Supporting Information (Online)

Where is Presidential Power?
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A Survey Information and Diagnostics

A.1 Pre-testing

Prior to fielding the survey, we ran a series of pre-tests. These tests are valuable for the expert survey that we discuss throughout the article. However, they are especially valuable for a companion survey that we also conducted of non-experts, which we discuss in more detail in Appendix A.2. In particular, we wanted to make sure that the meaning of the questions and terms were clear to everyone taking the survey, but especially to non-experts. Each pre-test provided a description of the concept of "discretion" followed by a prompt for the respondent to select correct examples of its use from a selection of four choices. The four choices were

A. President George H. W. Bush pushing for education reform in Congress.

B. President George H. W. Bush pardoning officials implicated in the Iran-Contra scandal.

C. President George H. W. Bush signing legislation that increased taxes and reduced the deficit.

D. President George H. W. Bush ordering government agencies to treat Puerto Rico as a state.

with B and D as correct uses of the term, and A and C incorrect uses of the term. Our initial pre-test, fielded on 400 MTurk respondents, used the following definition:

> *Presidents can use their position as the head of the executive branch to change policy.* In some cases, they have a great deal of discretion, or freedom, to change existing policies and create new ones. In others, their discretion to change or create policy is more limited.

This initial test revealed only suggestive evidence that non-experts could accurately grasp the concept: respondents selected correct answers on average 61% of the time, but selected at least one wrong answer 45% of the time. Moreover, about 20% of the survey failed an attention check at the end of the survey, or included responses to an open-ended question that suggested they were not human. In the second pre-test, which we fielded on the Prolific platform, we randomly assigned 600 respondents to one of three definitions of discretion. The key difference in these definitions was the first sentence, which is italicized in the definition above. The three conditions were:

1. Presidents can use their position as the head of the executive branch to change policy.

2. Presidents can use their legal authority as the head of the executive branch to change policy.

3. Presidents can use their legal authority as the head of the executive branch to change policy without Congress.

Overall, accuracy in this sample was higher, with correct answers selected 68% of the time, and wrong answers selected 35% of the time. Moreover, there were significant differences in respondents exposed to the third definition, relative to the others. More specifically, there was a reduction in the frequency of incorrect answers, decreasing from 35% to 22%. We inferred that the inclusion of the words "without Congress" was an important cognitive cue for non-experts, helping them to identify the concept we had in mind. This informed our selection of the final question wording, indicated in Figure A1.

Finally, we pre-tested the full pairwise comparison version of the survey on a sample of 300 U.S. respondents who were representative in terms of gender, age, education, and party identification. This sample was obtained through Lucid, an online workforce platform. One potential concern of a pairwise comparison approach is that respondents might simply click the left or right choice as quickly as possible to receive payment. If this is the case, we would expect to see left-right response distributions that deviate markedly from a simulated coin flip, with some respondents simply selecting

all lefts or rights. Reassuringly, in this final pre-test, the response distributions were not distinguishable from a coin flip, and no respondent seemed to have clicked through on one side or the other.

Presidents can use their legal authority as the head of the executive branch to change policy <u>without Congress</u>. In some cases, they have a great deal of **discretion**, or freedom, to change existing policies and create new ones. In others, their ability to use executive actions to change or create policy is more limited.

For the following pair of policy areas, please click on the policy that recent presidents (i.e., Bill Clinton, George W. Bush, Barack Obama, and Donald J. Trump) have had **greater discretion** to change through executive action. (1 of 20)

| Defense Alliances, Military Aid, and Weapons Sales to other Countries | Health Insurance Availability and Costs |

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Figure A1 – Survey Instrument

Earlier in this survey, we gave you a definition of executive "discretion," by which we meant the freedom to act without Congress. To help us understand your answers, can you tell us who you would rank as the U.S. president who has used the most discretion, and why? (Click the arrow when finished.)

←   →

Figure A2 – Attention Check

Discretion Topic	Major Topic (CAP)	Sub-Topic Name-Change or Creation?
Inflation, Prices, and Interest Rates	Economic Policy	No
Monetary policy	Economic Policy	Yes
Tax policy	Economic Policy	No
Voting Rights and Election Administration	Civil Rights and Civil Liberties	Yes
Access to Government Information	Civil Rights and Civil Liberties	Yes
Discrimination Against Protected Classes	Civil Rights and Civil Liberties	Yes
Firearm regulation (i.e. gun control)	Civil Rights and Civil Liberties	Yes
Health Insurance Availability and Costs	Healthcare	No
Regulation of the Drug Industry, Medical Devices, and Clinical Labs	Healthcare	No
Disease Prevention, Treatment, and Health Promotion	Healthcare	No
Prescription Drug Coverage and Costs	Healthcare	No
Abortion policy	Healthcare	Yes
Substance Abuse Prevention and Treatment	Healthcare	Yes
Government Subsidies to Farmers and Ranchers	Agriculture	Yes
Food Inspection and Safety	Agriculture	No
Worker Safety and Protection	Labor	No
Employee Relations and Labor Unions	Labor	No
Elementary, Vocational, and Higher Education	Education	Yes
Regulation and Promotion of energy	Energy	Yes
General Immigration and Refugee Issues	Immigration	No
Mass Transit Control and Safety	Transportation and Infrastructure	Yes
Public Works and Infrastructure Development	Transportation and Infrastructure	No
Illegal Drug Production, Trafficking, and Control	Criminal Justice	No
Prisons	Criminal Justice	No
Police, Civil Defense, and Domestic Security Responses to Terrorism	Criminal Justice	No
Government Assistance for Low-Income Families, the Elderly, or Disabled	Welfare	Yes
Housing Policy	Housing	No
Corporate Mergers, Antitrust Regulation, and Corporate Management Issues	Consumer Protection	No
Domestic Disaster Relief	Consumer Protection	No
Consumer Safety and Consumer Fraud	Consumer Protection	No
Oversight and Regulation of the Financial Services Industry	Consumer Protection	Yes
Military Intelligence and Espionage	Defense	No
Arms Control and Nuclear Nonproliferation	Defense	No
Direct War Related Issues	Defense	No
Defense Alliances, Military Aid, and Weapons Sales to other Countries	Defense	No
Government Use of Space and Space Exploration Agreements	Science and Technology	No
Science Technology Transfer and International Scientific Cooperation	Science and Technology	No
Telephone and Telecommunication Regulation	Science and Technology	No
Newspaper, Publishing, and Broadcast Industry Regulation	Science and Technology	No
Computer Industry and Computer Security	Science and Technology	No
Government Employee Benefits, Pay, and Civil Service Issues	Government Operations	No
Census and Government Statistics	Government Operations	No
Government Funding of Research and Development	Government Operations	Yes
Government Purchasing, Contracts, and Property Management	Government Operations	Yes
Trade Negotiations, Disputes, Tariffs/Quotas, and Agreements	Trade and Diplomacy	Yes
Export Promotion and Regulation	Trade and Diplomacy	Yes
Foreign Aid	Trade and Diplomacy	No
Human Rights	Trade and Diplomacy	No
International Organizations, including Non-governmental Organizations	Trade and Diplomacy	No
Drinking Water Supply and Safety	Environment and Public Lands	No
National Parks and Monuments	Environment and Public Lands	No
Pollution, including waste, toxic chemicals, and carbon emissions	Environment and Public Lands	No
Wildlife Conservation and Management	Environment and Public Lands	Yes
Public Lands and Resource Management	Environment and Public Lands	Yes

Table A1 – Discretion and Comparative Agendas Topics

A.2 Non-Expert Sample

In addition to our survey of experts, we also conducted a survey of non-experts, which we discuss here and which we plan to use in future analyses. A survey of non-experts presents several challenges. First, initial pre-tests that we report in (Section A1 suggested that as much as 20% of respondents we reached using MTurk were not human. Consequently, we selected an alternative vendor, Lucid,

because of its investment in the removal of bots and web-crawlers from its online workforce.[16] Our public survey was fielded by Lucid from March 15-18, 2019.

Second, we wanted to ensure that our non-expert respondents would share a common definition of the concept of discretion after reading the prompt. We were particularly concerned that the prompt might confuse non-expert respondents new to the term. We therefore pre-tested several different prompts by randomly assigning these prompts and then comparing respondent performance on the task of selecting examples of presidents using discretion from a list. We report these pre-test results in the SI (see section A1), but overall, the final prompt guides most respondents to correct examples of presidents' use of discretion. Respondents with this prompt selected correct answers 68% of the time and incorrect ones 22% of the time. The phrase "without Congress" appeared to be most helpful in guiding respondents to the concept in question.

Third, we sought to exclude low-performing respondents *ex post*. After representative quotas were reached, responses to an open-ended attention check question (Figure A2) in the Lucid sample were examined for patterns indicating non-attentive or bot respondents. This led to twelve respondents being replaced. In addition, we dropped respondents who revealed they had misunderstood the definition of discretion, namely, those who thought of it as the noun form of the word "discreet." After removing respondents that failed our attention check by these definitions, our sample included 303 raters.[17] Section A1 of the SI provides further details.

Finally, another potential issue is that non-expert respondents, particularly those who are paid, might click through the task to complete it as quickly as possible. This does not produce bias, but like bot responses, it increases noise and would render policy areas less distinguishable. We performed several diagnostic checks to ensure this was not the case. We found that response times were comparable across samples. Median total response time was 4.23 and 4.37 minutes for experts and laypersons, respectively, which means that both sets of respondents spent about 13 seconds per comparison. In addition, in both the pre-tested samples and final samples, neither experts or non-experts were significantly more likely to select the righthand topic, which was adjacent to the "Next" button in the survey (Figure A1). For this reason, we believe differences in the resulting measures are a function of expertise, not an artifact of the relative level of care taken by respondents.

As Table A2 suggests, the subjects were broadly representative of the U.S. voting age population in terms of party identification, age, sex, and education. Though the sample is somewhat younger and more credentialed, the deviation is sufficiently minor that re-weighting the raters does not significantly alter the rank-order of the resulting discretion estimates.

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[16]Coppock and McClellan (2019) suggest Lucid supplies samples that are more suitable for social scientific inquiry, relative to other convenience sample sources like MTurk. Respondents were paid based on terms set by Lucid.

[17]Because these respondents make up a small proportion of our sample, the results are substantively unchanged if they are included.

		Sample	U.S. Voters
Party ID	Democrat	0.34	0.33
	Independent	0.37	0.37
	Republican	0.27	0.26
Sex	Female	0.50	0.53
	Male	0.50	0.47
Education	Some High School	0.03	0.15
	High School	0.25	0.27
	Some College	0.37	0.27
	BA or Higher	0.37	0.31
Age	18-24	0.10	0.09
	25-34	0.16	0.15
	35-44	0.18	0.15
	45-64	0.36	0.36
	65+	0.20	0.25

Table A2 – Public sample compared to the population of eligible U.S. voters. U.S. voter party ID data come from Pew Research (`https://www.people-press.org/2018/03/20/party-identification-trends-1992-2017/`); other demographic data obtained from the 2018 current population survey of the Census Bureau.

The expert and public samples differ in ways beyond their degree of expertise. Of course, all expert respondents have a graduate credential of some kind (usually a J.D. or Ph.D.). In addition, the expert sample underrepresents women and non-Democratic party identifiers, relative to the general public. Both of these patterns are broadly reflective of trends in academia, not our choice of experts. Scholars in the fields of political science and law tend to be more politically liberal (Chilton and Posner 2014; Rom 2019), and women make-up about one-fourth of the Presidents and Executive Politics section of the American Political Science Association (Reid and Curry 2019). The over-representation of Democrats reported in Figure A3 is comparable to estimates that Democrats outnumber Republicans roughly 8:1 in the law and the social sciences fields. Notably, one recent survey of executive politics scholars that asked respondents to rank presidents has been critiqued as politically biased (see Rottinghaus and Vaughn 2017; Azari 2018). Our survey specifically primes memories of both Republican and Democratic presidents and the scope of power that presidents exercise across policy areas. For this reason, we believe that potential for partisan bias influencing the results of the expert survey is minimal.

In this current paper, for reasons of space we do not analyze the results of this non-expert survey. However, these results present numerous possibilities we intend to pursue in future research. It will allow us to examine whether experts and non-experts reach similar or divergent conclusions about discretion, and whether the public also assesses the president as having different levels of discretion in foreign versus domestic policy. Finally, it may provide a systematic assessment of the "expectations gap," in which the public views the president as having more (or less) discretion than seen in the baseline established by the expert survey. This, of course, would open the door to work investigating determinants of this gap, such as whether it is impacted by presidential rhetoric and actions.

A.3 Sample Statistics for Expert Survey

	Population	Sample
N	173	128
Junior	0.1	0.125
Female	0.22	0.195
Law	0.28	0.273
Political Science	0.6	0.617
History	0.08	0.078
Terminal Degree (median)	1993	1994

Table A3 – Expert sample compared to the subject pool of executive politics scholars across law, political science, and history. Terminal degree, demographic, and career information obtained through public searches of expert webpages and vitae.
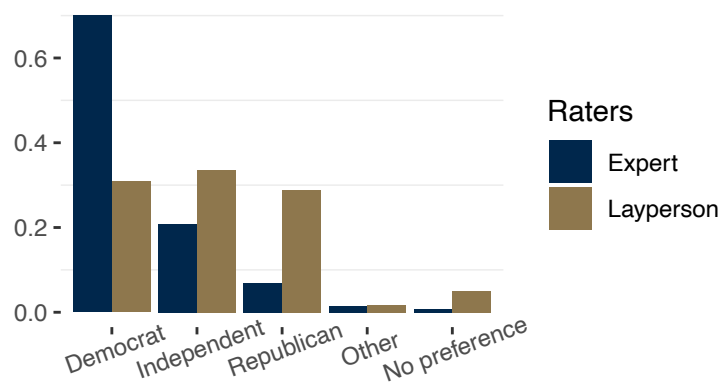
Figure A3 – Expert panel sample relative to the layperson sample and the general public. Includes only experts who completed the survey and excludes three who would not report partisanship.

A.4 Stochastic Transitivity

Probabilistic choice models like the one we employ typically assume some form of stochastic transitivty. This assumption is not empirically verifiable. However, counting the incidence of violations provides a descriptive measure of expert and public inconsistency. For our purposes, it is one way to assess what is gained by consulting experts over laypersons. We report aggregate and within-rater violations in Table A4 and Figure A4, respectively.

According to Table A4, the incidence of aggregate transitivity violations in the public sample are higher, relative to the expert sample. For a set of choice probabilities P, if $P_{ij} \geq 0.5$ and $P_{jk} \geq 0.5$, then weak stochastic transitivity is defined as $P_{ik} \geq 0.5$, moderate as $P_{ik} \geq \min(P_{ij}, P_{jk})$, and strong as $P_{ik} \geq \max(P_{ij}, P_{jk})$ (Wickelmaier 2019). Within-rater violations in Figure A4 are also instructive. On average, experts select one fewer pairwise choice that violates transitivity.

Sample	Assumption	Error Ratio	Mean Dev.
Experts	Weak	0.21	0.47
	Moderate	0.30	0.60
	Strong	0.32	0.74
Public	Weak	0.14	0.24
	Moderate	0.39	0.28
	Strong	0.52	0.38

Table A4 – Stochastic transitivity violations are more common among the public, relative to experts. Reports the error ratios and mean deviation from the minimum probability for which transitivity would hold for weak, moderate, and strong transitivity (e.g., Choisel and Wickelmaier 2007; Suppes et al. 2006), in expert and public samples.
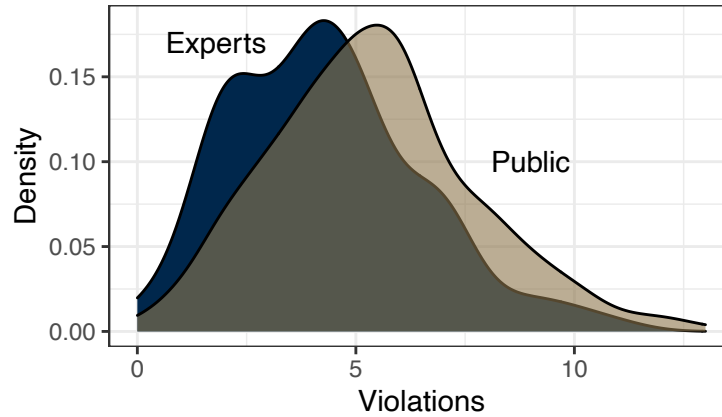

Figure A4 – Within-rater incidence of transitivity violations is higher among the public, relative to experts. Reports density plots for the incidence of transitivity violations for the relational topic graph unique to each rater.

B   Additional Results

Below, we report results related to unilateral action using an alternative estimation strategy—which is simply the bootstrapped mean, indicating the unconditional probability the topic is selected when it appears.

Data Source	Outcome	r	95% Conf. Int.
Comparative Agendas Project	Pre-1992 Exec. Orders	0.18	(-0.09, 0.43)
	Post-1992 Exec. Orders	0.28	(0.01, 0.51)
	All Exec. Orders	0.20	(-0.07, 0.45)
Chiou and Rothenberg (2014)	Pre-1992 Sig. Orders	0.28	(0.01, 0.51)
	Post-1992 Sig. Orders	0.32	(0.05, 0.54)
	All Sig. Orders	0.31	(0.04, 0.53)
Lowande (2019)	Total Actions	0.49	(0.24, 0.68)

Table B5 – Discretion (Non-parametric) is positively associated with action. Executive order counts come from the Comparative Agendas Project; estimates of all unilateral action come from (Lowande 2021), and includes all directives, as well as non-directive actions like regulations and informal orders. Discretion is a topic's mean selection score.
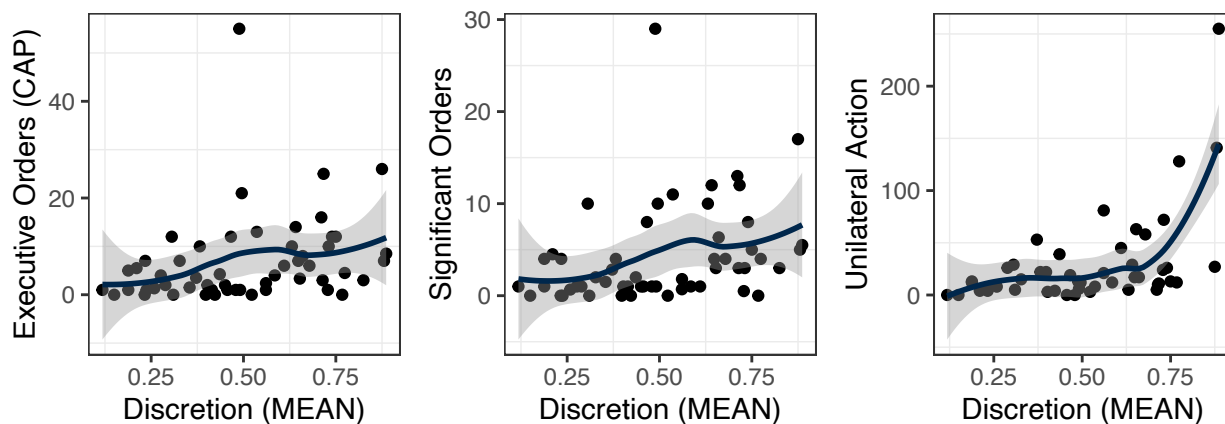
Figure B5 – Presidential Discretion and Unilateral Action by Policy Area, 1992-2018. Executive order counts (left plot) come from the Comparative Agendas Project; executive order counts (center plot) from Chiou and Rothenberg (2014) were generated by setting a significance threshold of 0.5; estimates of total unilateral action (right panel) come from (Lowande 2021), and include all directives, as well as non-directive actions like regulations and informal orders. Discretion is a topic's mean selection score.

B.1   Discretion According to Legal Scholars

One potential concern with the results presenting in the main text is that the scores are derived from the substantive judgment of political scientists, may have internalized the hypotheses (e.g., related the two-presidencies or unilateral action) we assess. That would mean that the scores themselves are an artifact of the hypotheses, rather than an accurate reflection of the discretion of the president. To investigate this issue, we re-estimated the discretion scores using the same methods, while excluding all political scientists. This means that the new discretion estimates are based on the 56 non-political scientist respondents—in this case, mostly legal scholars or those who have law degrees–in the original sample.

Overall, the results in Figures B6 and B7 reproduce the findings reported in the main text—specifically, those reported in Figures 2 and 3. Presidents are rated by lawyers as having more discretion in foregin affairs, relative to domestic policy, and are more active in issuing presidential directives in those areas. Both are consistent with theories of the presidency that have little or no purchase in the disciplines of those surveyed for these scores.
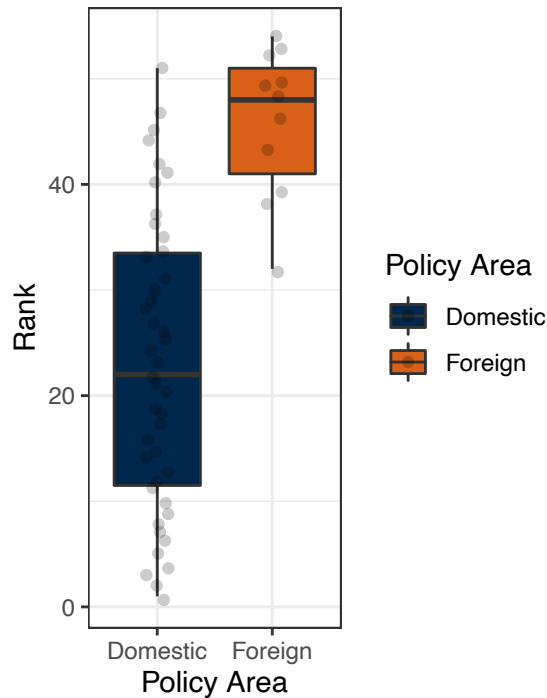
Figure B6 – The Two Presidencies Thesis (according to legal scholars). Higher rank indicates *more* discretion. Arms control, defense alliances, war, exports, foreign aid, refugees and immigration, human rights, international organizations, military intelligence, responses to terrorism, and trade agreements were classified as foreign policy areas. Points jittered to prevent over-plotting.

Data Source	Outcome	r	95% Conf. Int.
Comparative Agendas Project	Pre-1992 Exec. Orders	0.12	(-0.15, 0.38)
	Post-1992 Exec. Orders	0.24	(-0.03, 0.47)
	All Exec. Orders	0.15	(-0.13, 0.4)
Chiou and Rothenberg (2014)	Pre-1992 Sig. Orders	0.23	(-0.04, 0.47)
	Post-1992 Sig. Orders	0.28	(0.02, 0.51)
	All Sig. Orders	0.26	(0, 0.5)
Lowande (2019)	Total Actions	0.45	(0.19, 0.65)

Table B6 – Discretion (according to legal scholars) is Positively Associated with Presidential Action. Executive order counts come from the Comparative Agendas Project; executive order counts from Chiou and Rothenberg (2014) were generated by setting a significance threshold of 0.5; estimates of total unilateral action come from (Lowande 2021), and includes all directives, as well as non-directive actions like regulations and informal orders. Includes random utility model estimates of discretion, derived from the judgements of 56 non-political scientists.
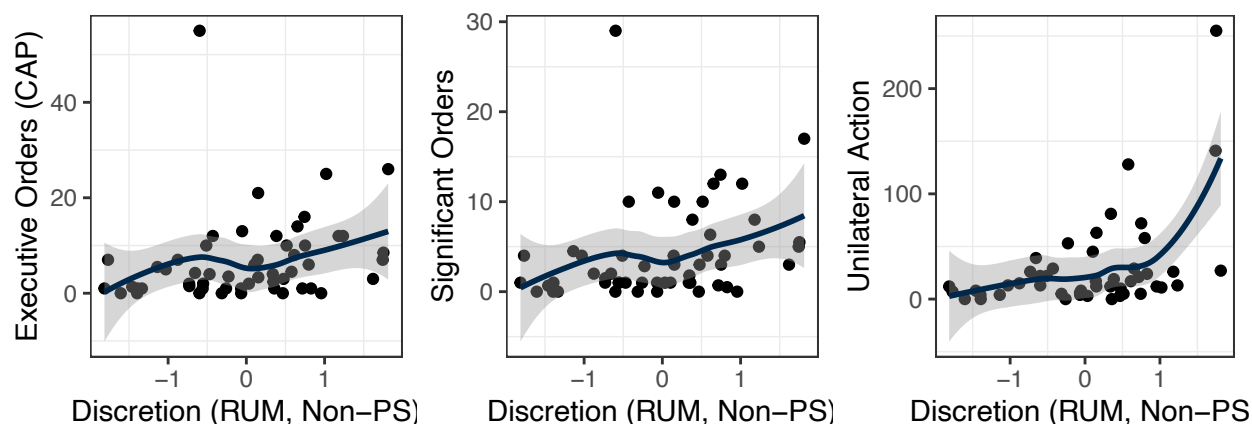
Figure B7 – Presidential Discretion (according to Lawyers) and Unilateral Action by Policy Area, 1992-2018. Executive order counts (left plot) come from the Comparative Agendas Project; executive order counts (center plot) from Chiou and Rothenberg (2014) were generated by setting a significance threshold of 0.5; estimates of total unilateral action (right panel) come from Lowande (2021), and include all directives, as well as non-directive actions like regulations and informal orders. Includes random utility model (RUM) estimates of discretion, derived from the judgements of 56 non-political scientists.

B.2 Comparison with Agency Discretion Measures

One potential concern with our measure of presidential discretion is that it might simply reproduce existing measures of executive branch discretion. To investigate this, we compared our measure to summary measures constructed from two studies.

Epstein and O'Halloran (1999) construct a "discretion ratio," which is the proportion of Congressional Quarterly summary provisions of a major law that delegate to an agency, less a percentage multiplier that is greater when more constraint provisions are present. Because these data were never made available beyond the study's authors, we use a replication conducted by Lowande (2014), which updates their list to 2012, and summarize this discretion ratio by policy area. We report these results and compare them with our measure in Figure B8.

Bolton and Thrower (2019) report a measure based on annual appropriations bills to agencies, dividing this by the number of pages of limitation riders (as a proxy for constraints). We assign agencies to a priniipal area of policy, and again take the average discretion. We report these comparisons in B9. In both cases, agency discretion is orthogonal to presidential discretion. Moreover, B8 illustrates a basic problem of discretion measures that use coding of bill summaries. Fewer provisions implies more imprecision in discretion scores, which varies by policy area, and is unmodeled.

Finally, we examined the rank order of policy areas and the distribution of independent agencies with authority over that area. Our concern was that some combination of independence and discretion could recover our estimates. That is, an independent agency with high discretion might explain a low presidential discretion rating. As Table B7 suggests, this is not the case, with policy areas covered by independent agencies corresponding to both low and high values of presidential discretion. Overall, these comparisons suggest to us that our measures recover a unique, latent concept that is largely intractable to account for with either appropriations or statutes.
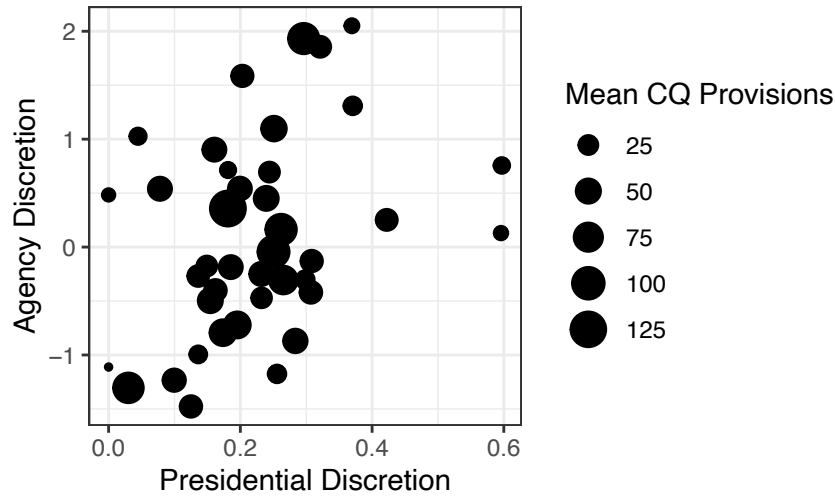
Figure B8 – Agency discretion (Epstein and O'Halloran 1999) measure is orthogonal to presidential discretion, and based on variable information. Plots agency discretion and presidential measures, with point size determined by the mean number of Congressional Quarterly Almanac summary provisions agency discretion measures are based on. Based on a replication and extension of Epstein and O'Halloran (1999) of major laws from 1947-2012, conducted by Lowande (2014).
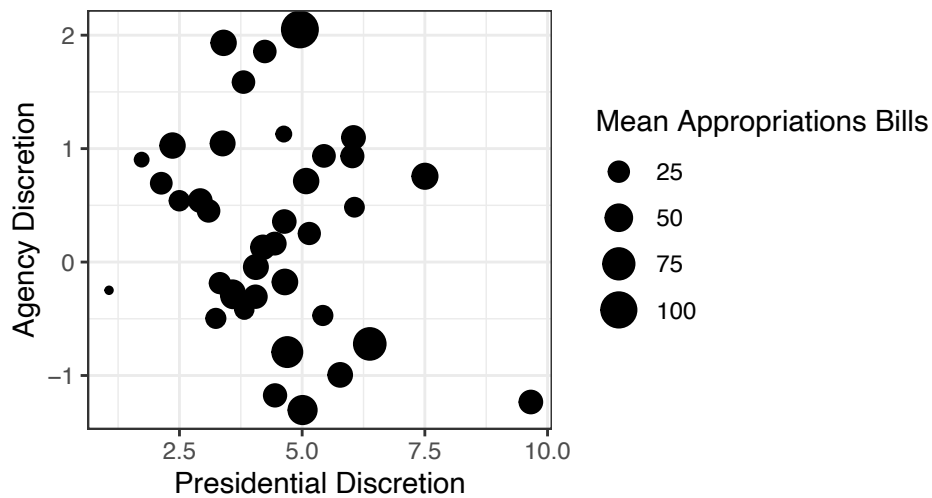

Figure B9 – Agency discretion (Bolton and Thrower 2019) measure is orthogonal to presidential discretion. Plots agency discretion and presidential measures, with point size determined by the mean number of appropraitions bills within topic from 1992-2014, as measured by Bolton and Thrower (2019).

Rank	Policy Area	Independent, Non-Executive Agencies with		
		Strong Authority	Some Authority	Advisory Authority
1	Direct War Related Issues			
2	Military Intelligence and Espionage			
3	Trade Agreements and Barriers		USTDA	ITC
4	Public Lands and Resource Management			
5	Defense Alliances, Military Aid, and Weapons Sales			
6	Arms Control and Nuclear Nonproliferation			
7	Police, Civil Defense, and Terrorism			
8	National Parks and Monuments			
9	Science/Technology Transfer			
10	International Organizations			
11	Export Promotion and Regulation	Ex-Im Bank	USTDA	
12	General Immigration and Refugee Issues			
13	Government Use of Space			
14	Access to Government Information			
15	Wildlife Conservation and Management			
16	Government Purchasing, Contracts, and Property	GSA		
17	Human Rights			
18	Domestic Disaster Relief		SBA	
19	Regulation and Promotion of energy	FERC		
20	Illegal Drug Production, Trafficking, and Control			
21	Foreign Aid		USAID, DFC	
22	Pollution			
23	Government Funding of Research and Development			
24	Census and Government Statistics			
25	Government Employee Benefits, Pay, and Civil Service	OPM, FLRA		
26	Disease Prevention, Treatment, and Health Promotion			
27	Food Inspection and Safety			
28	Consumer Safety and Consumer Fraud	CPSC, FTC	CFPB	
29	Computer Industry and Computer Security			
30	Public Works and Infrastructure Development	TVA		
31	Corporate Mergers, Antitrust, and Management	FTC		
32	Discrimination Against Protected Classes	EEOC		
33	Worker Safety and Protection	OSHRC		
34	Housing Policy		FHFA	
35	Substance Abuse Prevention and Treatment			
36	Drug, Medical Device, and Clinical Lab Regulation			
37	Elementary, Vocational, and Higher Education			
38	Prisons			
39	Telecommunication Regulation	FCC		
40	Oversight and Regulation of Financial Services	CFPB	FHFA	
41	Government Subsidies to Farmers and Ranchers		FCA	
42	Mass Transit Control and Safety	NTSB		
43	Health Insurance Availability and Costs			
44	Drinking Water Supply and Safety			
45	Employee Relations and Labor Unions	NLRB	FMCS	
46	Media and Broadcast Industry Regulation	FCC		
47	Abortion policy			
48	Voting Rights and Election Administration		FEC	EAC, USCCR
49	Prescription Drug Coverage and Costs			
50	Assistance for Low-Income, the Elderly, or Disabled			
51	Tax policy			
52	Firearm regulation			
53	Inflation, Prices, and Interest Rates	Fed		
54	Monetary policy	Fed		

Table B7 – **Agency independence is orthogonal to presidential discretion.** Independent agencies drawn from `https://pitt.libguides.com/usgovinfo/independentagencies`. Agency "independence" can be thought of as a continuous concept (Selin 2015). However, because our purpose is to provide a substantive diagnostic check on our results, we use a dichotomous classification. Naturally, the agencies above tend to be rated as more independent by Selin.