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How Do You Measure a Constitutional Moment?
Using Algorithmic Topic Modeling To Evaluate
Bruce Ackerman's Theory of Constitutional Change

ABSTRACT. Bruce Ackerman argues that major shifts in constitutional law can occur outside the Article V amendment process when there are unusually high levels of sustained popular attention to questions of constitutional significance. This Note develops a new empirical strategy to evaluate this claim using the debate over ratification of the Fourteenth Amendment as its test case. The Note applies a statistical process known as unsupervised topic modeling to a dataset containing over 19,000 pages of text from U.S. newspapers published between 1866 and 1884. This innovative methodological technique illuminates the structure of constitutional discourse during this period. The Note finds empirical support for the notion that the salience of constitutional issues was high throughout the ratification debate and then gradually declined as the country returned to a period of normal politics. These findings buttress Ackerman's cyclic theory of constitutional change at one of its more vulnerable points.

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INTRODUCTION

When considering the long arc of American constitutional history, most legal historians recognize that constitutional change sometimes occurs outside the boundaries of Article V's formal amendment process. Three moments, in particular, have become touchstones of legal scholarship: (1) the ratification of the Fourteenth Amendment, purporting to comply with the requirements of Article V but in reality occurring under armed occupation as a precondition for Southern states' readmission to the Union; (2) the juridical revolution ushered in by the New Deal; and (3) the legal transformation wrought by the civil rights movement. Each of these periods of constitutional upheaval featured powerful coalitions purporting to represent "We the People." The battle over Reconstruction pitted Radical Republicans against President Johnson and recalcitrant Democrats;[1] the New Deal involved a showdown between President Roosevelt and the "Four Horsemen" of the Supreme Court;[2] and the civil rights movement pitted activists against the apartheid South.[3] If we accept the premise that constitutional change occurs outside the Article V amendment process, then we need a way to evaluate the claims of competing constitutional visions during times of political tumult. How are we to weigh the legitimacy of claims to speak for We the People?

Bruce Ackerman's theory of constitutional change is an attempt to systematize an answer to that question. Ackerman's initial move is to posit that the United States has a "dualist democracy," meaning that it operates in two distinct modes — a "normal politics" mode and a "higher lawmaking" mode.[4] The dualist-democracy thesis starts from the premise that most of the time American citizens do not grapple with higher-order questions of constitutional law. As Ackerman puts it, one half of the "cyclical pattern" of American history "is characterized by normal politics, during which most citizens keep a relatively disengaged eye on the to-and-fro in Washington."[5] During these

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1. *See* 2 BRUCE ACKERMAN, WE THE PEOPLE: TRANSFORMATIONS 19-20 (1998); *see also id.* at 110-11 (discussing the "naked violations of Article Five" underlying the ratification of the Fourteenth Amendment).

2. *Id.* at 279-382.

3. *See* Bruce Ackerman, *2006 Oliver Wendell Holmes Lectures: The Living Constitution*, 120 HARV. L. REV. 1737, 1757-92 (2007).

4. 1 BRUCE ACKERMAN, WE THE PEOPLE: FOUNDATIONS 6-7 (1991) (outlining the dualist thesis); *see also id.* at 8 (distinguishing a dualist conception of democracy from "monistic" conceptions that view the function of elections as granting "plenary lawmaking authority to the winners of the last general election").

5. *Id.* at 31.

periods of normal politics, those who advocate for transformation are "regularly rebuffed at the polls in favor of politics-as-usual."[6] On rare occasions, however, debates that occur among governing elites during times of "normal" politics spill into the national discourse and catch the attention of the American people. Ackerman argues that during these periods of constitutional transformation key elections push constitutional change forward. On Ackerman's telling, certain elections legitimate constitutional change because voters, in contrast to their behavior during times of normal politics, pay special attention to the constitutional questions on the national agenda.[7] Critically, then, Ackerman's argument about popular sovereignty hinges on voter attention. Its principal claim—that voters pay particular attention to constitutional issues during periods of higher lawmaking—should be amenable to empirical scrutiny. But what variable to measure? And how? Pure electoral returns are silent on the question of *why* individuals voted or what issues were particularly salient for them at the ballot box. Public opinion polling is also problematic[8] and, in any event, is not available to help us evaluate constitutional politics during earlier periods of American history, such as Reconstruction. In light of these challenges, how can we measure the national "constitutional dialogue" to determine if Ackerman's key moments really were different from normal political debate? To put it another way: can we quantify constitutional discourse?

This Note proposes that we can. I worked with Brandon Stewart, a Ph.D. candidate in Government at Harvard University focusing on statistical methodology, to apply a series of algorithmic topic models to study historical newspapers published between 1866 and 1884.[9] Topic modeling is a process of

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6. *Id.*

7. *See id.* at 266-94 (describing the nature of "higher lawmaking").

8. The fallout from the 2004 National Election Pool exit poll, conducted by Edison Media Research and Mitofsky International, illustrates the pitfalls of trying to quantify the connection between issue salience and electoral returns. The poll indicated that more Americans voted because of "moral values" (22%) than the economy (20%) or terrorism (19%). *National Election Pool General Election Exit Polls, 2004*, ICPSR, http://www.icpsr .umich.edu/icpsrweb/ICPSR/studies/4181 (last visited Jan. 14, 2013). The political commentariat then spent weeks fretting over a survey finding that turned out to be methodologically suspect. *See* D. Sunshine Hillygus & Todd G. Shields, *Moral Issues and Voter Decision Making in the 2004 Presidential Election*, 38 PS: POL. SCI. & POL. 201, 207 (2005) ("[T]he values voter explanation appears to be only a very minor part of citizens' voting calculus in the 2004 presidential election."); Gary Langer & Jon Cohen, *Voters and Values in the 2004 Election*, 69 PUB. OPINION Q. 744 (2005) (critiquing the exit poll).

9. Mr. Stewart was indispensable to this project from its inception. This Note began as a conversation several years ago about how we could explore a topic that combines my interest in legal history with his technical expertise. In light of Mr. Stewart's extensive knowledge of

machine learning that uses a statistical algorithm to analyze a body of text — the "corpus" — by grouping together words that have a high probability of appearing together in the documents.[10] I deploy these models to test the validity of constitutional moments theory by looking for spikes in particular kinds of constitutional dialogue when Ackerman's theory predicts they should arise.

This Note uses Reconstruction as its test case, focusing in particular on the debate over ratification of the Fourteenth Amendment during the years 1866 to 1868. I rely on four datasets containing over 19,000 pages from U.S. historical newspapers published between January 1, 1866, and December 31, 1884. I find empirical support for the proposition that newspapers did in fact focus to an unusually high degree on constitutional-level questions during the critical period between 1866 and 1868. These findings lend support to Ackerman's conception of "constitutional politics" during the debate over ratification of the Fourteenth Amendment.

Part I of this Note begins by explicating Ackerman's dualist-democracy thesis and outlining how it applies to ratification of the Fourteenth Amendment. I argue that Ackerman's theory rests on the notion that voters were paying special attention to constitutional debates in the lead up to the 1866 and 1868 elections, which in turn legitimizes (on Ackerman's telling) the constitutional changes that these elections helped ratify. I survey the literature on "constitutional moments" in order to demonstrate how the lack of empirical rigor in this area has fueled an ongoing debate about what "counts" as a moment of significant constitutional change. I then explain how topic modeling can address this challenge by evaluating the popular salience of constitutional issues during this period. This Part ends by justifying the choice of Ackerman's treatment of the Fourteenth Amendment as a test case.

Part II explains this Note's methodology. This Part begins by exploring how topic modeling distills the structure of enormous amounts of text. I then seek to justify this Note's use of historical newspapers as a proxy for public attention, responding to potential objections about whether newspapers truly capture issue salience among voters. This Part concludes by explaining how Brandon Stewart and I converted the raw text from newspaper articles into usable data for our analysis.

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topic modeling and statistical methodology, he worked to compile the raw data and then developed the algorithmic topic model to produce our results. The analysis of those results, as well as the legal and historical arguments in this Note, is my own.

10. For an excellent introduction to topic modeling, see David M. Blei, *Probabilistic Topic Models*, COMM. ACM, Apr. 2012, at 77, http://www.cs.princeton.edu/~blei/papers /Blei2012.pdf.

Part III provides the results of our topic models. In particular, this Note examines two hypotheses. Section III.A explores whether there is evidence of constitutional politics in the period from 1866 to 1868 and concludes that there is evidence of constitutional discourse before the 1866 and 1868 elections. I also use a technique known as hierarchical topic modeling to illustrate how newspapers discussed various issues. Section III.B then examines change over time, seeking to discern whether the salience of constitutional politics declined in the period from 1866-1884. I find evidence that constitutional discourse peaked between 1866 and 1868 and then gradually declined, lending support to Ackerman's narrative about a gradual return to "normal politics" during this period.

This Note concludes by surveying these results and arguing that there is indeed empirical evidence for the high salience of constitutional issues during this period. This provides quantitative support for Ackerman's dualist-democracy thesis. It also illustrates that topic modeling is an innovative research tool ripe for further applications in legal scholarship.

I. QUANTIFYING CONSTITUTIONAL POLITICS

Attempts to distill American constitutional history into a set of key moments are a common feature of legal scholarship.[11] Such efforts, of which Bruce Ackerman's dualist-democracy thesis is arguably the most prominent,

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11. Many scholars have undertaken this project, often building on Ackerman's framework. *See, e.g.*, Michael W. McConnell, *The Forgotten Constitutional Moment*, 11 CONST. COMMENT. 115 (1994) (arguing that the 1876 election and the end of Reconstruction qualifies as a constitutional moment); James Gray Pope, *Republican Moments: The Role of Direct Popular Power in the American Constitutional Order*, 139 U. PA. L. REV. 287 (1990); Christopher H. Schroeder, *Rational Choice Versus Republican Moment—Explanations for Environmental Laws, 1969-73*, 9 DUKE ENVTL. L. & POL'Y F. 29 (1998) (applying the idea of a "republican moment" to the passage of key environmental protection legislation from 1969-1973); Mark Tushnet, *Living in a Constitutional Moment?:* Lopez *and Constitutional Theory*, 46 CASE W. RES. L. REV. 845 (1996) (exploring whether the Supreme Court's decision in *United States v. Lopez*, 514 U.S. 549 (1995), might signal a new constitutional moment); Mark V. Tushnet, *The Flag-Burning Episode: An Essay on the Constitution*, 61 U. COLO. L. REV. 39, 48 (1990) (arguing that the debate over flag burning, culminating in the Supreme Court's decision in *Texas v. Johnson*, 491 U.S. 397 (1989), qualifies as a constitutional moment); Christy Scott, *Constitutional Moments and Crockpot Revolutions*, 25 CONN. L. REV. 967, 982-83 (1993) (reviewing 1 ACKERMAN, *supra* note 4) (applying the constitutional moments theory to the women's movement of the 1970s). Some scholars have also applied the constitutional moments framework to international and comparative politics. *See, e.g.*, Geoffrey P. Miller, *Constitutional Moments, Precommitment, and Fundamental Reform: The Case of Argentina*, 71 WASH. U. L.Q. 1061 (1993); Catherine Powell, *Libya: A Multilateral Constitutional Moment?*, 106 AM. J. INT'L L. 298 (2012).

raise a consistent and vexing methodological challenge: How can we develop objective criteria to distinguish "constitutional moments" from "normal politics"?

This Part begins by explicating Bruce Ackerman's theory of constitutional change and exploring its application to the ratification of the Fourteenth Amendment. I argue that Ackerman's theory rests on a critical but untested argument regarding the high salience of constitutional issues before certain key elections, including the elections of 1866 and 1868. I then survey other scholarship in this area to demonstrate how the lack of empirical metrics about what "counts" as a constitutional moment is a continuing problem. Finally, I argue that topic modeling provides us with a way to address this challenge, using Ackerman's arguments about the Fourteenth Amendment as a test case.

A. Ackerman's Theory of Dualist Democracy

Bruce Ackerman's dualist-democracy thesis is one of the most prominent attempts to systematize a theory of constitutional change. In its scope and ambition, Ackerman's theory has left a lasting impression on the legal academy.[12]

Ackerman's theory is, at bottom, a framework for understanding how constitutional change occurs outside the boundaries of the formal Article V amendment process. When evaluating how the U.S. Constitution changes over time, legal scholars generally begin by making one of two analytic moves. The first is to look at the text of the Constitution itself, and in particular Article V. According to this view, the American people change the Constitution whenever a would-be amendment successfully clears the requisite procedural hurdles: approval by two-thirds of each house of Congress and ratification by the legislatures (or special ratifying conventions) of three-fourths of the states. The strong version of this formalist view holds that the U.S. Constitution, properly construed, contains only the 1789 version and the twenty-seven amendments that followed.

While perfectly reasonable at first glance, the formalist view poorly comports with our constitutional history.[13] Its proponents, for example, are often at pains to explain the legitimacy of the Fourteenth Amendment, ratified

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12. *See, e.g.*, Symposium, *Moments of Change: Transformation in American Constitutionalism*, 108 YALE L.J. 1917 (1999); Michael J. Gerhardt, *Ackermania: The Quest for a Common Law of Higher Lawmaking*, 40 WM. & MARY L. REV. 1731, 1733 nn.12 & 13 (reviewing 2 ACKERMAN, *supra* note 1) (collecting praise and criticism for Ackerman's theory).

13. *See* 2 ACKERMAN, *supra* note 1, at 28-31 (discussing formalism's disadvantages).

by Southern states under armed occupation according to a procedure that did not conform to Article V.[14] The New Deal is another sticking point for formalists, since the famous "switch in time" that supposedly occurred in *West Coast Hotel Co. v. Parrish*,[15] and was codified in cases like *United States v. Darby*[16] and *Wickard v. Filburn*,[17] represented an about-face in the Supreme Court's constitutional jurisprudence without any accompanying amendments to justify sudden approval of the New Deal's regulatory departures.[18] Only a few diehard formalists[19] argue that the modern regulatory state is unconstitutional at its very roots, yet that is precisely the bind into which Article V myopia forces its adherents.[20]

In light of these shortcomings, one response is to reject constitutional formalism altogether in favor of a more plastic view of how constitutional change actually occurs. This mode of interpretation takes into account political dynamics, historical contingencies, and extratextual sources of constitutional legitimacy. Ackerman makes this intellectual move by arguing that America's democracy is "dualist," meaning that it operates in two distinct modes: a

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14. *Id.* at 110-19 (reviewing the debate over the status of the Fourteenth Amendment); Ackerman, *supra* note 3, at 1747-78 n.25 (responding to Akhil Amar's attempt to "sweep all these difficulties under the rug" by arguing that Southern states' disenfranchisement of blacks justified their exclusion from Congress under the constitutional guarantee of "republican government"); *see also* AKHIL REED AMAR, AMERICA'S CONSTITUTION: A BIOGRAPHY 364-80 (2005) (articulating Amar's views regarding the ratification of the Fourteenth Amendment).

15. 300 U.S. 379 (1937).

16. 312 U.S. 100 (1941).

17. 317 U.S. 111 (1942).

18. *But see* Daniel E. Ho & Kevin M. Quinn, *Did a Switch in Time Save Nine?*, 2 J. LEGAL ANALYSIS 69, 71 (2010) (reviewing the historical debate about whether there was a "switch" at all).

19. *See, e.g.*, Richard A. Epstein, *The Proper Scope of the Commerce Power*, 73 VA. L. REV. 1387, 1451, 1454 (1987) (arguing that the New Deal Supreme Court stood "the Constitution upon its head" and advancing the "radical" notion that we should return to a pre-New Deal conception of the Commerce Clause); Elizabeth C. Price, *Constitutional Fidelity and the Commerce Clause: A Reply to Professor Ackerman*, 48 SYRACUSE L. REV. 139, 175 (1998) ("Thus, by labeling the New Deal Court's 'switch in time' as an implicit constitutional amendment, Ackerman provides an intellectual means to justify the Warren Court's noble ends. While Ackerman's implicit amendment theory may provide some psychological solace to legal academics similarly torn, it does not provide a principled basis for ignoring Article V.").

20. *See* 2 ACKERMAN, *supra* note 1, at 255-60 (critiquing the legal fictions that some formalists use to legitimize the New Deal legal revolution).

"normal politics" mode and a "higher lawmaking" mode.[21] On this view, institutional actors in the American political regime typically jockey back and forth within the existing constitutional order. Ackerman argues that during these moments of "normal politics" the typical citizen only engages with the political process at arm's length. While people may vote, they do so without having reached a "*considered judgment* on the central issues raised by the candidates."[22] During certain periods of American history, however, one actor on the political stage (be it the president, the Supreme Court, a political party, or some other player) will signal a challenge to the existing constitutional orthodoxy. Over the course of several years, spanning multiple elections, a process of institutional move and countermove will unfold. Either the challenge to the constitutional order subverts and replaces the old regime or fails, leaving the preexisting constitutional framework intact.[23] Ackerman identifies three such "constitutional moments" in America's history: the debate and passage of the Civil War Amendments; the success of President Franklin Roosevelt's New Deal in ushering in the era of the modern regulatory state; and the struggle over civil rights, beginning with the Supreme Court's decision in *Brown* and ending with the passage of the Civil Rights Act of 1964[24] and the Voting Rights Act of 1965.[25] Each of these three moments, argues Ackerman, represents a non-Article V modification of the Constitution of 1789, even though the New Deal and the civil rights movement resulted in no formal constitutional amendments.[26]

Ackerman argues that each moment of higher lawmaking follows a five-step cycle[27]:

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21. *See* 1 ACKERMAN, *supra* note 4, at 6 ("Above all else, a dualist Constitution seeks to distinguish between two different decisions that may be made in a democracy. The first is a decision by the American people; the second, by their government.").

22. *Id.*

23. *Id.* at 266-67 (outlining this progression of mobilization, countermobilization, and codification). Ackerman, for example, considers the failed nomination of Robert Bork to be a constitutional moment that withered early in the process. Ackerman asks his reader to consider the constitutional conflict that would have resulted if President Reagan had simply sent another, equally conservative nominee to the Senate rather than backing down and nominating the more moderate Anthony Kennedy. 2 ACKERMAN, *supra* note 1, at 394-95.

24. Pub. L. No. 88-352, 78 Stat. 241.

25. Pub. L. No. 89-110, 79 Stat. 437.

26. Ackerman, *supra* note 3, at 1802 (arguing for the expansion of the "the twenty-first-century canon to add the decisive texts of the New Deal and the civil rights era to those of the Founding and Reconstruction").

27. *Id.* at 1762 (identifying the five-step cycle).

1. Signaling.[28] An institutional actor makes clear that major constitutional change is a possibility in the near future. Signaling moments include the election of President Lincoln in 1860,[29] the election of President Franklin Roosevelt in 1932,[30] and the Supreme Court's 1954 decision in *Brown*.[31]

2. Proposing.[32] The institutional actor pushing change begins to elaborate a program of constitutional reform, which gradually consumes more and more of the country's collective attention and the energy of political actors.

3. Triggering.[33] An intervening event (typically an election) provides preliminary support for the constitutional challenge and generates additional momentum for change. Triggering moments include the congressional elections of 1866 (during which time the Fourteenth Amendment was the major point of national debate);[34] the general election of 1936 (returning President Roosevelt to power with a substantial congressional majority, even after the Supreme Court had repudiated several New Deal programs as unconstitutional);[35] and the general election of 1964 (returning Democrats to power even as conservatives campaigned against civil rights legislation).[36]

4. Ratifying.[37] One or more of the institutional actors who have been resisting change gives up, clearing the way for a new constitutional regime. Elections can also play a ratifying role by legitimating reformers.[38]

5. Consolidating.[39] Both the legislature and, even more importantly, the Supreme Court begin to integrate the new constitutional understanding into the previous regime, synthesizing the two into a new constitutional order.

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28. *See* 1 ACKERMAN, *supra* note 4, at 272-80.

29. *See* 2 ACKERMAN, *supra* note 1, at 126-27.

30. *See id.* at 266-68.

31. *See* Ackerman, *supra* note 3, at 1762-63 ("In calling *Brown v. Board of Education* an institutional signal, I take a middle path between legalists who exaggerate *Brown*'s significance and political scientists who trivialize it.").

32. 1 ACKERMAN, *supra* note 4, at 280-85.

33. *See* Ackerman, *supra* note 3, at 1770-71 (defining the triggering phase as when "voters get their first chance to pass judgment on the brave new initiatives undertaken in their name in Washington, D.C.").

34. 2 ACKERMAN, *supra* note 1, at 178-83, 186-88.

35. *Id.* at 306-11.

36. Ackerman, *supra* note 3, at 1778-79.

37. *Id.* at 1771-74 (comparing the "mandate" elections of 1936 and 1964); *id.* at 1778-79 (explaining that the "ratification" phase begins when reforms discharge their "burden of persuasion" and "burden of going forward").

38. 2 ACKERMAN, *supra* note 1, at 354-59 (drawing parallels between the ratifying elections of 1868, 1938, and 1940).

As an argument about America's political development, there is much to admire in Ackerman's cyclical theory of constitutional change. At its core, it purports to provide us with a set of tools to assess the legitimacy of constitutional claims in a world where we cannot rely solely on the formalism of Article V to do the job for us. In doing so, it recognizes that the American system is not one in which, as in a parliamentary system, a single election may constitute a sufficient expression of popular will to justify wholesale reform. Instead, the Founders created a system that split popular sovereignty into myriad institutional and electoral frameworks, and it is the interaction of those various components that generates the energy for constitutional change. For our purposes, these theoretical underpinnings highlight the fundamental mechanism of Ackerman's higher lawmaking: the one-way ratcheting that accompanies a successful constitutional movement. At each stage in the process, institutional actors "up the ante" through a dialogue of resistance and response, which in turn pushes the national political dialogue deeper and deeper into a serious conversation about the constitutional agenda.

From an empirical perspective, however, Ackerman's theory of dualist democracy is exceptionally slippery. In its massive scope, covering the entire history of the American Republic, it resists the very criterion on which political science evaluates theories of political change: the presence of empirically testable hypotheses. Unlike other cyclical theories, such as the theory of critical elections,[40] Ackerman's framework does not immediately lend itself to existing datasets. Still, the "constitutional moments" thesis should be amenable to empirical evaluation. Through the process of institutional resistance, so the story goes, a question of constitutional magnitude eventually becomes central to the national agenda. Voters—normally unconcerned with such weighty matters—ultimately weigh in either for or against systemic change, and these deliberations either provide political actors with the momentum to continue their constitutional challenge or shut down a would-be moment of constitutional reform. It is this electoral check that provides the key warrant for reformers to continue challenging the status quo.

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39. 1 ACKERMAN, *supra* note 4, at 288-90 (describing consolidation generally); 2 ACKERMAN, *supra* note 1, at 238-51 (describing the consolidation of Reconstruction); *id.* at 360-75 (recounting the legal consolidation of the New Deal); Ackerman, *supra* note 3, at 1783-85 (describing Nixon's consolidation of civil rights legislation).

40. *See, e.g.*, JAMES L. SUNDQUIST, DYNAMICS OF THE PARTY SYSTEM: ALIGNMENT AND REALIGNMENT OF POLITICAL PARTIES IN THE UNITED STATES (1973) (identifying key "realignment elections" over the course of American history). Note that while critical elections scholars focus on the dynamics of what Ackerman would call "normal" politics and how they change, Ackerman himself emphasizes the constitutional import of the interaction between elections and interbranch political conflict.

B. The Importance of Popular Attention

If Ackerman's theory is valid, then, we should expect to find some empirically observable changes in the nation's "constitutional dialogue" surrounding elections that Ackerman identifies as key constitutional moments. Indeed, for the theory to "work properly" there should be some evidence that voters in these elections were considering constitutional questions in an *atypical* manner. If these elections were unremarkable, then Ackerman's interpretation of their significance collapses.

Ackerman insists that *the* mechanism that legitimizes reformers' claims to popular sovereignty is the expression of political will manifested in these elections. Ackerman thus describes how the work of social movements and reformers ensures that a "constitutional critique gains the mobilized support of enough citizens to push it onto the center of the political stage."[41] The dividing line between normal and constitutional politics is the fact that during a period of normal politics no "'public interest' grouping is powerful enough to force its agenda to the center of political concern, to make normal politician/statesmen treat *its* questions as *the* critical questions they *must* answer if they hope to continue to represent the People."[42] In this sense, higher lawmaking becomes a function of "political salience."[43] What provides new constitutional regimes with legitimacy is the fact that the central questions defining such regimes are subjected to sustained popular debate. Ackerman describes these periods as "democratic," "energetic," and "multivocal":

> This is the point at which the higher lawmaking system confronts its greatest challenge: Can it channel the contending parties into an energetic exchange of public views, inviting them to address each other's critiques as they seek to mobilize deeper and broader support from the general citizenry? Or will it allow partisans to dissipate political energy in an almost random series of public scenes . . . ? In a single line: will the system encourage the protagonists to talk *to* one another or *past* one another?[44]

Elsewhere, Ackerman rejects referenda as a way to gauge the public's reaction to a key political question, unless the referendum occurs under the circumstances attendant to higher-level lawmaking. Thus, "the referendum

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41. 1 ACKERMAN, *supra* note 4, at 31.

42. *Id.* at 270.

43. *Id.*

44. *Id.* at 287.

retains its democratic appeal under the special conditions of constitutional politics—when millions of citizens have indeed been mobilized and confront the political agenda with a rare seriousness."[45]

The first premise of this Note, is that Ackerman's theory rests on, and indeed collapses without, citizens' *unusual* focus on constitutional issues during periods of higher lawmaking. Without this high degree of, to use Ackerman's phraseology, salience, engagement, mobilization, energy, and concern, a "triggering" or "ratifying" election loses its significance. On Ackerman's telling, what makes the New Deal juridical revolution legitimate is that voters in 1936 understood that they were deciding a major constitutional question, just as voters in 1866 understood that they were voting on the future of the Fourteenth Amendment. By contrast, if these key elections were instead just iterations of normal politics, with voters paying minimal attention to the background noise of political infighting (or, alternatively, highly engaged but without any sense that their votes would decide major constitutional questions), then such elections lose their significance. Popular attention is the critical cog in the machine that makes Ackerman's theory run. Without it, the gears cannot turn at all.

On the one hand, all of this talk regarding popular sovereignty and legitimacy can sound quite abstract. Notice again, however, the terms that Ackerman uses to describe the "special conditions" that render elections a valid reflection of popular sovereignty: salience, engagement, mobilization, seriousness, energy, and political concern. This is the vocabulary of political science. It describes phenomena of which there should be some observable and quantifiable evidence. Yet Ackerman's treatment of these periods in American history eschews this kind of empirical scrutiny.

C. A Test Case: Ratification of the Fourteenth Amendment

This Note focuses on the debate over ratification of the Fourteenth Amendment as the case study for assessing Ackerman's theory. Ackerman's interpretation of events surrounding this period provides testable hypotheses that are amenable to empirical verification (or falsification). Ackerman describes the debate over ratification of the Fourteenth Amendment as occurring in five distinct phases[46]:

Phase One (Signaling). Congressional Republicans choose not to seat Southern legislators at the opening of the Thirty-Ninth Congress. Rather than

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45. 2 ACKERMAN, *supra* note 1, at 411.

46. *Id.* at 19-20.

capitulate to this decision, President Johnson questions the legality of Republicans' actions.[47] In Ackerman's words, "Rival branches were denouncing each other's authority to speak in the name of the People, launching a point-counterpoint that framed the next phase of popular debate, mobilization, and decision."[48]

Phase Two (Proposing). The Joint Committee on Reconstruction issues its official report proposing the Fourteenth Amendment.[49] President Johnson and the conservatives encourage Southern states to veto the Fourteenth Amendment under Article V of the Constitution.[50] Republicans insist that they have a popular mandate to proceed with ratification.

Phase Three (Triggering). President Johnson campaigns against the congressional Republicans' proposal of the Fourteenth Amendment in the lead-up to the 1866 congressional elections. Republicans win a resounding victory at the polls. In Ackerman's parlance, 1866 was a "triggering election."[51]

Phase Four (Ratifying). Republicans respond to President Johnson's continued recalcitrance with radical action, including the Reconstruction Acts and impeachment.[52] Ackerman refers to this period as the "ratification struggle," in which Congress continued to make readmission into Congress for Southern states contingent on ratification of the Fourteenth Amendment—a "blatant refusal . . . to respect the structure of the Federalist's Article Five."[53]

Phase Five (Consolidating). Conservative Democrats challenge the legitimacy of the Fourteenth Amendment during the 1868 elections but are rebuffed by another Republican electoral victory. In Ackerman's words, "After the consolidating election of 1868, there was no longer a serious question whether the Civil War amendments were legal; the question, instead, was what they meant, and whether Americans would live up to their promise."[54]

This sequence of events makes the debate over ratification of the Fourteenth Amendment an ideal test case for subjecting Ackerman's theory to empirical scrutiny. First, this period included two separate key elections: the triggering election of 1866 and the consolidating election of 1868. Both of these elections became sharp lines of demarcation in the debate over constitutional

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47. *Id.* at 168-73.
48. *Id.* at 173.
49. *Id.* at 174-75.
50. *Id.* at 177-78.
51. *Id.* at 178-83.
52. *Id.* at 219-34.
53. *Id.* at 231.
54. *Id.* at 20.

politics following the Civil War. If Republicans had lost just twenty to thirty House seats in 1866, ratification of the Fourteenth Amendment would have been in jeopardy.[55] Under those circumstances, "President [Johnson] would have won a stunning victory: if the Northern Republicans joined the Johnsonian Congress, they would no longer have the votes required to take unconventional measures to induce the white South to ratify the Fourteenth Amendment."[56] The stakes in 1868 were similarly high. In July of that year, Secretary of State William Seward formally recognized the ratification of the Fourteenth Amendment.[57] Unless the Republicans won the White House and maintained their congressional majority, Democrats had made clear their intentions to attack the legitimacy of the ratification process as part of their broader plan to defeat the Fourteenth Amendment altogether.[58]

Moreover, in both cases, Ackerman attributes enormous significance to the supposedly heightened salience of constitutional issues during the elections. Ackerman argues that as "the election of 1866 reached its climax, voters were being asked to confront a truly constitutive question. Stripped down to essentials, it was simply this: which was *more* fundamental to the American Union—racial identity or political identity?"[59] Discussing this triggering election, Ackerman characterizes the higher lawmaking process as resulting in an "increasing convergence between the talk that is going on in the country and the talk occurring in the capitol" because "prevailing elites and the majority of citizens will share common concerns and basic aims to a much higher degree than usual."[60] Likewise, Ackerman invests the election of President Grant and the Republican congressional victory in 1868 with immense importance, arguing that the election was a "conceptually complex, but politically exhilarating, triumph of constitutional redefinition" whereby "We the People of the United States had somehow managed to reconstruct itself."[61] On Ackerman's telling, these elections were critical because in both instances

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55. *Id.* at 178.

56. *Id.*; *see also id.* at 178-83 (describing the party platforms and rhetoric around the Fourteenth Amendment issue during the 1866 elections).

57. *Id.* at 233-34 (discussing Secretary Seward's two key proclamations on ratification, issued July 20 and 28).

58. *Id.* at 234 (quoting Democratic vice-presidential nominee Frank Blair's statement that "[t]here is but one way to restore the Government and the Constitution, and that is for *the President-elect to declare these acts null and void*").

59. *Id.* at 181.

60. *Id.* at 187-88.

61. *Id.* at 236.

Americans went to the polls *understanding* the constitutional stakes and voted with the constitutional implications clearly in mind.

To repeat my earlier contention, this should be an empirically testable proposition.

D. The Challenge of Measurement

This Note aims to subject Ackerman's theory to that kind of analysis. But what is the key variable—and how do we measure it?

To his credit, Ackerman acknowledges that the lack of quantitative support in his scholarly work is a potential weakness in his theory. He recognizes that many academics have attacked the entire idea of a "mandate" election on the ground that elections always involve a "multiplicity of issues."[62] This critique, if correct, would be devastating for Ackerman's theory. If voters in 1936 were as likely to be voting on the basis of economic performance, the likeability of the candidates, foreign policy, or any number of myriad factors, then Ackerman's key argument regarding the role of elections in a dualist democracy—that, for example, the New Deal is legitimate in part because *voters deemed it so* by consciously supporting Roosevelt's constitutional vision in 1936—fails. The same result would obtain if voters were no more engaged regarding constitutional issues in 1936 than in any other election year. Ackerman, however, treats this critique dismissively, stating that it is "too broad legally and too shallow philosophically."[63] Ackerman's reasoning is twofold. First, he argues that there simply are no good empirical metrics available. On his telling, reliance on public opinion polling during these moments is problematic because such polls "serve as crude indications of the breadth of popular support."[64] Second, Ackerman argues that critics who focus on the multiplicity problem simply miss his point:

> Within the existing American system, the bundling objection is simply inapt: it falsely supposes that our Constitution seeks to test claims of a mandate by isolating single issues for focused decision by the voters, rather than collective and sustained deliberation by representatives. Instead, we should recognize that American politicians earn their authority to speak for the People by successfully negotiating a

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62. Ackerman, *supra* note 3, at 1774 & n.121 (citing academics who criticize the notion of election mandates).

63. *Id.* at 1775.

64. *Id.* at 1775-76 & n.125.

demanding institutional obstacle course that gives their opponents repeated opportunities to defeat their claims in a series of national elections.[65]

I quote Ackerman at length because this is his most direct response to his critics' "multiplicity" objection. The impetus for this Note is simple: Ackerman's response is plainly insufficient.

Ackerman's gambit here is to engage in a sleight of hand. By insisting that the multiplicity objection is "inapt," Ackerman suggests that his five-stage model is basically descriptive—a systematic way of describing how it is that some constitutional reform movements succeed and others fail. In other words, process is all that matters. Elites may fairly claim popular authority due to the results of elections. If a faction is able to rack up several victories in a row, such as the Republicans in 1866 and 1868 or the Democrats in 1932 and 1936, it may claim the mantle of popular sovereignty in support of its new constitutional vision.

The problem with this response is that it jettisons Ackerman's own ideas about what makes legitimating elections so important. Throughout his discussion of dualist democracy, Ackerman focuses not just on *how* reformers gain legitimacy but *why*, and the answer to that "why" question is deeply bound up with claims about what is actually occurring inside voters' heads. When Ackerman argues that lawmakers can only legitimately claim to speak for the "the People" when those lawmakers "have extraordinary support for their initiative in the country at large" in terms of "depth, breadth, and decisiveness,"[66] or when he asserts that "conservative countermobilization will vastly broaden and deepen the political engagement of the People on the fundamental issues at stake,"[67] Ackerman purports to describe the actual states of mind that drive voters during key elections. To use Ackerman's own words:

> We must expect that most of our fellow citizens will look upon most political efforts at national renewal with the apathy, ignorance, and selfishness characteristic of normal life in a liberal democracy. And yet, from time to time, some would-be Publians begin to strike a resonant chord. The rising movement is taken seriously by more and more Americans—even when they find its message deeply repugnant. The movement's success in *penetrating political consciousness* provokes a general effort to assess its ultimate significance . . . . Slowly the

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65. *Id.* at 1776-77 (footnote omitted).

66. 1 ACKERMAN, *supra* at note 4, at 272.

67. *Id.* at 287.

half-remembered rituals of higher lawmaking begin to take on a deeper meaning, for it is through these rituals that Americans test the seriousness of their fellows' efforts at national renewal and redefinition.[68]

These are not process- or results-oriented claims. Rather, Ackerman argues that in times of higher lawmaking, citizens pay more attention to constitutional-level issues.

The problem of "quantifying" constitutional moments is, of course, broader than Ackerman. The attempt to distill American constitutional history into a series of discrete moments of radical change has been a recurring theme of constitutional law scholarship for several decades. These efforts are often marked by the same contradiction: on the one hand, they attempt to make an empirical claim about how a particular set of historical periods are different from "normal politics," and yet at the same time, they fail to provide useful metrics with which to test their hypotheses. Thus, James Gray Pope has attempted to generalize Ackerman's theory into a set of "republican moments" that include not just Ackerman's selections—the Founding, Reconstruction, the New Deal, and the Civil Rights Era—but also the "Jeffersonian upsurge," the "Age of Jackson," and the "Populist era."[69] Pope lists a series of criteria for generating his list, including the fact that at such times "large numbers of Americans engage in serious political discourse," but the question of how to quantify this "large number" goes unanswered.[70]

In short, scholars lack useful metrics for determining which constitutional moments "make the cut" for any canonical list. Political scientist Walter Dean Burnham has flatly stated that Ackerman's argument regarding heightened popular engagement finds no support in survey-research models.[71] Burnham cites other pieces of evidence, however, such as the then-record-breaking voter turnout in Ohio during the 1866 congressional election (85.9 percent), as validating Ackerman, and ultimately concludes that Ackerman's argument regarding public attention "is fully consistent with the empirical observations," though Burnham does not cite any additional evidence for the reader.[72] Other legal scholars have looked to such metrics as the volume of correspondence

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68. *Id.* at 293-94 (emphasis added).

69. Pope, *supra* note 11, at 312.

70. *Id.* at 311.

71. Walter Dean Burnham, *Constitutional Moments and Punctuated Equilibria: A Political Scientist Confronts Bruce Ackerman's* We the People, 108 YALE L.J. 2237, 2246 (1999).

72. *Id.* at 2248-49.

received by political figures as an indicator of popular engagement.[73] Historian Barry Cushman nicely sums up the difficulties with determining how to evaluate the sustained public attention supposedly paid during critical elections. As Cushman writes, "One could simply review party platforms and some campaign speeches, a few presidential news conferences and fireside chats, a handful of newspaper columns and editorials, toss in an assortment of legislative enactments and a smattering of congressional debate, and let one's imagination do the rest."[74] If unsatisfied, one could "supplement these sources by drawing far more extensively on the relevant newspaper, periodical, and secondary literature, and conducting a conscientious canvas of relevant letters, memoranda, and diaries contained in hundreds of manuscript collections scattered around the country."[75] As Cushman notes, however, "even after such Herculean efforts one might still worry that one's sources were not sufficiently representative."[76]

Cushman's solution is to evaluate the political discourse of the 1930s by utilizing public opinion data.[77] Unfortunately, this methodological technique is not available when evaluating earlier periods like Reconstruction. Nonetheless, Cushman's more foundational move—to seek objective indicia of popular attention—is laudable. The purpose of this Note is to develop another way to objectively evaluate constitutional discourse.

E. A New Approach

This Note assesses the extent to which voters were paying attention to constitutional issues in the months before the elections of 1866 and 1868. It also attempts to articulate how constitutional discourse changed over the course of this two-year period and over the period from 1866 to 1884 more generally. In the absence of public polling or other direct metrics for

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73. *Id.*

74. Barry Cushman, *Mr. Dooley and Mr. Gallup: Public Opinion and Constitutional Change in the 1930s*, 50 BUFF. L. REV. 7, 10 (2002).

75. *Id.* at 13; *see also id.* at 9 (citing, as one example of such an effort, William E. Leuchtenburg, *When the People Spoke, What Did They Say? The Election of 1936 and the Ackerman Thesis*, 108 YALE L.J. 2077, 2111, 2113-14 (1999)). Leuchtenburg concludes that Ackerman "goes much too far in maintaining that the American people were consciously amending the Constitution in 1936. . . . [T]he evidence falls far short of sustaining Professor Ackerman's bold claim about the intent of the electorate to amend the Constitution . . . ." Leuchtenburg, *supra*, at 2113-14.

76. Cushman, *supra* note 74, at 13.

77. *Id.* at 17-19.

quantifying public opinion during the 1860s, this Note uses unsupervised topic modeling to analyze a corpus of over 19,000 pages of historical newspapers published between 1866 and 1884. Newspaper coverage serves as a proxy for the "national conversation" about constitutional politics.

Ratification of the Fourteenth Amendment serves as an excellent case study because Ackerman's treatment of this period provides testable empirical hypotheses. If Ackerman's argument regarding popular attention were correct, we would expect to observe two key phenomena during this period. First, we would expect to observe an uptick in "constitutional discourse" throughout the period from 1866 to 1868. We might also expect to see particular focus on constitutional issues in the run-up to the 1866 and 1868 elections. That is, we would expect local maxima in the salience of constitutional issues in the period immediately preceding key elections. I explore this hypothesis in Section III.A. Second, we would expect this focus on constitutional issues to peak in the period from 1866 to 1868 and then decline over time as the debate over the Civil War amendments receded.[78] I investigate this hypothesis in Section III.B.

If topics relating to the ratification of the Fourteenth Amendment exhibited a high salience for voters during this period, it would tend to confirm Ackerman's claim that the Amendment's ratification is an example of higher lawmaking. Conversely, the absence of such evidence would call into question the mechanisms underlying Ackerman's theory of dual democracy. Such results would suggest that the elections of 1866 and 1868 were no more "special" than any others, indicating a lack of sustained popular attention and denying Ackerman the kind of popular focus he associates with legitimate constitutional reform.

II. RESEARCH DESIGN

In order to evaluate Ackerman's theory, this Note uses topic modeling to address two questions. First, do we see evidence of "constitutional" discourse between 1866 and 1868? Second, do we see an increased focus on constitutional issues during the critical period from 1866 to 1868 relative to the "normal" politics of the later nineteenth century?

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78. By 1876, on Ackerman's telling, the country was returning to a period of normal politics and Reconstruction was "evidently coming to a close." 2 ACKERMAN, *supra* note 1, at 248. I chose 1884 as the end point for this period to provide a bit more distance from the constitutional politics of the 1860s and Reconstruction.

A. Quantifying Public Discourse

In order to test the "constitutional moments" thesis, some metric is required for quantifying public attention to various topics. With technology making it easier to manipulate larger and larger sets of data, several tools have become available in recent years that purport to offer this kind of analysis.

Google has been a leader in popularizing some of these techniques. These tools typically rely on keyword searches. For example, Google Trends provides a quick-look sense of public attention by depicting the ranking of various search terms.[79] Another Google service, the "Ngram" viewer,[80] goes a step further by allowing users to conduct keyword searches across Google's corpus of over 5.2 million published books.[81] The use of these kinds of searchable text aggregations, however, is subject to several methodological limitations. Without some larger historical context, interpreting trend lines generated by keyword searches of massive databases is akin to reading a Rorschach blot. The use of Ngram data in scholarship has therefore generated a robust debate in the academic community.[82] Because Ngrams and other keyword-search platforms are extremely blunt tools for measuring public discourse, this Note seeks to employ a more nuanced set of analytical methods.

B. The Use of Newspapers as a Proxy for Political Attention

The discussion so far has highlighted several shortcomings of Google-style attempts to quantify what we might call the national conversation. By contrast, I argue that historical newspapers provide an ideal barometer for measuring Ackerman's constitutional moments hypothesis. In order to effectively utilize topic modeling as a tool for testing Ackerman's ideas, this Note required a sufficiently large corpus of documents relating to a single constitutional moment. Many sources of text, particularly for the modern era, are part of

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79. GOOGLE TRENDS, http://www.google.com/trends (last visited Feb. 7, 2013).

80. GOOGLE BOOKS NGRAM VIEWER, http://books.google.com/ngrams (last visited Dec. 24, 2012).

81. Patricia Cohen, *Five-Million-Book Google Database Gets a Workout, and a Debate, in Its First Days*, N.Y. TIMES: ARTS BEAT (Dec. 21, 2010, 4:08 PM), http://artsbeat.blogs.nytimes.com /2010/12/21/five-million-book-google-database-gets-a-workout-and-debate-in-its-first-days.

82. *See* Geoffrey Nunberg, *Counting on Google Books*, CHRON. OF HIGHER EDUC. (Dec. 16, 2010), http://chronicle.com/article/Counting-in-Google-Books/125735 (summarizing criticisms of using Ngram data in scholarship); *see also* Jean-Baptiste Michel et al., *Quantitative Analysis of Culture Using Millions of Digitized Books*, 331 SCIENCE 176 (2011) (coining the term "culturomics" to describe the quantitative study of culture using text aggregation).

proprietary databases whose licensing agreements do not allow a researcher to download the entire corpus.[83] One database, however, is ideal for the methodological technique applied in this Note. The National Digital Newspaper Program (NDNP) is a partnership between the National Endowment for the Humanities, the Library of Congress, and various states to create digitized records of historical newspapers published between 1836 and 1922.[84] The NDNP database includes digitized, PDF scans of newspapers by page, searchable text using optical character recognition (OCR), and a robust system of metadata indexing each newspaper and edition.[85] The newspapers are accessible through the Library of Congress's Chronicling America website,[86] which allows users to search by state, newspaper, keyword, and date range. Critically for independent researchers, the Library of Congress does not restrict access to the underlying data, including metadata.[87] The Chronicling America database uses an open-source web-based architecture such that anyone can write a script using common programming languages to download newspaper pages and their associated metadata.[88] Brandon Stewart and I utilized a custom script to assemble our datasets from the Chronicling America servers.

In order to understand the nature of this data, it is helpful to have a sense of newspapers in circulation during the 1860s. Researchers at Stanford have created a visualization depicting the evolution of newspaper publishing in the United States from 1690 through 2011. By their count, there were at least 4,459 newspapers in circulation in the United States by 1860, including 596 daily

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83. Because commercial databases typically do not allow these kinds of downloads, a growing number of researchers have suggested that, as data-mining technology becomes more accessible in the scholarly community, commercial text databases will need to consider new licensing arrangements that allow users to explore the entirety of the database at once rather than using the document-by-document paradigm of keyword searching. *See, e.g.*, Alastair Dunning, Ian Gregory & Andrew Hardie, *Freeing Up Digital Content with Text Mining: New Research Means New Licenses*, 22 SERIALS 166 (2009), http://uksg.metapress.com/content /p07711g325354098/fulltext.pdf.

84. *National Digital Newspaper Program*, NAT'L ENDOWMENT FOR THE HUMAN., http://www.neh.gov/divisions/preservation/national-digital-newspaper-program (last visited Apr. 29, 2012).

85. *See The National Digital Newspaper Program (NDNP) Technical Guidelines for Applicants*, LIBR. OF CONGRESS (Sept. 20, 2011), http://www.loc.gov/ndnp/guidelines/NDNP _201214TechNotes.pdf.

86. *Chronicling America: Historic American Newspapers*, LIBR. OF CONGRESS, http://chroniclingamerica.loc.gov (last visited Apr. 29, 2012).

87. In other words, it is easy to access information at the article level about the associated newspaper, publication date, and the location of the online PDF file.

88. *See About the Site and API*, LIBR. OF CONGRESS, http://chroniclingamerica.loc.gov/about/api (last visited Apr. 29, 2012) (explaining how to access the data).

papers, 3,662 weekly or biweekly publications, and 104 periodicals published less frequently.[89]

Before moving forward, it is important to defend my choice to use newspapers as a proxy for public discourse during this period. Here, we have to remember that the legitimizing mechanism of Ackerman's theory is the notion of popular attention (in Ackerman's nomenclature, the distinction between *private* citizens in times of normal politics and *public* citizens in times of constitutional politics).[90] Because voters in times of higher lawmaking are supposedly paying attention to a specific constitutional question, their participation in key elections provides the imprimatur of popular sovereignty for constitutional change outside the Article V framework. It is possible to study other collections of relevant historical documents, such as the *Congressional Record*, using algorithmic analysis. In that case, however, the validity of the results would, presumably, be limited to depicting the conversation in Washington—and even then, only among congressmen rather than among federal elites more generally. Other empirical approaches to evaluating "constitutional moments" have emphasized the voting patterns of members of the Supreme Court, attempting to detect ideological shifts among members at critical junctures.[91] The crux of Ackerman's theory, however, is that constitutional change happens when lawmaking conversations among elites reach a moment of impasse and then spill out into the broader polity. The use of newspapers should allow us to glimpse this moment more clearly. This is because newspapers serve a key translation function, filtering elite political conversations and representing them to the broader electorate.[92] If the average voter truly is paying *special* attention to an issue of constitutional importance because the national dialogue demands it, then this Note hypothesizes that there ought to be some empirical evidence of that fact in the broader channels of local and national communication.

89. *Data Visualization: Journalism's Voyage West*, BILL LANE CENTER FOR THE AM. W. (June 20, 2012), http://www.stanford.edu/group/ruralwest/cgi-bin/drupal/visualizations /us_newspapers (data available by filtering visualization by "publication frequency").

90. 1 ACKERMAN, *supra* note 4, at 230-43.

91. *See, e.g.*, Ho & Quinn, *supra* note 18 (using a Bayesian learning model to demonstrate the shift in Justice Roberts's voting patterns around the seminal case of *West Coast Hotel v. Parrish*, 300 U.S. 379 (1937)).

92. *See, e.g.*, Maxwell E. McCombs & Donald L. Shaw, *The Agenda-Setting Function of Mass Media*, 36 PUB. OPINION Q. 176, 185 (1972) ("The media are the major primary sources of national political information; for most, mass media provide the best—and only—easily available approximation of ever-changing political realities.").

I recognize that my use of newspapers as a proxy for popular discourse rests on the assumption that the media does, in fact, reflect the broader national conversation about salient political issues. This claim is open to challenge. Social scientists engaged in content analysis have long recognized that such studies often have embedded causal assumptions that require interrogation. As one 1967 study put it, "[M]essages filter through a number of gates, and some of these gates neutralize or exaggerate the effects produced at other phases in the communication process. . . . [O]ne must view messages as only indirect indicators of the underlying variables being studied."[93] Even with this caveat in mind, it remains the case that the nature of media coverage is pertinent to our conception of constitutional politics. Whether we view the media as transmitting messages from political elites or, alternatively, satisfying readers' demands for news relating to topics of intense popular interest, evidence regarding the salience of political questions in moments of constitutional significance is still informative when evaluating the claim that citizens are *particularly* engaged in constitutional thinking at these critical junctures.

Here, a word on the nineteenth-century press is in order. It is widely understood that the media during this period was a "party press," with most newspapers consistently expressing affiliation with one party or another. These parties, in turn, attempted to influence newspapers through the awarding of lucrative government contracts and the allocation of patronage jobs to newspaper editors.[94] One critique that might be leveled at the choice of newspapers as my unit of investigation, then, is that, during this historical period, newspapers operated as instruments of partisan influence rather than as reflections of popular opinion.[95] My response is threefold. First, the extent to which partisan newspapers attempted to shape, rather than reflect, political debate is uncertain. By the middle decades of the nineteenth century,

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93. Robert Edward Mitchell, *The Use of Content Analysis for Explanatory Studies*, 31 PUB. OPINION Q. 230, 237 (1967).

94. Matthew Gentzkow et al., *Do Newspapers Serve the State? Incumbent Party Influence on the US Press, 1869-1928*, at 2 (Nat'l Bureau of Econ. Research, Working Paper No. 18164, 2012), http://faculty.chicagobooth.edu/matthew.gentzkow/research/PoliticalInfluence.pdf (describing how politicians would "funnel resources to friendly outlets" and "contributed money to start new newspapers and bailed newspapers out when they were in financial trouble").

95. This debate continues with respect to modern media. *See* Matthew A. Baum & Phillip B.K. Potter, *The Relationships Between Mass Media, Public Opinion, and Foreign Policy: Toward a Theoretical Synthesis*, 11 ANN. REV. POL. SCI. 39, 50 (2008) (comparing "indexing" theories that perceive the media as a "conduit for elite messages" with "gatekeeper" theories that emphasize how "journalists shape news").

newspapers were shifting from being pure organs of political parties to becoming more commercially driven business enterprises.[96] During this period it was more common for newspapers to be privately owned, subjecting them to competitive capitalist pressures that pushed them to appeal to a broad customer base rather than a narrow political constituency.[97] Second, the partisanship of newspapers no doubt varied by time and place. New empirical research has shown that there is little evidence, for example, of a relationship between partisan control of state government and the circulation of partisan newspapers from the period from 1869 to 1928.[98] Third, even within partisan coalitions, different newspaper publishers would have demonstrated variegated, rather than monolithic, political opinions.[99]

Acknowledging that newspapers may have been attempting to push a particular political agenda does not invalidate their use for testing the dualist-democracy thesis. I have chosen newspapers as my investigative tool not because they perfectly capture the zeitgeist, but rather because they provide us with a good barometer for measuring trends in political discourse more generally. While different papers may evince sharp differences in the presentation of news depending on their partisan affiliation, topic modeling should still detect the volume of coverage dedicated to particular issues and how that volume changed over time. In other words, even if the press were attempting to drive a party line, a spike in discussion of constitutional topics would still tend to confirm Ackerman's theory, just as the lack thereof would call it into question.

Another potential objection to this Note's methodology is that newspapers could focus their coverage on political elites to such an extent that topic modeling would fail to capture my actual variable of interest—the salience of issues among the public—and instead would only measure shifts in elite opinion. Relatedly, one might argue that the media itself causes shifts in public perception of issue salience by focusing on particular topics rather than

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96. GERALD J. BALDASTY, THE COMMERCIALIZATION OF NEWS IN THE NINETEENTH CENTURY 36-38 (1992) (discussing broader social and economic forces speeding the transition away from the antebellum party press).

97. Gentzkow et al., *supra* note 94, at 2.

98. *Id.* at 3. The one notable exception to this trend is the Reconstruction South. As statehouses fell out of Republican hands and Democrats once again took control, the daily circulation share of Democratic newspapers increased by approximately ten percentage points. *Id.* at 4.

99. *See, e.g.*, Peter Kolchin, *The Business Press and Reconstruction, 1865-1868*, 33 J. S. HIST. 183, 184, 187 (1967) (demonstrating that the Northern business press was highly critical of Radical Republicans and eager to restart trade with the South).

others.[100] Evidence suggests that one's choices in media consumption can influence one's perception of issue salience, particularly the salience of issues in the community at large.[101] Contemporary models of media behavior thus emphasize that the interactions between the media, political elites, and public opinion are part of a dynamic system.[102] The fact that the media exerts some power over public perceptions, however, does not invalidate the notion that topic modeling of newspapers can help elucidate public perceptions. While the media's role as an arbiter of public information might attenuate the connection between media coverage and public sentiment, there is no reason to believe that it severs it altogether. To be sure, using newspapers as a proxy for public opinion means that I am deploying a secondary variable to try to capture the popular political mood. The alternative, however, is a world in which the assumptions of the dualist-democracy thesis remain untested. Seeing through a glass, albeit darkly, is better than not seeing at all.

Moreover, while these objections are worthy of serious consideration, this Note's methodology also has a number of significant advantages. First, topic modeling allows the synthesis of an extraordinary amount of data, minimizing potential selection bias that might limit the validity of my results if I relied on a smaller dataset. Second, because text analysis is algorithmic, there is little possibility for ex ante bias from a researcher trying to massage the data one way or another. Even where researchers attempt to manually code topics using objective standards, "condensing the information in a large text requires a great deal of thought, expertise, and good-sense" such that "purely qualitative

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100. *See* Jürgen Habermas, *Does Democracy Still Enjoy an Epistemic Dimension?*, 16 COMM. THEORY 411, 419 (2006) ("Those who work in the politically relevant sectors of the media system . . . cannot but exert power, because they select and process politically relevant content and thus intervene in both the formation of public opinions and the distribution of influential interests.").

101. *See* Diana C. Mutz & Joe Soss, *Reading Public Opinion: The Influence of News Coverage on Perceptions of Public Sentiment*, 61 PUB. OPINION Q. 431, 446 (1997) (reporting results of an empirical study indicating that reading a particular newspaper does not affect issue salience on an individual basis, but does affect perceptions of issue salience in the community).

102. *See, e.g.,* TIMOTHY E. COOK, GOVERNING WITH THE NEWS: THE NEWS MEDIA AS A POLITICAL INSTITUTION 12 (1998) (describing newsmaking as an interactive process in which "[p]olitical actors and journalists (and only occasionally citizens) interact in a constant but implicit series of negotiations over who controls the agenda"). Some political scientists have questioned whether party polarization and the rise of twenty-four-hour cable news have fundamentally altered this dynamic. *See, e.g.*, LAWRENCE R. JACOBS & ROBERT Y. SHAPIRO, POLITICIANS DON'T PANDER: POLITICAL MANIPULATION AND THE LOSS OF DEMOCRATIC RESPONSIVENESS (2000) (arguing that political elites increasingly push ideological messages through savvy manipulation of the media, making the political system less responsive to the preferences of the median voter).

summaries of a text are often open to debate and highly contested."[103] Ultimately, the debate over using the press as a window into popular opinion is one about *how* robust my results are. The relevant backdrop is one in which Ackerman provides no quantitative support whatsoever for his dualist-democracy thesis.

Moreover, while it is possible to critique newspapers as a source for historical analysis, historians themselves are increasingly turning to text analysis as a tool for scholarly research. In 2006, Sharon Block, a history professor with a research focus on gender and sexuality issues in colonial America, proposed using this technique to supplement traditional, document-based research.[104] As Block explained, a researcher wanting to explore early American newspapers in the 1990s had no choice but to read hundreds of prints on microfilm. By the late 1990s, the advent of two new technologies—CD-ROMs and keyword searching—moved newspaper research out of the needle-in-a-haystack paradigm. Now, modern computer algorithms and more extensive text digitization have moved documentary research into the twenty-first century. As technology has improved and newer software packages have become available, it has become easier than ever for researchers to capitalize on topic modeling of historical sources.

These past approaches, however, tend to be descriptive in nature and focus on just a single source or small collection of sources.[105] The approach proposed in this Note is novel in that it attempts to put a single historical period—the debate over the Fourteenth Amendment—under the analytical microscope using a topic model that analyzes hundreds of different newspapers from across the entire country. The only other research project that appears to have adopted anything close to this kind of expansive scope is the Mapping Texts partnership between the University of North Texas and Stanford University.[106]

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103. Kevin M. Quinn et al., *How To Analyze Political Attention with Minimal Assumptions and Costs*, 54 AM. J. POL. SCI. 209, 212 (2010).

104. David J. Newman & Sharon Block, *Probabilistic Topic Decomposition of an Eighteenth-Century American Newspaper*, 57 J. AM. SOC. INFO. SCI. & TECH. 753 (2006); Sharon Block, *Doing More with Digitization*, COMMON-PLACE (Jan. 2006), http://www.common-place.org/vol -06/no-02/tales.

105. *See, e.g.*, Robert K. Nelson, *Mining the* Dispatch, DIGITAL SCHOLARSHIP LAB: U. RICH., http://dsl.richmond.edu/dispatch/pages/intro (last visited Nov. 1, 2012) (presenting topic models for the *Richmond Daily Dispatch* from November 1860 through April 1865).

106. The partnership produced a white paper detailing its goals and methodological approach. Andrew J. Torget et al*., Mapping Texts: Combining Text-Mining and Geo-Visualization To Unlock the Research Potential of Historical Newspapers* (Nat'l Endowment for the Humanities White Paper, 2012), http://mappingtexts.stanford.edu/whitepaper/Mapping Texts_WhitePaper.pdf.

This project, funded with a $50,000 grant from the National Endowment for the Humanities,[107] involved combining historical Texas newspapers from the Chronicling America database with language-analysis tools (including topic modeling)[108] and mapping technology. The resulting web-based interface allows users to explore over 232,000 pages of Texas newspapers appearing in print between 1829 and 2008.[109] Substantively, however, the Mapping Texts data is broad but not deep, relying on a handful of Texas newspapers scattered across a small number cities. While certainly helpful for some purposes, this relative paucity of data is not as useful for a researcher seeking a nuanced understanding of a particular historical period.

C. Methodology

The empirical model developed in this Note uses a method of text analysis known as unsupervised topic modeling. Unsupervised learning is a form of machine learning that estimates groupings of documents from the documents themselves without importing any assumptions ex ante from the researcher.[110] These partitions, called clusters, represent a division of the topics based on some set of features in the documents. These strategies are often used to model the topics of documents.[111] In order to turn text into data, each document is run through a processing algorithm. First we throw out punctuation, formatting and word order. Each document is then represented as a count of the words it contains. After this initial processing, it is possible to run one of the many available unsupervised learning algorithms. For each collection of documents (such as a set of newspaper pages), the algorithm returns a set number of "word groupings," or clusters, that tend to appear together.

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107. *Grant Number HD-51188-10*, NAT'L ENDOWMENT FOR THE HUMAN., https://securegrants.neh.gov /publicquery/main.aspx?f=1&gn=HD-51188-10 (last visited Nov. 1, 2012).

108. *See* Tze-I Yang, Andrew J. Torget & Rada Mihalcea, *Topic Modeling on Historical Newspapers*, 2011 ASS'N FOR COMPUTATIONAL LOGISTICS, WORKSHOP ON LANGUAGE TECH. FOR CULTURAL HERITAGE, SOC. SCI. & HUMAN. 96, http://aclweb.org/anthology-new/W/W11/W11-15.pdf (detailing technical approaches applied to the Mapping Texts project).

109. *Data and Source Materials for Mapping Texts*, MAPPING TEXTS, http://www.mappingtexts.org /data (last visited Nov. 1, 2012).

110. *See* Blei, *supra* note 10.

111. *See, e.g.*, Justin Grimmer & Gary King, *Quantitative Discovery from Qualitative Information: A General-Purpose Document Clustering Methodology*, 108 PROC. NAT'L ACAD. SCI. 2643 (2011); Burt L. Monroe, Michael P. Colaresi & Kevin M. Quinn, *Fightin' Words: Lexical Feature Selection and Evaluation for Identifying the Content of Political Conflict*, 16 POL. ANALYSIS 372 (2008).

Beyond technical specifications,[112] the only user input in this process is the number of clusters to be estimated. There is no "correct" number of clusters. The model deployed here strikes the balance at twenty. The algorithm thus uncovers the natural structure of the data. A "topic" is just a cluster that groups together words that are more likely to appear with one another across the corpus. The mathematical function underlying these probability clusters is known as latent Dirichlet allocation.[113] By distilling a collection of documents into topics, we can get a quick-look sense of what the documents are about and the nature of their subject matter. In short: the input in this model is the OCR text from a collection of historical newspaper pages; the output is a set of twenty clusters that estimate the most prevalent topics across the collection.

In essence, topic models are a useful way to group like documents together, and they allow us to capture the issues discussed in the full corpus of documents simultaneously.[114] By creating the taxonomy of topics after the fact, the goal is to create a complete accounting of issues throughout the corpus with little a priori knowledge. This approach is dramatically different from, for example, a Google Trends model that simply functions as a crude tally of particular words. The result of the model should be an index over both time and space of the topics discussed in the American public sphere.

In order to understand the utility of topic modeling, it is helpful to have a sense of other studies that have employed this particular research technique. One paper in this area, by computer scientists David M. Blei and John D. Lafferty, applied topic modeling to a set of thirty thousand articles appearing in the journal *Science* between 1881 and 1999.[115] The results reveal a great deal of information about how scientific discourse has changed over time. For example, their study includes a graph charting the frequency of words relating to the topic "atomic physics."[116] The graph depicts a marked decline in the frequency of the word "matter," the rise and fall of the word "electron," and the sharp jump of the word "quantum" in the latter half of the twentieth century.

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112. *See* Daniel Young, *How Do You Measure a Constitutional Moment: Online Appendix* (2013), http://www.people.fas.harvard.edu/~bstewart/YLJ/index.cgi.

113. *See* David Blei, Andrew Y. Ng & Michael I. Jordan, *Latent Dirichlet Allocation*, 3 J. MACHINE LEARNING RES. 993 (2003) (introducing the technique).

114. For a general discussion of text analysis's benefits (and limitations), see Justin Grimmer & Brandon M. Stewart, *Text as Data: The Promise and Pitfalls of Automatic Content Analysis Methods for Political Texts*, POL. ANALYSIS (forthcoming), http://www.stanford.edu/~jgrimmer/tad2.pdf.

115. David M. Blei & John D. Lafferty, *Dynamic Topic Models*, 2006 PROC. 23RD INT'L CONF. MACHINE LEARNING 113, http://www.cs.princeton.edu/~blei/papers/BleiLafferty2006a.pdf.

116. *Id.* at 118.

Topic modeling has also proven fruitful for political scientists. Researchers have used topic modeling to study everything from speeches in the *Congressional Record*[117] to Senate press releases.[118] These applications of textual analysis illustrate the advantages of topic modeling for testing Ackerman's theory of dualist democracy. First, because the model requires no ex ante information about the topics themselves, it provides a more objective sense of the national conversation than user-generated keyword searches do. Since the objective of this Note is to test a historical hypothesis, this is a crucial advantage. Because topic modeling does not import preexisting assumptions into the structure of the results, observing topics that focus on constitutional politics provides strong evidence that such topics were prominent in the national dialogue. Second, the model can track changes over time, potentially uncovering critical differences in the way newspapers discussed constitutional issues when comparing the beginning of the debate over ratification of the Fourteenth Amendment to the end.

These substantive benefits only augment the practical advantages of topic modeling. Before machine learning, a traditional analysis of massive document collections would involve human coders manually assigning individual newspaper articles to a list of predefined topics. Not only is such an approach resource intensive, but it is also likely to result in human errors (including those that might result from latent biases) that can undermine its validity. Finally, topic modeling of historical newspapers provides a window into public opinion and national discourse that, in the absence of modern polling data, would simply be unavailable for the Reconstruction Era. In the past, gaining a sense of the public zeitgeist around key political events required immersion in thousands of documents and was subject to the interpretative proclivities of whatever historian was up to the task.[119] While there is extraordinary value in this kind of synthesis, it also requires an extraordinary outlay of time and effort. It is, in short, the work of professional historians laboring over years to understand small slivers of historical time. By contrast, algorithmic topic modeling allows us to glean some sense of public discourse in a much more rapid fashion. While we lose the texture of professional historical analysis,

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117. Quinn et al., *supra* note 103.

118. Justin Grimmer, *A Bayesian Hierarchical Topic Model for Political Texts: Measuring Expressed Agendas in Senate Press Releases*, 18 POL. ANALYSIS 1 (2010).

119. As a classic of the genre, see BERNARD BAILYN, THE IDEOLOGICAL ORIGINS OF THE AMERICAN REVOLUTION (1967). *See also* ALFRED YOUNG, WHOSE AMERICAN REVOLUTION WAS IT? HISTORIANS INTERPRET THE FOUNDING 66 (2011) (situating Bailyn within the historiographical debates about the nature of the American Revolution).

topic modeling can assist close readings of primary sources in an economical fashion.

With this understanding of the utility of topic modeling, we can now describe the specific approach of the model utilized here. This Note uses a "mixed-membership" topic model, as opposed to a "single-membership" topic model. In a single-membership model, each document in the text corpus can only belong to a single topic. This makes it ideal for an analysis in which the documents in the corpus tend to focus on a single area, such as congressional press releases.[120] By contrast, this Note uses a mixed-membership topic model. In this algorithm, a single document can belong to multiple topics. This makes sense in light of the fact that each "document" in our text corpus is a single page of newsprint that will contain articles about different subjects.

An additional technique known as hierarchical topic modeling can help reveal yet another aspect of text's structure. In particular, hierarchical modeling reveals how topics arelate to one another. This Note applies a technique known as hierarchical latent Dirichlet allocation. Instead of simply grouping words together in probabilistic clusters, as in a standard topic model, a hierarchical model reveals the structure of the overall corpus. The result of a hierarchical model is thus a "topic tree" rather than a list of topics. This adds another layer to our understanding of what "people are talking about" in the newspaper corpus.

There are several other technical parameters relating to the algorithm itself. The technical Appendix at the conclusion of this Note contains further information.

D. Data

I apply an unsupervised topic model to four original datasets that Brandon Stewart and I extracted from the Chronicling America database. A summary of the scope of these sets appears in Table 1. The "words modeled" metric refers to the total number of words included in the topic model after eliminating vocabulary "noise" in the form of common or idiosyncratic words.

First, I analyze the front pages of all newspapers that appeared between June 1, 1866, and December 31, 1866. Second, I analyze the front pages of all newspapers appearing between June 1, 1868, and December 31, 1868.[121] These two datasets help address the missing link in Ackerman's argument: Was the

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120. *See* Grimmer, *supra* note 118.

121. A list of all newspapers and associated page counts for all four datasets is available in the accompanying web appendiex for this Note (on file with author).

public in fact paying sustained attention to the ratification debate in a manner consistent with higher lawmaking? The decision to limit these first two datasets to front pages was in part practical and in part substantive. In terms of practicality, modeling only the front pages of newspapers provides a more manageable dataset. It also has the effect of cutting out a great deal of extraneous content, such as advertisements, obituaries, and other newspaper staples that are not pertinent to this project. Substantively, limiting the data to front pages further emphasizes the salience metric in which we are interested. By only modeling articles in the most prominent part of the newspaper, I focus my attention on those stories the media deemed most important during this critical period.

Table 1.
DESCRIPTION OF DATASETS

DATASET	NUMBER OF ARTICLES	NUMBER OF WORDS MODELED
Front pages June 1, 1866 - December 31, 1866	2,000[122]	1,376,291
Front pages June 1, 1868 – December 31, 1868	2,612	1,710,031
All pages containing keyword "constitution" January 1, 1866 – December 31, 1868	5,000	18,652,124
Front pages June 1 – December 31 1866, 1868, 1870, 1872, and 1884	15,322	10,806,424

The third dataset is a subset of all newspaper pages (not just front pages) appearing between January 1, 1868, and December 31, 1868, in which the

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122. Because Brandon Stewart and I assembled the data on our own using a script that pulled the articles off the Library of Congress's servers, it is not clear why this dataset and the third dataset contain round numbers of articles. It is possible that the script failed, the Library of Congress's servers capped the download, or some combination of the two. A search of the Chronicling America database on January 17, 2013, returned 2,561 front pages appearing between June 1, 1866, and December 31, 1866. Likewise, a search for the word "constitution" between January 1, 1866, and December 31, 1868, returned 7,992 hits. While the first and third data sets are thus not exhaustive, there is no reason to believe they are systematically biased in a way that would frustrate our purposes here. Since we began this project, in part due to our communications with the Library of Congress, the entire Chronicling America dataset is now available as a direct multi-terabyte download. We commend the Library for making this valuable resource fully available to the public.

keyword "constitution" appears. This set will help us track how constitutional discourse changed over the course of our two-year period of interest. By using keyword searches, we lose breadth but gain depth in terms of exploring a particular subtopic in greater detail.

The fourth dataset consists of every newspaper front page appearing between June 1 and December 31 for the years 1866, 1868, 1870, 1872, and 1884. This set will provide us with a baseline to compare the prevalence of constitutional topics during early Reconstruction with the prevalence during later periods of comparatively "normal" politics.

One potentially troubling characteristic of the data is worth underscoring: the poor quality of the scanned OCR text. A typical page from the Chronicling America database is riddled with scanning errors, resulting in an estimated OCR validity of only around forty percent.[123] For certain kinds of inquiry, such as keyword searches, this poor quality can be extremely problematic. One advantage of topic modeling, however, is that the goal is to analyze a large corpus of text for key language patterns and word clusters. Because topic modeling analysis operates at one degree of abstraction from the words themselves—that is, looking for general patterns across thousands of pages rather than semantic accuracy in a handful of excerpts—the poor quality of the OCR in our corpus is not as problematic as it might otherwise be. One study that systematically examined the effect of OCR errors in topic modeling found "a surprisingly good correlation between the topics learned on the clean data [without OCR errors] and those learned on the corrupted data [with OCR errors]."[124] OCR errors are not entirely unproblematic, as the study noted that corrupted text can make it more difficult to cleanly distinguish topics.[125] Nonetheless, it seems likely that the distribution of OCR errors across the text corpus is more or less random, such that the presence of scanning errors should not bias the results of the topic model in any particular direction. All things considered, topic modeling remains an especially attractive methodological technique in light of the coding errors common in scans of historical newspapers.

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123. *See, e.g.*, *Wherein a Confederate Bull Gores a Federal Ox*, SHREVEPORT NEWS, June 12, 1866, http://chroniclingamerica.loc.gov/lccn/sn83016484/1866-06-12/ed-1/seq-1.pdf (OCR text available at http://chroniclingamerica.loc.gov/lccn/sn83016484/1866-06-12/ed-1/seq-1/ocr) (indicating that for many articles, the OCR text is at times practically illegible).

124. Daniel D. Walker, William B. Lund & Eric K. Ringger, *Evaluating Models of Latent Document Semantics in the Presence of OCR Errors*, PROC. 2010 CONF. ON EMPIRICAL METHODS NAT. LANGUAGE PROCESSING 240, 247, http://aclweb.org/anthology-new/D/D10/D10-1024.pdf.

125. *Id.* at 247.

Even if OCR errors do not undermine the validity of topic modeling, they can clutter up topic models with "nonsense" words formed by clusters of common errors (such as "teh" instead of "the"). In order to minimize this problem, Brandon Stewart and I applied a multi-step "cleansing" process to the raw OCR data from the Chronicling America database. The first step was to compare the raw text with a corpus of historical English.[126] We created a total count for every word in the English language corpus and then removed any words from our data that did not appear at least five hundred times in the corpus. Second, we pruned the OCR data by removing any words that appeared in more than ninety-nine percent of documents or less than one percent of documents. Finally, we removed any word with fewer than five characters and verified all other words against the corpus of historical English.[127] Only after applying these steps did we run the newspaper text through the modeling algorithm.

III. RESULTS

I ran an unsupervised topic model across all four datasets.[128] The results provide empirical support for Ackerman's thesis about constitutional politics during Reconstruction. My first hypothesis was that there would be evidence of constitutional discourse in the months before the key elections of 1866 and 1868. For both elections the data reveal multiple topics relating to constitutional-level debates. This tends to confirm the first hypothesis regarding the prevalence of constitutional topics. My second hypothesis was that the salience of constitutional issues would spike during the period from 1866 to 1868 and gradually decline as the country left a period of higher lawmaking and returned to normal politics. Keyword validation and topic modeling on data spanning the years from 1866 to 1884 illustrate that the salience of constitutional issues during the debate over the Fourteenth Amendment was especially high relative to later levels. This pattern tends to confirm my second hypothesis.

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126. Mark Davies, THE CORPUS OF HISTORICAL AMERICAN ENGLISH: 400 MILLION WORDS, 1810-2009 (2010), http://corpus.byu.edu/coha.

127. This final step might appear to be overkill, but past experience with the raw OCR data taught us that less robust filters resulted in topics full of "nonsense" words due to the sheer prevalence of OCR errors in the data. Moreover, we reasonably assume that word length is randomly distributed across topics such that this rather draconian step should not substantively affect the final list of topics.

128. For a more detailed description of our technique, see the Online Appendix *supra* note 112.

These results support Ackerman's argument that popular discourse focused on constitutional politics during the key elections of 1866 and 1868. Without any specifications ex ante, unsupervised topic modeling of contemporary news sources indicates a sustained focus on the issues that we would expect to see if this period represented a true "constitutional moment."

A. Hypothesis 1: Evidence of Constitutional Discourse

The first key question is whether there is evidence of constitutional discourse during the period from 1866 to 1868. To answer this question, I first consider the elections of 1866 and 1868 in isolation. Then I consider the structure of political discourse across this two-year period as a whole.

1. The 1866 Election

Figure 1.

WORD CLOUD OF NEWSPAPER ARTICLES BEFORE THE 1866 ELECTION

In order to quantify constitutional discourse leading up the 1866 congressional elections, this Note analyzes two thousand news articles

published between June 1, 1866, and December 31, 1866, which in total contained 1.4 million modeled words.[129] A word cloud of these words (Figure 1) provides a quick-glance sense of the major themes appearing in these articles.[130] In the word cloud, font size is proportional to the prevalence of a particular word.

While the impressions one can draw from the word cloud are holistic at best, there is a clear clustering of words that seem to relate to constitutional-level issues, including: law, government, right, national, convention, amendment, and the word "constitutional" itself.

Table 2.

TOPICS FOR 1866 ELECTION

TOPIC	FREQUENCY	WORDS
1	2.73%	county, house, store, office, senate, members, smith, court, democratic, premium, block, davis, claim, prices, dealers
2	4.21%	prussian, austrian, austria, prussia, italy, italian, battle, prince, troops, london, enemy, field, emperor, attack, corps
3	5.86%	report, would, united, killed, cable, clock, states, italy, other, taken, night, august, until, arrived, court
4	4.03%	dollars, hundred, majority, union, thousand, republican, treaty, states, twenty, county, eighteen, district, james, election, article
5	8.37%	**states, government, union, constitution, congress, united, national, right, amendment, people, power, would, country, shall, rebellion**
6	4.90%	street, store, sweet, columbia, prices, received, other, sugar, manufacture, insurance, perfume, stock, business, weekly, above
7	5.33%	would, county, warren, asked, young, ladies, street, mother, could, think, leave, before, thing, night, married
8	3.09%	street, virginia, county, territory, montana, missouri, months, miles, proprietor, oregon, attention, river, wallace, office, indian
9	4.35%	could, water, train, night, first, soldiers, would, still, found, vermont, killed, little, heart, through, seemed
10	4.03%	friends, great, church, before, himself, country, ladies, young, radical, present, though, mother, christian, story, nothing

129. The phrase "modeled words" refers to total words in the topic model after the raw text has been cleaned to eliminate OCR errors. *See supra* note 127 and accompanying text.

130. We used a publicly available software package to generate the word clouds. Ian Fellows, *wordcloud: Word Clouds*, THE COMPREHENSIVE R ARCHIVE NETWORK (Sept. 11, 2012), http://CRAN.R-project.org/package=wordcloud.

Table 2 continued.

TOPIC	FREQUENCY	WORDS
11	**5.37%**	**states, government, union, rebel, south, president, national, congress, johnson, party, convention, treason, against, united, right**
12	4.10%	little, would, should, never, shall, could, every, world, woman, ladies, heart, thing, thought, people, replied
13	7.16%	december, report, united, mexico, morning, troops, general, steamer, market, court, clock, yesterday, quiet, government, majority
14	4.20%	columbia, charleston, diseases, cents, company, prices, notice, store, sugar, received, fisher, medicine, stock, carolina, weekly
15	**5.10%**	**convention, delegates, committee, president, election, meeting, would, union, party, resolution, nomination, report, appointed, motion, adopted**
16	5.14%	states, november, charleston, cotton, south, carolina, government, railroad, would, general, flour, president, arrived, leave, bonds
17	8.25%	nashville, street, tennessee, states, cotton, diseases, union, agent, united, college, court, stock, terms, company, commission
18	**5.99%**	**shall, states, united, persons, district, provided, enacted, court, section, dollars, hereby, further, other, amendment, approved**
19	3.32%	cheers, warren, states, people, great, country, applause, davis, general, committee, soldiers, those, citizens, right, south
20	4.46%	every, block, dealers, market, other, street, clothing, water, prices, shoes, physician, fruit, young, beautiful, spring

It is worth pausing here to explain exactly what this data depicts. As summarized in Table 1, we start with a corpus of documents relating to the period between 1866 and 1868. Here, that corpus comprises two thousand front pages of historical newspapers and contains 1,376,291 modeled words (that is, words remaining after the cleaning process aimed at removing OCR errors). We calibrate the algorithmic topic model to produce twenty topics from the corpus. The model then outputs those twenty topics. Each topic is a cluster of words that have a high probability of appearing together across the newspaper pages. The raw topic output is actually a distribution of all words in the corpus vocabulary, divided into discrete clusters with the words appearing in decreasing order of frequency. For readability, I have selected the top fifteen words for each of the twenty topics for inclusion in Table 2 above and in subsequent tables throughout my analysis. The "frequency" of each topic is the proportion of the modeled text in the corpus associated with each discrete

topic, summing to one hundred percent.[131] The model also divides the text of each document in the corpus (here, each newspaper page) across topics.

The results of topic modeling the 1866 data appear in Table 2, with topics relevant to politics (5, 11, 15, 18) shaded in gray and topics that seem especially relevant to constitutional discourse (here, all four) bolded. I adopt this convention throughout the Note. To be clear: which topics receive this "shading" and "bolding" is a matter of subjective judgment on my part, although later in the Note I explore tools for validating these selections.[132] Beyond these political topics, the list includes several groupings that are entirely expected for Reconstruction-era America, including several topics relating to trade and commerce (1, 6, 14, 16, 20) and, perhaps most idiosyncratically, a topic devoted to the 1866 Austro-Prussian War (2).

The topic model developed here also allows for easy graphing of topic prevalence across time. Figure 2 depicts the prevalence of each of the four topics highlighted above along with each topic's associated word cloud. The *y*-axis on each graph represents the proportion of the given topic (that is, its percentage frequency in the corpus relative to the other 19 topics). Each "dot" on the scatterplot is the proportion of the given topic for a particular week during the time period. For two of the topics (5, 18), there was no increase in prevalence between June and December 1866. However, for topics 11 and 15 there was a noticeable uptick around September 1866. In order to determine if these changes were statistically significant, I ran a hypothesis test for nonlinearity (that is, a test to determine if the trend lines could be represented by a straight line).[133] The results indicate that for topics 11 and 15 the change in prevalence was statistically significant.[134] By way of background, the Senate voted to send the Fourteenth Amendment to the states for ratification on June 8, 1866,[135] and the House of Representatives followed suit on June 13.[136] By the

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131. There is a distinction between corpus vocabulary and modeled text. In the sentence, "The quick brown fox jumped over the lazy dog," the word "the" appears twice. The word "the" is thus part of that sentence's corpus vocabulary, but both iterations of the word "the" would be allocated to a discrete topic. Thus, all discrete words in the corpus are associated with one (and only one) topic, but since words appear multiple times in the corpus text, the same vocabulary item can appear in two different topics simultaneously.

132. *See infra* Subsection III.A.3.

133. We used a publically available software package to run these tests. *See* Trevor Hastie, *gam: Generalized Additive Models*, THE COMPREHENSIVE R ARCHIVE NETWORK (Dec. 6, 2011), http://CRAN.R-project.org/package=gam.

134. The *p*-values for topics 5, 11, 15, and 18 were 0.113, 0, 0, and 0 respectively. A *p*-value of less than 0.05 indicates statistical significance at a 95 percent confidence level.

135. CONG. GLOBE, 39th Cong., 1st Sess. 3148 (1866), 3149 (House).

136. *Id.* at 3042 (Senate); *see* 2 ACKERMAN, *supra* note 1, at 174 n.26.
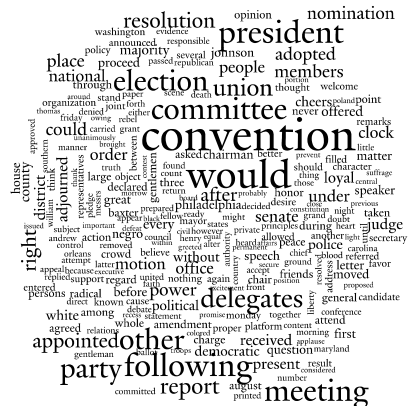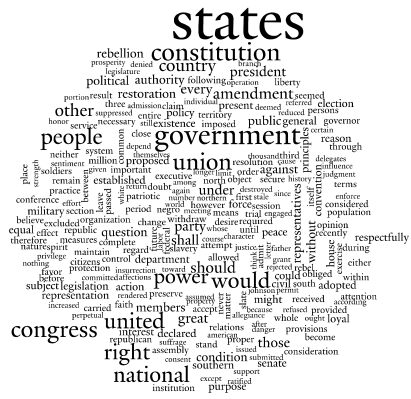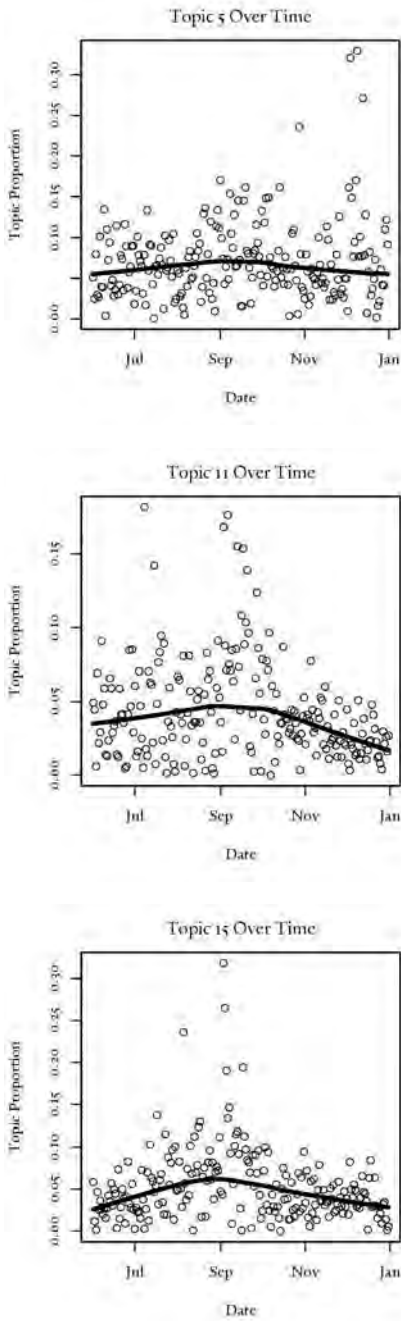
end of 1866, six states had ratified the amendment.[137] Secretary of State William Seward issued a proclamation declaring the requisite 28 states had ratified the amendment on July 20, 1868.[138] These upticks are thus especially interesting: even as states continued to ratify the amendment throughout late 1866 and into 1867, there appears to have been a decline in the salience of constitutional topics following the election.

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137. For a list of state ratification dates, see CONG. RESEARCH SERV., NO. 108-17, THE CONSTITUTION OF THE UNITED STATES OF AMERICA: ANALYSIS AND INTERPRETATION 31 n.6 (2004): Connecticut, June 30, 1866; New Hampshire, July 7, 1866; Tennessee, July 19, 1866; New Jersey, September 11, 1866 (the New Jersey Legislature on February 20, 1868, "withdrew" its consent to the ratification; the Governor vetoed that bill on March 5, 1868; and it was repassed over his veto on March 24, 1868); Oregon, September 19, 1866 (Oregon "withdrew" its consent on October 15, 1868); Vermont, October 30, 1866; New York, January 10, 1867; Ohio, January 11, 1867 (Ohio "withdrew" its consent on January 15, 1868); Illinois, January 15, 1867; West Virginia, January 16, 1867; Michigan, January 16, 1867; Kansas, January 17, 1867; Minnesota, January 17, 1867; Maine, January 19, 1867; Nevada, January 22, 1867; Indiana, January 23, 1867; Missouri, January 26, 1867 (date on which it was certified by the Missouri secretary of state); Rhode Island, February 7, 1867; Pennsylvania, February 12, 1867; Wisconsin, February 13, 1867 (actually passed February 7, but not signed by legislative officers until February 13); Massachusetts, March 20, 1867; Nebraska, June 15, 1867; Iowa, March 9, 1868; Arkansas, April 6, 1868; Florida, June 9, 1868; North Carolina, July 2, 1868 (after having rejected the amendment on December 13, 1866); Louisiana, July 9, 1868 (after having rejected the amendment on February 6, 1867); South Carolina, July 8, 1868 (after having rejected the amendment on December 20, 1866); Alabama, July 13, 1868 (date on which it was "approved" by the Governor); Georgia, July 21, 1868 (after having rejected the amendment on November 9, 1866, Georgia ratified again on February 2, 1870); Virginia, October 8, 1869 (after having rejected the amendment on January 9, 1867); Mississippi, January 17, 1870; Texas, February 18, 1870 (after having rejected the amendment on October 27, 1866); Delaware, February 12, 1901 (after having rejected the amendment on February 7, 1867). The amendment was rejected (and not subsequently ratified) by Kentucky on January 8, 1867. Maryland and California ratified this amendment in 1959.

138. It remains controversial whether Secretary Seward had the necessary ratifications in hand at that point to do so. *See* Michael Stokes Paulsen, *A General Theory of Article V: The Constitutional Lessons of the Twenty-Seventh Amendment*, 103 YALE L.J. 677, 709-11 (1993) (explaining the sequence of events in July 1868).

Figure 2.

SELECTED TOPICS FOR 1866

2. The 1868 Election

In order to evaluate popular discourse leading up to the 1868 general election, I analyzed 2,600 news articles containing 1.7 million modeled words between June 1, 1868, and December 31, 1868. A word cloud of these newspaper pages appears below in Figure 3.

Figure 3.

WORD CLOUD OF NEWSPAPER ARTICLES BEFORE THE 1868 ELECTION

The results of the 1868 topic model appear in Table 3. There are several topics that appear to be related to "normal" politics, including topic 1 (relating to the election itself) and topics 4 and 12 (which appear to be related to standard legislative procedure). Topics 7 and 18, however, seem infused with constitutional rhetoric. These topics are shaded in Table 3. A word cloud of shaded topics appears in Figure 4.

Table 3.
TOPICS FOR 1868 ELECTION

| TOPIC	FREQUENCY	WORDS
1	5.63%	democratic, seymour, convention, nomination, blair, election, negro, candidate, radical, grant, national, president, south, constitution, platform
2	4.30%	should, amount, interest, national, report, currency, government, paper, payment, millions, treasury, indian, company, railroad, notes
3	4.96%	street, bales, yesterday, cotton, orleans, report, night, canal, quiet, wheat, clear, arrested, arrived, board, market
4	4.88%	committee, amendment, senate, resolution, report, motion, election, referred, adopted, moved, adjourned, president, shall, appointed, introduced
5	5.50%	shall, court, persons, constitution, office, section, provided, election, county, bonds, judge, dollars, appointed, required, amendment
6	4.01%	train, leave, montreal, vermont, concord, junction, arrived, stock, smith, connecting, boston, lowell, store, street, clothing
7	**7.02%**	**government, democratic, national, republican, power, right, constitution, grant, union, congress, liberty, rebel, south, political, election**
8	5.39%	little, young, dress, never, woman, women, children, beautiful, church, night, married, heart, fashionable, father, death
9	5.68%	report, majority, meeting, morning, killed, until, total, night, miles, taken, county, third, indian, could, yesterday
10	8.96%	could, little, heart, never, mother, young, thought, words, father, think, voice, asked, child, thing, seems
11	3.30%	stock, dealers, county, style, medicines, silver, price, grant, nigger, block, young, clothing, class, german, business
12	3.62%	election, majority, members, report, street, board, district, committee, republican, county, mayor, return, senate, could, third

Table 3 continued.

| TOPIC	FREQUENCY	WORDS
13	3.78%	hundred, dollars, morning, clerk, class, august, western, report, philadelphia, clock, twenty, spirit, third, arrived, display
14	3.94%	hundred, patent, dollars, national, street, dealers, treaty, millions, twenty, petition, corner, amount, article, avenue, thousand
15	4.34%	street, commission, merchants, stock, acres, island, company, cotton, agent, water, market, boston, miles, business, church
16	5.78%	charleston, wharf, freight, steamer, passage, clock, south, steamship, savannah, leave, baltimore, cabin, carolina, captain, apply
17	4.82%	columbia, fisher, weekly, street, queen, inserted, flour, delight, sugar, daily, south, fresh, price, smoking, carolina
18	**4.27%**	**radical, negro, white, south, tennessee, grant, southern, republican, democratic, president, colored, political, power, peace, members**
19	3.99%	september, street, december, session, school, company, board, charleston, college, monday, institution, president, insurance, railroad, apply
20	5.83%	street, cotton, front, commission, tennessee, merchants, factors, warren, block, agent, court, county, dealers, insurance, store

The prevalence of the political topics (1, 4, 12) over the relevant time period reveals varying patterns. The frequency of topic 1 falls off precipitously after the election (which is to be expected since it appears to capture discourse related directly to the election itself); the prevalence of topic 4 declines throughout the year; and the prevalence of topic 12 gradually rises. Both constitutional topics (7, 18), however, demonstrate a statistically significant uptick in advance of the election.[139] Graphs of each of these topics over time, as well as their associated word clouds, appear in Figure 4.

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139. The *p*-values for topics 7 and 18 using a test for nonlinearity were both 0. *See supra* note 133 and accompanying text.

Figure 4.

SELECTED TOPICS FOR 1868
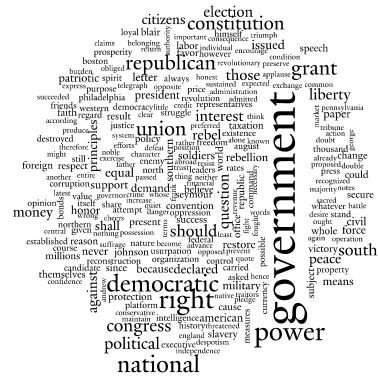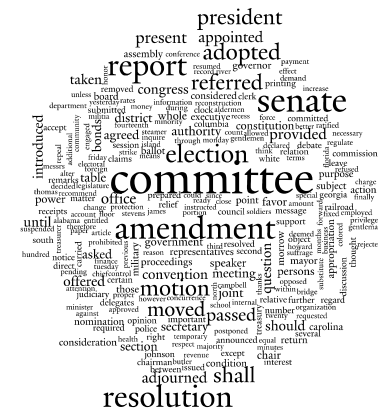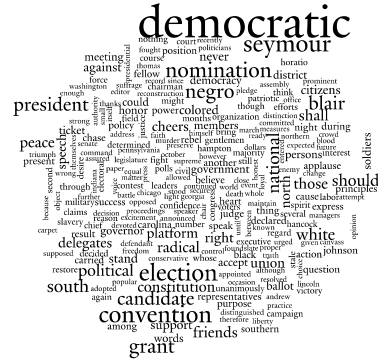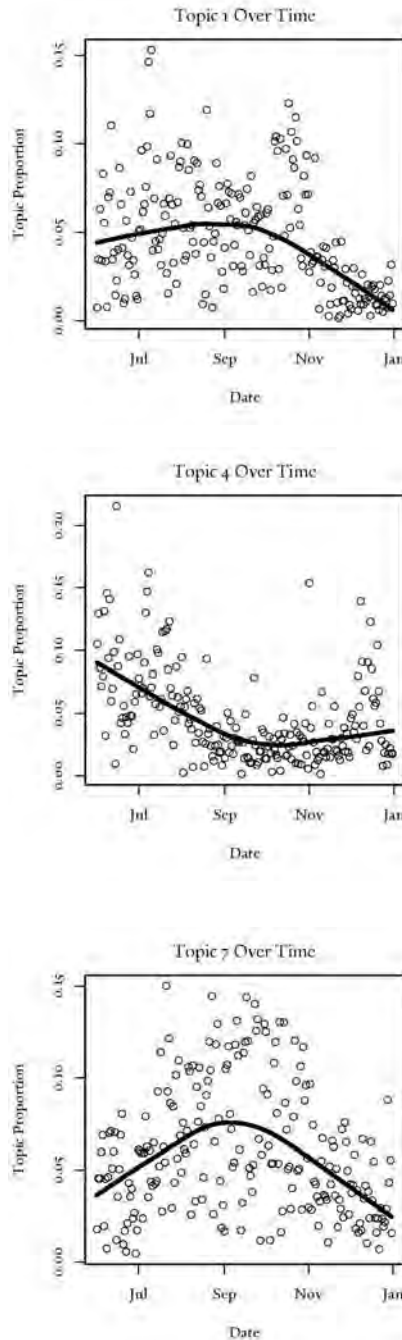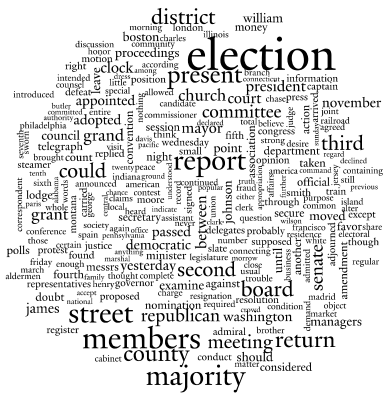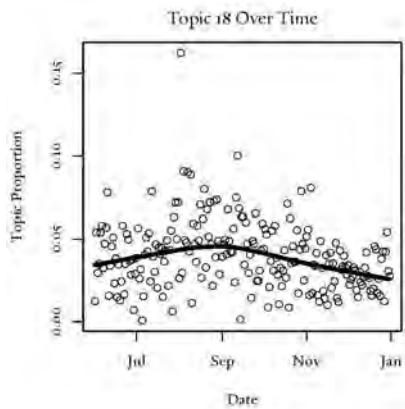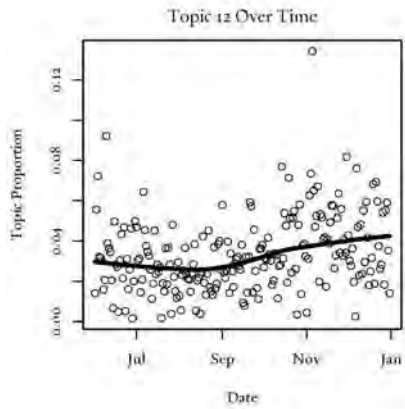
These observations are consistent with Ackerman's interpretation of the 1868 election as one in which popular engagement with constitutional issues helped consolidated the Fourteenth Amendment's controversial ratification.

3. Parsing Out Constitutional Topics

My results so far include two topic models on newspaper front pages published between June 1 and December 31 in both 1866 and 1868. From these models there is strong evidence for two preliminary conclusions. First, the data indicate that there is a significant portion of articles involving political and constitutional discourse in both years. Second, while there is *some* ramping up as the elections approached, this spiking pattern is not consistent across topics in the run-up to the elections of 1866 and 1868.

Standing alone, such conclusions are only partially helpful in evaluating Ackerman's dualist thesis. Indeed, it would be surprising if there were a paucity of articles about politics in the months before the election of 1866 and 1868, particularly in light of the fact that the party press was one of the primary mechanisms for political communication during this period. In order to truly analyze whether the popular discourse during this period reflected the language of "higher lawmaking," we need a more nuanced assessment of the newspapers' content.

One way to analyze discourse during this period is to study the articles themselves. The advantage of topic modeling is that it can help focus such efforts by identifying which pages are especially representative of particular topics.[140] If we start with 1866, we recall that topic 5 (with words such as: states, government, union, constitution, congress, united, national, and right) seemed to indicate higher-level lawmaking discourse. Representative newspaper pages for topic 15 include the August 6, 1866, edition of the *Keowee Courier* (from Pickens Court House, South Carolina)[141] and the December 29, 1866, edition of the *Arizona Miner*.[142] The *Keowee Courier* contains an address to the people of the United States from the national "Arm-in-Arm" National Union Convention in Philadelphia.[143] This convention supported President Johnson against the Republican Congress and invited to Philadelphia those who "wish to sustain the Administration in maintaining unbroken the Union of the States of the Constitution."[144] The Convention's aim was to "organize a new moderate-conservative party" and discredit the Republicans in Congress.[145] Meanwhile, the article from the *Arizona Miner* contains the text of a message from President Johnson to Congress. In the message, President Johnson decries the Republicans' exclusion of Southern legislators and

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140. In an ideal world, we would model newspapers by article rather than by page. The data in the Chronicling America collection, however, does not parse articles this way and only includes metadata at the page level.

141. KEOWEE COURIER (S.C.), Sept. 8, 1866, http://chroniclingamerica.loc.gov/lccn/sn84026912 /1866-09-08/ed-1/seq-1.pdf.

142. ARIZONA MINER, Dec. 29, 1866, http://chroniclingamerica.loc.gov/lccn/sn82016242/1866 -12-29/ed-1/seq-1.pdf.

143. KEOWEE COURIER, *supra* note 141; *see also* 2 ACKERMAN, *supra* note 1, at 179-80 & nn.42-43 (describing the National Union Convention).

144. 2 ACKERMAN, *supra* note 1, at 179.

145. *Id.* at 179-80.

advocates for their readmission.[146] These articles thus clearly fall within the ambit of constitutional discourse, as the model suggests they should.

While we could engage in similar acts of close reading for each of the topics in 1866, and indeed all of the datasets developed for this Note, this approach has substantial drawbacks. The great advantage of topic modeling is that it allows us to glean a sense of the thrust of an entire corpus of documents without having to read thousands (or tens of thousands) of individual newspaper pages. Of course, I recognize that readers may want to validate whether particular topics represent truly "constitutional" subject matter. In order to facilitate such investigation, I have produced an online appendix that includes links to the individual pages of newsprint associated with each topic. Curious readers can browse both the OCR text and PDF of each page from the Chronicling America database associated with each topic.[147]

Of course, skeptical readers might demand some additional validation of the models themselves. Do the textual groupings listed here truly illustrate something substantive about the underlying discourse? One way we can validate these results is to verify them against something we would absolutely categorize as constitutional in nature. This is possible because one of the outputs generated by the algorithm is a list of every document in the corpus indexed against every topic. Here, each document is a page of newsprint. The algorithm proceeds by assigning every word in the document to a single topic; if we sum the percentage of words associated with each topic across all topics, we will reach one hundred percent. We can take advantage of this output to "check" the validity of the model.

For example, on June 13, 1866, Congress officially sent the Fourteenth Amendment to the states for ratification.[148] An event this monumental is assuredly enmeshed in Ackerman's concept of "higher politics," and we would expect our topic model to categorize any news coverage of the event accordingly. Running a search in the Chronicling America database for all terms "Reconstruction, Amendment, June" appearing on newspaper front pages in 1866 returns an article from the June 23, 1866, edition of South

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146. ARIZONA MINER, *supra* note 142 ("I know of no measure more imperatively demanded by every consideration of national interest, sound policy and equal justice, than admission of loyal members from the now unrepresented States.").

147. *See* Young, *supra* note 112.

148. *See* Earl M. Maltz, *The Fourteenth Amendment as Political Compromise: Section One in the Joint Committee on Reconstruction*, 45 OHIO ST. L.J. 933 (1984) (providing a legislative history of the Amendment's passage).

Carolina's *Charleston Daily News.*[149] That article, in turn, reports on President Andrew Johnson's message expressing skepticism about the Amendment's legality.[150] Sure enough, cross-referencing this article against the 1866 text corpus and its associated topic model (as delineated in Table 2) reveals that 21.2% of this page of newsprint was associated with topic 18−a topic previously identified as touching on constitutional issues.[151] For the algorithm to identify one-fifth of a page of newsprint as constitutional is noteworthy; the most prevalent topics after 18 were topics 16 and 14 at 16.1% and 14.2%, respectively. These numbers appear in Table 4 below, with "constitutional topics" shaded and bolded. This provides some comfort that the topic model for 1866 is accurately identifying especially constitutional discourse.

Table 4.
TOPIC MODEL ALLOCATION FOR JUNE 28, 1866, *CHARLESTON DAILY NEWS*

Topic 1	Topic 2	Topic 3	Topic 4	Topic 5
4.12%	0.00%	0.06%	0.11%	**0.89%**
Topic 6	Topic 7	Topic 8	Topic 9	Topic 10
0.00%	4.68%	0.84%	3.34%	3.68%
Topic 11	Topic 12	Topic 13	Topic 14	Topic 15
0.06%	0.22%	10.20%	14.21%	**7.64%**
Topic 16	Topic 17	Topic 18	Topic 19	Topic 20
16.11%	4.40%	**21.24%**	5.46%	2.73%

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149. *President's Message on the Reconstruction Amendment*, CHARLESTON DAILY NEWS (S.C.), June 23, 1866, http://chroniclingamerica.loc.gov/lccn/sn84026994/1866-06-23/ed-1/seq-1.pdf.

150. *Id.* ("Grave doubts, therefore, may naturally and justly arise as to whether the action of Congress is in harmony with the sentiments of the people, and whether, in such an issue, they should be called upon by Congress to decide respecting the ratification of the proposed amendment, waiving the question as to the constitutional validity of the proceedings of Congress . . . .").

151. Topic 18 included the words: shall, states, united, persons, district, provided, enacted, court, section, dollars, hereby, further, other, amendment, approved.

We can engage in the same exercise with respect to the Fourteenth Amendment's ultimate ratification. Secretary of State William Seward issued a proclamation declaring the amendment ratified on July 20, 1868.[152] A search of the Chronicling America database for the terms "Seward" and "Ratification" appearing on newspaper front pages in 1868 returns, among others, the Virginia and Tennessee *Bristol News* from August 14, 1868. That paper contains a simple notice that "Mr. Seward has formally proclaimed the ratification of the 14th Article to the Constitution."[153] The algorithm identified 26.19% of the words in this document as associated with topic 7 and 16.78% with topic 18 (Table 5). A quick glance back at Table 3 reveals that topics 7 and 18 were also previously identified as having constitutional significance.[154] Here again, these results suggest that the topic model is accurately capturing constitutional discourse.

Table 5.

TOPIC MODEL ALLOCATION FOR AUGUST 14, 1868, *BRISTOL NEWS*

Topic 1	Topic 2	Topic 3	Topic 4	Topic 5
0.75%	8.46%	1.09%	2.11%	7.03%
Topic 6	Topic 7	Topic 8	Topic 9	Topic 10
0.07%	**26.19%**	0.07%	2.93%	10.64%
Topic 11	Topic 12	Topic 13	Topic 14	Topic 15
0.00%	6.28%	0.00%	2.46%	1.50%
Topic 16	Topic 17	Topic 18	Topic 19	Topic 20
0.00%	0.20%	**16.78%**	6.68%	6.75%

A final way to validate our results is to try to more thoroughly investigate the structure of the data across our period of interest. The results from our

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152. *See supra* note 138.

153. BRISTOL NEWS (Va. & Tenn.), Aug. 14, 1868, http://chroniclingamerica.loc.gov/lccn /sn85026955/1868-08-14/ed-1/seq-1.pdf.

154. Topic 7 includes the words: government, democratic, national, republican, power, right, constitution, grant, union, congress, liberty, rebel, south, political, election. Topic 18 included the words: radical, negro, white, south, tennessee, grant, southern, republican, democratic, president, colored, political, power, peace, members.

topic model of 1866 and 1868 only provide us with a sliver of the constitutional discourse during the debate over the ratification of the Fourteenth Amendment and, indeed, during Reconstruction generally. What we need is some larger way to synthesize the corpus so we can understand how topics interrelate to one another during this period. For example, do constitutional topics take up a small proportion of many pages or, alternatively, large proportions of relatively fewer pages? Understanding the structure of the discourse can help reveal the way in which the media presented these topics to the public.

4. Hierarchical Modeling and the Structure of Discourse, 1866-1868

In order to accomplish this task, I utilize a dataset of all newspaper pages appearing between January 1, 1866, and December 31, 1868, that contained the keyword "constitution." This dataset includes five thousand newspaper pages and 18,652,124 model words ("tokens"). The choice to filter articles by keyword flowed from a desire to understand how newspapers treated constitutional topics in particular.[155] In other words, this part of the Note aims to understand the nature of constitutional discourse. I then generate a hierarchical topic model with four distinct levels.[156] The purpose of the hierarchical model is to elucidate the structure of the topics themselves. Such a model can reveal whether certain topics divide neatly into categorical subtopics.

The easiest way to present the results of the hierarchical model is in two steps. First, the model generated a list of topics organized in a hierarchy of four levels. The results appear in Table 6. Each row in the table represents a topic (identified with a unique key number) and contains the most common words associated with the topic in rank order.[157] The "Level" column identifies the topic's position in the hierarchy, with level 0 at the top and level 3 at the bottom. Topics that appear to involve politics as shaded and topics involving constitutional rhetoric are bolded.

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155. Note that the hierarchical topic model was run on data collected early in the research process without the robust scrubbing for OCR errors deployed elsewhere in this Note. Obvious OCR errors in the results of the hierarchical model were removed manually for presentation here.

156. The hierarchical topic model was generated using the Mallet software package. Andrew Kachites McCallum, *Machine Learning for Language Toolkit*, MALLET (2002), http://mallet.cs.umass.edu.

157. Words have been removed from some cells due to space constraints.

Table 6.

HIERARCHICAL TOPIC MODEL, LIST OF TOPICS, 1866-1868

| LEVEL	TOPIC	WORDS	TOKENS	FREQUENCY
0	0	bill, committee, street, city, john, made, york, house, time, order, court, clock, motion, united, hall, report, evening, held, ward	---	---
1	4	states, charleston, district, carolina, york, general, state, south, united, court, cotton, house, city, order, clock, made, bill, office	3,072,552	22.07%
1	1	united, people, congress, constitution, government, president, union, law, war, power, country, south, state, general, great, bill, made, time, laws	359,352	2.58%
1	25	advent, crocker, debtor, designating, expanded, flooding, markets, middling, mind, plains, political, promises, showing,	21	0.00%
2	5	states, people, president, congress, government, united, war, bill, union, party, man, general, made, law, state, people, country, constitution, time, great, power, house	5,258,122	37.77%
2	14	sale, received, low, store, fisher, prices, goods, assortment, hand, stock, sale, received, store, fisher, prices, goods, assortment, hand, stock, sugar, house, flour, york, john, queen	53,550	0.38%
2	12	street, office, clock, patent, washington, hundred, petition, street, office, clock, patent, required, united, york, john, city, twenty, board, north, baltimore, march, received	349,787	2.51%
2	30	admirably, ailing, ambassadors, bandied, clothier, detained, erection, finished, forced, licenses, liveliest, lottery, obnoxious, onward, passion, pine, plasterers	36	0.00%
2	46	city, till, mill, county, july, majority, bill, year, great, democratic	91,352	0.66%
2	2	amply, commitment, defended, eighth, ensued, german, lyons, muslin, nulled, pats	31	0.00%
2	20	market, street, sales, cleared, cotton, york, bales, march, prices, charleston, sold, states, extra, state, good, baltimore, gold	42,125	0.30%
2	7	order, adventure, cargoes, coated, fall, ferguson, formal, lemon, liabilities, owner, philadel, preceded, single, spared, sparkling, tend	27	0.00%
2	32	division, house, street, corner, serve, ward, residing, streets, person, years, election, divisions, avenue, district, persons, vote, city, freemen, term	4,891	0.04%
2	10	fractional, market, general, napoleon, april, cleared, march, range, street, registered, registry, acres, prices, boards, bushels, district, pianos, boston, europe, orders	2,496	0.02%
2	43	back, dawes, deserve, disloyalty, engine, logical, lune, parish, pearce, regulating, resignations, roan, sable, satinets, treasurer	19	0.00%

3	6	street, city, sale, county, stock, company, court, york, office, goods, bank, john, market, state, house, made, nashville, large, good	3,816,424	27.41%
3	15	street, cotton, south, columbia, march, carolina, state, city, december, court, sales, bales, north, district, house, flour, sale, york, charleston	74,447	0.53%
3	66	committee, bill, amendment, laid, referred, reported, house, motion, resolution, agreed, york, report, senate, united, amend	268,292	1.93%
3	29	enacted, art, exceeding, prison, bread, editors, offico, petltloa, senate	1,864	0.01%
3	38	philadelphia, leave, street, york, railroad, trains, train, express, baltimore, dally, church, north, leaves, west, freight, accommodation, corner, line, depot	114,188	0.82%
3	119	division, street, house, corner, serve, ward, streets, residing, person, years, avenue, election, city, side, freemen, south, vote, district, west	28,489	0.20%
3	13	state, kansas, white, county, cloud, bells, section, john, election, article, constitution, work, louis, sale, office, stock, send, secretary	95,188	0.68%
3	**22**	**states, war, government, constitution, congress, people, united, authority, laws, union, rights, state, power, representation, national, common, insurrection**	**25,811**	**0.19%**
3	45	dollars, hundred, lodge, thousand, grand, appropriation, tho, salary, state, office, orleans, fund, eighteen, south, general, sixty, attorney, enacted, parish	2,228	0.02%
3	57	bill, state, people, power, amendment, vote, lion, states, united, committee, york, made	169,366	1.22%
3	3	july, pendleton, john, mill, hancock, interest, seymour, bonds, route, ballot, blair, hundred, creek, nomination	1,607	0.01%
3	**21**	**states, union, power, constitution, congress, united, country, president, rights, party, government, people, great, rebellion, state, political, laws, civil, policy**	**9,815**	**0.07%**
3	61	court, state, chancery, tennessee, clerk, defendant, copy, monday, ordered, nashville, term, plead, weeks, held, answer, demur, appearing, confessed, complainant	10,902	0.08%
3	8	leave, street, lady, arrive, june, york, miss, wharf, jan, received, freight, january, bank, apply, association, clock, banking	2,578	0.02%
3	97	ward, part, lying, avenue, city, bounded, election, twenty, ninth, thai, fourth, tenth, hall	31,835	0.23%
3	**17**	**state, officers, states, oath, united, military, rebellion, office, judicial, registration, executive, civil, person, section, officer, congress, authority, constitution, power**	**15,851**	**0.11%**
3	44	ward, committee, bill, read, parish, fourth, report, adopted, reported, nays, referred, move, house, rules, sixth, passage, judiciary, district, introduced, resolution	5,620	0.04%
3	28	dollars, hundred, item, thousand, twenty, section, school, salaries, fifty, eighteen, expenses, treaty, furniture, repairs, sixty, house, schools, printing	13,829	0.10%

The next step is to explore the relationships among topics. The results appear in Figure 5. In the hierarchical model used here, each newspaper page travels along a single "path" down the topic tree until it winds up in a "bin" at level 3. It thus makes sense to think about this organization in terms of "parent topics," "child topics," and "sibling topics." As in a normal family tree, a horizontal line connects sibling topics that share the same parent. Thus, topic 0 at level 0 has three child topics (4, 1, and 25), topic 1 at level 1 has five child topics (14, 12, 2, 7, and 32), and so on. All modeled pages must take one "path" through all four levels of the hierarchy (e.g., 0 → 4 → 5 → 6). The content of a given page of newsprint will comprise a random sample of the four topics along the path. Thus, the topics do not "nest" inside one another but are independent nodes in a sequence. We can thus think of a particular document path in the hierarchy as the collection of topics a reader might see glancing across the newspaper page. For readability, I have eliminated from the graphic below all topics at levels 2 and 3 with a frequency of less than 1% (unless a parent topic has a child topic with a frequency greater than 1%.) Once again, constitutional-level topics are bolded.

Figure 5.

HIERARCHICAL TOPIC MODEL, TOPIC TREE, 1866-1868
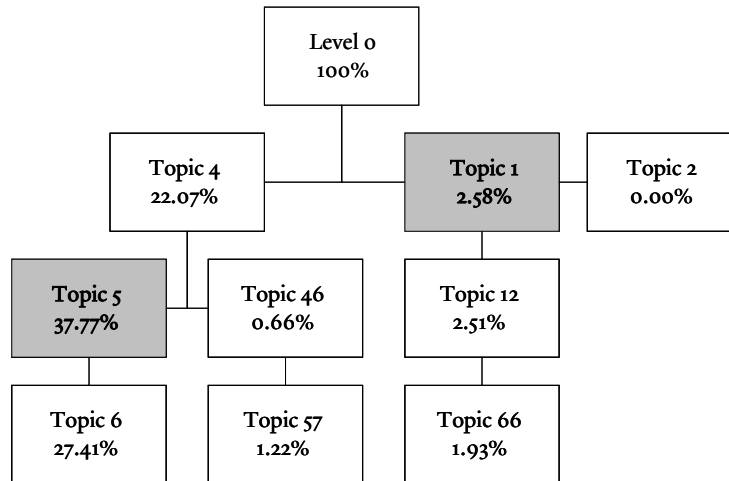
This hierarchical model reveals a great deal about the structure of political discourse during the period from 1866 through 1868. First, the model helps us sort out standard or "normal" political discourse from what we might think of as higher lawmaking discourse. I have bolded constitutional topics. Topic 6 appears to relate to trade and shipping; topic 61 relates to legal matters and court cases; topic 66 appears to capture the summary of congressional activity that often appeared in contemporary newspapers;[158] and topic 119 seems to relate to instructions for voting in elections. Interestingly, topic 3, with its references to Representative George Pendleton of Ohio, General Winfield Hancock of Pennsylvania, and Democratic presidential nominee Governor Horatio Seymour of New York, clearly captures newspaper articles detailing the nomination fight at the Democratic National Convention in July 1868.[159] By contrast, topics 5, 21, 1, 17, and 22 seem to relate directly to what we might call "constitutional" or higher-lawmaking discourse. These topics use words like "constitution," "authority," and "rebellion."

Here it is important to pause in order to explain how the model quantifies the prevalence of individual topics. Each cell contains a "token count" indicating the number of modeled words that fall within that topic. If we add up all token counts as a percentage of the total across all topics, we will reach one hundred percent. In order to explain how the topic model treats topic prevalence, we can consider two examples: a newspaper page that takes the path 0 → 4 → 5 → 6 ("Path A") versus a newspaper page that takes the path 0 → 4 → 5 → 61 ("Path B"). Topic 5 includes 5,258,122 words, or 37.75% of the total words in the model, whereas topic 6 includes 3,816,424 words, or 27.41% of the total. By contrast, topic 61 (the other subtopic in level 3 that branches off from topic 5) only includes 10,902 words, or 0.08% of the total.

What immediately emerges from this model is the overwhelming dominance of Path A through topics 0, 4, 5, and 6.[160] Topics 0 and 4, of course, are very generalized. Indeed, topic 4, with the words "york" and "carolina,"

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158. *See* Richard J. McKinney, *An Overview of the Congressional Record and Predecessor Publications*, LAW LIBR. LIGHTS, Winter 2002, at 16, 16-17 (discussing the publication of congressional activities during this period).

159. *See* GEORGE WAKEMAN, OFFICIAL PROCEEDINGS OF THE NATIONAL DEMOCRATIC CONVENTION (Boston, Rockwell & Rollins 1868).

160. The model admittedly does not appear to be capturing topics and associated subtopics, but this is likely a function of the structure of the underlying data. Because this Note uses pages of newsprint as its unit of analysis, and each page contains multiple articles, a "walk" down one of the available paths seems to be capturing kinds of articles that tend to appear with one another on a newspaper page. Were we to re-run the model using articles as the unit of analysis (which is impossible with the current data), we might obtain a different typology that more closely resembles topics and subtopics.

may simply be capturing the mastheads of newspapers from South Carolina and New York. Topics 5 and 6, however, address constitutional issues and commercial issues, respectively. It makes intuitive sense that newspapers addressing constitutional issues would contain equal parts business and political news during this period, but the model appears to confirm this. Moreover, the high frequency of topic 5 relative to the other constitutional topics suggests that newspapers tended to treat constitutional issues in some depth when they addressed them. This, again, appears to be consistent with Ackerman's thesis regarding pronounced engagement with constitutional issues during this period.

The use of hierarchical topic modeling helps provide us with a sense of how constitutional issues are treated when they do appear in newspapers during this period. The next step is to compare the critical years of 1866 and 1868 to some baseline of "normal politics."

B. Hypothesis 2: Comparing Normal and Constitutional Politics, 1866-1884

So far this Note has examined specific subsets of national discourse from 1866 through 1868. This helps us to answer a preliminary question: Were citizens (or at least newspapers) talking about constitutional issues during this period? The answer clearly seems to be "yes." The next step is to develop some sort of baseline for quantifying the salience of those topics.

In order to obtain a basis for comparison, I utilize a fourth dataset of newspaper pages from the Chronicling America collection. This set includes front pages from newspapers appearing from June 1 through December 31 in the years 1866, 1868, 1870, 1872, and 1884. I chose the 1884 election, pitting Democrat Grover Cleveland against Republican James Blaine, to serve as a control group. If one were to compare the prevalence of constitutional topics during the period from 1866 to 1868 with 1884, and did *not* see a noticeable decline in topic salience, it would undermine the argument that the debate over the ratification of the Fourteenth Amendment was imbued with the legitimating discourse of "higher lawmaking."[161]

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161. One might object that topic modeling over this lengthy period could fail to capture new constitutional debates that emerged in the 1880s, such as the burgeoning antitrust movement. *See, e.g.*, James May, *Antitrust Practice and Procedure in the Formative Era: The Constitutional and Conceptual Reach of State Antitrust Law, 1880-1918*, 135 U. PA. L. REV. 495, 498-502 (1987). This, however, is highly unlikely. Because a topic model is simply a probabilistic clustering of words, a list of the most prevalent topics within the data would "capture" specific kinds of discourse. Moreover, even if the *same* words were used in a topic across time periods, that would only bolster our finding that the prevalence of constitutional topics declined during this period.

Table 8.
TOPIC MODEL FOR FIVE ELECTIONS: 1866, 1868, 1870, 1872, AND 1884

| TOPIC	WORDS	FREQUENCY
1	report, yesterdai, about, committe, decemb, street, court, dollar, senat, treati, until, compani, willi, amend, indian	5.23%
2	shall, state, street, dollar, court, hundr, offic, district, section, amend, counti, nashvil, herebi, thousand, cotton	4.57%
3	would, which, their, could, about, willi, lilli, there, until, littl, ililli, think, after, thought, major	4.61%
4	would, littl, never, heart, could, think, there, their, mother, which, thing, young, thought, woman, world	5.70%
5	street, about, yesterdai, night, crowd, afternoon, train, arrest, could, found, murder, wound, second, death, report	5.26%
6	street, alban, train, stock, dealer, store, price, cairo, agent, assort, smith, vermont, block, cloth, arriv	3.08%
7	littl, could, never, there, young, about, would, think, mother, heart, thing, woman, father, thought, which	5.65%
8	memphi, state, cotton, tennese, govern, elect, yesterdai, report, democrat, committe, republican, august, major, presid, french	5.18%
9	street, memphi, cotton, stock, tennese, agent, price, merchant, diseas, offic, dealer, nashvil, commiss, block, insur	4.50%
10	democrat, republican, elect, convent, cleveland, nomin, major, yesterdai, street, deleg, parti, committe, district, report, candid	4.94%
11	french, prussian, franc, prussia, troop, london, princ, emperor, yesterdai, german, battl, govern, report, command, wound	5.00%
12	**state, govern, shall, constitut, congress, democrat, peopl, district, presid, richmond, elect, south, parti, greelei, right**	**5.53%**
13	columbia, stock, street, price, assort, store, charleston, diseas, medicin, carolina, dealer, cloth, style, druggist, varieti	4.17%
14	convent, democrat, committe, state, republican, nomin, deleg, senat, elect, parti, presid, resolut, candid, amend, report	5.26%
15	govern, state, which, charleston, prussian, senat, report, their, congress, french, shall, franc, elect, peopl, decemb	6.01%
16	dealer, street, oregon, offic, block, agent, warren, store, portland, attornei, everi, wholesal, groceri, govern, insur	4.84%
17	littl, there, could, young, mother, never, would, woman, heart, think, thought, father, about, thing, moment	6.22%
18	street, diseas, dealer, price, agent, medicin, stock, liver, merchant, store, queen, commiss, sugar, columbia, stomach	4.42%
19	democrat, republican, cleveland, nomin, convent, blain, deleg, elect, major, counti, blame, parti, district, ticket, candid	4.58%
20	elect, republican, committe, democrat, state, major, shall, senat, district, amend, report, cleveland, counti, convent, blain	5.23%

The dataset from this period consists of 15,322 pages of newsprint including 18,652,124 modeled words. The results appear in Table 8.[162] There are several topics associated with constitutional issues and government, including topics 10, 12, 14, 19, and 20. Of these, topic 12 appears to involve constitutional discourse and is bolded accordingly.

In order to test the salience of these political topics, we can track their prevalence over time. If these truly are "higher lawmaking" topics, we should expect their prevalence to decline as Reconstruction ended and the nation returned to a period of normal politics. The results appear in Figure 6 and seem broadly consistent with this notion. Topics 10 and 19, for example, rise dramatically in prevalence during this period. This result is consistent with the "normal" politics of presidential campaigning and Grover Cleveland's election. By contrast, topics 14 and 20, which appear to deal with routine political matters, are relatively static. Meanwhile, topic 12, which includes a direct reference to the word "constitution," declines in salience after 1866.

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162. In this larger dataset, which Brandon Stewart and I collected at an early stage of research, we applied a "filtering" process predicated on stemming root words rather than filtering out words with fewer characters, as in the 1866 and 1868 topic models. The substance of the topics should not vary, only the presentation of the results.

Figure 6.

SELECTED TOPICS OVER TIME, 1866-1884

Topic 19 Over Time

Topic 20 Over Time
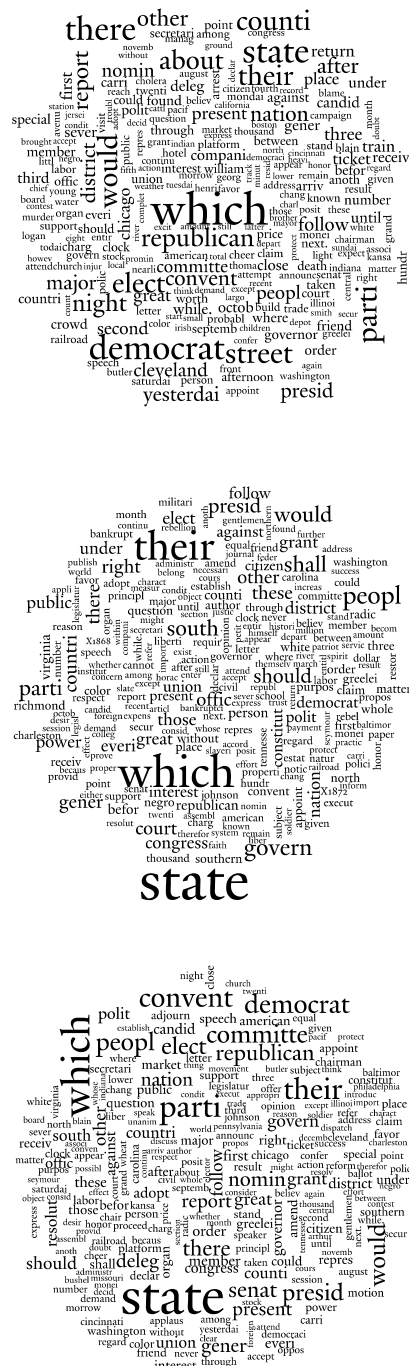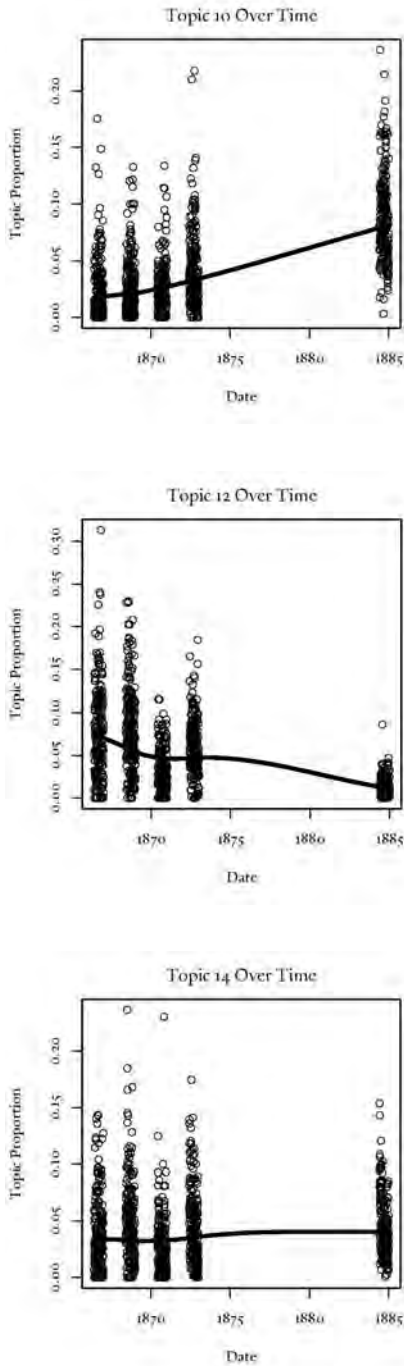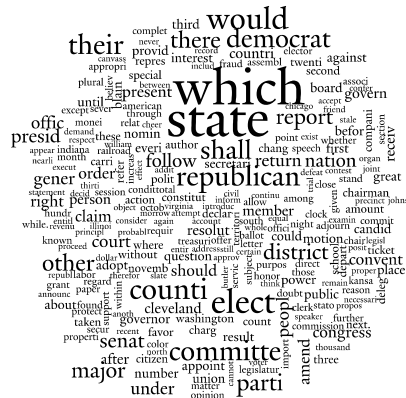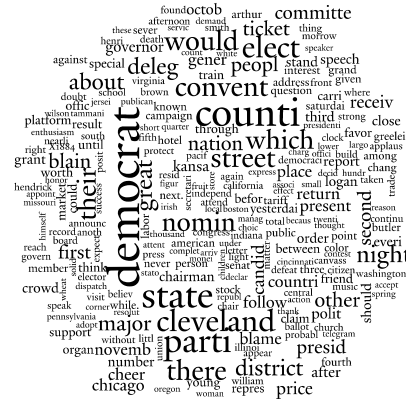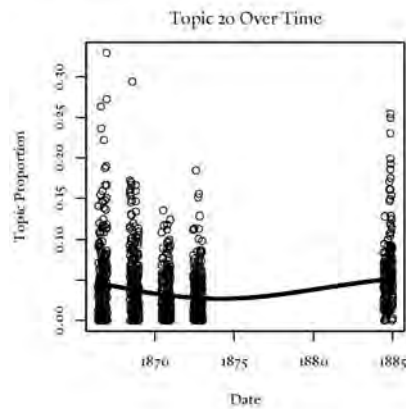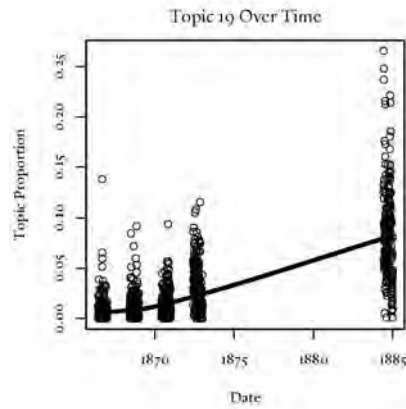
What we see, then, is tentative confirmation of both hypotheses about the dualist-democracy thesis. First, we find evidence of constitutional discourse in the critical period from 1866 to 1868. Second, we see variation over time, with certain topics declining in salience over the period from 1866 to 1884 and others rising in prevalence. This is consistent with Ackerman's theory, since we expect topics regarding higher lawmaking to spike in the period from 1866 to 1872 and to be at their nadir by 1884. So far, topic modeling has produced some empirical evidence to support Ackerman's argument regarding popular attention and constitutional change.

A third way we can try to capture the political discourse surrounding constitutional issues is to track the appearance of certain keywords. I calculate the prevalence of five stemmed keywords (and their variants) in the fourth dataset: constitution*, unconstitution*, convention*, Reconstruction, and

amend⋆.[163] I use prevalence per week as my unit of measurement. The results appear in Figures 7 through 11.[164] These results provide empirical support for the hypothesis that constitutional discourse peaked during the period surrounding ratification of the Fourteenth Amendment. As a preliminary observation, the keyword "convention⋆" does not provide us with much information since it appears to have been a common part of the lexicon throughout this period. The other four keywords, however, are quite useful. All four keywords (constitution⋆, unconstitution⋆, Reconstruction, and amend⋆) decline markedly between 1866 and 1884. The local maxima, however, reveal important differences in this overall pattern. The keyword "constitution⋆," for example, spikes before the congressional elections of 1866. By contrast, the keyword "unconstitution⋆" spikes in 1868 — most likely due to the impeachment charges against President Johnson. The keyword "Reconstruction" experiences a similar spike in 1868. The keyword "amend⋆" is most prevalent in 1866, which is consistent with the theory that there was a great deal of debate about the Fourteenth Amendment in the press, but also demonstrates a pattern of overall decline punctuated by regular spiking — perhaps a result of electioneering more generally.

These graphs depict data from the fourth dataset, combining newspaper pages from the period June 1 – December 31 in 1866, 1868, 1870, 1872, and 1884. These figures concatenate the data to create a smooth curve rather than depict the time breaks, as in Figure 6.

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163. The ⋆ notation denotes stemming a word such that the search term constitution⋆ would return instances of the word "constitution," "constitutions," and "constitutional."

164. In each of these figures, the panel on the right represents an aggregation of individual trends plotted with locally weighted scatterplot smoothing (LOWESS). Note, too, that the y-axis scale differs across keywords, since we are interested in overall trends and not absolute levels. The unit of observation in each scatterplot is the prevalence of the key term by week.

Figure 7.

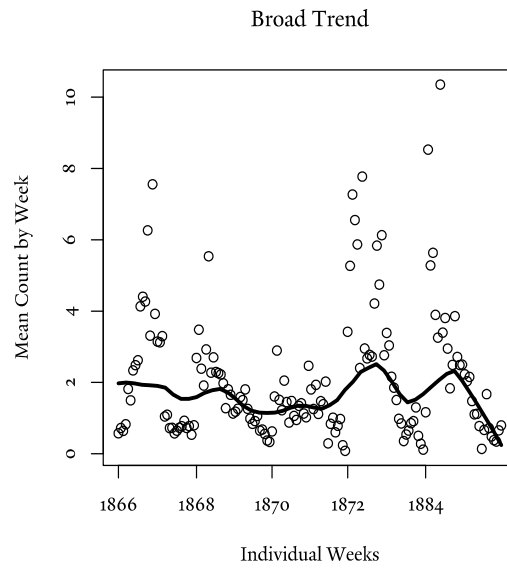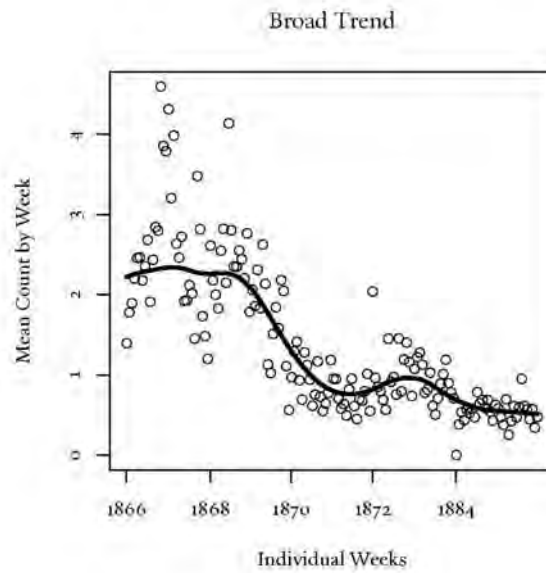APPEARANCE OF THE WORD "CONVENTION" AND ITS VARIANTS, 1866-1884

Broad Trend

Figure 8.

APPEARANCE OF THE WORD "CONSTITUTIONAL" AND ITS VARIANTS, 1866-1884

Broad Trend

Figure 9.
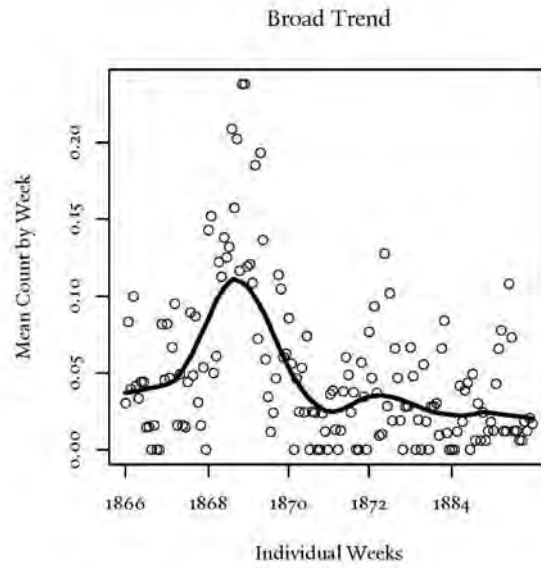APPEARANCE OF THE WORD "UNCONSTITUTIONAL" AND ITS VARIANTS, 1866-1884

Figure 10.
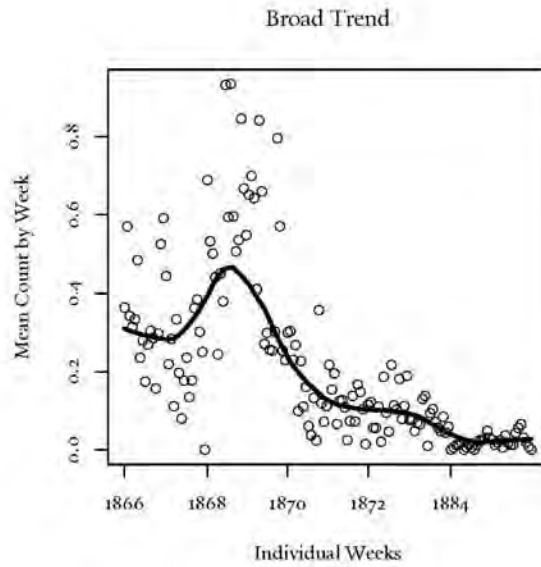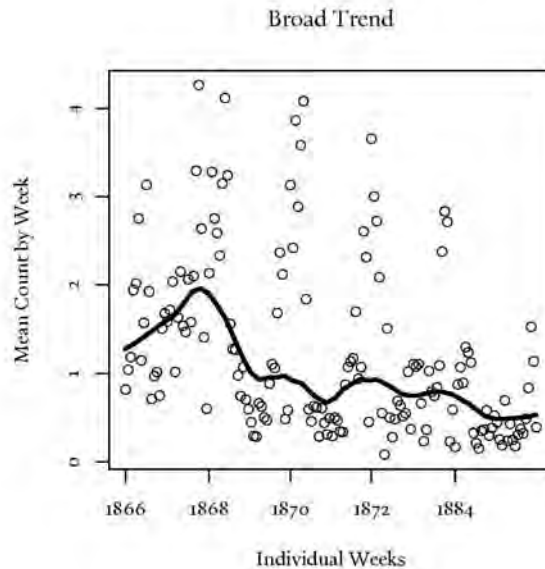APPEARANCE OF THE WORD "RECONSTRUCTION" AND ITS VARIANTS, 1866-1884

Figure 11.

APPEARANCE OF THE WORD "AMEND" AND ITS VARIANTS, 1866-1884

Broad Trend

These results provide some important context for this Note's evaluation of Ackerman's theory of constitutional change. With just the topic modeling from 1866 and 1868, it would be impossible to assess whether the high salience of political topics was an aberration or whether it was normal for newspapers of the era. This is especially true in light of the fact that the newspapers of the 1860s were largely operated by political machines and sought to push the party line, particularly before elections.[165] By topic modeling a dataset including articles from less constitutionally fraught periods, however, I have a basis of comparison for describing the constitutional discourse during the early days of Reconstruction. The empirical evidence strongly supports the notion that the salience of constitutional topics was especially high during the period from 1866 to 1868.

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165. *See* DAVID W. BULLA & GREGORY A. BORCHARD, JOURNALISM IN THE CIVIL WAR ERA 111-35 (2010) (contrasting the party press with informative press); Richard L. Kaplan, *Partisan News in the Early Reconstruction Era: Representations of African-Americans in Detroit's Daily Press*, *in* THE CIVIL WAR AND THE PRESS 519 (David B. Sachsman, S. Kittrell Rushing & Debra Reddin van Tuyll eds., 2000).

CONCLUSION

This Note develops a novel way to analyze the popular discourse surrounding key moments in America's constitutional history. By applying an unsupervised topic model to over nineteen thousand pages of historical newspapers in print between 1866 and 1884, this Note uses objective metrics to analyze issues of national salience. The results indicate empirical support for the hypothesis that Americans were paying attention to constitutional-level issues during these periods. For both the 1866 and 1868 elections, the model produced multiple topics regarding the hot political issues raised by Reconstruction. The prevalence of these topics lends credence to the dualist notion that voters pay special attention to constitutional debates during critical elections. By conducting a hierarchical topic model of all newspaper pages with the keyword "constitution" appearing between 1866 and 1868, this Note elucidates how political discourse during this period was structured. These results confirm the centrality of constitutional issues to the public conversation at the time. Finally, by running a topic model and tracking the frequency of keywords relating to constitutional politics over the period from 1866 to 1872 and, with a gap, to 1884, my results indicate empirical support for both the notion that constitutional issues were of high salience during this period *and* that sustained attention to those issues spiked during certain key moments in 1866 and 1868.

The cumulative effect of these results is to provide support for Ackerman's dualist-democracy thesis. Topic modeling reveals evidence of both constitutional discourse *and* a gradual decline in the prevalence of that discourse over time. These findings are consistent with the predictions of Ackerman's theory that sustained popular attention to constitutional politics peaks during transformative constitutional moments and then declines as normal politics once again take center stage. One might object, of course, that for all the millions of words and thousands of newspaper articles this Note analyzes, this is a rather modest conclusion. On the surface, there is nothing surprising about the fact that the media was paying attention to the passage of major constitutional amendments in the aftermath of a devastating civil war. The advantage of topic modeling, however, is that it allows us to examine variations in the salience of constitutional issues across time. We can scrutinize Ackerman's narrative about the Fourteenth Amendment on its own terms. It is not simply that people were paying attention to politics during this period. Rather, these results suggest they were paying attention in the manner that Ackerman's argument insists—with interest peaking during the key elections of 1866 and 1868 and then gradually waning. In the absence of any prior empirical testing, the validity of this framework was open to challenge. Had

my results indicated either no evidence of constitutional discourse, or a constant level of such discourse across time, it would have called into question the entire theoretical superstructure of Ackerman's work. Instead, topic modeling has bolstered Ackerman's theory at one of its more vulnerable points.

The methodological technique applied here is at the cutting edge of technology and the humanities. As historians and political scientists become increasingly aware of the power of topic modeling to help them glean meaning from collections of text previously too large or unwieldy to analyze efficiently, the potential for future research is practically unlimited. Combining county-level electoral data with the kind of spatial visualization techniques developed by the Mapping Texts project,[166] for example, would allow us to explore popular discourse in different states and media markets. By cross-referencing these findings with election returns, we can explore the connections between media, campaigns, and constitutional politics during this period. Ultimately, topic modeling is a powerful tool for legal scholars examining the role of mass mobilization, issue saliency, and the dynamics of popular constitutionalism.

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166. *See Data and Source Materials for Mapping Texts, supra* note 109.