political parties invoke these terms. Under this measure, a higher score indicates a greater degree of disjointness in the parties’ use of constitutional rhetoric. In Figure 9B, we consider an alternative measure of the extent to

which Democrats and Republicans differentially draw on a dictionary's terms: the "cosine similarity" between the parties' use of all terms in each dictionary. Under this measure, a lower score indicates greater polarization (patterns of speech that are more orthogonal).¹²¹ All charts plot time series of the relevant scores, by Congress.

As these charts show, there have been several historical periods in which the constitutional rhetoric used by Democrats and Republicans became increasingly distinct on one or both measures, including the 1930s and 1960s. The levels of disjointness/orthogonality during those periods, however, pale in comparison to the levels reached during the past several decades. Indeed, all four plots in Figure 9 suggest that *Democratic and Republican members of Congress are talking past each other in their constitutional rhetoric to a greater extent than they ever have since the beginning of our data set in 1873.*

V. ONE DOCUMENT, TWO DISCOURSES: WHAT DRIVES CONSTITUTIONAL POLARIZATION?

The previous Part documents the growing polarization of constitutional discourse in Congress over the past four decades. Our findings are robust across multiple constitutional dictionaries, classification metrics, ideology proxies, and imputation rules for constitutional subject matter. These findings are dramatic, unsettling, and the core of this Article's contribution.

What has been driving the trends that Part IV documents? Teasing out the causes of a phenomenon as complex as constitutional polarization requires sustained multidisciplinary study, but our research design enables us to make some headway. In particular, we can analyze interactions in the data to assess: (1) whether polarization has increased symmetrically or asymmetrically across the two parties; (2) whether the prevalence of constitutional rhetoric is related to unified or divided government; (3) whether the introduction of television coverage of the House and Senate floors has had any appreciable effect on polarization; and (4) whether certain constitutional terms have become increasingly associated with one or the other party. We discuss each topic in turn.

A. Asymmetric Constitutional Polarization

Consider first the possibility that one political party has been more responsible than the other for the uptick in constitutional polarization. As noted above, legal scholars and political scientists continue to debate whether and to what extent the recent rise in partisan polarization and constitutional hardball has been driven, asymmetrically, by Republicans over Democrats.¹²² Qualitative analyses of such phenomena may be subject to any number of subjective biases.¹²³ Our

¹²¹ More technically, to compute the cosine similarity we first translate the corpus into a document-term matrix, where the rows represent the documents and the columns represent the terms. Element $a_{d,t}$ then represents the frequency of term t in document d . The cosine similarity between documents d_1 and d_2 is a representation of the angle between their respective vectors.

¹²² See *supra* notes 28–32 and accompanying text.

¹²³ See Fishkin & Pozen, *supra* note 24, at 927–29; Bernstein, *supra* note 32, at 208–11. *But cf.* Joseph Fishkin & David E. Pozen, *Evaluating Constitutional Hardball: Two Fallacies and a Research Agenda*,

methods, while no doubt imperfect in various ways, provide an alternative lens through which to assess the asymmetry question.

Figure 10: PR Scores and Predicted Conservatism

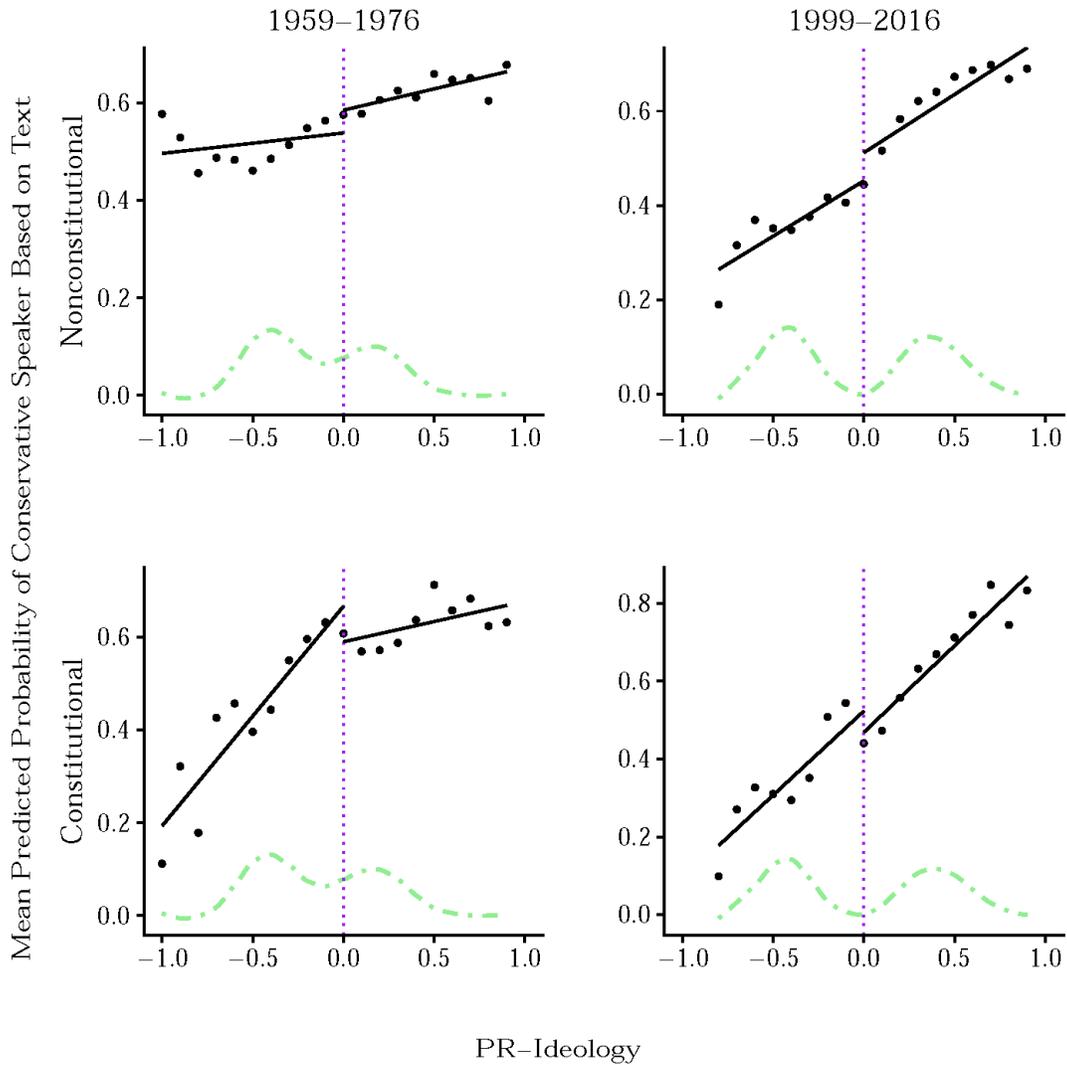


Figure 10 illustrates the relationship between the political ideology of congressional speakers (as measured by PR scores) and the polarization of their remarks on the House and Senate floors (as measured by our classifier’s predictions as to whether a conservative is speaking). It compares two historical periods: one from 1959 to 1976 when levels of polarization were relatively low, and one from 1999 to 2016 when levels of polarization were relatively high. The charts in the top row of Figure 10 are based on remarks deemed to be nonconstitutional. The charts in the bottom row are based on remarks deemed to be constitutional under our baseline test (that the Minimal

119 COLUM. L. REV. ONLINE (forthcoming 2019), <https://ssrn.com/abstract=3325195> [<https://perma.cc/6GQA-8UW2>] (defending the use of qualitative methods to study patterns and practices of constitutional hardball).

dictionary is triggered). The horizontal axis plots PR score intervals across all members of Congress, with the vertical purple dotted line indicating the “neutral” score of 0.0.

The charts in Figure 10 each contain two diagrams. First, the green dashed/dotted lines depict the frequency distribution (or smoothed histograms) of PR scores for Congresses within the period. Note that in both periods this distribution is bimodal, although more so in 1999–2016 reflecting the virtual disappearance of political neutrals. Second, and most importantly for our purposes, the black solid lines depict the average likelihood that the speaker is predicted by our classifier to be conservative based solely on the text of her remarks. When this black line is steep, it suggests a tight relationship between speakers’ ideology as reflected in their voting record and their ideology as reflected in the “conservativeness” of their remarks. A flatter line, in contrast, suggests a noisier relationship between voting behavior and rhetoric.

For nonconstitutional remarks (the upper charts), we see ideology and rhetoric becoming more closely aligned from the earlier period to the later period for both liberals and conservatives, as the slope of the black line increases across all members of Congress. For constitutional remarks (the lower charts), we see a similar shift toward greater alignment of ideology and rhetoric, *but with a significant asymmetric twist*. In the earlier period, conservative speakers of all stripes tend to engage in relatively homogenous constitutional discourse (lower left chart, PR scores above zero). In the later period depicted in the lower right chart, however, conservative speakers become much more distinguishable by ideology, with relatively extreme conservatives (with the highest PR scores) employing a much more distinctive constitutional rhetoric than relatively moderate conservatives (with the lowest positive PR scores). Among liberals (lower charts, PR scores below zero), in contrast, the mapping between ideology and constitutional rhetoric changes only trivially across the measured time spans. These patterns suggest that it is conservatives in Congress—and in particular the most conservative conservatives—who have been driving the most recent uptick in polarization of constitutional discourse. Although this shift is a stark one even for visual analysis, it also manifests in both statistically and behaviorally significant ways using a “regression-kink” analysis, as described in Appendix B.¹²⁴

That said, Figure 10 also suggests that at least part of the reason for this asymmetric-polarization result is that extreme conservatives have *caught up* to extreme liberals in the distinctiveness of their constitutional rhetoric. As the lower left chart shows, from 1959 to 1976 the most liberal liberals were already easy to identify as such through the text of their constitutional remarks. The lower right chart shows that this remains the case.

The overall portrait painted by Figure 10 is thus a nuanced one. Consistent with the “asymmetric polarization” and “asymmetric constitutional hardball” theses, our findings strongly support the notion that developments within the Republican coalition have been responsible for the post-1970s rise in constitutional polarization—but with the important caveat that these asymmetric developments have made the degree of fit between political ideology and constitutional rhetoric more symmetric across the historical liberal/conservative divide. The big change from 1959–1976 to 1999–2016, again, is that the constitutional remarks made by the most extreme conservatives in Congress used to be hard to distinguish from the constitutional remarks made by the most moderate conservatives, and now the two are relatively easy to differentiate.

¹²⁴ See *infra* App. B, tbl. B.1.

B. Separation of Parties, Not Powers

Thus far, we have analyzed constitutional polarization in Congress without reference to which party holds power. The “separation of parties, not powers” thesis advanced by Levinson and Pildes, however, suggests that “the degree and kind of competition between the legislative and executive branches vary significantly . . . depending on whether the House, Senate, and presidency are divided or unified by political party.”¹²⁵ Members of Congress from the same political party as the president, Levinson and Pildes emphasize, are more likely to approach interbranch interactions in a “cooperative” rather than a “competitive” manner.¹²⁶

In line with this thesis, members of Congress whose party does not hold the presidency may tend to invoke the Constitution more frequently than their counterparts across the aisle, as part of their efforts to resist the president’s agenda and generate the “friction” necessary “to save the people” from perceived executive overreach.¹²⁷ For similar reasons, members of Congress who are in the minority party within their chamber may tend to invoke the Constitution more frequently, as part of their efforts to resist the majority party’s agenda. Levinson and Pildes’s descriptive account has been challenged by some,¹²⁸ and its implications for constitutional discourse might be debated. But it seems to suggest the possibility that public appeals to the Constitution in Congress serve less as a rhetoric of justification or aspiration, wielded by those in power to help explain or defend their policies, and more as a rhetoric of opposition wielded by those who find themselves on the political margins.

Figure 11 probes this possibility, illustrating the propensity of Democrats and Republicans to invoke the Constitution or any of its provisions or phrases (the Extended Textual dictionary) in their remarks on the floor, conditional on whether the presidency (top row) or their legislative chamber (bottom row) is controlled by their own party or the other party. The gaps in the smoothed lines represent Congresses in which the relevant condition does not apply. For instance, in the top left chart on Republican presidencies, the gaps represent periods in which a Democrat was in the White House. In the bottom row, the charts can have anywhere from zero to four dots per Congress, depending on how many of the relevant conditions are met. For instance, in the 103rd Congress beginning in 1993, Democrats controlled both the House and Senate, so in the bottom right chart (majority Democratic chambers) there are four dots: one for Democrats in the House, one for Democrats in the Senate, one for Republicans in the House, and one for Republicans in the Senate. In the 104th Congress beginning in 1995, by contrast, Republicans controlled both chambers, so there are zero dots that year in the bottom right chart and four in the bottom left chart.

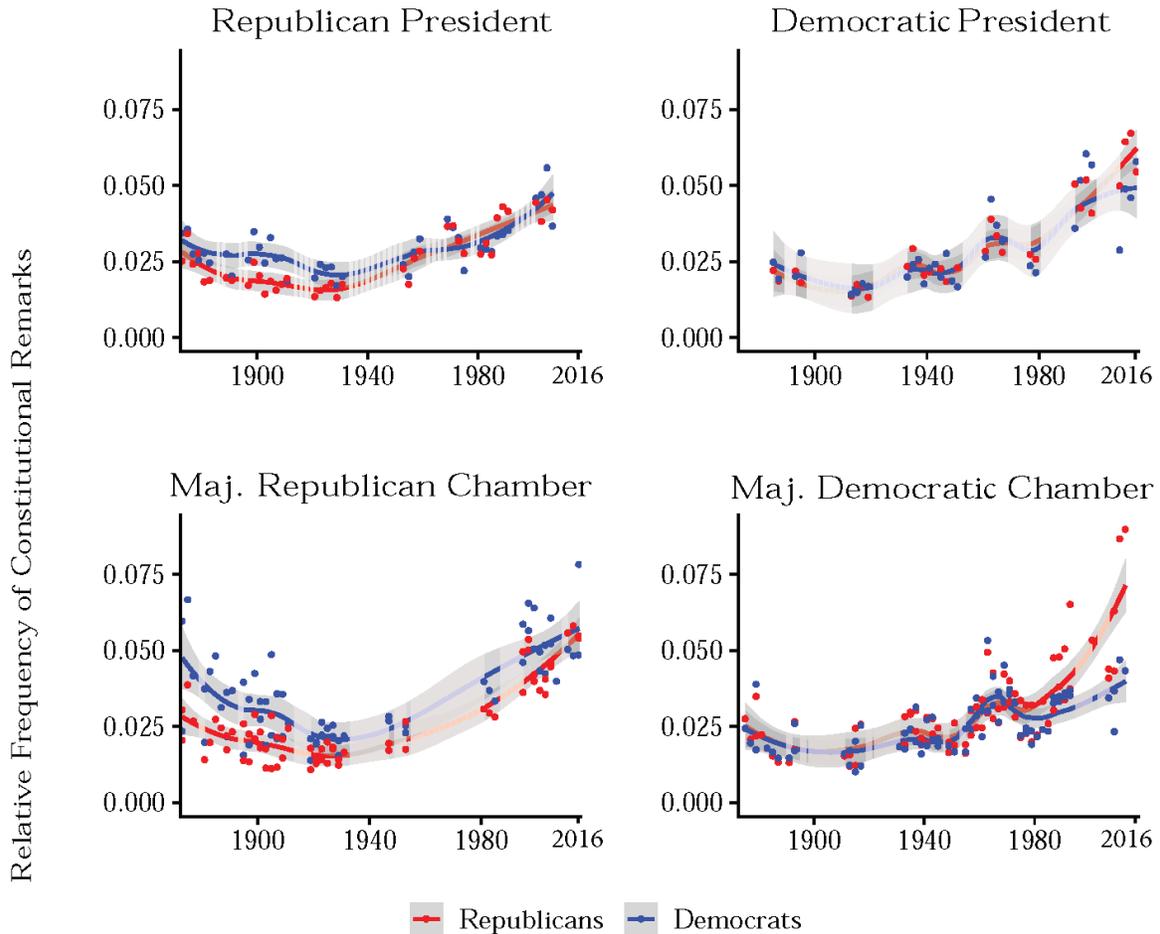
¹²⁵ Levinson & Pildes, *supra* note 1, at 2315.

¹²⁶ *Id.* at 2316.

¹²⁷ *Cf.* Myers v. United States, 272 U.S. 52, 293 (1926) (Brandeis, J., dissenting) (“The doctrine of the separation of powers was adopted . . . not to promote efficiency but to preclude the exercise of arbitrary power. The purpose was not to avoid friction, but . . . to save the people from autocracy.”).

¹²⁸ See *supra* note 39 and accompanying text.

Figure 11: Countermajoritarian Constitutional Rhetoric (Extended Textual Dictionary)



The overall trends in Figure 11 suggest a mild tendency for members of Congress whose party is out of power, either in the sense of not controlling the presidency or not controlling their own chamber, to invoke the Constitution more frequently than their counterparts across the aisle. But both the magnitude and the partisan skew of this tendency vary significantly across historical eras. In the early twentieth century, another period of high partisan polarization in Congress,¹²⁹ Democrats were especially likely to appeal to the Constitution when out of power. During much of the mid-twentieth century, countermajoritarian propensities to invoke the constitution were far weaker (and in some cases reversed). Over the past four decades or so, however, the earlier pattern reemerged but with minority-party Republicans becoming the most intensive invokers of the Constitution. During the Obama Administration, they mentioned the Constitution in an unprecedentedly high proportion of their remarks.

¹²⁹ See, e.g., Keith T. Poole, Howard Rosenthal & Christopher Hare, *House and Senate Polarization 1879–2014*, VOTEVIEW BLOG (Dec. 22, 2014), <https://voteviewblog.com/2014/12/22/house-and-senate-polarization-1879-2014> [<https://perma.cc/LK65-3KHQ>].

In terms of how often members of Congress discuss the Constitution (Figure 11), as well as what they say when they do (Figures 4 through 10), partisan discrepancies have thus become both increasingly clear and increasingly asymmetric. In Appendix B, we further document these differential patterns across historical eras using negative binomial regression analysis.¹³⁰

C. Polarization by Chamber and the C-SPAN Effect

The analyses described in the previous sections pool the two chambers of Congress together. This pooling helps us to see general trends, but it might also mask important variations across the chambers. Traditionally, the Senate has been perceived as a more deliberative and compromise-oriented body than the House of Representatives.¹³¹ In recent years, however, “most scholars find that the political parties have polarized almost as much in the Senate as they have in the House” in terms of voting behavior.¹³² Do our textual measures of constitutional polarization exhibit similar tendencies?

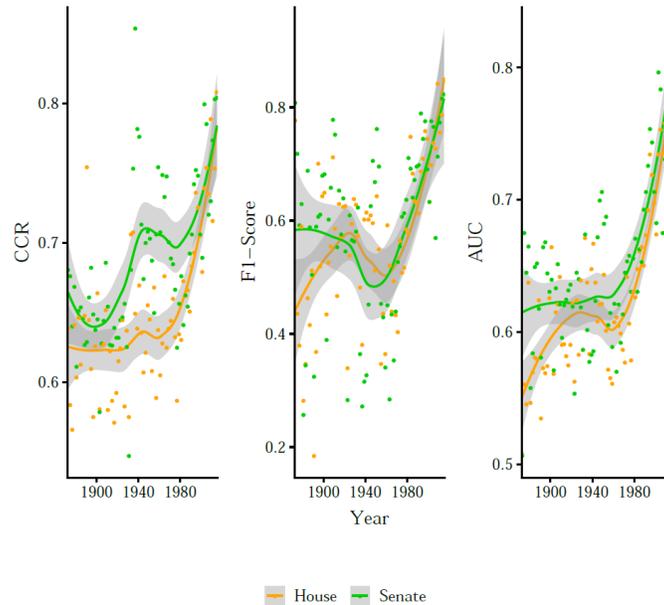
To explore this question, we reran the analyses behind Figure 7A—predicting party affiliation using the length-matched data set—for each chamber separately. The results appear in Figure 12. For purposes of illustrative clarity, it shows classifier performance for constitutional documents only (with all documents that trigger the Minimal dictionary deemed constitutional). As is immediately apparent from Figure 12, constitutional discourse has become significantly more polarized in both chambers since around 1980, and levels of polarization are now very similar across the two chambers under all three measures of classifier performance. Interestingly, however, our results do not reveal greater polarization in the House in the pre-1980 period. To the contrary, on two of our three measures, constitutional remarks in the House were consistently less polarized than constitutional remarks in the Senate from 1873 to 1980, even as both have reached unprecedentedly high levels of polarization in recent decades.

¹³⁰ See *infra* App. B, tbl. B.2.

¹³¹ See, e.g., DONALD R. MATTHEWS, *U.S. SENATORS AND THEIR WORLD* 5 (1960) (noting that the U.S. Senate “proudly calls itself the greatest deliberative body in the world”); Julia L. Ernst, *The Congressional Caucus for Women’s Issues: An Inside Perspective on Lawmaking by and for Women*, 12 *MICH. J. GENDER & L.* 189, 245 n.168 (2006) (“The culture of the two chambers is known to be vastly different, with the Senate generally seen as the more genteel, refined, deliberative, broad-minded body favoring consultation and compromise . . .”). *But cf.* Daniel Wirls, *The “Golden Age” Senate and Floor Debate in the Antebellum Congress*, 32 *LEGIS. STUD. Q.* 193, 194 (2007) (using case studies to demonstrate that the “House debated as long, and arguably as well, as the Senate on the signal issues of the day” in the antebellum period).

¹³² Sean M. Theriault & David W. Rohde, *The Gingrich Senators and Party Polarization in the U.S. Senate*, 73 *J. POL.* 1011, 1011 (2011).

Figure 12: Partisan Constitutional Polarization in the House Versus Senate (Matched Data)



Separating out the chambers is also useful for investigating another possible factor driving the polarization of constitutional discourse, involving what some have called the “C-SPAN effect.”¹³³ Over the course of the 1970s, the decade immediately preceding the recent surge in polarization, both houses of Congress made a series of procedural reforms intended to enhance the visibility of their work to the public.¹³⁴ A growing number of scholars have suggested that this increase in transparency may have contributed to an increase in institutional discord and dysfunction—for instance, “by preventing legislators from deviating from party messages and by interfering with the good-faith search for multidimensional solutions”¹³⁵—although precise causal influences remain difficult to establish. Of particular relevance for a study of discourse on the House and Senate floors, scholars have pointed to the congressionally authorized creation of the C-SPAN cable network, which airs live broadcasts of all floor proceedings, as a critical inflection point in the direction of a more performative, soundbite-driven style of legislative debate.¹³⁶

¹³³ See, e.g., Mark J. Rozell & Richard J. Semiatin, *Congress and the News Media*, in *MEDIA POWER, MEDIA POLITICS* 43, 51 (Mark J. Rozell & Jeremy D. Mayer eds., 2d ed. 2008); Philip Joyce, *The Dark Side of Government in the Sunshine*, *GOVERNING* (May 6, 2015), <http://www.governing.com/columns/smart-mgmt/col-dark-side-transparency-government.html> [<https://perma.cc/AJ7M-2E6F>]. See generally STEPHEN FRANTZICH & JOHN SULLIVAN, *THE C-SPAN REVOLUTION* (1996).

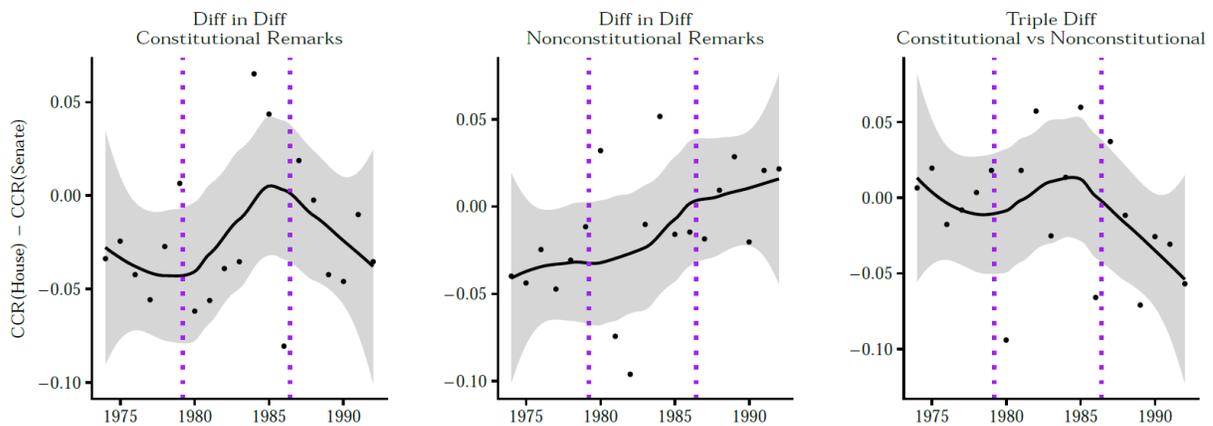
¹³⁴ See David E. Pozen, *Transparency’s Ideological Drift*, 128 *YALE L.J.* 100, 130–32 (2018) (discussing these reforms). For a variety of reasons related and unrelated to these reforms, the floors of both chambers became “far more important arenas of substantive policymaking” during the 1960s and especially the 1970s than they had been during the early-mid twentieth century. SMITH, *supra* note 60, at 1.

¹³⁵ Pozen, *supra* note 134, at 132; see also *id.* at 130–33 (reviewing the critical literature on legislative transparency).

¹³⁶ See, e.g., FRANKLIN G. MIXON, JR. & KAMAL P. UPADHYAYA, *LEGISLATIVE TELEVISION AS POLITICAL ADVERTISING: A PUBLIC CHOICE APPROACH* 47 (2003) (discussing evidence that “the presence

Our data permit one avenue for testing the C-SPAN effect, taking advantage of its staggered introduction, first in the House (on March 19, 1979) and seven years later in the Senate (on June 2, 1986).¹³⁷ A staggered “shock” of this sort can be a helpful device for causal identification, as it allows the House to serve as a type of “treatment” group and the Senate (in the period from March 19, 1979 to June 2, 1986) to serve as a “control” group. We can then conduct what is commonly known as a difference-in-differences analysis based on our simplest measure of discursive polarization (classification accuracy) between the House and Senate, both before and after the introduction of C-SPAN. Some illustrations of this approach are presented in Figure 13. For this analysis, we again use the length-matched data set described in section IV.B and deem documents constitutional if they trigger the Minimal dictionary. The smoothed lines in the left-hand chart and the middle chart track the *difference in classification accuracy* over time between the House and Senate (House CCR – Senate CCR). The left-hand chart shows this difference for constitutional remarks; the middle chart shows it for nonconstitutional remarks. The right-hand chart plots the difference over time between the left-hand chart’s results and the middle chart’s results. The vertical dashed lines represent the introduction dates of C-SPAN in the House and Senate.

Figure 13: C-SPAN and Constitutional Polarization



Dashed vertical lines indicate the introduction of C-SPAN in the House and Senate

of legislative television at the federal level has increased the value [to legislators] of . . . grandstanding and posturing on salient political issues”); Jonathan S. Morris, *Reexamining the Politics of Talk: Partisan Rhetoric in the 104th House*, 26 LEG. STUD. Q. 101, 114–15 (2001) (“[T]his study has shown that members of Congress make attempts to appeal to [the C-SPAN] audience by instituting their own version of the legislative sound bite.”); Edward H. Stiglitz & Aviv Caspi, *Observability and Reasoned Discourse: Evidence from the U.S. Senate 3–4* (Mar. 21, 2019) (unpublished manuscript) (on file with authors) (finding that the introduction of C-SPAN led to greater discursive “herding” among senators from the same party and to a significant decrease in “the amount of time [spent] debating live bills and resolutions” versus “posturing for constituents”); see also Susan Davis, *Not Everyone Is a Fan of C-SPAN Cameras in Congress*, USA TODAY (Mar. 19, 2014), <https://www.usatoday.com/story/news/politics/2014/03/19/cspan-anniversary/6577593> [<https://perma.cc/AF6X-LW4U>] (quoting Representative Don Young for the view that C-SPAN is “probably the worst thing that happened to the Congress”).

¹³⁷ See SARAH J. ECKMAN, CONG. RESEARCH SERV., R44665, VIDEO BROADCASTING OF CONGRESSIONAL PROCEEDINGS 5–10 (2017).

Figure 13 reveals that after the introduction of C-SPAN1 in the House, the relative accuracy of our classifier for constitutional remarks in that chamber increased slightly, and then declined following C-SPAN2's introduction in the Senate. This pattern is consistent with the notion that television coverage of floor proceedings helped foster a more polarized constitutional rhetoric.

Nevertheless, we interpret this result cautiously for a number of reasons. First, C-SPAN's staggered introduction in the House and Senate was not an exogenous shock, and it is possible that certain members of the House voted in 1979 in favor of video coverage because they were willing or eager to speak on the floor in a more partisan manner. Second, the magnitude of movement in relative classification accuracy is small, well inside historical fluctuations. Third, as the regression results in Appendix B demonstrate, the evidence supporting a C-SPAN effect does not appear to hold across standard statistical robustness checks.¹³⁸ Fourth, as the middle chart shows, we do not observe a comparable effect for nonconstitutional documents even though transparency plausibly functions similarly in both contexts.¹³⁹ And fifth, for a difference-in-differences strategy to be reliable, the treatment and control groups must have exhibited parallel trends prior to the initial shock. As the leftmost set of dots on each chart reflect, however, pre-1979 partisanship levels in the House and Senate exhibit significant volatility (for both constitutional and nonconstitutional documents). Although our results are consistent with the hypothesis that cable news coverage contributed to the polarization of constitutional discourse, we are unable to measure such an effect with much statistical confidence.¹⁴⁰

D. The Vocabulary of Constitutional Partisanship

Finally, our data set can shed light on the polarization of constitutional discourse by allowing us to study patterns of usage of particular expressions. As explained above, legal scholars have argued that Democratic and Republican officials have become increasingly attached to distinct constitutional themes and tropes over the past four decades, as exemplified by the rise of

¹³⁸ See *infra* App. B, tbl. B.3. Most notably, the effects of C-SPAN1 and C-SPAN2 are statistically significant in a model without speaker fixed effects, but they largely disappear once we add speaker fixed effects. Although one can certainly debate the appropriateness of including speaker fixed effects in this context, as explained in Appendix B, it nonetheless remains appropriate to interpret these results with caution.

¹³⁹ This finding is broadly consistent with Gentzkow, Shapiro, and Taddy's working paper, which does not attempt to exploit the staggered introduction of C-SPAN in the House and Senate but which finds little indication in its time-series trends that C-SPAN was "the proximate cause of increased partisanship" in the 1980s and 1990s (although it may well have "provided an important complement to linguistic innovation"). Gentzkow, Shapiro & Taddy, *supra* note 9, at 25.

¹⁴⁰ It is possible that the C-SPAN effect we observe is dampened due to the limited availability of cable television in some regions of the United States while the Federal Communications Commission was gradually deregulating the cable industry beginning in the 1970s. See generally Stanley M. Besen & Robert W. Crandall, *The Deregulation of Cable Television*, 44 LAW & CONTEMP. PROBS., no. 1, 1981, at 77. Rather than exploiting the staggered introduction of C-SPAN in the House and the Senate, future work might use the staggered introduction of cable television across different members' voting districts as a shock that allows for a convincing identification strategy.

“originalism” on the Republican side.¹⁴¹ Although aggregate trends in polarization are more rigorously assessed through the methods employed in Part IV, this scholarship suggests that it is worthwhile to look into some especially salient terms that may be doing outsized work in differentiating the parties’ contemporary constitutional rhetoric.

Figures 14A and 14B display word clouds associated with the utilization of terms in our broadest constitutional dictionary, the Expansive dictionary, for two historical periods: 1959 to 1976 and 1999 to 2016. The earlier period predates the recent surge in polarization of constitutional discourse; the later period captures the surge at its apex. Figure 14A shows the *fifty most distinctive terms regardless of party* in congressional floor remarks from each period, with size scaled to its distinctiveness.¹⁴² In other words, these are the fifty constitutionally freighted terms that are most strongly “owned” by one particular party during the years in question. Figure 14B offers a slight twist on Figure 14A. It shows the twenty-five most distinctive terms *of each party*, again with a total of fifty terms (this time half owned by Democrats, half owned by Republicans) and again with size scaled to a term’s distinctiveness (relative to other terms owned by the same party). Figure 14C replicates the analysis of 14A for the Obama presidency specifically, the last full presidency for which we have data. All terms in all word clouds are color-coded based on which party uses the term most frequently.

¹⁴¹ See *supra* notes 23–24, 33–37 and accompanying text.

¹⁴² “Distinctiveness” refers to the difference in the relative frequency with which a term is used across the two major parties. For instance, if Republicans use a term 10 times for every 10,000 words they speak, whereas Democrats use it 8 times, then the distinctiveness is $\frac{10}{10,000} - \frac{8}{10,000} = 0.0002$.

Figure 14A: Fifty Most Distinctive Terms Across Parties, Expansive Dictionary

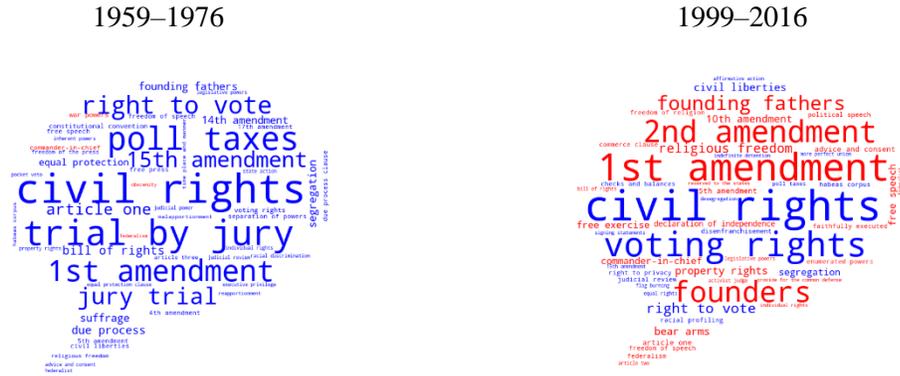


Figure 14B: Twenty-Five Most Distinctive Terms of Each Party, Expansive Dictionary

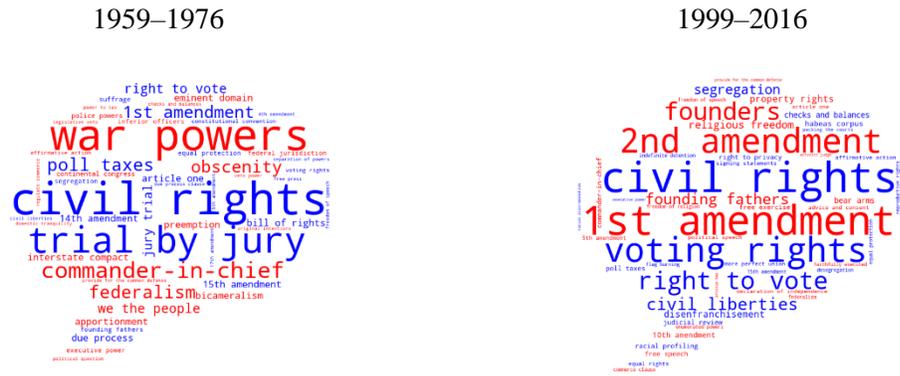
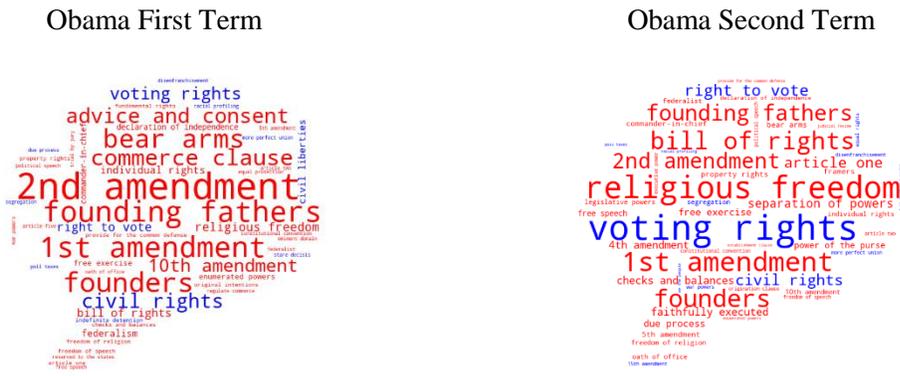


Figure 14C: Fifty Most Distinctive Terms Across Parties, Expansive Dictionary



Without hyperbole, we think it is fair to say that these results are stunning. In the 1959–1976 period, Figure 14A shows, congressional Democrats had a *far* more distinctive and robust constitutional vocabulary than Republicans did. In the 1999–2016 period, the opposite was true—

with the important exceptions that the terms “civil rights” and “voting rights” remained squarely in the Democratic fold. Put (overly) simply, Democrats used to dominate constitutional discourse. Now Republicans do.

The specific content of the word clouds is interesting as well. (For those readers who wish to see a much more detailed visual record of the history of constitutional discourse in Congress, the Online Appendix contains comparable word clouds for every Congress in our data set.¹⁴³) Invocation of the “first amendment,” to take just one term, flips from being primarily a Democratic practice to primarily a Republican practice between the two periods—a dramatic demonstration of ideological drift.¹⁴⁴ More broadly, whereas terms associated with the Framers’ Constitution have become strongly associated with the contemporary Republican Party, terms associated with the Reconstruction Amendments have become strongly associated with the contemporary Democratic Party—a dramatic demonstration of the “constant,” and now highly partisan, “struggle” in constitutional politics “between the values of the Founding and the values of Reconstruction.”¹⁴⁵

Figure 15 fleshes out these observations a bit further. It traces the evolution over time of Democratic and Republican usage of a select set of notable terms for every million words spoken: “first amendment,” “second amendment,” “tenth amendment,” “equal protection,” “fourteenth amendment,” and the combined set of terms in our Originalism dictionary (described in section III.A¹⁴⁶ and reproduced in full in Appendix A). The selection of these terms on which to focus is inherently arbitrary at some level, but nonetheless instructive as to the phrase-level drivers of discursive polarization.

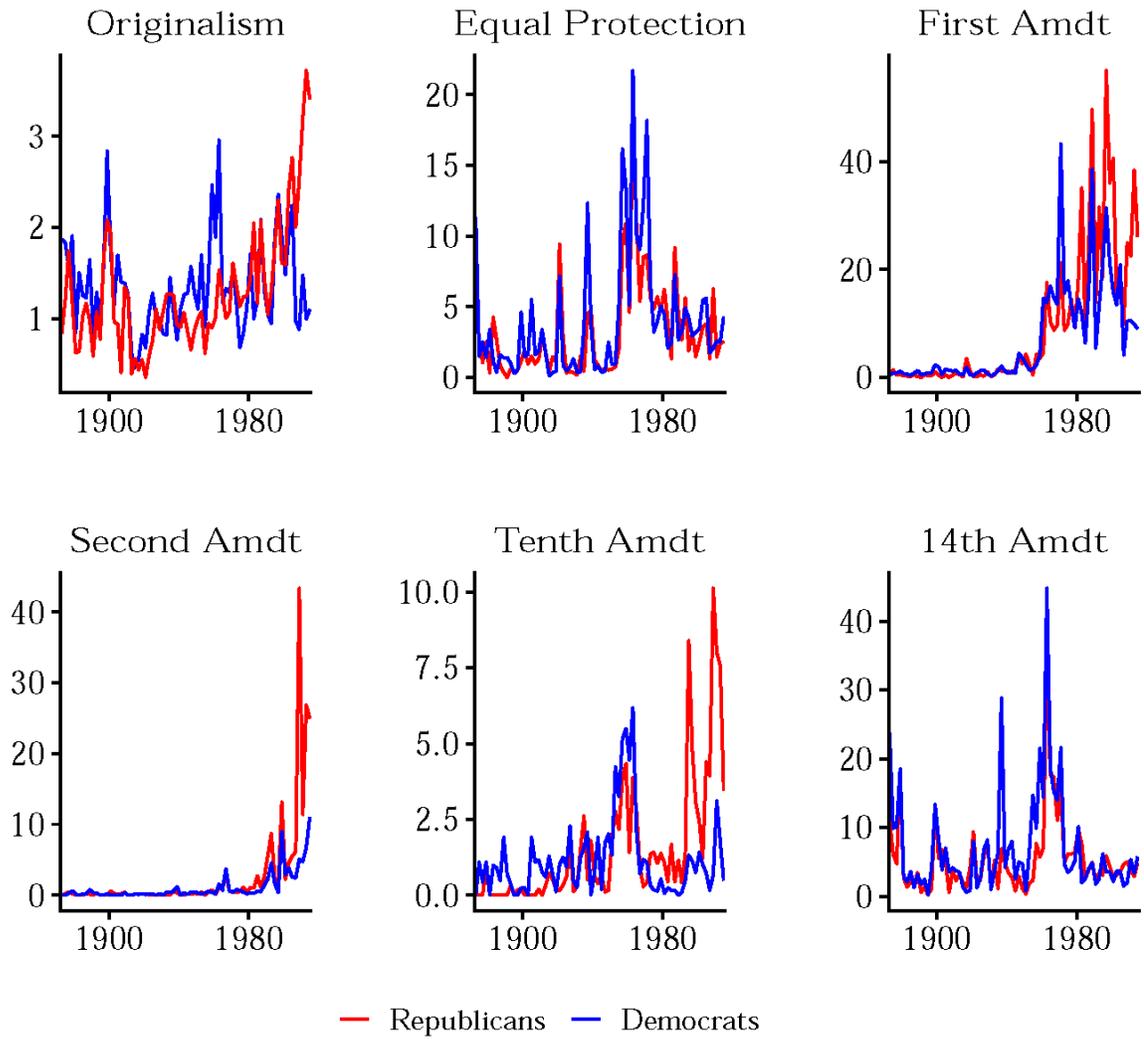
¹⁴³ Online App., figs. OA.1–2.

¹⁴⁴ This demonstration is consistent with the qualitative First Amendment literature. *See, e.g.*, Jeremy K. Kessler & David E. Pozen, *The Search for an Egalitarian First Amendment*, 118 COLUM. L. REV. 1953, 1969 (2018) (“Cases in which ‘individuals or groups commonly thought of as “conservative” took up the First Amendment cudgels against regulatory forces supported by individuals or groups commonly thought to be “liberals”’ began to multiply in the late 1970s and 1980s, both in the economic realm and beyond.” (quoting Frederick Schauer, *The Political Incidence of the Free Speech Principle*, 64 U. COLO. L. REV. 935, 941 (1993))).

¹⁴⁵ Kermit Roosevelt III, *Reconstruction and Resistance*, 91 TEX. L. REV. 121, 141 (2012); *see also* Pozen, *supra* note 26, at 927 (noting that while “[c]onservative commentators routinely depict interpretive approaches associated with left-liberals . . . as tainted by imperfect loyalty to the canonical document” or “the Framers,” a parallel “strain of commentary on the political left accuses conservatives of refusing to accept the full scope of constitutional change wrought by the Reconstruction Amendments”). “The Founding,” according to Kermit Roosevelt, “stands for individual liberty, for limited federal power, for the ability of states to run their internal affairs as they see fit.” Roosevelt, *supra*, at 141–42. “Reconstruction stands for equality, for broader federal authority, for federal rights and federal laws protecting individuals from their own states.” *Id.* at 142.

¹⁴⁶ *See supra* note 73 and accompanying text.

Figure 15: Partisan Discrepancies in Constitutional Language



These results largely speak for themselves. Ownership of “first amendment” began to switch parties in the 1980s. Democrats no longer own the terms “equal protection” and “fourteenth amendment,” or indeed invoke them all that frequently, relative to their rhetoric during the civil rights revolution. Congressional references to the Second Amendment started to rise well in advance of the Supreme Court’s 2008 watershed decision in *District of Columbia v. Heller*,¹⁴⁷ around which time they skyrocketed. More surprisingly, Democrats were, if anything, more likely than Republicans to appeal to originalist tropes and the Tenth Amendment in the mid-twentieth century,¹⁴⁸ starting in the 1970s, Republicans came to dominate these vocabularies. Again, our

¹⁴⁷ 554 U.S. 570 (2008).

¹⁴⁸ Loosely in line with this finding, see FRANK B. CROSS, *THE FAILED PROMISE OF ORIGINALISM* 92 (2013) (arguing that while the liberal Warren Court justices are “often accused of ignoring the original meaning of the Constitution” during the 1950s and 1960s, in fact “originalism survived and even grew in importance during the Warren Court era”).

Online Appendix offers much more detail, with comparable charts for every single term in the Expansive dictionary.¹⁴⁹ The six charts in Figure 14 are revealing in their own right. They also give a taste of how narrower inquiries can fill in some of the details of the larger picture of constitutional polarization painted in Part IV.

VI. POLARIZED DISCOURSE OUTSIDE CONGRESS

A powerful attribute of our principal methodologies is their flexibility across textual data sets, permitting us to analyze constitutional polarization in virtually any well-organized corpus. To provide a basis for comparison with (and a rough robustness check on) the key results discussed in Part IV, this Part briefly explores one alternative source of political and constitutional discourse: staff editorials in the *New York Times* and the *Wall Street Journal*. As described in Part II,¹⁵⁰ we used ProQuest and Factiva to collect 57,884 editorials published between 1993 to November 2018. For years prior to 1993, both databases are missing the full text of editorials for one or both sources, especially the *Journal*. We therefore cabin the analysis below to the 46,242 full-text editorials from 1993 to 2018.

Table 2: Summary Statistics of Newspaper Editorials Corpus

	Total Number of Editorials			Average Number of Editorials per Year (Standard Deviation)			Average Length of Editorials per Year (Standard Deviation)		
	Overall	WSJ	NYT	Overall	WSJ	NYT	Overall	WSJ	NYT
Clinton	11,586	4,351	7,235	1,448 (381)	544 (91)	904 (374)	484 (32)	549 (35)	440 (27)
Bush	14,326	6,087	8,239	1,791 (632)	761 (224)	1,030 (453)	501 (22)	566 (17)	449 (29)
Obama	15,676	6,076	9,600	1,960 (267)	760 (191)	1,200 (127)	506 (30)	560 (16)	474 (54)
Trump	4,654	2,684	1,970	2,327 (173)	1,342 (181)	985 (8)	637 (13)	604 (107)	692 (122)

Figure 16 reproduces the analysis behind Figure 3 for our newspaper editorials corpus. As in Figure 3, Figure 16 depicts the relative frequency of “constitutional” documents in this corpus, using four different tests of what counts as a constitutional document. The overall shares of newspaper editorials that have constitutional subject matter are substantially higher than the comparable figures for congressional floor remarks, and there is a weak upward trend in these shares, particularly evident during the Obama and Trump Administrations.

¹⁴⁹ Online App., fig. OA.3.

¹⁵⁰ See *supra* note 65 and accompanying text. Data restrictions on the availability of *Journal* editorials prior to 1993 unfortunately prevented us from extending the analysis further back in time.

Figure 16: Share of “Constitutional” Editorials (by Year)

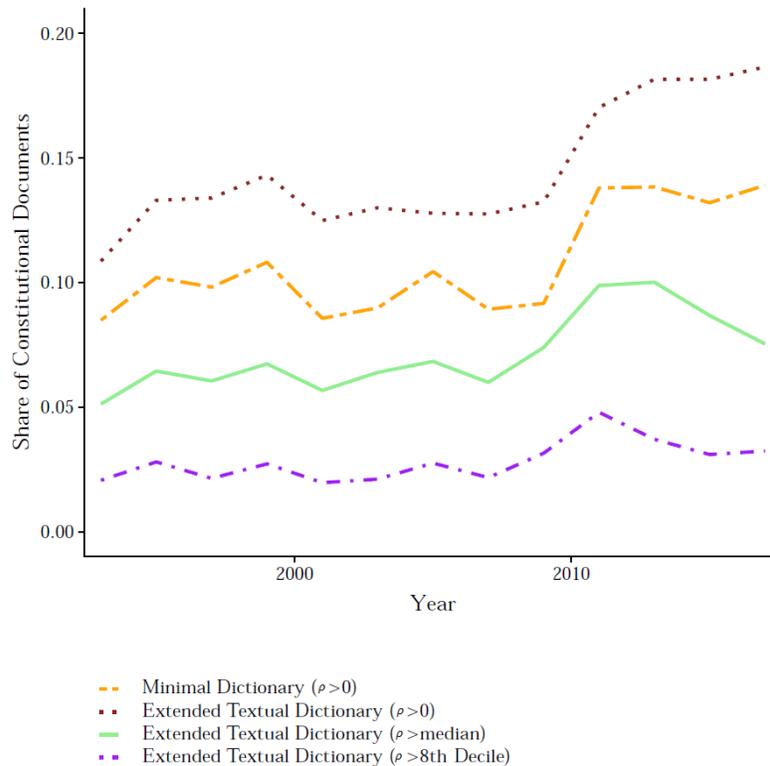
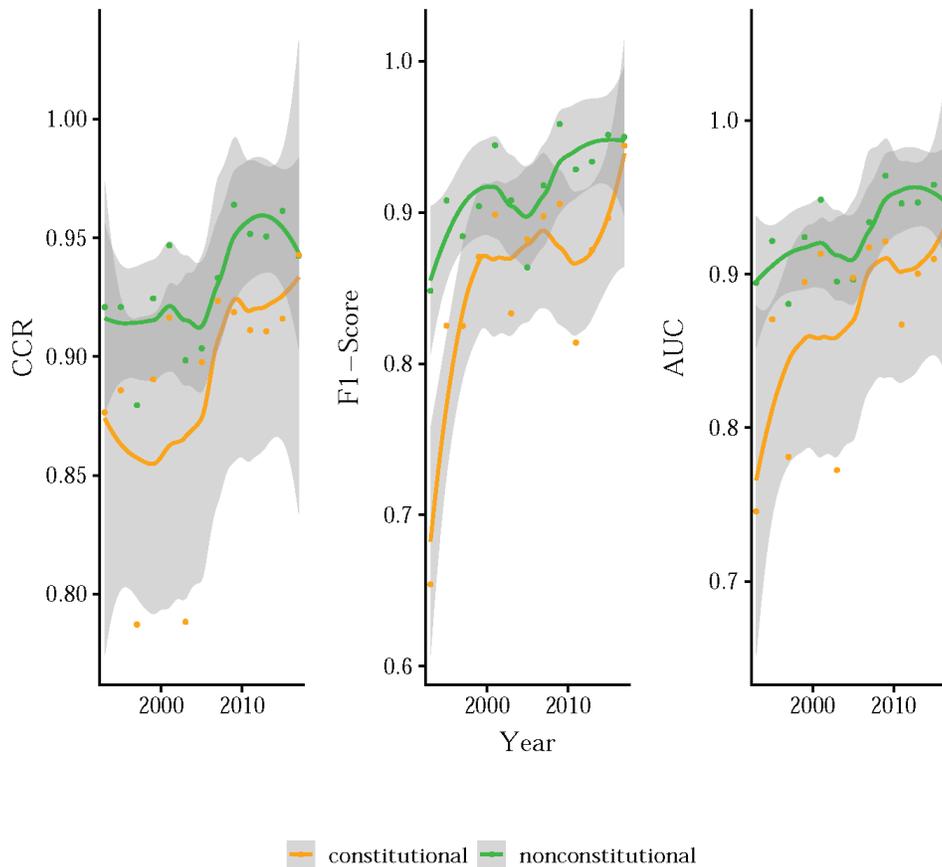


Figure 17 reproduces the analyses behind Figures 4 and 5—our baseline results—for our newspaper editorials corpus. As in Figures 4 and 5, Figure 17 shows the evolution of ideological polarization, as measured by our three core metrics of classifier performance, for constitutional versus nonconstitutional documents. Our adaptation here is to identify “speaker” and “ideology” with publication outlet, with the *Journal* proxying for “conservative” speakers and the *Times* proxying for “liberal” speakers. To facilitate comparisons between these results and the Congressional Record results, we lump the editorials into two-year bins corresponding to the contemporaneous Congresses. All panels use the Minimal dictionary and a cutoff criterion of 0 to impute constitutional subject matter. The average length of constitutional editorials in our data set is 569 words, while the average length of nonconstitutional editorials is 503 words. Because this difference is relatively small and the number of editorials is relatively modest, we do not match editorials by length.

Figure 17: Predicting Publication Outlet by Textual Content



As all three panels of Figure 17 show, both constitutional and nonconstitutional editorials in the *Journal* and *Times* grew increasingly polarized over the past twenty-five years, but not always at the same rate. After starting out being substantially less polarized in the early 1990s, constitutional editorials had largely caught up with nonconstitutional editorials by the 2000s. Levels of constitutional polarization surged again during the second term of the Obama Administration and the first two years of the Trump presidency.

We interpret these findings as suggestive but secondary by far to our findings on Congress. The temporal span of this corpus is much briefer than that of the Congressional Record, and the data set is much less rich in content. Moreover, there is no simple way to control for different style guides that the *Journal* and the *Times* may be using at any given time. Nevertheless, it is notable that a similar pattern of growing constitutional polarization appears in this corpus as well. Additional research into the path of polarization in these newspapers, along with any number of other newspapers and media sources, seems well warranted.

CONCLUSION: A COMPUTATIONAL AGENDA FOR CONSTITUTIONAL SCHOLARSHIP

This Article is the first to use computational techniques to investigate the ideological and partisan structure of constitutional discourse outside the courts. Applying these techniques to millions of remarks made on the House and Senate floors as well as tens of thousands of newspaper editorials, we are able to demonstrate the explosive growth of constitutional polarization over the past four decades and to shed new empirical light on its causes, contours, and implications for the separation of powers. If the fact that Democrats and Republicans “increasingly speak different languages . . . contribute[s] to the striking increase in inter-party hostility evident in recent years”¹⁵¹ and to the prejudices associated with “partyism,”¹⁵² our findings suggest that appeals to the Constitution are unlikely to save us. If anything, constitutionalizing policy debates appears to make matters worse. We hope these findings will inform and inspire further research on constitutional polarization by scholars from diverse disciplines.

More than that, we hope this Article will inform and inspire computational inquiries into a wide array of constitutional subjects. This inquiry has focused on constitutional polarization in the postwar period. Our data and our methods, however, could fruitfully be employed to investigate a virtually limitless number of questions involving constitutional discourse and its evolution over time—from the significance of speakers’ sex, age, race, educational background (in law or otherwise), tenure in office, and proximity to their next election; to the deliberative effects of various procedural rules or of iterated exchanges with members of another political party; to the relationship between rates of constitutional rhetoric and congressional productivity; to the changing nature of constitutional argumentation during periods of military conflict, political violence, major statutory reform (including the passage of quasi-constitutional “super-statutes”¹⁵³), Supreme Court confirmation hearings, or formal constitutional amendment. Recent constitutional scholarship, moreover, suggests any number of specific hypotheses that might be tested with comparable data and methods—from Joseph Fishkin and William Forbath’s claim that following the New Deal, the United States experienced “the disappearance of the discourse of constitutional political economy,” in which issues of economic opportunity had been broadly understood and debated in constitutional terms;¹⁵⁴ to Aziz Rana’s claim that the culture of “constitutional veneration” is a relatively recent phenomenon bound up with the Cold War effort to justify American imperial ambitions;¹⁵⁵ to Jamal Greene’s claim that interpreters tend to resolve

¹⁵¹ Gentzkow, Shapiro & Taddy, *supra* note 9, at 26 (citing Shanto Iyengar, Gaurav Sood & Yphtach Lelkes, *Affect, Not Ideology: A Social Identity Perspective on Polarization*, 76 PUB. OPINION Q. 405 (2012)).

¹⁵² See generally Cass R. Sunstein, *Partyism*, 2015 U. CHI. LEGAL F. 1, 1–8 (defining partyism as hostility “to the opposing party and willing[ness] to believe that its members have a host of bad characteristics” and reviewing evidence of its emergence in the United States).

¹⁵³ See generally William N. Eskridge, Jr. & John Ferejohn, *Super-Statutes*, 50 DUKE L.J. 1215 (2001).

¹⁵⁴ Joseph Fishkin & William Forbath, *Reclaiming Constitutional Political Economy: An Introduction to the Symposium on the Constitution and Economic Inequality*, 94 TEX. L. REV. 1287, 1294 (2016). Fishkin and Forbath describe this development as “the ‘great forgetting.’” *Id.*

¹⁵⁵ Aziz Rana, *Making American Constitutional Consensus 2* (2015) (unpublished manuscript) (on file with author); see also Asli Bâli & Aziz Rana, *Constitutionalism and the American Imperial Imagination*, 85 U. CHI. L. REV. 257, 264 (2018) (calling attention to “the manner in which [Cold War] constitutionalism creatively married notions of universal inclusion and self-government with racial hierarchies about global stewardship”).

debates over “constitutional rules” with reference to originalist sources, but to resolve debates over “constitutional standards” with reference to nonoriginalist sources;¹⁵⁶ to the suggestion in multiple works that conservative constitutional rhetoric has become more likely than its liberal counterpart to evoke fearful sentiments¹⁵⁷ and to emphasize necessitarian arguments about the Constitution’s “real” or “true” meaning rather than explicitly normative arguments sounding in policy or political morality.¹⁵⁸

This list only begins to scratch the surface. But that is our point. At least where large textual data sets such as the Congressional Record are available and germane, the study of almost any aspect of constitutional discourse and discord stands to benefit from computational analysis of the sort this Article has undertaken.

¹⁵⁶ Jamal Greene, *Rule Originalism*, 116 COLUM. L. REV. 1639 (2016). Also potentially testable through computational methods is the broader claim, made by many, that conservatives tend to prefer relatively clear legal rules whereas liberals tend to prefer relatively open-ended legal standards. *See, e.g.*, Spencer Overton, *Rules, Standards, and Bush v. Gore: Form and the Law of Democracy*, 37 HARV. C.R.-C.L. L. REV. 65, 82 (2002) (“Liberals are said to favor standards, whereas conservatives are said to favor rules.”); Kathleen M. Sullivan, *The Supreme Court, 1991 Term—Foreword: The Justices of Rules and Standards*, 106 HARV. L. REV. 22, 96 (1992) (discussing “the stereotype that rules are conservative and standards liberal”).

¹⁵⁷ *See, e.g.*, Fishkin & Pozen, *supra* note 24, at 971 (“Constitutional narratives of debasement and restoration are consonant with a broader type of narrative in contemporary conservative politics: a story that something has gone fundamentally awry in the republic, on the order of an existential crisis, and that unpatriotic liberals have allowed or caused it to happen.”). For an overview of “sentiment analysis” in computational linguistics and an application to public comments received by U.S. administrative agencies, see Michael A. Livermore, Vladimir Eidelman & Brian Grom, *Computationally Assisted Regulatory Participation*, 93 NOTRE DAME L. REV. 977, 1003–14 (2018).

¹⁵⁸ *See, e.g.*, William Baude, *Is Originalism Our Law?*, 115 COLUM. L. REV. 2349, 2351 (2015) (“Originalists rely on an intuition that the original meaning of a document is its real meaning and that anything else is making it up.”); Pozen, *supra* note 26, at 936–39 (contrasting the arguments advanced by “living constitutionalists” with certain originalists’ “claim to a prepolitical, ontologically or conceptually required methodology”).

APPENDIX A: CONSTITUTIONAL DICTIONARIES

Section III.A explained and defended our decision to use constitutional dictionaries as a basis for distinguishing “constitutional” from “nonconstitutional” subject matter. Parts IV, V, and VI demonstrated the ability of a dictionary-based approach, when combined with machine learning, to illuminate the contours of constitutional polarization. This Appendix reproduces the contents of the five dictionaries we have created, along with an explanation of some of the contestable choices that (inevitably) informed their construction.

We note that although we have discussed the four larger dictionaries with a range of colleagues, it certainly remains possible that each could be improved by adding or subtracting specific terms. Doing so is extremely unlikely to affect our main results—and by design is incapable of affecting our baseline results, which rely on the Minimal dictionary only. But we welcome future efforts to refine these dictionaries if improvements can be identified and justified on reasonably objective grounds.

A. Minimal Dictionary

The Minimal dictionary, recall, is limited to the term “constitution” and all variants and stems thereof.¹⁵⁹ Variants of “constitution” such as “constitutional,” “unconstitutional,” “nonconstitutional,” “extraconstitutional,” “constitutionally,” and “unconstitutionally” are included. Variants of “constitute” are excluded. Our preprocessing of the textual data renders capitalization and punctuation irrelevant.¹⁶⁰ Accordingly, the Minimal dictionary is simply:

constitution

B. Textual Dictionary

The Textual dictionary includes the Minimal dictionary and, in addition, the titles of all constitutional articles, amendments, and clauses, both in their standard legal formulations and in well-recognized colloquial synonyms. Along with rendering capitalization and punctuation irrelevant, our stemming process guarantees that we identify each term in all of our dictionaries regardless of whether the term (or any distinct words within the term) appear in their singular or plural form. For terms including Arabic numbers, we also scan for alternative spellings and combine the counts. The entry for “1st amendment” below thus stands in for “first amendment” and “1st amendment” as well as “1st amendment.”

The titles of constitutional clauses were culled from a variety of sources, principally Cornell Law School’s Legal Information Institute,¹⁶¹ *The Heritage Guide to the Constitution*,¹⁶² *The U.S.*

¹⁵⁹ See *supra* note 72 and accompanying text.

¹⁶⁰ See *supra* notes 61–63 and accompanying text.

¹⁶¹ Legal Info. Inst., Cornell Law Sch., Constitutional Clauses, https://www.law.cornell.edu/wex/constitutional_clauses [<https://perma.cc/8UHW-7A89>] (last visited Jan. 19, 2019).

¹⁶² Heritage Found., *The Heritage Guide to the Constitution*, <https://www.heritage.org/constitution> [<https://perma.cc/B7JF-Y5DP>] (last visited Jan. 19, 2019). Upon clicking on any given article or

Constitution On-Line,¹⁶³ and Wikipedia.¹⁶⁴ Any reference to a constitutional clause in any of these sources is included. Also included are a number of “powers” allocated by the Constitution to specific actors (for example, the “pardon power”) that tend to be invoked as metonyms for specific clauses. The term “preamble,” however, is excluded on account of how frequently it is invoked in the Congressional Record in connection with pending bills and resolutions rather than in connection with the Constitution.

In addition to the contents of the Minimal dictionary, the Textual dictionary contains:

<i>10th amendment</i>	<i>advice and consent clause</i>
<i>11th amendment</i>	<i>appellate jurisdiction clause</i>
<i>12th amendment</i>	<i>appointment clause</i>
<i>13th amendment</i>	<i>appointment power</i>
<i>14th amendment</i>	<i>appropriation clause</i>
<i>15th amendment</i>	<i>arising clause</i>
<i>16th amendment</i>	<i>army clause</i>
<i>17th amendment</i>	<i>arraignment clause</i>
<i>1808 clause</i>	<i>article five</i>
<i>18th amendment</i>	<i>article four</i>
<i>19th amendment</i>	<i>article one</i>
<i>1st amendment</i>	<i>article seven</i>
<i>20th amendment</i>	<i>article six</i>
<i>21st amendment</i>	<i>article three</i>
<i>22nd amendment</i>	<i>article two</i>
<i>23rd amendment</i>	<i>assistance-of-counsel clause</i>
<i>24th amendment</i>	<i>attestation clause</i>
<i>25th amendment</i>	<i>bankruptcy clause</i>
<i>26th amendment</i>	<i>basket clause</i>
<i>27th amendment</i>	<i>bear arms amendment</i>
<i>2nd amendment</i>	<i>bill of rights</i>
<i>3/5 clause</i>	<i>borrowing clause</i>
<i>3rd amendment</i>	<i>capture clause</i>
<i>4th amendment</i>	<i>case or controversy clause</i>
<i>5th amendment</i>	<i>census clause</i>
<i>6th amendment</i>	<i>citizenship clause</i>
<i>7th amendment</i>	<i>civil war amendments</i>
<i>8th amendment</i>	<i>coefficient clause</i>
<i>9th amendment</i>	<i>coinage clause</i>
<i>admission clause</i>	<i>comity clause</i>

amendment on the left-hand side of the page, a list of clauses contained within that article or amendment appears on the right-hand side.

¹⁶³ *Popular Names of Sections and Clauses*, U.S. CONSTITUTION ON-LINE, <https://www.usconstitution.net/constpop.html> [<https://perma.cc/UGQ2-W9RG>] (last visited Jan. 19, 2019).

¹⁶⁴ *List of Clauses of the United States Constitution*, WIKIPEDIA, https://en.wikipedia.org/wiki/List_of_clauses_of_the_United_States_Constitution [<https://perma.cc/37M2-C7NW>] (last visited Jan. 19, 2019).

commander-in-chief clause
commerce clause
commerce power
compact clause
compensation clause
compulsory process clause
confrontation clause
congressional enforcement clause
contract clause
copyright and patent clause
copyright clause
cruel and unusual punishment clause
declaration-of-war clause
declare war clause
define and punish clause
disestablishment clause
diversity clause
diversity-of-citizenship clause
dormant commerce clause
double jeopardy clause
due process clause
elastic clause
emoluments clause
enclave clause
enforcement clause
enumeration clause
equal protection clause
establishment clause
exception clause
excessive bail clause
excessive fines clause
export clause
export taxation clause
extradition clause
faithful execution clause
faithfully executed clause
foreign commerce clause
free assembly clause
free exercise clause
free press clause
free speech clause
freedom of assembly clause
freedom of religion clause
freedom of speech clause
freedom of the press clause
fugitive slave clause

full faith and credit clause
general welfare clause
good behavior clause
grand jury clause
guarantee clause
guaranty clause
impartial jury clause
impeachment clause
impeachment power
implied powers clause
import/export clause
income tax amendment
incompatibility clause
indian commerce clause
ineligibility clause
inferior officer clause
information clause
interstate commerce clause
interstate rendition clause
journal clause
judicial compensation clause
just compensation clause
land grant jurisdiction clause
liberty clause
loyalty clause
meetings of congress clause
migration or importation clause
militia clause
naturalization clause
navy clause
necessary and proper clause
new states clause
oath-of-office clause
oath clause
opinion clause
orders, resolutions, and votes clause
original jurisdiction clause
origination clause
pardon clause
pardon power
pardon power clause
patent and copyright clause
petition clause
port preference clause
postal clause
postal power clause

power of impeachment
power of the purse
power to tax
power-of-the-purse clause
power-to-tax-clause
presentment clause
presidential eligibility clause
presidential succession clause
privileges and immunities clause
privileges or immunities clause
prohibition amendment
property clause
public trial clause
qualifications clause
ratification clause
reception clause
recess appointment clause
recess appointment power
recommendations clause
reconstruction amendments
reexamination clause
republican form clause
republican-form-of-government clause
reserve clause
revenue clause
right to bear arms amendment
right-to-counsel clause
rules and expulsion clause
search and seizure clause
self-incrimination clause
sinecure clause
slavery amendment
speech and debate clause
speech or debate clause

speedy trial clause
spending clause
spending power
statement and account clause
subscription clause
supremacy clause
suspension clause
sweeping clause
take care clause
takings clause
taxing and spending clause
taxing and spending power
taxing power
territorial clause
title of nobility clause
tonnage clause
treason clause
treaty clause
treaty power
treaty-making power
trial by jury clause
trial-by-jury clause
uniformity clause
vacancies clause
vesting clause
veto power
vicinage clause
war clause
war power clause
warrant clause
womens suffrage amendment

C. Extended Textual Dictionary

The Extended Textual dictionary includes the Minimal and Textual dictionaries and, in addition, dozens of familiar phrases that appear in the text of the Constitution and lack a common extraconstitutional usage. The selection of these phrases is inherently subjective. On the one hand, we opted to exclude phrases such as “state of the union” and “general welfare” that appear to have crossed over to a significant degree into the extraconstitutional realm, in the sense that their invocation does not reliably conjure up the Constitution for speakers or listeners. On the other hand, we opted to include certain textual phrases, such as “executive power,” that arguably share this same problem (although to a lesser degree, in our estimation). We also exclude all *institutions* created by the Constitution, such as the Electoral College and the Senate, as these institutions are

routinely invoked in political commentary without any apparent intent or effect of making a constitutional claim.

In addition to the contents of the Minimal and Textual dictionaries, the Extended Textual dictionary contains:

<i>advice and consent</i>	<i>lay and collect taxes</i>
<i>aid and comfort</i>	<i>legislative powers</i>
<i>among the several states</i>	<i>letters of marque and reprisal</i>
<i>appellate jurisdiction</i>	<i>life liberty or property</i>
<i>assistance of counsel</i>	<i>more perfect union</i>
<i>bear arms</i>	<i>natural-born citizen</i>
<i>bill of attainder</i>	<i>necessary and proper</i>
<i>blessings of liberty</i>	<i>oath or affirmation</i>
<i>commander-in-chief</i>	<i>obligation of contracts</i>
<i>cruel and unusual punishment</i>	<i>office of profit or trust</i>
<i>direct taxes</i>	<i>original jurisdiction</i>
<i>domestic tranquility</i>	<i>peaceably to assemble</i>
<i>due process</i>	<i>privileges and immunities</i>
<i>emoluments</i>	<i>privileges or immunities</i>
<i>equal protection</i>	<i>progress of science and useful arts</i>
<i>establishment of religion</i>	<i>provide and maintain a navy</i>
<i>ex post facto</i>	<i>provide for the common defense</i>
<i>excessive bail</i>	<i>public trial</i>
<i>excessive fines</i>	<i>raise and support armies</i>
<i>executive power</i>	<i>regulate commerce</i>
<i>faithfully executed</i>	<i>religious test</i>
<i>free exercise</i>	<i>republican form of government</i>
<i>freedom of speech</i>	<i>reserved to the states</i>
<i>full faith and credit</i>	<i>retained by the people</i>
<i>habeas corpus</i>	<i>right to be confronted</i>
<i>high crimes and misdemeanors</i>	<i>rule of naturalization</i>
<i>impartial jury</i>	<i>rules of its proceedings</i>
<i>inferior courts</i>	<i>searches and seizures</i>
<i>inferior officers</i>	<i>shall take care</i>
<i>involuntary servitude</i>	<i>title of nobility</i>
<i>judicial power</i>	<i>we the people</i>
<i>just compensation</i>	

D. Originalism Dictionary

Unlike the Textual, Extended Textual, and Expansive dictionaries, the Originalism dictionary does not build on the others, but rather was created specifically to investigate the evolution of “originalist” rhetoric. It is therefore devoted to terms related to the constitutional founding and the Constitution’s original meaning. The construction of this list, too, is inherently subjective. For instance, we opted to exclude the names of specific framers, as even a cursory perusal of the

Congressional Record shows the risk of false positives to be extremely high. (There are dozens of schools and other institutions that have “George Washington” in their names.) However, we opted to include “textualism” on account of its close conceptual affinity with “originalism,” even though the term may refer to a theory of statutory as well as constitutional interpretation.

The Originalism dictionary contains:

<i>3/5 compromise</i>	<i>original intention</i>
<i>anti-federalist</i>	<i>original meaning</i>
<i>articles of confederation</i>	<i>original public meaning</i>
<i>committee of detail</i>	<i>original understanding</i>
<i>constitutional convention</i>	<i>originalism</i>
<i>continental congress</i>	<i>originalist</i>
<i>declaration of independence</i>	<i>philadelphia convention</i>
<i>federal convention</i>	<i>strict construction</i>
<i>federalist</i>	<i>strict constructionism</i>
<i>founders</i>	<i>textualism</i>
<i>founding fathers</i>	<i>textualist</i>
<i>framers</i>	

E. Expansive Dictionary

Finally, the Expansive dictionary includes all four of the preceding dictionaries and, in addition, over 100 important constitutional concepts that are at least several decades old. We impose this age requirement to avoid extreme presentism in results that make use of this dictionary. The construction of this dictionary is especially subjective. We derived its contents from the indices of three leading constitutional law casebooks,¹⁶⁵ as well as a “constitutional glossary” created for students by the Annenberg Public Policy Center of the University of Pennsylvania.¹⁶⁶

In general, we aimed to construct this dictionary in an encompassing fashion, sweeping in numerous terms whose “constitutional-ness” might be debated, on the view that overinclusiveness is preferable to underinclusiveness for purposes of a catch-all, final dictionary. Yet at the risk of losing some potentially interesting information, we decided against using case names (as well as institutions) in this dictionary because of their inherent time-boundedness. No one could invoke “*Roe v. Wade*,” for instance, before the eponymous lawsuit was filed in 1970. For a similar reason, we exclude terms such as “commandeering,” “undue burden,” and “congruence and

¹⁶⁵ PAUL BREST ET AL., *PROCESSES OF CONSTITUTIONAL DECISIONMAKING: CASES AND MATERIALS* (7th ed. 2018); ERWIN CHEMERINSKY, *CONSTITUTIONAL LAW* (5th ed. 2017); KATHLEEN M. SULLIVAN & NOAH FELDMAN, *CONSTITUTIONAL LAW* (19th ed. 2016).

¹⁶⁶ Donald A. Ritchie & Justice Learning.org, *Our Constitution: Constitutional Glossary*, ANNENBERG PUB. POL’Y CTR. (2017), <https://www.annenbergclassroom.org/resource/our-constitution/our-constitution-glossary> [<https://perma.cc/Q4JA-5N4F>].

proportionality” that did not appear in constitutional discourse until they were introduced by the Court in recent cases.¹⁶⁷

In addition to the contents of the Minimal, Textual, Extended Textual, and Originalism dictionaries, the Expansive dictionary contains:

<i>abortion right</i>	<i>double jeopardy</i>
<i>access to court</i>	<i>economic liberty</i>
<i>activist court</i>	<i>economic right</i>
<i>activist judge</i>	<i>emergency power</i>
<i>administrative state</i>	<i>eminent domain</i>
<i>advisory opinion</i>	<i>enumerated power</i>
<i>affirmative action</i>	<i>enumerated right</i>
<i>alienage discrimination</i>	<i>equal footing</i>
<i>anti-discrimination</i>	<i>equal rights</i>
<i>apportionment</i>	<i>equality</i>
<i>badges and incidents</i>	<i>executive detention</i>
<i>bicameralism</i>	<i>executive privilege</i>
<i>birthright citizenship</i>	<i>faithful execution</i>
<i>case or controversy</i>	<i>federal government power</i>
<i>checks and balances</i>	<i>federal jurisdiction</i>
<i>civil liberties</i>	<i>federal power</i>
<i>civil rights</i>	<i>federalism</i>
<i>class legislation</i>	<i>flag burning</i>
<i>clear-and-present danger</i>	<i>free press</i>
<i>colorblindness</i>	<i>free speech</i>
<i>compelled speech</i>	<i>freedom of assembly</i>
<i>concurrent powers</i>	<i>freedom of association</i>
<i>conditional spending</i>	<i>freedom of contract</i>
<i>congressional enforcement</i>	<i>freedom of expression</i>
<i>congressional power</i>	<i>freedom of petition</i>
<i>countermajoritarian</i>	<i>freedom of religion</i>
<i>court packing</i>	<i>freedom of the press</i>
<i>court stripping</i>	<i>fundamental fairness</i>
<i>delegation of power</i>	<i>fundamental interest</i>
<i>democratic legitimacy</i>	<i>fundamental right</i>
<i>departmentalism</i>	<i>gay rights</i>
<i>desegregation</i>	<i>gender discrimination</i>
<i>dilution of votes</i>	<i>gender equality</i>
<i>discrete-and-insular</i>	<i>heightened scrutiny</i>
<i>disenfranchisement</i>	<i>historical gloss</i>
<i>disparate impact</i>	<i>implied power</i>
<i>disparate treatment</i>	<i>incorporated rights</i>

¹⁶⁷ See generally *City of Boerne v. Flores*, 521 U.S. 507 (1997) (congruence and proportionality); *Planned Parenthood of Se. Pa. v. Casey*, 505 U.S. 833 (1992) (undue burden); *New York v. United States*, 505 U.S. 144 (1992) (commandeering).

indefinite detention
individual right
inherent powers
intermediate scrutiny
interposition
interstate compact
judicial activism
judicial deference
judicial immunity
judicial review
judicial supremacy
jurisdiction stripping
jury trial
justiciable
legislative immunity
legislative veto
liberty
life tenure
lifetime tenure
line-item veto
malapportionment
minimum rationality
national-origin discrimination
negative right
neutral principles
nondelegation
nonjusticiable
nullification
oath of office
obscenity
official discrimination
one-person-one-vote
overbreadth
packing the court
plenary power
pocket veto
police power
political expression
political question
political speech
poll tax
popular sovereignty
positive right
preemption
presidential eligibility
presidential immunity

presidential power
presidential privilege
presidential succession
press freedom
prior restraint
property right
public forum
race discrimination
race equality
race-based discrimination
racial discrimination
racial equality
racial gerrymandering
racial integration
racial profiling
racial redistricting
racially discriminatory
rational basis review
rational basis test
rationality review
reapportionment
reconstruction powers
religious freedom
removal power
reproductive rights
reverse discrimination
reverse incorporation
right of abortion
right of free speech
right of petition
right of privacy
right of self-defense
right to abortion
right to confront
right to counsel
right to education
right to free speech
right to petition
right to privacy
right to self-defense
right to travel
right to vote
segregation
self-defense right
self-incrimination
separate-but-equal

separation of church and state
separation of powers
sex discrimination
sex equality
sex-based discrimination
sexual equality
sexual orientation equality
sexual-orientation discrimination
signing statement
sovereign immunity
speedy trial
stare decisis
state action
state discrimination
state sovereignty
states rights

strict scrutiny
suffrage
suspect class
suspect classification
takings
time place and manner
trial by jury
unenumerated right
unitary executive
void for vagueness
vote dilution
voting right
wall of separation
war power
warrant requirement
womens equality

APPENDIX B: REGRESSION RESULTS

This Appendix describes results from several regression analyses referenced in Part V’s exploration of possible drivers of constitutional polarization.

Table B.1 contains a kinked regression specification accompanying the results described in section V.A (and the lower panel of Figure 10) regarding asymmetric constitutional polarization. The table uses “constitutional” documents that trigger the Minimal dictionary and estimates the relationship between the measured partisanship of these documents (per our classifier) and various non-text attributes. In particular, we estimate the relationship:

$$\begin{aligned}
 y_i = & \alpha + \beta_1 \cdot (PR\ Score_i) + \beta_2 \cdot (Late\ Period_i) + \beta_3 \cdot (Conservative_i) \\
 & + \beta_4 \cdot (PR\ Score_i) \times (Late\ Period_i) + \beta_5 \cdot (PR\ Score_i) \times (Conservative_i) \\
 & + \beta_6 \cdot (Late\ Period_i) \times (Conservative_i) \\
 & + \beta_7 \cdot (PR\ Score_i) \times (Late\ Period_i) \times (Conservative_i) + \varepsilon_i,
 \end{aligned} \tag{B1}$$

where y_i denotes our classifier’s probability assessment that a given speaker is conservative; $(PR\ Score_i)$ is dimension one of the speaker’s Poole-Rosenthal (PR) score based on roll-call votes; $(Late\ Period_i)$ is an indicator variable with value set to 1 if the remark occurs during the later period (1999–2016) from Figure 10; $(Conservative_i)$ is an indicator variable set to 1 if the speaker’s voting record is conservative (also according to PR scores); and ε_i is an error term.

Not surprisingly, the intensity of the speaker’s PR Score (as reflected in the estimate for β_1) strongly predicts the classifier’s confidence in assessing her speech. The main coefficient of interest, however, is the regression “kink” coefficient β_7 , whose strong positive estimates imply that in the late period partisanship increased significantly among ideologically extreme conservatives. Although all estimated effects are statistically significant owing to the large sample size, the sheer magnitude of the estimated kink coefficient is particularly striking, swamping even the predictive magnitude of the unconditional PR Score.

Table B.2 provides regression estimates of the extent to which being “out of power” predicts a greater proclivity to invoke the Constitution, tracking the panels of Figure 11. We calculate total “counts” of constitutional remarks made by Democrats and Republicans each year, and thus all specifications in the table estimate a negative binomial regression with an “offset” parameter (not reported) equal to the total number of remarks made by members of the party in the observed year. The four subpanels of the table utilize four different imputation protocols for deeming a remark to be “constitutional.” For each protocol, we also estimate the relationship for different “eras” (pre-1940, 1940–1979, 1980–2016). The top panel uses a maximum-likelihood approach with negative binomial functional form to estimate implicitly the hazard-rate relationship:

$$\begin{aligned}
 \mu_{i,t} = & \alpha + \beta_1 \cdot (NonAllied_{i,t}) + \beta_2 \cdot (Republican_{i,t}) + \beta_3 \cdot (House\ of\ Reprs_{i,t}) \\
 & + \varepsilon_{i,t},
 \end{aligned} \tag{B2}$$

where $\mu_{i,t}$ represents the hazard rate governing a negative binomial distribution function for party i (Democrats, Republicans) at time t . The key indicator variable $(NonAllied_{i,t})$ takes on the value of 1 whenever the chamber is not controlled by the same party as group i (and 0 otherwise). In the

bottom panel of the table, we pool the chambers and redefine (*NonAllied_i*) to take on the value of 1 if the president is not from the same party as group *i* (and 0 otherwise), or:

$$\mu_{i,t} = \alpha + \beta_1 \cdot (\text{NonAllied}_{i,t}) + \beta_2 \cdot (\text{Republican}_{i,t}) + \varepsilon_{i,t}. \quad (\text{B3})$$

Note that while both specifications suggest a greater countermajoritarian proclivity to invoke the Constitution (that is, $\beta_1 > 0$) over the entire panel, the estimated effect appears inconsistent over time. In particular, in the period from 1940 to 1979, the countermajoritarian use of constitutional rhetoric is dampened (top panel) or slightly reversed (bottom panel) relative to the other eras.

Finally, Table B.3 augments section V.C and Figure 13 to consider whether the staggered introduction of C-SPAN1 and C-SPAN2 in the House and Senate, respectively, was related to greater degrees of discursive polarization (as measured by classification accuracy). The introduction of the two networks took place approximately seven years apart, allowing us to measure two distinct “shocks” to each chamber, using the other chamber as a control group. In the left-hand panel, we estimate various permutations of the relationship:

$$y_{i,t} = \alpha + \beta_1 \cdot (\text{Senate}_{i,t}) + \beta_2 \cdot (\text{Post-CSPAN 1}_{i,t}) + \beta_3 \cdot (\text{Post-CSPAN 2}_{i,t}) + \beta_4 \cdot (\text{Senate}_{i,t}) \times (\text{Post-CSPAN 1}_{i,t}) + \beta_5 \cdot (\text{Senate}_{i,t}) \times (\text{Post-CSPAN 2}_{i,t}) + \varepsilon_{i,t}, \quad (\text{B4})$$

where $y_{i,t}$ denotes our text classifier’s probability assessment that speaker *i* who gives a speech at time *t* is conservative; (*Senate_{i,t}*) is an indicator variable set to 1 if the speaker is a senator at the time the speech is delivered; and (*Post-CSPAN 1_{i,t}*) and (*Post-CSPAN 2_{i,t}*) are indicator variables set to 1 if the speech is given after the introduction of C-SPAN1 and C-SPAN2, respectively. The first three columns of Table B.3 do not include “fixed effects” for the speaker; such fixed effects are introduced in the final three columns. In columns 1, 2, 4, and 5, where we track only one event, we use a three-year window around that event. In columns 3 and 6 where we track two events, we use a window beginning three years before the introduction of C-SPAN1 and ending three years after the introduction of C-SPAN2.

Beginning with the left-hand columns of Table B.3, the two coefficients of interest are on the cross-product terms, β_4 and β_5 . Here, the estimated coefficients cohere with the hypothesis that constitutional discourse became more polarized in each chamber following the introduction of cable television coverage. Remarks in the House became more polarized than in the Senate ($\beta_4 < 0$) after the introduction of C-SPAN1; and Senate remarks did the same (relative to the House) after the introduction of C-SPAN2 ($\beta_5 > 0$). That said, note that introducing speaker fixed effects tends to wash away the C-SPAN effect. This result causes us to temper our assessment that cable television coverage contributed to polarization in a causal fashion.

On the other hand, there are certain aspects of our approach that are not particularly conducive to a speaker fixed-effects estimation. For example, some members of Congress, particularly in the House, do not survive across both measurement periods. Moreover, the reasons for their nonsurvival (through retirement or failed reelection bid) are plausibly related to unflattering appearances on C-SPAN. Consequently, we view the results in Table B.3 as being supportive, but not definitively so, of a C-SPAN effect in constitutional congressional speech.

TABLE B. 1

	Minimal Dictionary $\rho > 0$	Expansive Dictionary		
		$\rho > 0$	$\rho > 0.5$	$\rho > 0.8$
PR Score	0.551*** (0.01)	0.524*** (0.01)	0.493*** (0.01)	0.419*** (0.02)
Late Period	-0.397*** (0.01)	-0.371*** (0.01)	-0.319*** (0.02)	-0.322*** (0.03)
Conservative	-0.055*** (0.01)	-0.044*** (0.01)	-0.071*** (0.01)	-0.057*** (0.01)
(PR Score) x (Late Period)	-0.436*** (0.03)	-0.345*** (0.03)	-0.318*** (0.04)	-0.468*** (0.07)
(PR Score) x (Conservative)	-0.571*** (0.02)	-0.542*** (0.02)	-0.566*** (0.02)	-0.527*** (0.04)
(Late Period) x (Conservative)	0.171*** (0.02)	0.154*** (0.01)	0.136*** (0.02)	0.036*** (0.04)
(PR Score) x (Late Period) x (Conservative)	0.976*** (0.04)	0.862*** (0.04)	0.850*** (0.05)	1.090*** (0.10)
Constant	0.737*** (0.01)	0.720*** (0.00)	0.730*** (0.01)	0.762*** (0.01)
R-Sqrd	0.123	0.128	0.090	0.052
Adjusted R-Sqrd	0.123	0.128	0.090	0.052
F-Statistic	1,714***	2,425***	731.2***	135***
N	85,311	115,964	51,563	17,084

Table B.1. Ordinary Least Squares Regression. Dependent Variable: Predicted probability speaker is conservative per prediction of Naive Bayes Classifier. Regression kink coefficient of interest is for cross product variable (PR Score) x (Late Period) x (Conservative). Standard Errors in Parentheses. Significance: * = 0.05; ** = 0.01; *** = 0.001

TABLE B.2

A. Allied Chamber Control and Constitutional Speech

	Minimal Dictionary			Expansive Dictionary ($\rho > 0$)			Expansive Dictionary ($\rho > \text{Median}$)			Expansive Dictionary ($\rho > 8\text{th Decile}$)						
	Full Panel	< 1940	1940-79	> 1979	Full Panel	< 1940	1940-79	> 1979	Full Panel	< 1940	1940-79	> 1979	Full Panel	< 1940	1940-79	> 1979
Non-Allied	0.215*** (0.00)	0.257*** (0.03)	0.193 (0.15)	0.217*** (0.05)	0.228*** (0.03)	0.158 (0.16)	0.233*** (0.04)	0.132*** (0.00)	0.167*** (0.03)	0.114 (0.07)	0.200** (0.07)	0.059*** (0.00)	0.135*** (0.02)	0.015 (0.01)	0.149 (0.08)	
Republican	-0.085 (0.11)	-0.196 (0.17)	-0.182 (0.21)	0.131 (0.21)	-0.087 (0.09)	-0.144 (0.19)	0.085 (0.21)	-0.065 (0.13)	-0.133 (0.09)	-0.16 (0.09)	0.165 (0.31)	-0.055 (0.16)	-0.051 (0.08)	-0.160*** (0.02)	0.191 (0.36)	
Senate	0.298** (0.09)	0.462*** (0.00)	0.264*** (0.04)	0.154 (0.15)	0.451*** (0.09)	0.235*** (0.04)	0.176 (0.13)	0.350*** (0.04)	0.555*** (0.01)	0.471*** (0.00)	-0.059 (0.12)	0.433*** (0.05)	0.463*** (0.05)	0.642*** (0.03)	0.08 (0.12)	
Constant	-4.036*** (0.01)	-4.302*** (0.07)	-4.046*** (0.03)	-3.723*** (0.05)	-3.752*** (0.00)	-3.741*** (0.04)	-3.398*** (0.06)	-4.493*** (0.05)	-4.675*** (0.07)	-4.531*** (0.01)	-4.297*** (0.13)	-5.481*** (0.09)	-5.420*** (0.08)	-5.559*** (0.02)	-5.693*** (0.17)	
ln(Alpha)	-1.641*** (0.03)	-1.861*** (0.15)	-2.309*** (0.22)	-2.252*** (0.13)	-1.707*** (0.00)	-2.527*** (0.20)	-2.411*** (0.17)	-1.897*** (0.05)	-2.119*** (0.14)	-2.216*** (0.20)	-2.072*** (0.16)	-1.693*** (0.06)	-2.035*** (0.05)	-1.784*** (0.16)	-1.725*** (0.09)	
AIC	7634.908	3347.929	2091.806	1938.036	7919.849	3392.578	2152.575	6981.974	3106.154	1975.414	1765.411	5972.633	2721.82	1722.907	1421.409	
N	576	268	160	148	576	268	160	148	576	268	160	148	576	268	160	148

B. Allied Presidential Control and Constitutional Speech

	Minimal Dictionary			Expansive Dictionary ($\rho > 0$)			Expansive Dictionary ($\rho > \text{Median}$)			Expansive Dictionary ($\rho > 8\text{th Decile}$)					
	Full Panel	< 1940	1940-79	> 1979	Full Panel	< 1940	1940-79	> 1979	Full Panel	< 1940	1940-79	> 1979	Full Panel	< 1940	1940-79
Non-Allied	0.068*** (0.01)	0.160*** (0.04)	-0.072*** (0.01)	0.048*** (0.01)	0.058*** (0.01)	-0.051*** (0.01)	0.023*** (0.01)	0.031*** (0.01)	0.092*** (0.03)	-0.072*** (0.00)	0.033*** (0.01)	0.000 (0.01)	0.063* (0.03)	-0.066** (0.02)	0.039*** (0.01)
Republican	-0.057 (0.09)	-0.167 (0.10)	-0.051 (0.06)	0.106 (0.24)	-0.06 (0.10)	-0.153 (0.08)	0.058 (0.25)	-0.065 (0.10)	-0.104 (0.09)	-0.138*** (0.02)	0.136 (0.28)	-0.092 (0.05)	-0.042 (0.08)	-0.309** (0.10)	0.184 (0.27)
Constant	-3.751*** (0.05)	-4.029*** (0.07)	-3.638*** (0.02)	-3.502*** (0.12)	-3.484*** (0.06)	-3.406*** (0.03)	-3.157*** (0.12)	-4.194*** (0.05)	-4.360*** (0.06)	-3.987*** (0.01)	-4.181*** (0.14)	-5.150*** (0.03)	-5.161*** (0.05)	-4.893*** (0.05)	-5.566*** (0.13)
ln(Alpha)	-1.391*** (0.10)	-1.763*** (0.06)	-1.347*** (0.21)	-2.254*** (0.15)	-1.506*** (0.10)	-2.066*** (0.24)	-2.401*** (0.11)	-1.672*** (0.06)	-2.012*** (0.10)	-1.314*** (0.19)	-2.149*** (0.14)	-1.649*** (0.07)	-2.071*** (0.07)	-1.182*** (0.20)	-2.231*** (0.15)
AIC	4621.873	2027.012	1330.593	1144.879	4750.988	2053.909	1351.977	4270.785	1901.239	1265.766	1052.012	3662.968	1664.493	1106.828	825.734
N	318	148	88	82	318	148	88	82	318	148	88	318	148	88	82

Table B.2. Countermajoritarian Constitutionalism Negative Binomial Count Regressions. Dependent Variable: Number of "Constitutional" Speeches observed. The top panel focuses on each house of Congress separately, with right-hand-side indicator variable "Non-Allied" set to 1 if the chamber of Congress is dominated by the other party. The bottom panel pools both houses of Congress and hinges Non-Allied on whether the sitting president is from the other party. Each panel considers multiple criteria for deeming a speech to be constitutional, and in addition breaks down estimation periods into three "eras" for comparison. All regressions use the total number of speeches given as an offset parameter. Standard Errors in Parentheses and clustered at the Non-Allied level. Significance: * = 0.05; ** = 0.01; *** = 0.001

TABLE B.3

	C-SPAN 1 3/19/1979	C-SPAN 2 6/2/1986	C-SPAN 1 & C-SPAN 2	C-SPAN 1 3/19/1979	C-SPAN 2 6/2/1986	C-SPAN 1 & C-SPAN 2
Senate	0.076*** (0.00)	0.024*** (0.00)	0.024*** (0.00)	-0.021** (0.01)	0.014*** (0.00)	-0.020** (0.01)
Post C-SPAN 1	0.042*** 0.001		0.041*** (0.00)	0.004 (0.01)		0.004 (0.01)
(Senate) x (Post C-SPAN 1)	-0.017*** (0.00)		-0.014*** (0.00)			0.014*** (0.00)
Post C-SPAN 2		-0.051*** (0.00)	-0.046*** (0.00)		0.014*** (0.00)	
(Senate) x (Post C-SPAN 2)		0.055*** 0.002	0.049*** 0.002		-0.008 (0.00)	-0.008 (0.00)
Constant	0.566*** (0.00)	0.613*** (0.00)	0.613*** (0.00)			
Speaker Fixed Effects				✓	✓	✓
R-Sqrd	0.006	0.048	0.005	0.238	0.206	0.204
Adjusted R-Sqrd	0.006	0.048	0.005	0.238	0.204	0.202
F-Statistic	3.374***	1.862***	2.084***	132.2***	86.36***	105.6***
N	1,612,353	1,268,939	2,241,501	1,612,353	1,268,939	2,241,501

Table B.3. C-SPAN effect OLS Difference-In-Differences Regression. Dependent Variable: Correct classification. Speaker fixed effects are perfectly collinear with "Senate," and thus do not allow for the estimation of the coefficient on "Senate." Standard Errors in Parentheses. Significance: * = 0.05; ** = 0.01; *** = 0.001