Leadership Ability and Agenda Choice*

Ilwoo Hwang† and Stefan Krasa‡

February 15, 2022

Abstract

Should a political leader first focus on smaller policy goals or start with the most ambitious policy agenda? We model a political leader who chooses the policy agenda and proposes policies to a responder. The leader has a high or low ability to persuade the responder to agree to a proposal, and both parties are symmetrically uninformed about this ability. If the belief about the leader's ability is low, then it is optimal to start with the ambitious policy, but the reverse is true if the belief is high. Addressing both policies together is dominated by a sequential approach.

Keywords: Agenda choice, Leadership, Bargaining, Learning

JEL Classification: C78, D72, D74, D83

*We thank Dan Bernhardt, Renee Bowen, Dongkyu Chang, Mehdi Shadmehr, Huseyin Yildirim and the participants at the Great Lakes Political Economy Theory Conference for many helpful and constructive comments and suggestions.

†Seoul National University, Department of Economics; ilwoo.hwang@snu.ac.kr

‡University of Illinois, Department of Economics; skrasa@illinois.edu

1 Introduction

Should a political leader first focus on smaller policy goals, or instead start with the most ambitious policy agenda? How accommodating should political leaders be to get votes for their proposals, or should they rely more on their ability to persuade wavering legislators? The examples of Presidents Johnson and Obama provide us with very different answers.

President Johnson's first legislation was the Revenue Act of 1964, part of Johnson's War on Poverty. His ability to get the bill passed, when President Kennedy was unsuccessful on a similar effort, helped confirm the perception of Johnson's "great skill as persuader and coalition-builder" (Patterson, 1996, p. 529). Johnson's next objective was to pass the Civil Rights bill, which was a significantly more challenging task. The Civil Rights bill was important to Johnson, because "first and foremost, he believed in it." (Patterson, 1996, p. 542). In addition, it would allow him to get the support of liberals who distrusted him. In other words, Johnson's net-benefit of passing a Civil Rights bill was higher than his net-benefit from the Revenue Act. Passing the Revenue Act primarily helped to affirm the perception of leadership competence that was established during his service in the Senate. After the passage of the Civil Rights Act in the House, Johnson worked diligently to get the needed support of the GOP Senate Minority Leader, Dirksen, by "inviting him to the White House, swapping stories with him, and drinking with him into the night" (Patterson, 1996, p. 554). In the end, Dirksen requested only minor changes to the Civil Rights bill, the bill passed, and liberals were pleased. Johnson acted first on legislation of lower net benefit, then on one of higher.

When Barack Obama was elected president, the first issue on his agenda was an economic stimulus package, the American Recovery and Reinvestment Act of 2009. This action would form the perception of his leadership. Even though 40% of the stimulus package included tax cuts to attract conservative support, Republicans in the House voted unanimously against it (Ornstein, 2015). Although the bill passed, the fact that it garnered no support from House Republicans, hurt Obama's reputation as a good negotiator. We argue that economic conditions may have forced Obama to introduce the Recovery and Reinvestment Act, but he certainly faced a choice on how to proceed after that bill's passage: An infrastructure bill that would have provided further stimulus, or the more ambitious Health Care bill. Given that health care was one of Obama's main campaign promises, the political benefit to the president from getting a health care bill passed exceeded the benefit of an infrastructure bill. To draw the parallel to Johnson, infrastructure was the easier goal to achieve, comparable to the Revenue Act of 1964, while passing health care would be a more transformative achievement. Unlike Johnson, however, Obama choose the reverse order, starting with the more ambitious policy and delaying the goal thought easier. Further, and also unlike Johnson, he started with a proposal that was much more accommodating to his political opponents. He borrowed ideas from the Massachusetts Heath Care Reform law of 2006 and the Republican 1993-94 counterproposal to Clinton's attempt of addressing health care. A single-payer system or at least a public option that liberals wanted was never seriously considered (Ornstein, 2015).

The main result of our paper is that the order of a leader's legislative agenda is determined by the leader's *perceived ability* of persuading lawmakers. Johnson was already known as a great persuader since the early 1950's when he became the Democratic leader of the Senate. Opponents subjected to what "contemporaries described in awe as The Treatment" (Patterson, 1996, p. 521). In contrast, when Obama was elected, he had not had a previous leadership role, and his inability to get broad support for the American Recovery and Reinvestment Act, resulted in a low perceived ability to convince opponents to change their position. The main result of our paper is that leaders with a high perceived ability should further establish their reputation by starting with less ambitious initiatives, and then move to their most important item, as was the case with Johnson. As with Johnson, the model predicts that such a leader would try to compromise as little as possible, and instead attempt to convince legislators to support the bill. In contrast, we show that if a leader's perceived ability is low, it is better to start with the big item on the agenda. Moreover, as with Obama, the leader should attempt to be as accommodating as possible.

We consider a two-period model, with a proposer (e.g., the president), and a responder (e.g., congress). There are two policy issues that can be addressed. Each policy issue consists of a "divide the pie" problem, where players receive a reservation utility if agreement is not reached. One issue is *major* and the other is *minor*. We assume that the maximum possible benefit for each party for the major issue exceeds that of the minor issue, and thus the major issue also entails a higher surplus if it is resolved. The proposer first selects which issue to address first, and then proposes a policy—a division of the pie—for the first issue. Departing from the standard bargaining literature, we assume that if the responder rejects, the proposer can attempt to persuade the responder to change his decision. Importantly, the probability that the proposer indeed overturns the rejection depends on her true ability: A high-ability proposer is more likely to be able to persuade the responder than a low-ability proposer. Initially, the proposer's true ability is commonly unknown, and the players form a common belief p that the proposer is of high ability.

The intuition behind our main result crucially relies on the player's incentives regarding learning in the dynamic environment. First, notice that conflict generates information about the proposer's ability: An outcome of the proposer's attempt to overturn the responder's rejection leads to belief updating. This possibility of learning affects players' incentives under a given agenda order, ultimately affecting the proposer's optimal agenda choice.

In equilibrium, the proposer could enjoy two kinds of informational benefits when she bargains multiple issues sequentially. First, the proposer utilizes the information generated from the initial conflict to make a better decision on the second issue. This *informational value of conflict* strengthens the proposer's incentive to induce conflict by making an extreme offer. Second, the proposer can receive some benefit even when she does not induce conflict. When the prior belief p is low, the responder does not want to learn the proposer's type, as doing so may make the proposer "stronger" (higher p in the next period), which would lead to harmful conflict for the second issue. Knowing this, the proposer can exploit the responder's *dynamic incentive to compromise* by making an offer worse than the responder's optimal threshold in the static environment, which the responder still accepts.

Given this, the proposer's optimal agenda order depends on how she utilizes the above informational benefits. We first show that a high-ability leader is better off by bargaining over the minor issue first. In this case, the minor issue can essentially serve as a "test case" for the proposer. However, the underlying intuition is subtler than what we would imagine: Putting the major issue first does not generate any informational value for the minor issue, as the proposer would create conflict regardless of the outcome in the first issue. We argue that the example of

Johnson fits here. As mentioned, he already had an excellent reputation ex-ante, and his first legislation was a success and "enhanced his reputation as a legislative leader" (Patterson, 1996, p. 532), raising the belief p about his ability. Further, his persuasive power was needed to pass both legislations; in terms of our model, conflict occurred in both periods.

The reverse agenda order (putting the major issue first) is optimal when p is low. In this case, the low-ability proposer is willing to make a compromise offer. Thus, she prefers an agenda order which could better exploit the responder's dynamic incentive to compromise. We show that what the proposer can extract from the responder in the first period is proportional to the responder's reservation utility. Thus, the responder is willing to make larger concessions on the major issue as it has a lower reservation utility, making the major-first order optimal for the proposer. In the equilibrium for this case, the proposer has a "honeymoon" period in which the responder approves an offer that would not be accepted later. This reflects the observation in Ornstein (2015) that "the longer presidents wait, the greater the likelihood that their opposition will mobilize and exploit uneasy voters." The proposer makes a first-period offer that is accommodating enough to be accepted—in the case of Obama's Health Care proposal, this meant leaving out the public option and using market-based solutions that were originally proposed by conservatives.

Finally, we consider the possibility of bundling both policies to combine them into one proposal. We show that the proposer always prefers to sequence the two issues rather than bundling them. The intuition naturally follows from the discussion above: Creating a dynamic environment by sequencing the two issues yields additional benefits to the proposer, as she can either create a conflict in the first negotiation and learn valuable information or extract the responder's higher willingness to compromise.

1.1 Related Literature

The impact of agenda setters, such as a president, a prime minister, or a party leader in the process of political decision making has been the focus of research at least since the seminal contribution of Romer and Rosenthal (1979). As in their paper or in Diermeier and Fong (2011) we assume that there is a designated agenda setter, rather than an alternating or random selection of an agenda setter (as in Baron and Ferejohn (1987), Baron and Ferejohn (1989), Baron (1996), Banks and Duggan (2000), or Banks and Duggan (2006)). To link policies over time, these models assume that once a policy is enacted it determines that status quo point for the next period. In our model we do not specify a status quo point. Instead, if no agreement is reached then everyone receives a reservation utility, which in principle could be the utility from some policy that is already in place. However, we assume that the reservation utilities in our model are not affected by policy choices in previous period, to highlight the impact of learning.

Theoretically, our model contributes to the literature on learning and experimentation with many political agents. Strulovici (2010) shows that limited ability to control the future policy leads each agent to vote conservatively in a policy reform experiment. Callander and Hummel (2014) consider a case in which a political party preemptively experiments on policy to affect future decisions of the opposition party. Our model differs as agents do not learn the type of the policy, but rather they learn about the strength of the president, which endogenously determines the future outcome.

The literature on bargaining with incomplete information mainly analyzes the effect of private information on the bargaining outcome (Fudenberg et al., 1985; Abreu and Gul, 2000; Deneckere and Liang, 2006). In these models, a rejection by the informed bargainer signals that the bargainer has a higher reservation value. In contrast, in our model players are symmetrically uninformed about the president's ability and their conflicts over policy induces social learning.

Using the definition of Mayhew (1991), gridlock refers to the ratio of the supply of policies to the demand for policy. In our model, the demand for policies is one in each period, and hence gridlock in a period corresponds to the probability that a policy is passed. Thus, our model also allows us to investigate the determinants of political gridlock. In a recent paper Ortner (2017) investigates gridlock in a dynamic model in which a player's bargaining position depends on a stochastic process that depends on past policy choices, referred to as the player's popularity. Gridlock arises as a consequence of a player's tradeoff between implementing the player's ideal policy and maximizing popularity. In contrast, in our model gridlock is solely driven by the president's innate bargaining ability and the players' incentives to learn about it.

Several papers in political agency literature consider cases in which career concerns of politicians could lead to "pandering" behavior (Prat, 2009; Fox and Van Weelden, 2010). In our paper congress may be over accommodating to the president, but they do so in order to prevent strengthening the president.

Fershtman (1990) considers agenda choice over two items, but unlike in our model there is no learning. Instead, differences in outcomes are drive by the first-mover advantage. That is, in their model the player who is chosen to move first, is always better off starting with the issue that has a higher surplus. Applied to our model this means that players would always put the transformative issue first on the agenda. Krasteva and Yildirim (2012) investigate agenda choice when there are consumption externalities between the issues. In contrast, in our model the only inter-temporal link is through learning about the proposer's ability. Finally, in a companion paper (Bowen et al., 2020), we investigated dynamics of the agenda-setter power in an infinite-period bargaining game with an exogenous agenda sequence.

2 Model

A proposer (P, she) negotiates with a responder (R, he) over *two* policy issues ($i = A, B$). Each issue generates one unit of utility if undertaken, which can be allocated between the two players. At the beginning of the game, the proposer chooses the issue order, that is, which issue to address first. Then the two players negotiate the share from each issue over the two periods.

For each period $t = 1, 2$, the proposer offers a share $x_t \in [0, 1]$ to the responder, who then accepts or rejects the offer. If the responder accepts the offer, the current negotiation ends and they move on to the next issue (if $t = 1$). If the offer is rejected, the proposer can *attempt to persuade* the responder to change his decision. The proposer's ability to persuade depends on her type (τ) which can be either *high* (h) or *low* (l). If the proposer's type is high, then the responder can be persuaded with probability $\omega_h = \omega \in (0, 1)$ to accept the initial offer x_t. For simplicity, we assume that the low-type proposer is never able to successfully persuade the responder, i.e. $\omega_l = 0$.[1] Neither player knows the proposer's type, and they form a common

[1] If $\omega_l > 0$, the proposer successfully persuading the responder no longer perfectly reveals her type. Our results do not change qualitatively in this case, except for very low prior beliefs in which learning does not affect the player's behavior in the next period.

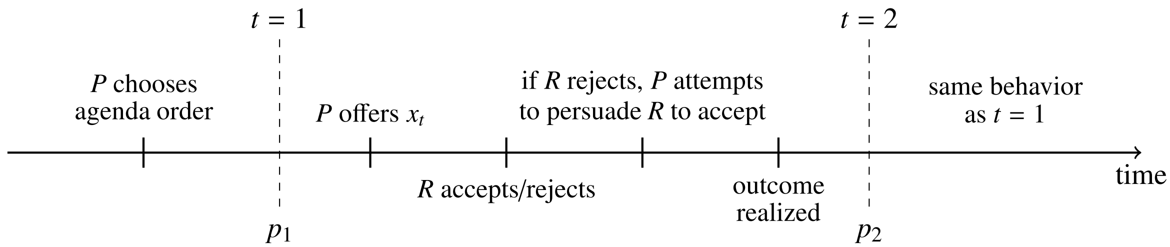

Figure 1: Timeline

belief; let p_t be the belief at the beginning of period t that the proposer's type is high. Figure 1 describes the timeline of the game.

If an agreement is made in period t (which occurs if the responder initially accepts the offer or is persuaded to do so), the responder and the proposer receive payoffs of x_t and $1 - x_t$, respectively. In contrast, if no agreement is reached on issue i, the responder and the proposer receive their reservation utilities, which we denote as $\bar{u}_i$ and $\bar{v}_i$, respectively. We assume that $\bar{v}_i \geq 0, \bar{u}_i \geq 0$ and $\bar{v}_i + \bar{u}_i < 1$ for any $i = A, B$. Note that the surplus from policy issue i is given by $S_i = 1 - \bar{v}_i - \bar{u}_i > 0$. We assume that the players do not discount payoffs.[2]

In this paper, we rank the two issues such that A is the *minor* and B the *major* agenda item. Given that we normalize the total payoff of a policy issue to one, the key parameters that measure an issue's importance are the responder's and proposer's reservation utilities, $\bar{u}_i$ and $\bar{v}_i$. Note that an issue with high values of $\bar{u}_i$ and $\bar{v}_i$ does not have much policy impact: The total surplus $1 - \bar{u}_i - \bar{v}_i$ is small, so it does not matter much whether or not the policy is approved. In contrast, if $\bar{u}_i$ and $\bar{v}_i$ are smaller, then there are potentially larger benefits from agreement—or alternatively, a failure to come to an agreement matters more. Thus, for B to be the major and A the minor issue, the reservation utilities for B must be lower than those for A. We therefore make the following assumption throughout the paper.

Assumption 1 (Ranking of issues) *A is the minor issue and B the major issue, i.e., $\bar{v}_A > \bar{v}_B$ and $\bar{u}_A > \bar{u}_B$.*

We denote $\langle ij \rangle$ $(i, j = A, B)$ as the agenda order in which issue i is chosen first and j is placed

[2] We make this assumption to get cleaner results. Adding discounting would not fundamentally change the results, but it adds an advantage to choosing a higher surplus issue first.

second. Also, we call $\langle BA \rangle$ as the *major-first order* and $\langle AB \rangle$ as the *minor-first order*.

Last, we make an assumption to rule out boundary solutions. As mentioned in the introduction, the responder may be willing to accept unfavorable proposals in the first period, to avoid the possibility that the proposer successfully demonstrates her persuasion skills, thereby raising the belief in the next negotiation round. For some parameters, this effect can be so strong that the responder would even be willing to accept the worst offer ($x_t = 0$). Allowing for such boundary solutions does not fundamentally change our results, but distracts from the main message by introducing a number of not very interesting additional cases.

Assumption 2 (Large set of available offers) *Surplus* $S_i = 1 - \bar{u}_i - \bar{v}_i$ *from issue* i *satisfies* $S_i < \bar{u}_j/\omega$ *for all* $i, j = A, B$.

Assumption 2 is in fact necessary and sufficient condition for the responder to always reject a sufficiently bad offer in a dynamic environment (see the proof of Proposition 1 in the Appendix), making the proposer's optimal choice non-trivial. This assumption can be interpreted as the set of available offers for both issues is sufficiently large, so that the responder always rejects the worst offer under any dynamic circumstances.[3]

Comments about the model The crucial assumption in our model is that the proposer is able to persuade a responder to change his mind after the initial rejection, and that the proposer's ability to do so depends on her commonly unknown type τ. In our model, this persuasion process is black-boxed in a type-dependent parameter ω_τ. There are several ways to interpret this process. For example, one can think of a proposer being able to put pressure on the responder. Alternatively, or in addition, a high ability proposer may be better in selectively presenting information to the responder (e.g., Bayesian persuasion).[4]

Also, we note that while the proposer *chooses* whether or not to persuade legislators after an initial rejection, in any subgame it is always optimal for her to attempt persuasion. Thus, we

[3] In fact, for any given parameter, we can "expand" the set of available offers (by allowing $x_t < 0$) and renormalize the parameter to satisfy Assumption 2.

[4] Basak and Deb (2020) model public opinion as the uncertain parameter that determines the cost of concession. But public opinion is different from the proposer's competency in our model.

could alternatively assume that the proposer automatically attempts to overturn any rejection. Of course, this would no longer be true if the proposer incurs a cost of persuasion.

3 Equilibrium and Agenda Choice

3.1 Compromise and Conflict

Suppose for the moment that there is only one policy issue j. Note that if the proposer does not have the option of persuading the responder (which would be the case if $p = 0$), then we have a standard ultimatum game. First, it is easy to show that for any $p \in [0, 1]$, the responder accepts any offer x no less than his reservation utility, i.e., $x \geq \bar{u}_j$.[5] However, if the proposer has the ability of persuading the responder, i.e., $p > 0$, then she may prefer to make less favorable offers, as she can attempt to persuade the responder in case of rejection.

For example, suppose that issue $j \in \{A, B\}$ is available in a static model. Then the proposer has two options: First, the proposer can make an offer $x = \bar{u}_j$, which is immediately accepted. We refer to this situation as *compromise*, and let $v_j^C \equiv 1 - \bar{u}_j$ be the proposer's payoff under compromise. Second, the proposer can offer x with $x < \bar{u}$, which is rejected by the responder. The proposer then attempts to overturn the rejection, resulting in an expected payoff of $p\omega(1 - x) + (1 - p\omega)\bar{v}_j$ for the proposer, which is maximized when $x = 0$. We refer to this situation as *conflict*, and let $v_j^F(p) \equiv p\omega + (1 - p\omega)\bar{v}_j$ be the proposer's payoff under conflict.

It is optimal for the proposer to engage in conflict if $v_j^F(p) > v_j^C$, and to compromise if the inequality is reversed.[6] Equivalently, if

$$\hat{p}_j = \frac{S_j}{\omega(1 - \bar{v}_j)}, \tag{1}$$

then conflict arise if the belief is high, i.e., $p > \hat{p}_j$, and there is compromise when the belief is low, i.e., $p < \hat{p}_j$.

[5] As usual, the responder accepts the proposal when she is indifferent; otherwise, the proposer's optimal offer may not exist.

[6] Throughout the paper, we do not specify the proposer's behavior in a nongeneric case where he is indifferent between making an optimal compromise offer and an optimal conflict offer. There exist multiple equilibria of this model, in which only the proposer's behavior differs in the case of indifference.

The static cutoff values for the beliefs defined in (1) matter for the second period of the game. For example, if the proposer chooses to first address issue A followed by issue B, then conflict will arise about issue B when the updated second-period belief $p_2 > \hat{p}_B$. Further, note that (1) implies $\hat{p}_B > \hat{p}_A$. That is, there is more potential for conflict on the minor issue. The reason is that there is a lower downside loss if the issue is not resolved.

3.2 Example: When Conflict Completely Reveals the Type

We now illustrate the strategic implication of the agenda order for the special case where $\omega = 1$, so that conflict in the first issue perfectly reveals the proposer's type when they bargain over the second issue. Using this special case, we argue that the proposer's optimal agenda order entirely depends on its effect on learning.

Fix the agenda order $\langle ij \rangle$, and suppose that the proposer induces conflict by offering $x = 0$ for the first issue. Then the proposer's type is perfectly revealed in the second period. If the proposer's type turns out to be high, then she receives a payoff of 1 in each period, but if her type turns out to be low, then the proposer receives the reservation payoff $\bar{v}_i$ in the first period, but compromises in the second period to get payoff $1 - \bar{u}_j$. The proposer's ex-ante expected payoff is therefore $2p_1 + (1 - p_1)(\bar{v}_i + (1 - \bar{u}_j))$. Because assumption 1 implies that $\bar{v}_A + (1 - \bar{u}_B) > \bar{v}_B + (1 - \bar{u}_A)$, it is optimal for the proposer to choose the minor-first order $\langle AB \rangle$ if she commits to inducing conflict in the first period. Intuitively, while the proposer benefits from the information generated from initial conflict, she has to risk losing surplus in case the issue is not resolved. Because surplus is lower for the minor issue, it is optimal to put that issue first as a "test-case".

Now suppose that there is compromise in the first period. Then the belief in the second period remains unchanged, i.e., $p_2 = p_1$. Recall from the previous section that $\hat{p}_A < \hat{p}_B$. Thus, if $p_1 < \hat{p}_A$ then the players compromise in the second period independent of the agenda order. Nevertheless, the agenda order still matters. The reason is that the proposer can exploit the responder's fear that the initial conflict may make the proposer stronger for the second issue.

To see this, suppose that the proposer makes an offer x under a fixed agenda order $\langle ij \rangle$. If the responder accepts x, then compromise occurs in both periods, and thus his total payoff is $x + \bar{u}_j$.

If the responder rejects the offer, then the conflict occurs and the proposer's type is revealed in the second period. Thus, the responder's total payoff is x if the proposer's type is high, and $\bar{u}_i + \bar{u}_j$ otherwise. The responder's expected payoff is therefore $px + (1-p)(\bar{u}_i + \bar{u}_j)$. Denote x^*_{ij} as the offer at which the responder is indifferent between acceptance and rejection, then

$$x^*_{ij} = \bar{u}_i - \frac{p}{1-p}\bar{u}_j < \bar{u}_i. \tag{2}$$

Unlike in the single-issue case (discussed in Section 3.1), the responder is willing to accept an offer below his reservation utility $\bar{u}_i$. Initial conflict may reveal that the proposer's type is high, which would strengthen the proposer's bargaining position in the second period. The responder is therefore reluctant to cause conflict, and the proposer in turn can exploit this reluctance by offering x^*_{ij}.

Algebraically, (2) and the fact that $\bar{u}_A > \bar{u}_B > 0$ immediately imply $x^*_{BA} < x^*_{AB}$. Hence, the responder is willing to accept lower offers under the major-first order $\langle BA \rangle$, which makes $\langle BA \rangle$ optimal for the proposer. The reason is that the responder has more to lose if the proposer implements an extreme solution on the minor issue.

Intuitively, the status quo is sufficiently bad for the major issue, so that the utility loss to the responder is not that large even if the proposer implements an extreme policy. In contrast, on minor issues the status quo is already relatively good, and a move to an extreme policy can lower the responder's utility substantially.

The final question is for what levels of p_1 conflict occurs in the first period. Intuitively, we would expect that if p_1 is low, then the proposer will avoid conflict, and hence will start with the major issue. In contrast, for larger p we would expected conflict and hence that the minor is chosen first. This intuition is indeed correct for the case where $\omega = 1$. We show that in general it is still optimal to start with the major issue when p is low, and with the minor issue for larger p. However, it is no longer true that there is always conflict in the latter case. Further, we will also see that the set of beliefs where compromise and conflict occur are not necessarily lower and upper intervals.

3.3 Characterization of Equilibria

When $\omega < 1$, then conflict does not necessarily reveal the proposer's type. In particular, if the proposer fails to overturn the rejection in the first period, then the second-period belief is

$$p_2 = \pi(p_1) \equiv \frac{p_1(1-\omega)}{p_1(1-\omega) + (1-p_1)}. \tag{3}$$

Note that $p_2 < p_1$, implying that the players become more pessimistic about the proposer's type after her unsuccessful attempt to overturn. If a rejection is successfully overturned, then the proposer's type is revealed to be high, i.e., $p_2 = 1$.

Define $\hat{p}_j^*$ ($j = A, B$) be such that $\pi(\hat{p}_j^*) = \hat{p}_j$, where $\hat{p}_j$ is the single-issue belief threshold defined in (1). Note that under the agenda order $\langle ij \rangle$, if $p_1 > \hat{p}_j^*$ then $p_2 > \hat{p}_j$ regardless of the first-period outcome, so learning does not affect the second-period behavior.

Proposition 1 shows that it is optimal for the proposer to begin with the major issue if the belief is low ($p_1 < \hat{p}_A$), while it is optimal to choose the minor-first order when the belief is high ($\hat{p}_A < p_1 < \hat{p}_B^*$). For beliefs close to one ($p_1 > \hat{p}_B^*$), the order of the agenda is irrelevant as learning does not have any effect.

Proposition 1 *Suppose that Assumptions 1 and 2 hold. Then in equilibrium:*

1. *If $p_1 < \hat{p}_A$, then the proposer chooses the major-first order $\langle BA \rangle$;*
2. *If $\hat{p}_A < p_1 < \hat{p}_B^*$, then the proposer chooses the minor-first order $\langle AB \rangle$;*
3. *If $p_1 \geq \hat{p}_B^*$, then either agenda order can occur in equilibrium, and the equilibrium payoffs to the proposer are the same.*

We relegate the formal proof of Proposition 1 to the Appendix. Here, we discuss the underlying intuition, which crucially depends on the players' incentives to learn from the first negotiation.

Incentives with a fixed agenda order. First, we investigate the equilibrium behavior under a fixed agenda order $\langle ij \rangle$. In doing so, we formally analyze the two ways that the proposer could benefit from sequencing the agenda, as demonstrated in Section 3.2.

The players' behavior in the second-period is described in Section 3.1. Let $u_j(p)$ be the responder's equilibrium payoff with a single issue j when the belief is p. Then in the first period, the responder accepts x if and only if

$$x + u_j(p_1) \geq \omega p_1 x + (1 - \omega p_1)\bar{u}_i + \mathbb{E}[u_j(p_2)|conflict],$$

which simplifies into

$$x \geq \bar{u}_i - \alpha_{ij}(p_1),$$

where

$$\alpha_{ij}(p_1) = \frac{u_j(p_1) - \mathbb{E}[u_j(p_2)|conflict]}{1 - \omega p_1}$$

is the responder's *willingness to compromise* under the agenda order $\langle ij \rangle$. Note that a positive $\alpha_{ij}(p_1)$ implies that the information generated from conflict would be harmful to the responder, so he is willing to accept a lower surplus to avoid a fight.

Given the responder's behavior, the proposer can choose between compromise (making an acceptable offer) or conflict (having the offer rejected then trying to persuade). The proposer's best compromise offer is $\bar{u}_i - \alpha_{ij}(p_1)$. In this case, the proposer's expected payoff is

$$V_{ij}^C(p_1) \equiv 1 - (\bar{u}_i - \alpha_{ij}(p_1)) + v_j(p_1) = v_i^C + \alpha_{ij}(p_1) + v_j(p_1), \tag{4}$$

where $v_j(p) = \max\{v_j^F(p), v_j^C\}$ is the proposer's equilibrium payoff with a single issue j (recall that $v_j^F(p), v_j^C$ are the proposer's payoffs from conflict and compromise with a single issue, respectively). When the proposer wants to induce conflict, her best offer is $x_1 = 0$, in which case the proposer's payoff is

$$V_{ij}^F(p_1) \equiv \omega p_1 + (1 - \omega p_1)\bar{v}_i + \mathbb{E}[v_j(p_2)|conflict] = v_i^F(p_1) + \beta_{ij}(p_1) + v_j(p_1), \tag{5}$$

where $\beta_{ij}(p_1) = \mathbb{E}[v_j(p_2)|conflict] - v_j(p_1)$ is the proposer's *informational value of conflict*.

Therefore, the proposer engages in a conflict in the first period if

$$v_i^F(p_1) + \beta_{ij}(p_1) > v_i^C + \alpha_{ij}(p_1)$$

Recall that with single-issue bargaining, the proposer prefers conflict if $v_i^F(p_1) > v_i^C$. With multiple issues, there are two kinds of informational benefits that the proposer could enjoy.

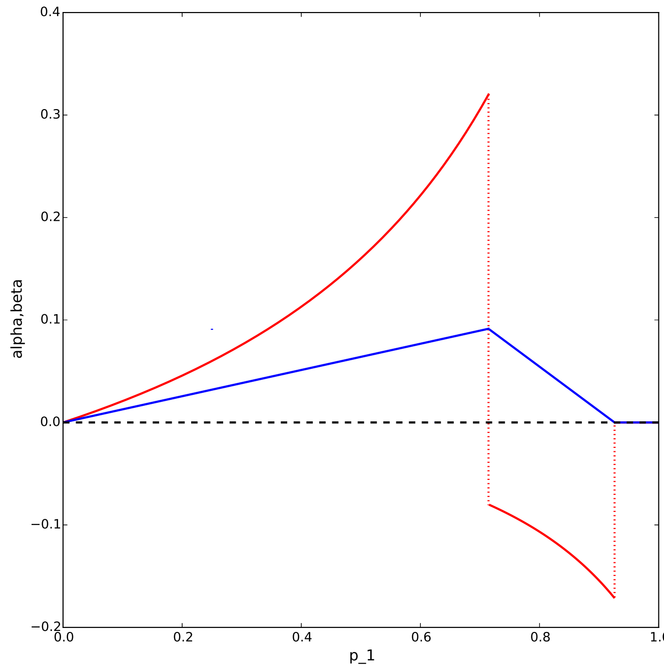

Figure 2: The responder's willingness to compromise ($\alpha_{ij}(p_1)$) (red) and the proposer's value of learning ($\beta_{ij}(p_1)$) (blue): $\bar{u}_i = 0.4, \bar{v}_i = 0.5, \bar{u}_j = \bar{v}_j = 0.3, \omega = 0.8$. In this example, the threshold beliefs are $\hat{p}_j \approx 0.714$ and $\hat{p}_j^* \approx 0.926$.

First, the proposer could benefit from information generated from conflict, which is measured by β_{ij}. Second, the proposer could benefit even when she does not induce conflict: She could exploit the responder's preference against revealing information and can compromise at better terms. This is captured by α_{ij}.

Figure 2 describes the graphs of $\alpha_{ij}(p_1)$ (red line) and $\beta_{ij}(p_1)$ (blue line). Note first that for $p_1 < \hat{p}_j$, the responder's willingness to compromise is positive, because he fears that the proposer's successful overturn would make her "stronger" (p_2 above $\hat{p}_j$). This in turn increases the proposer's incentive to compromise. For $p_1 \in (\hat{p}_j, \hat{p}_j^*)$, $\alpha_{ij}(p_1)$ is negative (because the responder would want to make the proposer "weaker") while $\beta_{ij}(p_1)$ is positive (because the proposer could respond to the information generated by conflict), making the initial conflict a more attractive option for the proposer. Finally, $\alpha_{ij}(p_1) = \beta_{ij}(p_1) = 0$ for any $p_1 > \hat{p}_1^*$, because learning from conflict does not have any effect on the second-period behavior in this case.

Optimal agenda order. To prove Proposition 1, we derive the proposer's benefit of issue sequencing, and compare the benefit in each order. As a useful benchmark, consider a case in which the proposer simultaneously deals with both issues. Since there is no sequential learning, the players negotiate about each issue using the same prior belief p_1, and thus

$$V_0(p_1) = v_A(p_1) + v_B(p_1). \tag{6}$$

Let $V_{ij}(p_1) = \max\{V^C_{ij}(p_1), V^F_{ij}(p_1)\}$ be the proposer's expected payoff under the agenda order $\langle ij \rangle$, and define $I_{ij}(p_1) = V_{ij}(p_1) - V_0(p_1)$ as the proposer's *benefit of the agenda order* $\langle ij \rangle$. Then equations (4)-(6) imply that

$$I_{ij}(p_1) = \begin{cases} \max\left\{\Delta v_i(p_1) + \beta_{ij}(p_1), \alpha_{ij}(p_1)\right\} & \text{if } \ p_1 < \hat{p}_i; \\ \max\left\{\beta_{ij}(p_1), -\Delta v_i(p_1) + \alpha_{ij}(p_1)\right\} & \text{otherwise.} \end{cases} \tag{7}$$

where $\Delta v_i(p_1) = v^F_i(p_1) - v^C_i(p_1)$ is the proposer's net-benefit of conflict from issue i in the static case of Section 3.1.

Note that the benefit of an agenda order $\langle ij \rangle$ is determined by three factors: $\alpha_{ij}(p_1)$ (responder's willingness to compromise), $\beta_{ij}(p_1)$ (proposer's informational value of conflict), and $\Delta v_i(p_1)$ (static net-benefit of conflict). The optimal agenda order hinges on whether she can either (i) extract the responder's incentive to avoid learning (high α_{ij}) or (ii) learn information about her type and use it for the second negotiation (high β_{ij}).

Importantly, equation (7) implies that that the proposer's preference over the agenda order is entirely driven by its effect on learning, which is captured by α_{ij} and β_{ij}. To see this, suppose that $\alpha_{ij}(p_1) = \beta_{ij}(p_1) = 0$ for $i, j = A, B$. Recall from Section 3.1 that $\Delta v_i(p_1) < 0$ (the proposer prefers compromise) if $p_1 < \hat{p}_1$ and $\Delta v_i(p_1) \geq 0$ if $p_1 \geq \hat{p}_1$. Therefore, $I_{ij}(p_1) = 0$ for all p_1, and thus the proposer is indifferent between either agenda order.

We compare the values of $I_{AB}(p_1)$ and $I_{BA}(p_1)$ to determine which issue the proposer will address first. Recall that Assumption 1 implies $\hat{p}_A < \hat{p}_B$: the major issue (where the players have more to lose) has a higher belief threshold for fight. Since $\hat{p}^*_i > \hat{p}_i$ for $i = A, B$, we have $\hat{p}_A < \{\hat{p}_B, \hat{p}^*_A\} < \hat{p}^*_B$, with $\hat{p}^*_A$ higher or lower than $\hat{p}_B$.

A trivial result arises if the belief is close to one (specifically, if $p_1 > \hat{p}_B^*$) and $\omega < 1$. Because the belief is very high, the players fight for both issues regardless of the conflict outcome under any agenda order. Learning does not change the equilibrium behavior, and the value of information is zero for both players (i.e. $\alpha_{ij}(p_1) = \beta_{ij}(p_1) = 0$ for any $i, j = A, B$). Then the above discussion implies $I_{ij}(p_1) = 0$ and the agenda order does not matter.

For any $p_1 < \hat{p}_B^*$, the proposer has a strict preference over the agenda order. The result and underlying intuitions differ in the following three cases: (i) *competent proposer* ($p_1 \in (\hat{p}_A^*, \hat{p}_B^*)$); (ii) *intermediate belief* ($p_1 \in (\hat{p}_A, \hat{p}_A^*)$); and (iii) *incompetent proposer* ($p_1 < \hat{p}_A$). Here we describe a brief intuition for each case; see the Appendix for a complete proof.

Case 1: competent proposer. In this case, the major-first order $\langle BA \rangle$ does not give the proposer any benefit: $p_1 > \hat{p}_A^*$ implies that the proposer would fight in the second period after any learning outcome, because the updated prior always remains above $\hat{p}_A$. Thus, the outcome from negotiations about issue B does not provide useful information about issue A, leading to $I_{BA}(p_1) = 0$. In contrast, the proposer's value of learning becomes positive in the minor-first order. Since $p_1 < \hat{p}_B^*$, the outcome of the first-period negotiation tells the proposer whether or not to compromise in the second period. Thus, using the minor issue as a "test case" gives the proposer a positive benefit of sequencing $I_{AB}(p_1) > 0$.

Case 2: intermediate belief. Same as Case 1, the proposer in Case 2 strictly prefers the minor-first order. The intuition is similar to the first case, but the proposer's preference may become even stronger. For example, if $p < \hat{p}_B$, the proposer's benefit from sequencing could be *negative* under the major-first order $\langle BA \rangle$. While the proposer prefers to compromise absent learning (because $p < \hat{p}_B$), the responder's willingness to compromise is negative (because $p \in (\hat{p}_A, \hat{p}_A^*)$). This is because in the case that the proposer fails to overturn the rejection, the responder could benefit from a lower belief about the proposer's type.

Case 3: incompetent proposer. In this case, the belief about the proposer's type is so small, that the proposer wants to take advantage of the responder's willingness to compromise (α_{ij}) instead of creating conflict. We show in the Appendix (equation 9) that for any $p_1 < \hat{p}_A$, the size of α_{ij} is proportional to the responder's reservation utility for the second issue ($\bar{u}_j$). When $\bar{u}_j$ is high, the responder is more likely to compromise in the first period as the cost from losing the conflict is greater. Thus, it is optimal for the proposer to choose the major-first order.

Belief range for compromise and conflict. Next, we investigate the range of beliefs under which compromise and fighting occurs. Proposition 1 shows that the proposer chooses the major-issue order for low beliefs, i.e., if $p < \hat{p}_A$. For these beliefs compromise always occurs.

If the first-period belief exceeds $\hat{p}_A$, then proposer chooses the minor-first order. The question is whether compromise also occurs for beliefs that are marginally larger than $\hat{p}_A$, or changing the agenda is automatically coupled with fighting. The following Lemma provides a characterization of this case. Finally, we can also show that conflict arises for all initial beliefs that exceed $\hat{p}_B$ (recall that $\hat{p}_B > \hat{p}_A$).

Lemma 1 *Suppose that Assumptions 1 and 2 hold. Then the following holds in equilibrium:*

1. *There is compromise for all beliefs $p_1 < \hat{p}_A$.*
2. *There is compromise for beliefs $\hat{p}_A < p_1 < \hat{p}_A + \varepsilon$ (for some $\varepsilon > 0$) if and only if $\hat{p}_B > 1 - (\bar{u}_B/\bar{u}_A)$.*
3. *There is conflict for all beliefs $p_1 > \hat{p}_B$.*
4. *If $\hat{p}_B > 1$ then there is conflict for all beliefs $p_1 > \hat{p}_A$.*

We use Lemma 1 to further characterize the situations in which conflict or compromise occurs. If $\hat{p}_B < 1$ then conflict must occur for at least all beliefs that exceed $\hat{p}_B$. Suppose that $\lim_{p_1 \uparrow \hat{p}_B} V^F_{AB}(p_1) - V^C_{AB}(p_1) > 0$. In Lemma 2 in the Appendix we show that V^C_{AB} is strictly convex for $p < \hat{p}_B$, while $V^F_{AB}(p_1)$ is affine linear for these values of p_1. Then V^C_{AB} and V^F_{AB} can intersect at most one point, $\hat{p}$, between $\hat{p}_A$ and $\hat{p}_B$. In this case compromise occurs for beliefs below $\hat{p}$ and conflict above $\hat{p}$. This is the situation depicted in the left panel of Figure 3. Further, Lemma 1 implies that $\hat{p} = \hat{p}_A$ if $\hat{p}_B < 1 - (\bar{u}_B/\bar{u}_A)$ (which is not the case in the figure).

Now suppose that $\lim_{p_1 \uparrow \hat{p}_B} V^C_{AB}(p_1) - V^F_{AB}(p_1) > 0$, then there must be compromise for at least some beliefs p_1 that are marginally below $\hat{p}_B$. Now there exists cutoffs $\hat{p}_1 < \hat{p}_2$ where $\hat{p}_1 \geq \hat{p}_A$ and $\hat{p}_2 < \hat{p}_B$ such that there is conflict for beliefs in the interval $(\hat{p}_1, \hat{p}_2)$. This is the case shown in the right-panel of Figure 3. Now compromise occurs in two disjoints intervals: for beliefs $p_1 < \hat{p}_A$, as well as for beliefs between $\hat{p}_1$ and $\hat{p}_2$.

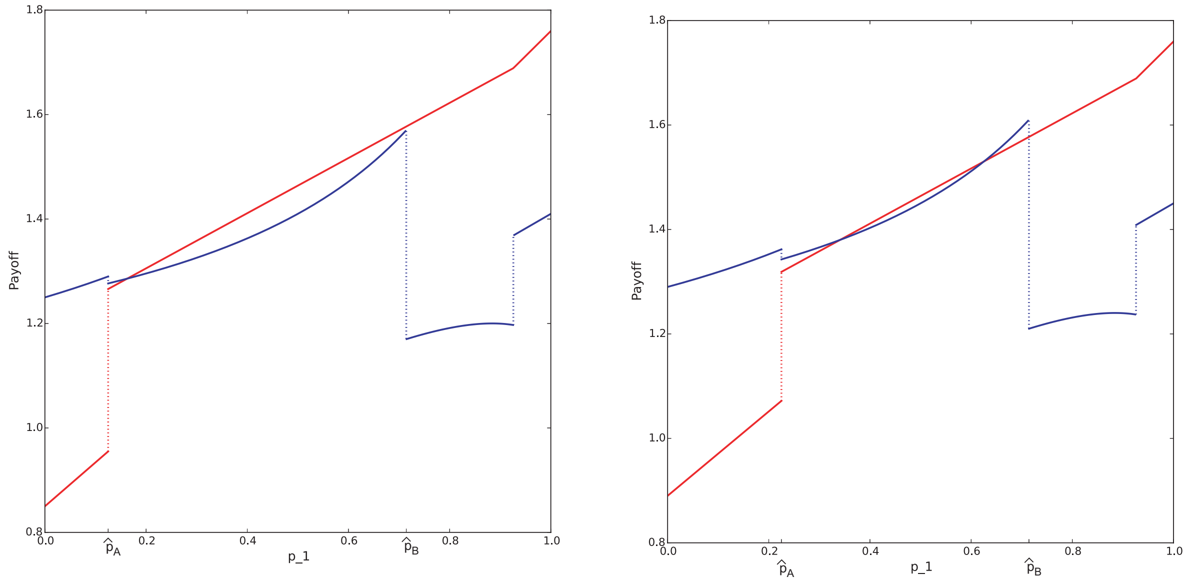

Figure 3: The proposer's value function from fighting (red) and from compromise (blue) when the proposer chooses the agenda (parameter values: $\bar{v}_A = 0.5$, $\bar{v}_B = 0.3$, $\bar{u}_B = 0.3$, $\omega = 0.8$, $\bar{u}_A = 0.45$(left panel); 0.41(right panel)).

Proposition 2 *Suppose that Assumptions 1 and 2 hold. Then there are two possible cases:*

1. *There exists $\hat{p} \geq \hat{p}_A$ such that compromise occurs for all $p_1 < \hat{p}$ and conflict for all $p_1 > \hat{p}$.*

2. *There exist $\hat{p}_1$, and $\hat{p}_2$, with $\hat{p}_A \leq \hat{p}_1 < \hat{p}_2 < \hat{p}_B$ such that compromise occurs for $p_1 \in [0, \hat{p}_1) \cup (\hat{p}_2, \hat{p}_B)$ and conflict for all $p_1 \in (\hat{p}_1, \hat{p}_2) \cup (\hat{p}_B, 1]$.*

4 Bundling

Is it optimal for the proposer to "bundle" the issues together, if such option is available? Suppose that the proposer could choose to deal with both issues together, in which case she makes an offer $x \in [0, 2]$ in the first period. If the offer is accepted, the game ends and the proposer and the responder receive $2 - x$ and x, respectively. If the offer is rejected, the proposer can attempt to overturn. If the rejection stays, then payoffs are $\bar{v} = \bar{v}_A + \bar{v}_B$ for the proposer and $\bar{u} = \bar{u}_A + \bar{u}_B$ for the responder.

The same argument as in Section 3.1 implies that the proposer offers $x = \bar{u}$ if $p < \hat{p}$, where

$$\hat{p} = \frac{S_A + S_B}{\omega(2 - \bar{v})},$$

and we have compromise, i.e., the offer is accepted. If $p > \hat{p}$ then the proposer offers $x = 0$, and conflict occurs.

The following proposition shows that dealing with the issues sequentially is better than bundling. Its proof is a straightforward implication of Proposition 1, which shows that the proposer's benefit of issue sequencing is positive as long as $p_1 < \hat{p}^*_B$.

Proposition 3 *Suppose that Assumptions 1 and 2 hold. Then it is weakly better for the proposer to address the issues sequentially than bundle them together. Moreover, the sequential approach is strictly better for* $p_1 \in (0, \hat{p}^*_B)$.

Proof. First, note that the proposer's payoff from bundling the issues is weakly lower than her payoff from dealing with two separate issues simultaneously, that is, $V_0(p_1)$ given in (6). The reason is that, by having separate issues, the proposer is able to make more fine-tuned decisions based on the characteristics of each issue ($\bar{v}_i$ and $\bar{u}_i$).

Therefore, it suffices to show that the proposer's equilibrium benefit of sequencing issues

$$\max\{I_{AB}(p_1), I_{BA}(p_1)\}$$

is nonnegative, and strictly positive for all $p \in (0, \hat{p}^*_B)$. We already discussed in Section 3 that $I_{AB}(p_1) = 0$ for $p_1 > \hat{p}^*_B$. Furthermore, the proof of Proposition 1 (and the argument in page 16) shows that $I_{BA}(p_1) > 0$ for all $p_1 \in (0, \hat{p}_A)$ and $I_{AB}(p_1) > 0$ for all $p_1 \in (\hat{p}_A, \hat{p}^*_B)$. ■

5 Concluding Remarks

We show that it is optimal to address a policy agenda sequentially, but the order depends on the proposer's ability of persuasion. If the proposer is weak, then it is optimal to start with the most important issue, while a stronger proposer should start with a less important issue, in order to further establish the perceived reputation as a good persuader.

In practice, the parameter ω—the probability of a high-ability proposer to successfully persuade the wavering responder—may depend on the composition of the legislature, i.e., whether or not the political leader has a sufficiently large majority in the legislature or on the level of polarization. For example, one can argue that under President Johnson ω was higher than under President Obama. Proposition 1 implies that if ω is higher, then the set of beliefs p for which it is optimal to start with the major issue is increased. Conversely, if persuading legislators has become more difficult, then leaders should start with their most ambitious policy initiative and be willing to make larger compromises up front to get their legislation passed. If they wait, even bigger compromises may be necessary.

One interesting generalization of the model is allowing for the possibility that ω depends on the policy issue and/or the initial proposal. In this case, the amount of information revealed by conflict may differ for the two issues, which would affect the proposer's agenda choice.

6 Appendix: Omitted Proofs

Proof of Proposition 1. First, we conduct a complete analysis of the equilibrium under a fixed agenda order, and provide a formula for the responder's willingness to compromise ($\alpha_{ij}(p_1)$) and the proposer's informational value of conflict ($\beta_{ij}(p_1)$). From the equilibrium behavior in the second period, analyzed in Section 3.1, the second-period payoff of the proposer and the responder, respectively, is given by

$$v_j(p_2) = \begin{cases} 1 - \bar{u}_j & \text{if } p_2 < \hat{p}_j, \\ \omega p + (1-\omega p)\bar{v}_j & \text{otherwise,} \end{cases} \qquad u_j(p_2) = \begin{cases} \bar{u}_j & \text{if } p_2 < \hat{p}_j, \\ (1-\omega p)\bar{u}_j & \text{otherwise.} \end{cases} \tag{8}$$

To calculate $\alpha_{ij}(p_1)$, recall that

$$\begin{aligned} \alpha_{ij}(p_1) &= \frac{u_j(p_1) - \mathbb{E}[u_j(p_2)|conflict]}{1-\omega p_1} \\ &= \frac{u_j(p_1) - (\omega p_1 u_j(1) + (1-\omega p_1)u_j(\pi(p_1)))}{1-\omega p_1}. \end{aligned}$$

Plugging in values of $\pi(p_1)$ from (3) and $u_j(p)$ from (8) yields

$$\alpha_{ij}(p_1) = \begin{cases} \frac{\omega^2 p_1}{1-\omega p_1}\bar{u}_j & \text{if } p_1 < \hat{p}_j, \\ -\frac{(1-\omega)\omega p_1}{1-\omega p_1}\bar{u}_j & \text{if } p_1 \in (\hat{p}_j, \hat{p}_j^*), \\ 0 & \text{if } p_1 > \hat{p}_j^*, \end{cases} \tag{9}$$

Let $\bar{x}_i(p_1) = \bar{u}_i - \alpha_{ij}(p_1)$ be the minimum offer that the responder would accept. We claim that Assumption 2 guarantees that $\bar{x}_i(p_1) > 0$ for any $p_1 \in (0,1)$, which implies that the proposer has a non-trivial choice between conflict and compromise. To see this, first note that $\bar{x}_i(p_1) > 0$ for any $p_1 \geq \hat{p}_j$. Since $\bar{x}_i(p_1)$ is strictly decreasing for $p < \hat{p}_j$, it is sufficient to prove $\lim_{p_1 \uparrow \hat{p}_j} \bar{x}_i(p_1) > 0$. Then a simple calculation yields

$$\lim_{p_1 \uparrow \hat{p}_j} \bar{x}_i(p_1) = \bar{u}_i - \frac{\omega^2 \bar{u}_j \hat{p}_j}{1-\omega\hat{p}_j} = u_i - \omega S_j,$$

which is strictly positive by Assumption 2. There is another boundary case in which $\bar{x}_i(p_1) > 1$, but it is immediate that the proposer strictly prefers conflict in this case, and thus the boundary offer $x = 1$ is never offered in the equilibrium.

To derive the proposer's informational value of conflict $\beta_{ij}(p_1)$, recall that

$$\begin{aligned}\beta_{ij}(p_1) &= \mathbb{E}[v_j(p_2)|conflict] - v_j(p_1)\\ &= \omega p_1 v_j(1) + (1-\omega p_1)v_j(\pi(p_1)) - v_j(p_1).\end{aligned}$$

Plugging in values of $v_j(p)$ from (8), and simplifying with the formula

$$\hat{p}^*_j = \frac{S_j}{\omega((1-\omega)(1-\bar{v}_j)+S_j}.$$

yield that

$$\beta_{ij}(p_1) = \begin{cases}\omega^2(1-\bar{v}_j)(1-\hat{p}_j)p_1 & \text{if } p_1 < \hat{p}_j;\\ \omega((1-\omega)(1-\bar{v}_j)+S_j)(\hat{p}^*_j - p_1) & \text{if } p_1 \in (\hat{p}_j, \hat{p}^*_j);\\ 0 & \text{if } p_1 > \hat{p}^*_j.\end{cases} \tag{10}$$

Recall that Assumption 1 implies $\hat{p}_A < \hat{p}_B$, and that $\hat{p}_i < \hat{p}^*_i$ $(i = A, B)$ by the definition of p^*_i. Therefore, it suffices to show Proposition 1 in the following two cases: (i) $\hat{p}_A < \hat{p}^*_A < \hat{p}_B < \hat{p}^*_B$; and (ii) $\hat{p}_A < \hat{p}_B < \hat{p}^*_A < \hat{p}^*_B$.

Case 1: $\hat{p}_A < \hat{p}^*_A < \hat{p}_B < \hat{p}^*_B$. Recall that $I_{ij}(p_1) = V_{ij}(p_1) - V_0(p_1)$ is the proposer's benefit of agenda order $\langle ij\rangle$. Using (9) and (10), we rewrite (7) as

$$I_{AB}(p_1) = \begin{cases}\max\{\Delta v_A(p_1) + \beta_{AB}(p_1), \alpha_{AB}(p_1)\} & \text{if } p_1 < \hat{p}_A;\\ \max\{\beta_{AB}(p_1), -\Delta v_A(p_1) + \alpha_{AB}(p_1)\} & \text{if } p_1 \in (\hat{p}_A, \hat{p}_B);\\ \beta_{AB}(p_1) & \text{if } p_1 \in (\hat{p}_B, \hat{p}^*_B);\\ 0 & \text{if } p_1 > \hat{p}^*_B;\end{cases}$$

$$I_{BA}(p_1) = \begin{cases}\max\{\Delta v_B(p_1) + \beta_{BA}(p_1), \alpha_{BA}(p_1)\} & \text{if } p_1 < \hat{p}^*_A;\\ 0 & \text{if } p_1 > \hat{p}^*_A.\end{cases}$$

It suffices to show that $I_{AB}(p_1) \le I_{BA}(p_1)$ for any $p < \hat{p}_A$ and $I_{AB}(p_1) \ge I_{BA}(p_1)$ for any $p > \hat{p}_A$.

1. $p > \hat{p}^*_A$: In this case, it is clear that $I_{AB}(p_1) \ge 0$ while $I_{BA}(p_1) = 0$.

2. $p \in (\hat{p}_A, \hat{p}_A^*)$: In this case, first observe that $\beta_{AB}(p_1) > 0$ while $\alpha_{BA}(p_1) < 0$. Therefore, it suffices to show that $\beta_{AB}(p_1) > \Delta v_B(p_1) + \beta_{BA}(p_1)$. From (10), we have

$$\begin{aligned}\beta_{AB}(p_1) - \Delta v_B(p_1) - \beta_{BA}(p_1) =& \omega p_1((\omega + (1-\omega)\bar{v}_B) - (1-\bar{u}_B)) \\ &- ((\omega p_1 + (1-\omega p_1)\bar{v}_B) - (1-\bar{u}_B)) \\ &- (-\omega(1-\omega)p_1 + (-1 + (2\omega - \omega^2)p_1)\bar{v}_A + (1-\omega p_1)(1-\bar{u}_A)) \\ =& ((1-\omega p_1) - \omega(1-\omega)p_1)(\bar{v}_A - \bar{v}_B) + (1-\omega p_1)(\bar{u}_A - \bar{u}_B) > 0.\end{aligned}$$

3. $p < \hat{p}_A$: First, note that for any $p < \hat{p}_A$, $\alpha_{AB}(p_1) = \frac{\omega^2 p_1}{1-\omega p_1}\bar{u}_B \le \frac{\omega^2 p_1}{1-\omega p_1}\bar{u}_A = \alpha_{BA}(p_1)$. Therefore, it suffices to show that $\Delta v_A(p_1) + \beta_{AB}(p_1) < \alpha_{BA}(p_1)$. Furthermore, since $\Delta v_A(p_1) < 0$ for any $p < \hat{p}_A$, it suffices to show that $\beta_{AB}(p_1) < \alpha_{BA}(p_1)$. Equations (9) and (10) yield

$$\alpha_{BA}(p_1) - \beta_{AB}(p_1) = \omega p_1\left(\frac{\omega}{1-\omega p_1}\bar{u}_A - (\omega + (1-\omega)\bar{v}_B) + (1-\bar{u}_B)\right).$$

Note that the terms in the parenthesis decrease in p_1. Therefore, we finish our proof by showing that the terms in the parenthesis is positive when $p = \hat{p}_A$. Since the $v_A^F(\hat{p}_A) = \omega\hat{p}_A + (1-\omega\hat{p}_A)\bar{v}_A = 1 - \bar{u}_A = v_A^C(\hat{p}_A)$, we have

$$\begin{aligned}\frac{\omega}{1-\omega p_1}\bar{u}_A - (\omega + (1-\omega)\bar{v}_B) + (1-\bar{u}_B) &= \omega(1-\bar{v}_A) - (\omega + (1-\omega)\bar{v}_B) + (1-\bar{u}_B) \\ &= 1 - (\omega\bar{v}_A + (1-\omega)\bar{v}_B) - \bar{u}_B \\ &> 1 - \bar{v}_A - \bar{u}_A > 0.\end{aligned}$$

Case 2: $\hat{p}_A < \hat{p}_B < \hat{p}_A^* < \hat{p}_B^*$**.** In this case, the proposer's benefit of agenda order can be written as

$$I_{AB}(p_1) = \begin{cases} \max\{\Delta v_A(p_1) + \beta_{AB}(p_1), \alpha_{AB}(p_1)\} & \text{if } p_1 < \hat{p}_A; \\ \max\{\beta_{AB}(p_1), -\Delta v_A(p_1) + \alpha_{AB}(p_1)\} & \text{if } p_1 \in (\hat{p}_A, \hat{p}_B); \\ \beta_{AB}(p_1) & \text{if } p_1 \in (\hat{p}_B, \hat{p}_B^*); \\ 0 & \text{if } p_1 > \hat{p}_B^*; \end{cases}$$

$$I_{BA}(p_1) = \begin{cases} \max\{\Delta v_B(p_1) + \beta_{BA}(p_1), \alpha_{BA}(p_1)\} & \text{if } p_1 < \hat{p}_B; \\ \beta_{BA}(p_1) & \text{if } p_1 \in (\hat{p}_B, \hat{p}_A^*); \\ 0 & \text{if } p_1 > \hat{p}_A^*. \end{cases}$$

The only range of beliefs where the comparison differs from Case 1 is $p \in (\hat{p}_B, \hat{p}_A^*)$. In this case, we need to show that $\beta_{AB}(p_1) > \beta_{BA}(p_1)$. From (10),

$$\beta_{AB}(p_1) = \omega((1-\omega)(1-\bar{v}_B) + S_B)(\hat{p}_B^* - p_1)$$
$$\beta_{BA}(p_1) = \omega((1-\omega)(1-\bar{v}_A) + S_A)(\hat{p}_A^* - p_1).$$

Because $\bar{v}_A \geq \bar{v}_B$, $S_A < S_B$, and $\hat{p}_A^* < \hat{p}_B^*$, we have shown the desired result. ■

Proof of Lemma 1. Consider the first statement. Because $p < \hat{p}_A$, Proposition 1 shows that the proposer starts with issue B. Therefore, we need to show that $Z_{BA}(p) \equiv V_{BA}^F(p) - V_{BA}^C(p) < 0$ for all $p < \hat{p}_A$. Then from the analysis in the proof of Proposition 1,

$$\begin{aligned} Z_{BA}(p) &= (v_B^F(p) + \beta_{BA}(p)) - (v_B^C(p) + \alpha_{BA}(p)) \\ &= (\omega p_1(1-\bar{v}_B) - S_B) + \omega^2(1-\bar{v}_A)(1-\hat{p}_A)p_1 - \frac{\omega^2 p_1}{1-\omega p_1}\bar{u}_A. \end{aligned}$$

First note that $Z_{BA}(0) = -S_B < 0$. Also, $Z_{BA}(p)$ is concave for all $p < \hat{p}_A$, since $Z_{BA}''(p) = -2\omega^2\bar{u}_A/((1-\omega p)^3$. Thus, it is sufficient to show that

$$Z_{BA}(0) + Z_{BA}'(0)\hat{p}_A < 0. \tag{11}$$

A simple calculation yields

$$Z_{BA}'(0) = \omega\Big(\omega S_A + \bar{u}_A + \bar{v}_A - \bar{v}_B\Big).$$

Substituting the value of $Z_{BA}(0), Z'_{BA}(0)$, and $\hat{p}_A$ into (11) and dividing by S_A yields

$$\frac{\omega S_A}{1-\bar{v}_A} + \frac{\bar{u}_A + \bar{v}_A - 1}{1-\bar{v}_A} + \frac{1-\bar{v}_B}{1-\bar{v}_A} < \frac{S_B}{S_A}. \tag{12}$$

Using the definition of $\hat{p}_A$ yields

$$\omega^2 \hat{p}_A - \omega \hat{p}_A + \frac{1-\bar{v}_B}{1-\bar{v}_A} < \frac{S_B}{S_A}. \tag{13}$$

Because $\omega^2 \hat{p}_A < \omega \hat{p}_A$, inequality (13) holds if

$$\frac{1-\bar{v}_B}{1-\bar{v}_A} \leq \frac{S_B}{S_A}. \tag{14}$$

This is equivalent to

$$1 \leq \frac{S_B}{\omega(1-\bar{v}_B)} \frac{\omega(1-\bar{v}_A)}{S_A} = \frac{\hat{p}_B}{\hat{p}_A}, \tag{15}$$

which holds because $\hat{p}_B > \hat{p}_A$.

We now prove the second statement. For $p_1 > \hat{p}_A$, then the proposer starts with issue A. Thus, compromise occurs for beliefs that are marginally larger than $\hat{p}_A$ if and only if $V^C_{AB}(\hat{p}_A) > V^F_{AB}(\hat{p}_A)$. One can show that this inequality is equivalent to

$$\frac{(S_B \bar{u}_A - \omega(1-\bar{v}_B)(\bar{u}_A - \bar{u}_B))S_A}{\bar{u}_A(1-\bar{v}_A)} > 0.$$

Using the definition of $\hat{p}_B$, the result follows.

We next prove that conflict is optimal for all $p_1 > \hat{p}_B$. This is immediate for $p_1 > \hat{p}^*_B$. In particular, for these beliefs the action in the first period does not affect the action in the second period. Because $\hat{p}_A < \hat{p}_B$ it follows that conflict is optimal. Finally, for p_1 between $\hat{p}_B$ and $\hat{p}^*_B$ the proposer must pay the responder more than the reservation utility when avoiding conflict, because the responder's value of information is strictly positive. In addition, $\hat{p}_A < \hat{p}_B$, implies that the myopic choice is conflict. Hence, conflict is optimal for all $p_1 > \hat{p}_B$.

Finally, suppose that $\hat{p}_B > 1$. Then there is not benefit from learning for either player, and hence first period choices do not affect the behavior in the second period. If $p_1 > \hat{p}_A$ then conflict is optima in the first period. ■

Lemma 2 *Suppose that issue i is addressed first, followed by issue j. If $\hat{p}_j > 1$ then both V^F_{ij} and V^C_{ij} are linear functions of the first period belief, p_1. If $\hat{p}_j < 1$, then*

1. *The proposer's expected payoff from fighting in the first period, $V_{ij}^F(p_1)$ is continuous, convex, and strictly increasing in p_1. Further, V_{ij}^F is (affine) linear for $p_1 < p_j^*$ and for $p_1 > p_j^*$.*

2. *The proposer's expected payoff from compromise in the first period, $V_{ij}^C(p_1)$ is strictly increasing and convex for $p_1 < \hat{p}_j$, is concave and strictly increasing when $p_1 \in (\hat{p}_j, \hat{p}_j^*)$, and affine linear and strictly increasing for $p_1 > \hat{p}_j^*$. There are discontinuities at $\hat{p}_j$ and $\hat{p}_j^*$. In particular, V^C jumps down by $\omega\hat{p}_j/(1-\omega\hat{p}_j)$ at $\hat{p}_j$; and it jumps up by $\omega\hat{p}_j\bar{u}_j$ at $\hat{p}_j^*$.*

3. *The proposer's expected payoff from compromise at $p_1 = 0$ is strictly higher than the expected payoff from compromise for p that are marginally larger than $\hat{p}_j$, i.e., $V_{ij}^C(0) - \lim_{p_1 \downarrow \hat{p}_j} V_{ij}^C(p_1) = S_j(1-\omega)$.*

Proof of Lemma 2. First, note that V_{ij}^F is a strictly increasing, convex, continuous and piecewise (affine) linear function of p_1.

Continuity follows immediately. Next, if $\pi(p_1) < \hat{p}_j$, then $v_j(\pi(p_1))$ is constant. Thus,

$$V_{i,j}^{F\prime}(p) = \omega(1 - \bar{v}_i + \omega(1 - \bar{v}_j)). \tag{16}$$

If $\pi(p_1) > \hat{p}_j$, then

$$V_{i,j}^{F\prime}(p) = \omega(1 - \bar{v}_i + 1 - \bar{v}_j). \tag{17}$$

Because $\omega < 1$ if follows that (17) is strictly larger than (16). Hence, V_{ij}^F is convex. Because both derivatives are strictly positive, V_{ij}^F is strictly increasing.

Next, note that $\alpha_{ij}(p_1)$ is increasing and strictly convex for $p_1 < \hat{p}_j$. Because $v_j(p_1)$ is constant for $p_1 < \hat{p}_j$ it follows that V_{ij}^C is strictly convex and strictly increasing for $p_1 < \hat{p}_j$.

For $p_1 \in (\hat{p}_j, \hat{p}_j^*)$ if follows that V_{ij}^C is strictly increasing and strictly concave. In particular, the first derivative is given by

$$V_{ij}^{C\prime}(p_1) = \frac{\omega\left((\omega p_1)^2(1-\bar{v}_j) + \omega(\bar{u}_j + 2(1-\bar{v}_j)) + S_j\right)}{(1-\omega p_1)^2} > 0. \tag{18}$$

The second derivative is given by

$$V_{ij}^{C\prime\prime}(p_1) = -\frac{2(1-\omega)\omega^2\bar{u}_j}{(1-\omega p_1)^3} < 0. \tag{19}$$

At $p_1 = \hat{p}_j$ there is a discontinuity, as V_{ij}^C jumps down by $\omega\hat{p}_j/(1-\omega\hat{p}_j)$.

Finally, $V_{ij}^C(p) = 1 - \bar{u}_i + \omega p_1 + (1-\omega p_1)\bar{v}_j$ for $p_1 > \hat{p}_j^*$. Thus, V_{ij}^C is affine-linear and strictly increasing in this range. At $\hat{p}_j^*$ the function jumps up by $(1-\omega)\omega\hat{p}_j^*\bar{u}_j/(1-p\omega) = \omega\hat{p}_j\bar{u}_j$. ■

References

Abreu, D. and F. Gul (2000). Bargaining and Reputation. *Econometrica 68*(1), 85–117.

Banks, J. S. and J. Duggan (2000). A bargaining model of collective choice. *American Political Science Review 94*(1), 73–88.

Banks, J. S. and J. Duggan (2006). A general bargaining model of legislative policy-making. *Quarterly Journal of Political Science 1*(1), 49–85.

Baron, D. P. (1996). A dynamic theory of collective goods programs. *American Political Science Review 90*(2), 316–330.

Baron, D. P. and J. A. Ferejohn (1987). Bargaining and agenda formation in legislatures. *American Economic Review 7*(2), 303–309.

Baron, D. P. and J. A. Ferejohn (1989). Bargaining in legislatures. *American Political Science Review 83*(4), 1181–1206.

Bowen, T. R., I. Hwang, and S. Krasa (2020). Agenda-setter power dynamics: Learning in multi-issue bargaining. *mimeo*.

Callander, S. and P. Hummel (2014). Preemptive Policy Experimentation. *Econometrica 82*(4), 1509–1528.

Deneckere, R. J. and M. Y. Liang (2006). Bargaining with interdependent values. *Econometrica 74*(5), 1309–1364.

Diermeier, D. and P. Fong (2011). Legislative bargaining with reconsideration. *The Quarterly Journal of Economics 126*(2), 947–985.

Fershtman, C. (1990). The importance of the agenda in bargaining. *Games and Economic Behavior 2*(3), 224–238.

Fox, J. and R. Van Weelden (2010). Partisanship and the effectiveness of oversight. *Journal of Public Economics 94*(9-10), 674–687.

Fudenberg, D., D. Levine, and J. Tirole (1985). Infinite-Horizon Models of Bargaining with One-Sided Incomplete Information. In A. E. Roth (Ed.), *Game-Theoretic Models of Bargaining*, pp. 73–98. Cambridge University Press.

Krasteva, S. and H. Yildirim (2012). On the role of confidentiality and deadlines in bilateral negotiations. *Games and Economic Behavior 75*(2), 714–730.

Mayhew, D. R. (1991). *Divided We Govern*. New Haven: Yale University Press.

Ornstein, N. (2015). The real story of Obamacare's birth. The Atlantic.

Ortner, J. (2017). A theory of political gridlock. *Theoretical Economics 12*, 555–586.

Patterson, J. T. (1996). *Grand Expectations: The United States, 1945-1974*. Oxford University Press.

Prat, A. (2009). The Wrong Kind of Transparency. *American Economic Review 95*(3), 862–877.

Romer, T. and H. Rosenthal (1979). Bureaucrats versus voters: On the political economy of resource allocation by direct democracy. *The Quarterly Journal of Economics 93*(4), 563–587.

Strulovici, B. (2010). Learning While Voting: Determinants of Collective Experimentation. *Econometrica 78*(3), 933–971.