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Source: *The Journal of Politics,* Vol. 62, No. 1 (Feb., 2000), pp. 187-205
Published by: The University of Chicago Press on behalf of the Southern Political Science Association
Stable URL: http://www.jstor.org/stable/2647603
Accessed: 17-10-2017 19:00 UTC

RESEARCH NOTES

Testing Formal Theories of Political Rhetoric

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Using a newly constructed dataset of 443 episodes of legislative bargaining between the president and Congress, we evaluate two game theoretic models of political bargaining: Matthews' coordination model and Ingberman and Yao's commitment model. We empirically test whether political rhetoric (i.e., presidential veto threats) are important in bargaining over public policy in the United States between 1946 and 1992. The paper provides empirical insight into presidential power and also addresses some difficult issues in the empirical evaluation of formal models with necessary conditions, sufficient conditions, or no stochastic components. We find that the coordination model does a better job than the commitment model of accounting for the data.

> Let them be forewarned, no matter how well intentioned they might be, no matter what their illusions may be, I have my veto pen drawn and ready for any tax increase that Congress might think of sending up. And I have only one thing to say to the tax increasers: Go ahead and make my day.
>
> —President Ronald Reagan[1]

[1]Quoted in Larry Berman, *Looking Back on the Reagan Presidency* (Baltimore: Johns Hopkins Press, 1990).

> Repeatedly I have said there are right ways and wrong ways to cut the deficit. This legislation [H.R. 15161, FY 96 Foreign Aid and State Department Authorization] is the wrong way. We did not win the Cold War to walk away and blow the opportunities of the peace on short-sighted, scattershotted budget cuts and attempts to micro-manage the United States foreign policy. If this bill passes in its present form I will veto it.
>
> —President Bill Clinton[2]

Rhetoric is widely believed to be important in politics. But how could it be? Rhetoric is just words. Politics is about power: redistributing wealth, creating rights, and making war. Can verbal posturing, mere words, make much difference in such matters? In this article, we show that the answer is "yes," at least in one important context: legislative bargaining between the president and Congress. We study presidential veto threats that occur during this bargaining. This paper provides an empirical analysis of how often Presidents use political rhetoric to extract policy concessions from the legislative branch and, perhaps more important, under what circumstances veto threats affect policy outcomes. In short, we provide an empirical portrait of the legislative process that sheds light on the relationship between the president and Congress. We also use this study to investigate some thorny issues concerning empirical tests of formal theory. We study veto threats by testing two models: Matthews' "coordination" model (1989) and Ingberman and Yao's "commitment" model of veto threats (1991).

Empirically testing formal theories is a formidable task. The bulk of empirical tests of formal models have adopted regression frameworks. More often than not, a theory or model is evaluated on the basis of the sign and statistical significance of important independent variables. While a regression framework is sometimes useful, it is not always the appropriate method. It is particularly problematic when the model involves necessary conditions or sufficient conditions or is not probabilistic. The two models we evaluate generate specific predictions that are not probabilistic, and, consequently, should not be tested—at least initially—through regression techniques. Instead, we propose a rigorous empirical test that is somewhat similar to the "crucial case" study method often associated with comparative and international politics. We show that this is an effective method for evaluating formal models because it exploits the strength of formal theory to make precise predictions.[3]

This article is organized as follows. In the next section, we detail the logic of the formal models and provide some simple numerical illustrations. The third section describes a new dataset, which examines 443 episodes of legislative bargaining between the president and Congress in the period 1945–92, from the first Truman administration through the Bush administration. The fourth section explains how we evaluate the formal theories. We then test their ability to predict precise "paths of play" through the game. We conclude by discussing the significance of the findings.

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[2] *CQ Weekly Report.* p. 1514, May 27, 1995.
[3] See Harry Eckstein 1992, pp. 117–76 and King, Keohane and Verba 1994, pp. 208–30.

Formal Models of Rhetoric

Rational choice theorists have devised two formal theories of veto threats. Both are variants of the celebrated Romer-Rosenthal model of ultimatum bargaining in political settings (1978). This model is a two-stage game in which a proposer (here, Congress) makes a single, final, take-it-or-leave-it offer to a chooser (here, the president). The threat models allow the president to issue a veto threat before Congress enacts a bill. A threat serves different functions in the two models. In the first model, Ingberman and Yao's *commitment model*, political rhetoric boxes the speaker so he cannot retreat from his position without paying a steep price. The speaker's commitment then alters the subsequent behavior of opponents. President Ronald Reagan's words at the beginning of the paper illustrate such a threat. In the second model, Matthews' *coordination model*, a threat is a signal that helps the two sides avoid a bad outcome and reach a mutually advantageous agreement. The second quote, from President Bill Clinton, illustrates this kind'of threat. Even in this model, though, rhetoric is hardly neutral. Speakers use it strategically to bend agreements in their favor.

The Commitment Model

Ingberman and Yao's commitment model assumes complete and perfect information (a point we return to later). Let x denote a bill, a point on the line X. The model begins with the president announcing C, an interval on the line. He pledges to veto all bills outside C. The model assumes the president suffers an exogenous penalty if he later violates this pledge. The penalty schedule takes either of two forms. In the "clear-cut" schedule, the President is penalized according to

$$h(x) = \begin{cases} 0 \text{ if } x \in C \\ k \text{ otherwise} \end{cases}$$

where the value k is exogenous. Thus, the president's utility function becomes $W(x) \equiv V(x) - h(x)$, where $V(x)$ denotes the utility value of the law in place at the end of the play. This schedule is intended to reflect the consequences of violating a "bright line" commitment, such as "no new taxes" or "any health insurance bill must provide universal coverage or I will veto it."

In the second schedule, the "diffuse" schedule, the President is penalized according to $g(x)$, a continuous and everywhere non-negative function such that $g(x) = 0$ if $x \in C$, $g'(x) < 0$ if $x < \min\{C\}$, and $g'(x) > 0$ if $x > \max\{C\}$. In this case, the president's utility function becomes $W(x) \equiv V(x) - g(x)$. With this schedule, small violations of the pledge result in small penalties while large violations result in large penalties.

Figure 1 illustrates a clear-cut commitment. We assume that a veto override is impossible. In the indicated configuration, the president vetoes all bills not in $C = [a, s]$ since doing so yields greater utility than accepting the bill (s indicates the status quo policy). Congress thus offers $x = a$, which is the most attractive

FIGURE 1

A "Clear-cut" Commitment
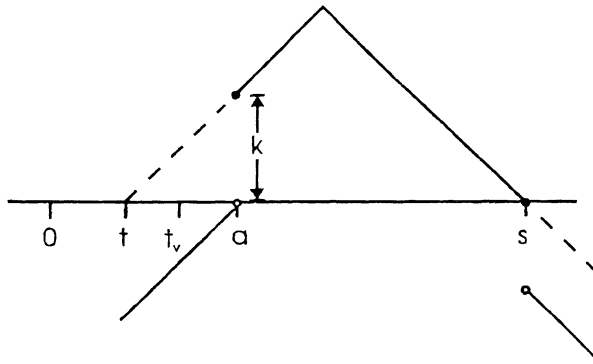
signable bill given the commitment. (We show in an appendix available from the authors that in this example the president has no incentive to make a commitment leading to another bill.)

Now we suppose that an override is possible for a bill located at or to the right of t_v (the reservation policy for the pivotal voter in an override attempt). Then, the president commits to a C with left-hand border at or above t_v. This forces Congress to submit $x_2 = t_v$ rather than $x_1 = t$. The president may or may not veto depending on C; but if he vetoes, Congress overrides the veto.

Figure 2 illustrates diffuse commitments. We suppose that no override is possible. Then, Congress submits $x = b$, which the president accepts. The president

FIGURE 2

A "Diffuse" Commitment
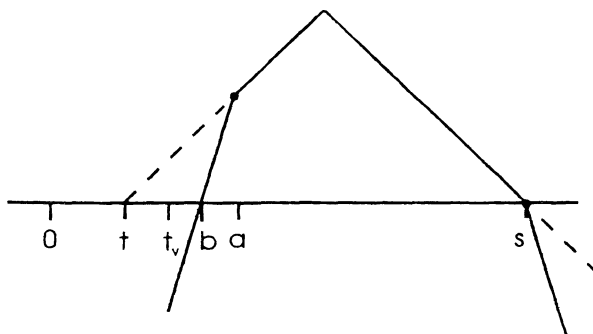
would do better if he made a clear-cut commitment, so he will not make diffuse commitments in this situation.

We suppose an override is possible, again for bills at, or to the right of, t_v. Then, a diffuse commitment again forces Congress to submit $x_2 = t_v$ rather than $x_1 = t$. In this case, the president vetoes the bill and the veto is overridden. In this configuration, the president gets to have his cake and eat it too: he makes a commitment that he honors and yet receives a bill he favors over the status quo.

The Coordination Model

The coordination model assumes the president has private information about his own policy preferences. Congress in turn has beliefs about the president's preferences. These beliefs constitute the president's policy reputation in the Washington community. The model thus formalizes part of the analysis offered in Richard Neustadt's (1980) classic treatise, *Presidential Power*.

The model modifies the sequence of play in the Romer-Rosenthal model to allow the president to send a message to Congress before it enacts a particular bill. The model places no a priori restrictions on the exact form of the message. However, the message is assumed to be costless in the technical sense that it is payoff-irrelevant for both players. In other words, it costs no money directly nor consumes any valuable time either to send or receive. It is just words. But though the message is cheap talk, it may still have an effect on Congress if the words alter Congress' beliefs about the president. The thrust of Matthews' analysis is to show how this happens, under what conditions, and with what consequences.

Matthews proves that only two types of equilibria are possible in the model. In the first, size one equilibria, all messages elicit the same bill from Congress. In other words, veto threats do not work. Size one equilibria always exist for any configuration of presidential preferences and possible beliefs.[4] In the second type of equilibrium, size two equilibria, threats do work. Two distinctly different bills are elicited, depending on the message received. The first bill is elicited by a message whose equilibrium meaning is "Congress, I will accept your most preferred policy." This bill is located at Congress' most preferred policy. The second bill is elicited by a message whose equilibrium meaning is "Congress, I may not accept your most preferred bill." This "compromise" bill is located away from Congress' ideal point in the direction of the president's most preferred policy. Matthews proves that at most two bills are elicitable.

The following example illustrates Matthews' coordination model. The example is slightly contrived but only to simplify the presentation. The policy space is a line running from $-\frac{1}{2}$ to 1 inclusive (see Figure 3). We use t to denote the president's reservation policy, the policy he finds utility-equivalent to the status

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[4] For example, so-called babbling equilibria always exist. In such an equilibrium, the president issues veto threats randomly. Knowing they are random, Congress ignores them; and because Congress ignores them, the president is free to issue random threats. We address empirical problems created by such equilibria below.

FIGURE 3

An Example of the Coordination Game
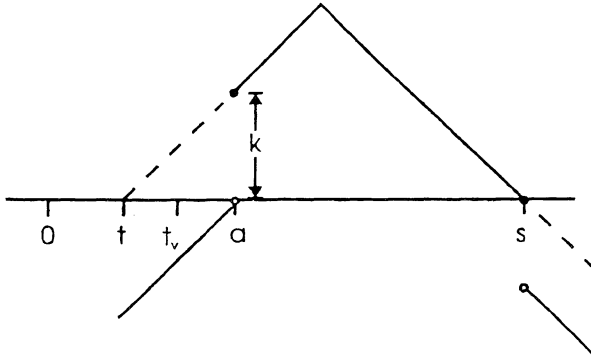
quo. In the example, there are four possible types for the president: Type 1, for whom $t = -\frac{1}{2}$; Type 2 for whom $t = -\frac{1}{8}$; Type 3 for whom $t = \frac{1}{2}$; and Type 4 for whom $t = 1$. The status quo is $\frac{3}{4}$ and Congress' ideal point is normalized to zero. Thus, Types 1 and 2 are "accommodators" because they would accept Congress' ideal policy if confronted with an ultimatum offer. Type 3 is a "compromiser," because he will accept an ultimatum offer that Congress prefers to the status quo, though not Congress' ideal policy. Type 4 is "recalcitrant" because he will not accept any offer Congress prefers to the status quo. The president's initial policy reputation is captured via a common knowledge, prior probability distribution on the four types. We use p_i to indicate the probability the president is Type i ($i = 1,4$). In an appendix (available from the authors), we show that Congress offers its ideal point if there is sufficient probability that the president is an accommodator. Otherwise, it offers the most favorable policy a compromiser will accept.

In the example, we assume Congress begins with the following beliefs: $p_1 = \frac{1}{8}$, $p_2 = \frac{1}{8}$, $p_3 = \frac{3}{8}$, and $p_4 = \frac{3}{8}$. If no threat were possible, then Congress would offer $x = 0.$[5] But in the threat game, the following is an equilibrium: if the president is Type 1, he sends the green-light message. If he is Type 2, 3, or 4, he sends the veto threat. If Congress receives the green-light message, it offers its ideal point, which is accepted by Types 1-2 but vetoed by Types 3-4. If Congress hears

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[5] Since using the "offer lemma" in the Appendix, $p_1 + p_2 = \frac{1}{4} > \frac{1}{2}p_3 = \frac{3}{16}$. This result may seem counter-intuitive since Congress is so pessimistic about the president accepting $x = 0$. But note that if the president is recalcitrant he will veto anything Congress would find more attractive than the status quo. So the recalcitrant types have no influence on a choice between $x = 0$ and $x = \frac{1}{2}$. And even though Congress expects the president to reject $x = 0$ it is still a worthwhile gamble given the attractiveness of $x = 0$ and the relatively small gain from $x = \frac{1}{2}$ relative to $s = \frac{3}{4}$. The specified behavior is indeed rational.

the veto threat, it offers $x = \frac{1}{2}$. This offer is accepted by Types 1-3 but vetoed by Type 4 (available from the authors).

There are thus three paths of play in this game. In the first, the President sends the green-light message and Congress responds with $x = 0$, which the president accepts. In the second, the president sends the veto threat and Congress responds with the compromise offer $x = \frac{1}{2}$, which the president accepts. In the third, the president sends the veto threat and Congress responds with the compromise offer $x = \frac{1}{2}$, which the president vetoes. The behavior of the Type 2 president is particularly interesting. This type issues the veto threat but is in fact bluffing: he would accept $x = 0$ if it were offered. But he prefers $x = \frac{1}{2}$ to $x = 0$ and so issues the threat. The bluff works because the Type 3 president also sends the threat, sincere in trying to avoid a veto that would maintain the status quo.[6] The example also indicates an important fact about the model: the presence of accommodators is a necessary condition for size two equilibria, for without them the green-light message cannot work.[7]

Research Design

Empirical evaluation of the models requires identifying a relevant universe of bills, which we define as all initially-passed, "non-minor" bills presented to the president from the 79th to 102nd Congresses (1945–92), the Truman to Bush administrations. This universe consists of 2,284 bills (a definition of "non-minor" appears in the Appendix). Veto threats directed at bills that were never passed are not studied for three reasons: (1) the theories do not address non-passed bills; (2) defining a valid sampling strategy for non-passed bills is problematic; and (3) collecting data on some of the relevant covariates is impossible. Veto threats may decrease the probability of a bill's passage, but we cannot measure this effect with our data. Minor bills are excluded from the study because they are substantively uninteresting, threats are rarely directed at them, and data are often unreliable. Bills that were re-passed in modified form after an earlier veto by the same president were also excluded. The previous veto may well affect the credibility of a threat directed at the re-passed bill, but the theories do not allow for this effect. Rather than muddy the waters by including re-passed bills, we exclude them for now, leaving this as an area for future research.

We partition the universe of initially passed non-minor bills presented to the president into bills signed by the president and bills vetoed by the president. To provide observations on the former, we draw a random sample of non-minor signed bills stratified by legislative significance (details on the coding of legis-

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[6] In the example, the Type 3 president is actually indifferent between the status quo and the offer. This is an uninteresting consequence of the type space in the example. If the type space were continuous then in a size two equilibrium there would be a range of compromisers who sincerely threaten and thereby benefit; the problem could also be avoided by allowing several types of compromisers in the example.

[7] Matthews 1989, p. 358, remark 2.

lative significance appear in the Appendix). This sample consists of 281 signed bills in three categories of legislative significance. To provide sufficient observations on vetoed bills, which are rare events, we over-sample vetoes of non-minor bills. In fact, we employ all such cases—a total of 162 bills distributed across the three categories of legislative significance. The aggregate number of bills in the study totals 443.

Because vetoed bills are over-sampled, this design is an example of *choice-based sampling*. Such samples are frequently employed in biomedical research, evaluations of training or treatment schemes, studies of transportation or participation choices, and other cases where a particular outcome is a rare event.[8] Choice-based samples provide an attractive method for economizing on sample sizes. However, weights must be applied to such samples in order to calculate the correct probabilities of paths of play. Fortunately, a simple weighting scheme makes the necessary correction for this type of sampling scheme. Additional details on this procedure can be found in the Appendix.[9]

Each bill in the study generated an event history detailing whether there was a veto threat, the nature of the threat (explained below), whether there was an apparent concession by Congress following the veto threat, the relationship between the concession and what the president had objected to, whether the president signed or vetoed the bill, whether there was an override attempt, and whether the veto was overridden. To gather the event histories, we first searched each volume of the *Public Papers of the Presidency* to find presidential involvement in each of the 443 bills. Next, we conducted a search to find additional threats not mentioned in the *Public Papers of the Presidency* by culling the legislative histories for each bill in the annual editions of the *Congressional Quarterly Almanac*. As a last check, we searched Nexus-Lexus for all articles in the *New York Times* and *Washington Post* that mentioned veto threats. We established an explicit set of written coding rules (available from the authors), and all coders followed these instructions to the letter. In all cases, at least two coders independently coded the information; a third coder broke disputes. Intercoder reliability proved to be quite high for veto threats (96%), whereas intercoder reliability for concessions was 91%.[10]

A critical step in the research design is defining and measuring veto threats.[11] A veto threat is defined as any statement made by the president himself or, in some cases, by certain officials that explicitly indicates the president's intention to veto the legislation or implicitly suggests an impending veto. For example, statements by administration officials stating clearly that the president will veto

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[8] Imbens 1992 provides citations to relevant examples.

[9] As a check on the sample, we estimated veto rates by significance level under unified and divided government using the entire population and compared those rates to similar ones estimated with the sample. The estimated probabilities are almost identical.

[10] Concessions were coded as "none," "some," and "capitulation." All disagreement involved adjacent categories (e.g., some versus none).

[11] Exact rules for threats and concessions are available upon request.

the bill and statements by a congressman indicating certain knowledge based on communications with the president that he will veto the bill are treated as legitimate veto threats. Statements in which the president expresses severe reservations about a piece of legislation and implies that he will use his veto power, but does not use direct language (e.g., "I will not sign," "I will have to veto"), are also treated as veto threats. More ambiguous negative mentions of bills are not considered threats. Statements expressing the speculation or opinions of congressmen or other officials are also not coded as threats. The random sample of initially presented bills contains 106 threatened bills: 30 Level A (Landmark) bills, 29 Level B (Important) bills, and 47 Level C (Ordinary) bills (see the Appendix for a complete definition of the bill categories).

Coding threats as clear-cut or diffuse would allow additional tests of the commitment model. However, the distinction between the two types of threats rests on the mathematical form of the penalty schedules, not the form of the rhetoric used by the president. Since the penalty schedules are exogenous—they do not arise endogenously in the model—the model is silent on what observable features might distinguish the two schedules. Attempts to code the two types based on the president's rhetoric did not achieve satisfactory inter-coder reliability. The tests employed below, therefore, do not rely on the distinction between clear-cut and diffuse threats.

For each threatened bill in our sample, it was determined whether Congress made concessions on the legislation. Following a veto threat by the president, did Congress make changes in the final version of the bill? If so, were these changes in the direction indicated by the president? Did they meet all of the objections of the president or only some of the objections? To answer these questions, we first identified the particular aspects of the bill (i.e., specific provisions, language, and/or general topic) mentioned by the president in the threat. We then examined legislative histories in the *CQ Almanac* and bill-signing and veto messages in the *Presidential Papers* to determine how changes in the bill finally presented to the president were connected to the president's objections, taking care to check the timing of threats and concessions. Of the 106 threatened bills in our sample of initially presented bills, Congress made no concessions on 33, made "some" concessions on 63, and "capitulated" on 10 bills.

Evaluating the Formal Theories

In *Methods and Models: A Guide to the Empirical Analysis of Formal Models in Political Science*, Morton (1999) argues that a researcher must answer two questions before empirically evaluating a formal model:

1. Is the formal model a complete data generating process or a partial data generating process?
2. Is the formal model entirely deterministic or deterministic with unobserved and/or stochastic elements?

Treating the models as partial data-generating processes would require either re-working the models, perhaps quite thoroughly (e.g., by adding new forms of incomplete information in such a way that hitherto necessary conditions became probabilistic), or adopting modifications that are quite ad hoc or may even violate the model's basic assumptions (e.g., by adding arbitrary "error terms" wherever needed to make deterministic predictions probabilistic). Instead, we test each model as is, treating the models as complete data-generating processes. This is a strong assumption and may lead to omitted variable bias, but we agree with Morton that before a model is supplemented or "fixed," it should be tested on its own terms.

We formulate a crucial case method to evaluate game theoretic models with necessary conditions, sufficient conditions, or no stochastic elements.[12] We conceptualize paths of play as "cases." For a given model, a crucial case is a path of play that is *always* off the equilibrium path of play. For example, suppose a model indicates "if outcome y, then always condition x (i.e., x is a necessary condition for y). Then the path "no x, outcome y" is a crucial case. Suppose a model indicates "whenever condition x, outcome y" (i.e., x is a sufficient condition). Then the path "condition x, no y" is a crucial case.

This crucial case method can be used to evaluate competitive models if three conditions are met. First, the models must share some paths of play, the "common" paths. Otherwise, they are incommensurate. Second, some of the common paths must not be reachable in equilibrium, so there are crucial cases, as defined above. Third, the set of crucial common paths must differ between the models, so the models make different predictions about a path that is crucial in one of the models.

From the perspective of the modified crucial case method, even a single errant observation may damage a model. Unquestionably, this view is extreme if carried to the limit, if only because of measurement error. Accordingly, we suggest goodness of fit as an appropriate way to think of competitive models with errant observations, combined with sensitivity tests on measurement error. The model with fewer errant observations will have superior goodness of fit—though it may still be so low that the evaluator finds the model unconvincing as a data-generating process.

The coordination model requires additional identifying assumptions before it can be empirically evaluated. In the model, size two equilibria can exist only under certain conditions, but size one equilibria can always exist. An outside observer will not be able with complete assurance to separate all occasions when only the size one equilibria can exist from those in which either could exist. Moreover, nothing in the model predicts which equilibrium will exist

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[12] An alternative method is suggested by Braumoeller and Goertz 1998. In essence, the authors advocate adding arbitrary error terms to deterministic models thus rendering them probabalistic. As noted in the text, we favor evaluating such models "as is" and then re-thinking the models (if necessary) in light of the evaluation.

when both can exist, nor will any standard equilibrium refinement exclude the size one equilibria. It is difficult to imagine any pattern in the data that could not be rationalized by an arbitrary combination of properly constructed size one and size two equilibria, thus rendering the models irrefutable. To resolve this problem, we impose two moderately strong assumptions: (A1) size two equilibria rather than size one equilibria prevail whenever it is possible for both to exist; (A2) the president does not issue veto threats in a size one equilibrium.

These assumptions are strong but not unreasonable. First, Matthews demonstrates that Congress always prefers size two equilibria over size one equilibria, and the president almost always does (Matthews, 1989, p. 358, remark 2). So the players have an incentive to coordinate on size two equilibria if they can—though how they might do so lies outside the model. Second, if only a size one equilibrium existed, then veto threats would be ineffective by definition. So why would presidents make them? It is easy to imagine they would not.

If the data augmented by the identifying restrictions display "impossible" patterns, then the problem may lie with the identifying restrictions rather than the model. Nonetheless, some form of identifying restrictions is required if the model is to be tested.

Empirical Findings: An Analysis of Paths of Play

The extensive form for the models is shown in Figure 4. Four paths are created by play in the early part of the game: threat–no concession; threat–some concessions; threat–capitulation; no threat. In the latter part of the game, veto and override decisions create three other possibilities: veto–override, veto–no override, and sign. Therefore, there are $4 \times 3 = 12$ paths of play through the game. These paths of play are listed in Table 1, which indicates whether a path of play is possible in the two models. If it is not possible, the table provides a brief explanation. As shown, Paths 1–3 provide hurdles for both models. Paths 5–8 provide hurdles for the commitment model. Paths 5 and 6 constitute crucial cases between the two models. These two paths are off the equilibrium path for the commitment model but not for the coordination model. Paths 10 and 11 would supply critical cases for the coordination model if one could distinguish observations from a size two equilibrium.[13] Unfortunately, this is not possible.

Table 2 provides counts of observed paths of play for 443 initially presented bills. The bulk of the observations are compatible with the models. However, appropriately weighing the observations to account for the sampling scheme, an estimated 10% of non-minor, initially presented bills involve events that violate

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[13] The identifying assumptions A1 and A2 force "no's" (in Table 1) for Paths 1–3 but do not do so for Paths 10 and 11. The problem is, size one equilibria always exist, while size two equilibria sometimes exist, and an outside observer can't distinguish those occasions when only size one equilibria exist from those in which both exist. If only a size one equilibrium exists, then via assumption A2, we should see no veto threat.

FIGURE 4

Paths of Play
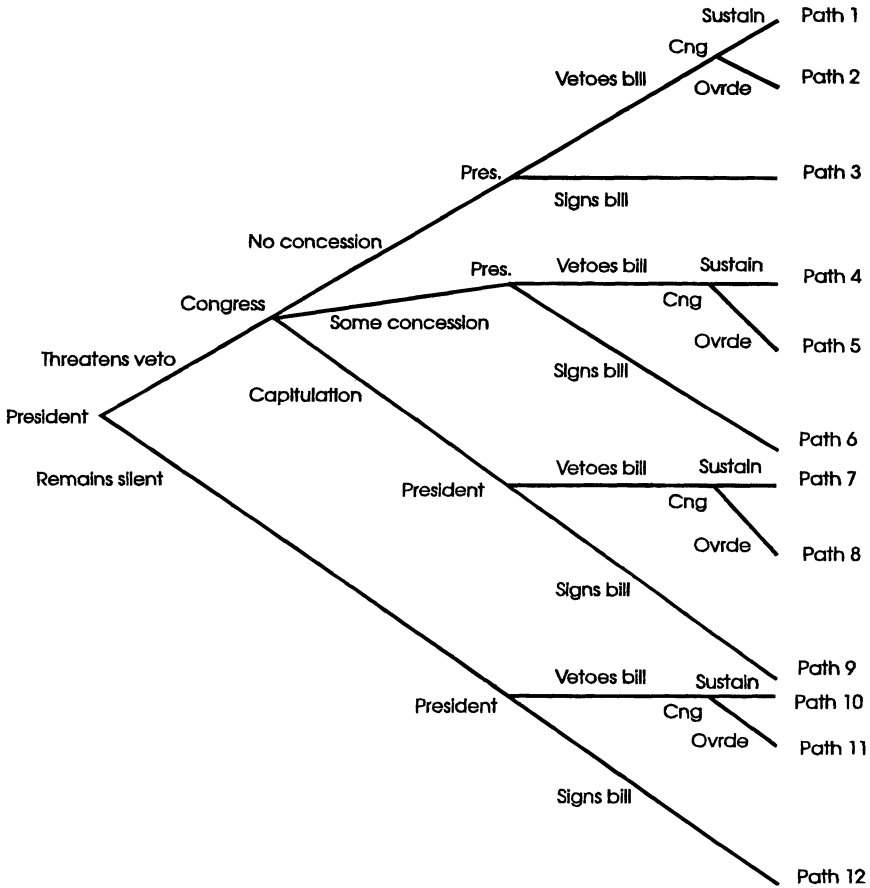
one or both models. The "impossible" observations fall into three classes: ineffectual threats (Paths 1–3, containing 15% of the weighted impossible observations), failed overrides after a commitment (Path 5, containing 13% of the weighted impossible observations), and broken commitments (Path 6, containing 73% of the weighted impossible observations).

Ineffectual Threats (Paths 1–3)

Thirty-three observations involved ineffectual threats, meaning no concession followed the threat. In neither model is this possible. However, most of these

TABLE 1

Paths of Play in the Two Models

Path of Play	Possible in Coordination Model?	Possible in Commitment Model?
1. Threat–no conces.–veto–over.	No: In size two equilibria threats bring concessions and A2 precludes other threats	No: A commitment will be taken only if it will bring concessions
2. Threat–no conces.–veto–not over.	No: In size two equilibria threats bring concessions and A2 precludes other threats	No: A commitment will be taken only if it brings concessions; and if there is a threat, a subsequent veto is always over-ridden
3. Threat–no conces.–signed	No: In size two equilibria threats bring concessions and A2 precludes other threats	No: A commitment will be taken only if it brings concessions; and the Pres. always keeps his commitment to veto
4. Threat–some conces.–veto–over.	Yes	Yes
5. Threat–some conces.–veto–not over.	Yes	No: If threat, vetoes always over-ridden
6. Threat–some conces.–signed	Yes	No: Pres. always keeps commitment to veto
7. Threat–capitulation–veto–over.	Yes	No: Pres. always keeps commitment to sign
8. Threat–capitulation–veto–not over.	Yes	No: If threat, vetoes always over-ridden
9. Threat–capitulation–signed	Yes	Yes
10. No threat–veto–over.	Yes (in a size one equilibrium, otherwise no)	Yes
11. No threat–veto–not over.	Yes (in a size one equilibrium, otherwise no)	Yes
12. No threat–veto–signed	Yes	Yes

cases involved override attempts that succeeded (all the observations in Path 1) or failed by narrow margins (12 of the observations in Path 2 failed an override by 10 or fewer votes). If the bills were shaped anticipating a veto and override attempt, concessions following a threat may simply have been too small to warrant notice in the legislative histories. But perhaps no concession was made and the purpose of the presidential veto threat lay outside either model, such as position-taking for the benefit of the public.

TABLE 2

Observed Paths of Play (unweighted observations)

Path of Play	Unified Govt	Divided Govt	Level A	Level B	Level C	Total
1. Threat–no conces.–veto–over.	2[a]	4[a]	3	0	3	6
2. Threat–no conces.–veto–not over.	4[a]	23[a]	0	5	22	27
3. Threat–no conces.–signed	0[a]	0[a]	0	0	0	0
4. Threat–some conces.–veto–over.	0	7	5	2	0	7
5. Threat–some conces.–veto–not over.	1[b]	28[b]	10	8	11	29
6. Threat–some conces.–signed	5[b]	22[b]	10	10	7	27
7. Threat–capitulation–veto–over.	0[b]	0[b]	0	0	0	0
8. Threat–capitulation–veto–not over.	0[b]	0[b]	0	0	0	0
9. Threat–capitulation–signed	0	10	2	4	4	10
10. No threat–veto–over.	2	12	1	6	7	14
11. No threat–veto–not over.	21	58	7	5	67	79
12. No threat–signed	127	117	79	80	85	244

[a] Paths not possible in either model.
[b] Paths not possible in commitment model.

Five of the cases in Path 2 occurred during presidential election years and involved override attempts that failed by a wide margin.[14] Such bills fit the profile of what Groseclose and McCarty (1996) have called "blame game vetoes," bills deliberately constructed to draw a politically damaging veto. The remaining 10 cases in Path 2 do not match this clear blame-game profile, either because no override was attempted (three were pocket vetoes) or because the veto occurred in an off-election year (seven cases).

Crucial Cases:
Failed Overrides After a Commitment (Path 5)

Twenty-nine observations violate the commitment model because they should have been overridden after a threatened veto (Path 5). Having multiple cases that contradict the commitment model suggest that this finding is not an artifact of measurement error. Braumoeller and Goertz (1998) propose a simple binomial test to account for measurement error where the level of mismeasurement is assumed to be 5%.[15] Adopting this test, we find that a measurement error of at least 10.1% would be required to generate a p-value of greater than 5%.[16] A

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[14] These cases are: S. 323 (1992), H.R. 2507 (1992), S. 3 (1992), H.R. 8617 (1976), H.R. 15714 (1972).

[15] See Braumoeller and Goertz 1998, pp. 25–30 for a detailed description of this statistical test.

[16] Path 5 measurement error would involve miscoding veto threats. As noted, intercoder reliability for veto threats is quite high (96%). Consequently, 10.1% seems quite high.

factor ignored in the commitment model, presidential uncertainty about the precise location of the veto override player, might account for these observations. But if incomplete information were the culprit, then the Path 5 bills should only narrowly fail in override votes, since it is hard to believe the president would grossly misestimate the location of the veto override player. Only five bills in Path 5 match this description; and six involve pocket vetoes. Pocket vetoes are incompatible with the commitment model since the model predicts that the president will veto only if he knows the veto will fail. Eight observations involve regular vetoes that Congress did not attempt to override, and 10 involve override attempts that failed by wide margins. In addition, one of the Path 5 bills shows the blame-game profile.

Crucial Cases: Broken "Commitments" (Path 6)

The 27 observations in Path 6 violate the commitment model because the model predicts the president will not sign them once he "commits" to a veto and Congress fails to capitulate. Appropriately weighing observations, such cases involve an estimated 53% of threatened bills. In other words, more than half of the event histories of threatened bills violate a critical case for the commitment model. How much measurement error would need to be introduced to account for so many violations? The simple answer is quite a lot. We estimate that measurement error would need to approach 58.5% to produce a p-value of 5%. The fact that 56 cases of Paths 5 and 6 are observed suggests that the commitment model is not well supported by the data.

Conclusion

The evaluation of Matthews' model and Ingberman and Yao's model provides us with a rich empirical understanding of bargaining between the president and Congress. Matthews' coordination model provides a powerful tool for understanding the politics of veto threats. Most of the model's failures stem from imminent overrides, where threats bring no or only undetectably small concessions. A few of the model's failures appear related to Groseclose and McCarty's (1996) blame-game vetoes, which also make an appearance in Path 5. There remain, however, a handful of cases in which threats unaccountably bring no concessions. The commitment model fares less well, partly because it makes bolder predictions than the coordination model. The aggregate number of 56 cases falling under Paths 5 and 6 suggests that something more than measurement error causes many "bad" cases. Presidents regularly and relatively frequently break their veto commitments in violation of the model. In addition, the model's predictions about overrides are wide of the mark, a failure that appears intrinsic to the model rather than a consequence of a small amount of incomplete information.

In light of the evidence, how are we to evaluate the commitment model? First, commitment threats do occur. Memorable examples include President Reagan's "make my day" threat, President Bush's celebrated promise to veto new taxes

("read my lips"), and President Clinton's dramatic vow to use his "veto pen" on health insurance bills without universal coverage. But commitment threats seem to be rare while coordination threats are relatively common, at least for non-minor bills passed during periods of divided government. Accordingly, the appropriate research question for a model of commitment threats must be: when will commitment threats occur? Unfortunately, the current model of commitment threats is poorly structured to answer this question. To do so, the president's ability to make a commitment, the benefits from doing so, and the penalties for reneging on commitments must arise from the equilibrium behavior of other unmodeled players, probably the voting public. For example, the president's commitment could be a signal about his policy preferences directed to voters uncertain about those preferences. This signal will be valuable and credible to voters only under certain circumstances; it is only then that we would expect to see commitment threats. This line of reasoning suggests that further investigation of commitment threats should abandon the assumption of complete information about the president's preferences. Models constructed along these lines may cast additional light on the mechanism at work when presidents "go public."

The critical case method provides a useful approach for evaluating models with necessary conditions, sufficient conditions, or no stochastic components. The lessons learned help to put boundaries on the reach of the model. They also serve a diagnostic purpose, suggesting stochastic elements that may need a place in revised versions of the model.

Appendix

This appendix provides a description of the legislative significance variable and also derives the weights used in the empirical analysis. The weights allow recovery of unbiased estimates of probabilities from a choice-based, stratified random.

Legislative Significance

Measures of legislative significance play an important role in the sampling strategy. This measure classifies every public law enacted in the 79th–103rd Congresses into four categories depending on the extent of the bill's coverage in *Congressional Quarterly Almanac*, the *New York Times*, and the *Washington Post*. The four levels are:

1. Level A—"landmark" legislation: The same laws identified in Mayhew's "Sweep one," (Mayhew 1991) statutes hailed in the annual legislative round-ups of *Washington Post* or the *New York Times* as the most important legislative accomplishments of the Congress, comparable to the most important accomplishments of any Congress. This category, however, excludes (almost all) appropriations bills. Between 1945 and 1992, 216 enactments fell into this category.

2. Level B—"important" legislation: Legislation of sufficient importance or news worthiness to warrant discussion in the legislative round-ups of either the *Washington Post* or The *New York Times*, and generate six or more pages of coverage in the *Congressional Quarterly Almanac*. Between 1945 and 1992, 283 enactments fell into this category.
3. Level C—"ordinary" legislation: Legislation with sufficient policy impact to warrant note in the annual summary section of *CQ Almanac* but not significant enough to warrant six or more pages discussion in the body of the *Almanac*. Examples include appropriations for non-controversial agencies, non-controversial recurrent authorizations, and some controversial authorizations with limited policy impact. Between 1945 and 1992, 1,727 enactments fell into this category.
4. Level D—"minor" legislation: Legislation not deemed worthy of notice in the annual summary section of *CQ Almanac*. This includes commemorative legislation, minor bills, and many routine reauthorizations or minor appropriations bills. Between 1945 and 1992, 14,972 enactments fell into this category.

Cameron (2000) provides several independent measures that confirm the classification captures a sensible notion of legislative significance. It then extends the measures to include all vetoed bills.

The random sample of initially presented signed bills consists of 91 Level A bills, 94 Level B bills, and 96 Level C bills. The initially presented, vetoed bills consist of 26 Level A bills, 26 Level B bills, and 110 Level C bills.

Weighting Scheme

The universe of initially presented non-minor bills by significance level was 223 A's, 288 B's, and 1,773 C's. The numbers of these that were signed were 197 A's, 262 B's, and 1,663 C's. The numbers that were vetoed were 26 A's, 26 B's, and 110 C's. The corresponding figures for the sample were: 91 A's, 94 B's, and 96 C's initially presented and signed; 26 A's, 26 B's, and 110 C's vetoed. Thus we know the percentage of signed bills and the percentage of vetoed bills in the original universe and in our sample. This allows the calculation of Manski-Lerman weights by stratum, as shown in columns labeled "Conversion Factor" in Table A1 (see Manski and Lerman 1977).

The per-stratum conversion factors need to be adjusted to account for the stratification of the sample. We calculated the proportion of each category of bills in the sample and in the universe. The "stratification weights" adjust the former to bring them in accord with the latter. Multiplying the per-stratum conversion factors by the indicated "stratification weights" appropriately adjusts each observation. The final set of weights is shown in Table A1 (see Manski and McFadden 1981).

TABLE A1

Weights to Adjust for Choice-based Stratified Random Sample

Significance	Sample		Universe		Conversion Factor			Final Weights	
	Signed # (rate)	Vetoed # (rate)	Signed # (rate)	Vetoed # (rate)	Signed	Vetoed	Stratification Weights	Signed	Vetoed
Level A	91 (.778)	26 (.222)	197 (.883)	26 (.117)	1.135	.527	.3674	.417	.194
Level B	94 (.783)	26 (.217)	262 (.910)	26 (.09)	1.162	.415	.4797	.557	.199
Level C	96 (.466)	206 (.534)	1663 (.938)	110 (.062)	2.013	.116	1.6688	3.359	.194

Manuscript submitted 1 October 1997
Final manuscript received 10 March 1999

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