A Computational Analysis of Constitutional Polarization

Online Appendix

David E. Pozen,* Eric L. Talley** & Julian Nyarko***

In this Online Appendix, we provide supplemental results referenced in the Article. We note that additional material, including code and trained word embeddings, can be found through our website, www.pozentalleynyarko.com.

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I. CONSTITUTIONAL DISCOURSE IN THE 88TH CONGRESS

The following table depicts the most frequent terms from all of our dictionaries (combined) for the 88th Congress, beginning in 1963.

Table OA.1: Fifty Most Frequent "Constitutional" Terms, 88th Congress

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individual rights Expansive 51 160 235	
legislative powers Extended Textual 45 138 213	
checks and balances Expansive 65 111 210	
6th amendment Textual 54 119 190	
article three Textual 40 126 178	
poll taxes Expansive 30 141 177	
judicial review Expansive 39 125 177	
fundamental rights Expansive 35 124 173	
suffrage Expansive 29 127 172	
founders Originalism 27 98 170	
10th amendment Textual 42 119 166	
advice and consent Extended Textual 30 99 168	
Sth amendment Textual 43 105 165	
equal protection clause Textual 53 96 158	
freedom of speech Extended Textual 31 96 151	
judicial power Extended Textual 17 109 147	
separation of powers Expansive 33 99 147	
reserved to the states Extended Textual 45 91 147	
13th amendment Textual 50 61 142	
free speech Expansive 37 90 140	
civil liberties Expansive 24 88 139	
free exercise Extended Textual 31 74 136	
appellate jurisdiction Extended Textual 52 66 133	
appenary jurisdiction	

II. QUALITATIVE EXAMPLES

In order to extract remarks for the qualitative analysis presdented in Section IV.A, we ran the following query:

- 1. We extracted all constitutional documents from the 86th to 94th Congresses, defining as "constitutional" all documents with a ρ score above the eighth decile using the Extended Textual dictionary.
- 2. Over this subset of documents, we computed the average predicted probability of a document originating from a Republican speaker. Based on the hypothesis that documents close to this average reflect generic or emblematic Republican constitutional discourse during this period, we then extracted the 10 documents closest to this average.
- 3. We repeated step 2 for Democratic remarks.
- 4. We repeated steps 1 through 3 for constitutional documents from the 106th to 114th Congresses.

This procedure resulted in a set of 40 documents, from which we removed one remark that was incorrectly parsed, resulting in 39 documents, as listed in the table below.

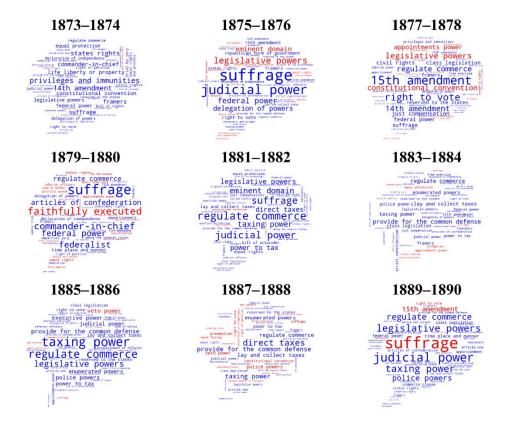
Table OA.2: Qualitative Examples, Full Results

Congress	Speaker First Name	Speaker Last Name	Party	Chamber	Citation
88	James	Fulbright	Democrat	Senate	109 Cong. Rec. 17,751 (1963)
88	Absalom	Robertson	Democrat	Senate	110 Cong. Rec. 3404 (1964)
88	John	Sparkman	Democrat	Senate	110 Cong. Rec. 10,436 (1964)
88	John	Sparkman	Democrat	Senate	110 Cong. Rec. 10,678 (1964)
90	Otto	Passman	Democrat	House	113 Cong. Rec. 32,977 (1967)
91	Charles	Diggs	Democrat	House	116 Cong. Rec. 32,324 (1970)
91	James	Allen	Democrat	Senate	116 Cong. Rec. 7105 (1970)
92	Philip	Hart	Democrat	Senate	117 Cong. Rec. 4025 (1971)
93	Edmund	Muskie	Democrat	Senate	119 Cong. Rec. 7740 (1973)
94	John	Tunney	Democrat	Senate	122 Cong. Rec. 23,015 (1976)
106	Robert	Scott	Democrat	House	145 Cong. Rec. 13,846 (1999)
106	Dennis	Kucinich	Democrat	House	145 Cong. Rec. 20,154 (1999)
106	Harry	Reid	Democrat	Senate	146 Cong. Rec. 24,796 (2000)
107	Eleanor	Norton	Democrat	House	148 Cong. Rec. 6066 (2002)
108	Sheila	Jackson Lee	Democrat	House	150 Cong. Rec. 18,491 (2004)
109	Maurice	Hinchey	Democrat	House	152 Cong. Rec. 12,967 (2006)
110	John	Conyers	Democrat	House	153 Cong. Rec. 22,774 (2007)
112	Peter	Visclosky	Democrat	House	157 Cong. Rec. H5069 (daily ed. July 14, 2011)
112	Tom	Udall	Democrat	Senate	157 Cong. Rec. S54 (daily ed. Jan. 5, 2011)
113	Harry	Reid	Democrat	Senate	160 Cong. Rec. S1225 (daily ed. Feb. 27, 2014)
86	Barry	Goldwater	Republican	Senate	106 Cong. Rec. 1642 (1960)
88	Kenneth	Keating	Republican	Senate	110 Cong. Rec. 5772 (1964)
89	Richard	Poff	Republican	House	111 Cong. Rec. 7963 (1965)
89	Gerald	Ford	Republican	House	112 Cong. Rec. 18,397 (1966)
91	Thomas	Railsback	Republican	House	116 Cong. Rec. 20,166 (1970)
91	William	Cramer	Republican	House	116 Cong. Rec. 36,169 (1970)
91	Ogden	Reid	Republican	House	116 Cong. Rec. 13,781 (1970)
91	Robert	Dole	Republican	Senate	116 Cong. Rec. 19,186 (1970)
93	John	Anderson	Republican	House	120 Cong. Rec. 35,167 (1974)
106	David	Dreier	Republican	House	145 Cong. Rec. 14,973 (1999)
106	Todd	Tiahrt	Republican	House	146 Cong. Rec. 12,551 (2000)
106	Phil	Gramm	Republican	Senate	145 Cong. Rec. 3010 (1999)
107	John	Hayworth	Republican	House	147 Cong. Rec. 26,451 (2001)
108	Tom	Feeney	Republican	House	150 Cong. Rec. 11,297 (2004)
108	Jon	Kyl	Republican	Senate	149 Cong. Rec. 10,817 (2003)
108	Jon	Kyl	Republican	Senate	149 Cong. Rec. 25,509 (2003)
109	Roy	Blunt	Republican	House	151 Cong. Rec. 720 (2005)
109	John	Boehner	Republican	House	152 Cong. Rec. 15,096 (2006)
114	Jody	Hice	Republican	House	161 Cong. Rec. H1550 (daily ed. Mar. 3, 2015)

III. THE VOCABULARY OF CONSTITUTIONAL PARTISANSHIP: ADDITIONAL FIGURES

The following figure, which is analogous to Figure 13.C in the Article, depicts the fifty most distinctive terms from the Expansive dictionary for each Congress from 1873 through 2016.

Figure OA.1: Fifty Most Distinctive (One-Party-Owned) Terms, Expansive Dictionary



ppellate jurisdiction
time place and manner
Commerce Clause
judicial Powerpower to the
judicial Powerpower to the
commerce Clause
judicial Powerpower to the
judicial Powerpower to the
commerce Clause
powers
regulate Commerce
right to you're
least right to you're
framers

1897-1898

legislative powers
commander in chief
policies with the powers of the policy of the power service of the policy of the power service of

1903-1904

bill of rights
habeas corpus
artitles of longiers inhebite powers
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1893-1894

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1899-1900

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1905-1906

Trial by jury

I regulative powers

States rights

Just compensation

States rights

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Just compensation

States rights

Just compensation

Jus

1895-1896

Interactive and proper district and income a

1901-1902

bill of rights

bill of rights

Suffrage
regulate commerce of the right of rights

regulate commerce of the right of rig

1907-1908

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1915-1916



1921-1922

regulate jurisdiction equal protection
judicial powers
delegation of powers due process Jaggistative powers
legislative powers
constitutional convention
convention
framers secretary and spirite
framers secretary rights
taxing power
secretary property rights police powers states rights

1911-1912



1917-1918



1923-1924





1919-1920





Taking power

18th amendment

commander_in-chief

bill of rights attickent
states_tabts
comerce clause Suffrage

Tight by Jury right to vote

apportionment

15th amendment

police power results

police powers

rillious_fregoon

distributions

1933-1934

taxing power
freedom of the press
legislative powers
bill of rights
delegation of powers
18th amendment
free peech

1939-1940

product for the company and the product of the three company and the product of the company and the product of the company and the company and

1929-1930



1935-1936



1941-1942



1931-1932

direct taxes

article five due process
constitutional convention
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taxing power convention output
taxing power registration and the convention of the convention of the convention of the convention output
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1937-1938





efficiency action

right to set afficiency

constitutional Convention

poll taxes, bill of their

constitutional Convention

poll taxes, bill of their

consent consent

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legis lative powers

policial action of independence

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1951-1952

restancification programme of the press of t

1957-1958



1947-1948



1953-1954



1959-1960

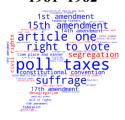


1949-1950



1955-1956







1969-1970



1975-1976



1965-1966



1971-1972



1977-1978



1967-1968









1987-1988



1993-1994

war powers

wear not be to be free speech due process of the control of the contr

1983-1984



1989-1990





1985-1986



1991-1992







2005-2006



2011-2012



2001-2002





2013-2014



2003-2004



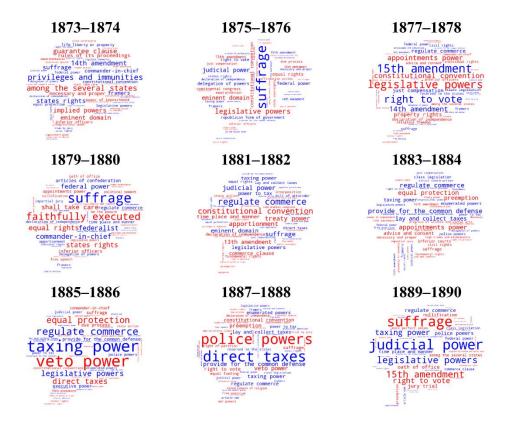
2009-2010





The following figure, which is analogus to Figure 13.B in the Article, depicts the twenty-five most distinctive Republican and Democratic terms from the Expansive dictionary from 1873 through 2016.

Figure OA.2: Twenty-Five Most Distinctive Terms by Party, Expansive Dictionary



regulate govers
regulate commerce clauses states
commerce clauses states
police powers
regulate commerce powers
regulate

1897-1898

legislative powers
police powers direct taxes
taxing power
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wideled or taxing power
wideled or taxing power
with taxing powers
with taxing pow

1903-1904

right to vote
articles of confederation

14th amendment

Sth amendment

legislative powers

Lhabeas corpus

getferal power

getferal power

Land affines

La

1893-1894

taxing powers
the place and namer
mullification
class legislation
class legislation
powers
oath of office publication
constitutional convention
states rights
owners
states rights
owners
approximately
powers
approximately
powers
states rights
owners
approximately
powers
approximatel

1899-1900

regard to the process regard to the process

1905-1906

commander - in - chief commander - chief commander

1895-1896

right to vote
judicial power
legislative powers
republican form of government
constitutional convention
police powers
security power

1901-1902

The part of the pa





1915-1916



1921-1922

constitutional Convention
equal protection
legislative powers
constitutional Convention
equal protection
legislative powers
commerce convention
commerce convention
regulate commerce
power regulate commerce
mendating power
despite of power
despi

1911-1912



1917-1918



1923-1924



1913-1914



1919-1920





In the second se

1933-1934

inferior courts produced in the court of the

1939-1940

bill of attainer

pocket veto
pocket veto
republican form of government
advice and consent freedom of seeper
judicial region of government
advice and consent freedom of seeper
judicial regional mendager

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in the process of seeper description
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article one seeper description
region of seeper descrip

1929-1930

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1935-1936

right power action of powers and in the power and in the

1941-1942



1931-1932

article five
article five
article five
article five
article five
blands for the five
article of conference
article for commerce
article five
a

1937-1938





declaration of the same plant Laxes and address the second of the second o

1951-1952

bill of rights

4th amendment rights

4th am federal power our unique board raise and support anter
Commander - in - chief
articles of confederation
articles of tonfederation
free press spare also and states freedom of the press
right to vote
religious freedom

preestion and a series of the series of the

1947-1948



1953-1954



1959-1960





1955-1956





picare alian

civil rights

pilital acids

responding fathers

responding fathers

responding fathers

trial

Segregation

1st amendment

equal rights

apport toment

1969-1970

equal rights

voting rights

equal protection

rights

equal protection

commander -in - chief

Ist amongment into vet - when the peak in the peak in

1975-1976

habeas corpus
habeas corpus
habeas corpus
15th amendment
1st amendment
1st amendment
clipt amendment
in the amendment
in the

1965-1966



1971-1972

was posed to the state of the s

1977-1978

1967-1968



1973-1974







1987-1988



1993-1994



1983-1984



1989-1990



1995-1996



1985-1986



1991-1992







2005-2006



1st amendment
1s

2001-2002



2007-2008



2013-2014



2003-2004



2009-2010





Below, we provide historical term-frequency plots, which are analogous to the plots shown in Figure 14 in the Article, for all terms in the Expansive dictionary. Each plot depicts the number of times the term was mentioned for every 1,000,000 spoken words on a biannual, per-Congress basis.

Figure OA.3: Partisan Discrepancies in Constitutional Language (All Terms)

