Dynamics of Policymaking: Stepping Back to Leap Forward, Stepping Forward to Keep Back*

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Short Title: Dynamics of Policymaking

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Abstract

We study dynamic policy-making when: today's policy agreement becomes tomorrow's status quo; agents account for the consequences of today's policies for future policy outcomes; and there is uncertainty about who will hold future political power to propose and veto future policy changes. Today's agenda-setter holds back from fully exploiting present opportunities to move policy toward her ideal point whenever future proposer and veto players are likely to be aligned *either* in favor of reform, or against it. Otherwise, agenda-setters advance their short-run interests. Optimal proposals can vary discontinuously and non-monotonically with political fundamentals.

Keywords: reform, agenda-setting, status quo, veto player.

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1. Introduction

Policies implemented today partly determine the policies implemented in the future. This *dynamic linkage* in policy-making may arise through information (Callander and Hummel, 2014), preferences (Glaeser and Shleifer, 2005), or institutions (Bowen et al., 2014). We study the consequences of a dynamic linkage that arises in contexts where existing policy agreements prevail until they are superseded by a new agreement. This may be a consequence of formal institutional rules, such as mandatory spending programs in the United States (Bowen et al., 2014). It may also arise *de facto*: an example is the Barnett formula, used in the United Kingdom to adjust public expenditure across Northern Ireland, Scotland and Wales; introduced in 1978 as a temporary expedient, it has been in continuous use, ever since.

A crucial feature of these environments is that the immediate payoff from today's policy becomes the opportunity cost of changing future policy. In this paper, we ask: how does this affect the short-term reform strategy of an agent whose long-term preference is to move policy away from an unpalatable status quo? How does this strategy vary with the form and degree of uncertainty over who will hold power in the future? And, how do the answers to these questions depend on agents' ideological preferences in favor of, or against, policy reform?

We explore these questions in a political economy setting with far-sighted agents, building on the seminal framework of Romer and Rosenthal (1979*b*). The novel ingredient that we introduce is that agents face uncertainty about who will hold power in the future both to propose and to accept policies vis-à-vis the endogenous status quo.

Our model features a *proposer* and a *veto player*. The proposer may be an executive, such as a president or prime minister, or a senior legislative office-holder such as the majority leader in a legislative chamber. The veto player may be the median legislator in the same or another legislative chamber, or a super-majority when such a rule applies.

We consider three types of veto player: a *progressive*, a *centrist* and a *conservative*. The centrist and progressive both want to move policy in the same direction away from the extant status quo, but a progressive wants to move policy further than a centrist. The conservative also wants to shift policy, but in the opposite direction from the progressive and centrist. To ease presentation, we assume that the initial veto player is a centrist.

Likewise, the proposer may either be a *radical* or a *reactionary*. A radical wants to move policy away from the status quo in the same direction as progressive and centrist veto players, but to a greater extent than both. Similarly, a reactionary wants to shift policy in the same direction as a conservative veto player, but to a greater extent.

[FIGURE 1 ABOUT HERE]

Thus, the proposer and veto player are *at best* imperfectly aligned. Even when their interests are nominally aligned, e.g., when they belong to the same political party, the 'effective' decisive agent need not precisely share a proposer's preferences. This may be due to explicit supermajority requirements or to the ability of a determined minority—on the chamber floor, in a legislative committee, or a faction within the majority party—to impede a bill's progress.

The timing unfolds as follows. At date one, the proposer offers the veto player a choice between the status quo, and an alternative policy. If the veto player adopts the proposer's alternative, it becomes the new status quo. Otherwise, the initial status quo remains in place. Between periods, the identities of both the legislative proposer and the veto player may change, for example, due to an election. Thus, a reactionary proposer may remain in power or be replaced by a radical proposer, or vice versa. Similarly, the centrist veto player may retain veto power, or be replaced by a progressive or conservative. Once again, the proposer designs a policy. If approved by the veto player, it is implemented; otherwise the status quo prevails.

Our paper derives how proposals are affected by uncertainty about who will hold future proposal and veto power, agents' policy preferences, and their relative concern for future policy outcomes. If agents care only about the present, the optimal proposal takes a simple form: move policy as far as possible in the proposer's favored direction, subject to the constraint that the veto player prefers the policy to the status quo (Romer and Rosenthal (1979*b*)).

When agents care about the future, though, optimal proposals may take a strikingly different form. We show that *alignment* of future proposer and veto player interests is a force for today's proposer to refrain moving policy in her preferred direction, while *mis-alignment* of their interests is a force for a radical to shift reform forward, and for a reactionary to maintain the status quo.

Alignment: A proposer and veto player are *aligned* if and only if there exist policies that both agents prefer to the status quo. In Figure 1, for example, a radical proposer is aligned with both the progressive and centrist veto players, while a reactionary proposer is aligned with the conservative veto player. A radical date-one proposer could exploit the centrist veto player by moving the status quo in the direction of her ideal policy. This, however, reduces her opportunity to exploit a future progressive veto player, since incremental reform reduces a progressive's discontent with the new status quo. If a date-one radical is sufficiently confident of a future *friendly alignment* between herself and a progressive veto player, she may prefer to hold back, initially, in order to maximize her ability to exploit a progressive in the future.

A date-one radical may also prefer to hold back reform if she suspects that she will be replaced by a future reactionary proposer who will face a conservative veto player. More policy movement toward the radical's ideal policy, today, exacerbates the conservative's discontent with tomorrow's status quo. This discontent can then be exploited by a reactionary proposer to achieve powerful counter-reform. If a radical fears a future *hostile alignment* between a reactionary and a conservative veto player, she may prefer to hold back, initially.

A date-1 reactionary proposer faces a similar calculation, with the crucial difference being that her notions of a friendly and hostile alignment are the opposite of the radical's. Thus, the possibilities of future alignment—both friendly and hostile—are forces for today's proposer to hold back from moving the initial status quo in her preferred direction.

Mis-alignment: A proposer and veto player are *mis-aligned* when there exists no alternative that both agents prefer to the status quo. In Figure 1, for example, a radical proposer is mis-aligned with a conservative veto player, while a reactionary proposer is mis-aligned with both the progressive and centrist veto players. If the future proposer and veto player are mis-aligned, the proposer cannot move policy in her preferred direction—gridlock means that the status quo that is inherited from the previous date will prevail. If a date-one proposer anticipates a future mis-alignment, she prefers to accelerate her agenda rather than hold back.

A proposer's dynamic incentives turn on the prospects of future friendly alignment, hostile alignment, and mis-alignment. A proposer can determine both (i) which potential veto players will be partially aligned with each possible future proposer and (ii) how much each veto player can be exploited. Moreover, a risk-averse proposer is most sensitive to the consequences of a hostile alignment that takes the policy outcome very far away from her ideal. So, a radical or a reactionary's proposal may reflect very different aspects of the uncertainty that all agents face about who will hold future political power.

We provide conditions under which a reactionary proposes more initial reform than a radical. This arises when, in the future, a radical proposer and progressive veto player are likely to hold proposal and veto power. In this case, a radical 'steps back in order to leap forward', fostering the opportunity to make dramatic future reform by showing restraint today. For the same reason, a reactionary 'steps forward in order to keep back', sacrificing ground today with a view to preventing more drastic reform in the future.

A proposer's dynamic incentives to hold back or accelerate her agenda are *not* driven by a calculation that more moderate policies are inherently more robust to changes in political power. Rather, the durability of policy agreements turns on the extent to which they align or mis-align the interests of possible future veto players and proposers. To illustrate with reference to Figure 1, notice that by moving the date-1 policy away from the status quo and towards the centrist's ideal policy, an initial proposer induces less extreme date-two outcomes in the event that the date-two proposer is radical and faces a progressive veto player. By contrast, the same date-1 policy moderation *raises* the prospect of a relatively extreme date-two policy shift in the event that the subsequent proposer is a reactionary and faces a conservative veto player. The reason is that this policy change increases a reactionary's ability to exploit the conservative's heightened discontent with the new status quo.

The standard explanation for why policymakers hold back from fully exploiting political power is that they fear losing power in the future. This explanation is present in our setting, and is especially relevant in non-democratic contexts. For example, an autocratic elite may concede limited redistribution to stave off a threat of revolution (Acemoglu and Robinson (2000)). When one agent initially holds all political power, any change in the distribution of power is necessarily *unfavorable* to the incumbent.

In democratic contexts, however, future political power may evolve *favorably* or *unfavorably* from an incumbent's perspective. In a presidential system, a party may initially control the legislature but then win the presidency, advancing from *divided* to *unified* control of government. Similar phenomena arise in parliamentary systems: in 2015, the British Conservative Party won a majority, allowing them to dispense with their former coalition partners, the Liberal Democrats. Such settings feature a second reason to hold back: partial reform today engenders an *opportunity cost* of implementing more powerful reform in the future.

Our model can make sense of situations in which policy advocacy and opposition cannot be explained by the respective groups' and individuals' contemporaneous policy interests. A powerful illustration of 'stepping forward to keep back' can be found in the Second Reform

Act of 1867. That a British Conservative Government would implement legislation extending voting rights to the British working class was long seen as paradoxical. However, Gallagher (1980) argues that "[t]he Act was certainly conservative in that it was an early concession to public opinion" (Gallagher, 1980, 147), while Cole (1950) argues that its enactment effectively postponed further reform for nearly 20 years.

Another example from British political history illustrates the phenomenon of 'stepping back to leap forward'. In 1969, the British Labour government attempted to reform the House of Lords by restricting the voting rights of hereditary peers and weakening their capacity to delay legislation approved in the House of Commons. It was defeated, in part, by a coalition of left-wing abolitionists within the Labour party, led by Michael Foot, who "was anxious that any reform (rather than outright abolition) would merely serve to imbue the House of Lords with greater legitimacy and longevity..." (Shell, 2006, 191).

Do politically-minded agents possess the foresight to make such calculations? A contemporary example from American politics illustrates this foresight, where the opportunity cost of short-run reform played a prominent role. The 2009 *American Clean Energy and Security Act* was designed to "curb the heat-trapping gases scientists have linked to climate change"[4] by creating a cap and trade system. TheClean.org, "a grassroots coalition... devoted to moving the U.S... to an economy based on renewable energy," opposed this legislation, arguing:

> Since President Obama is likely to sign the bill with great fanfare, what will the public take away from this? Will they see it as a "win"—that the problem is solved? If so, what will that mean for pushing for the needed steps later? How will the public be mobilized to push their Representatives when the official and media message is that this is "landmark" legislation?
>
> '*Why We Cannot Support This Bill*' (`http://goo.gl/zZ3U3r`)

Our benchmark analysis presumes that the proposer is dynamically sophisticated, but that the veto player evaluates alternatives to the status quo based on her current payoff. We conclude by showing how an initial centrist veto player who is dynamically sophisticated may (a) accept policies that she would reject were she myopic, and (b) reject policies that she would accept were she myopic.

[4] Broder, John (2009-06-26). "House Passes Bill to Address Threat of Climate Change". New York Times. First cited in Schraub (2013).

The paper's outline is as follows. After reviewing the literature, we present our base model. We first analyze scenarios in which proposers never hold back, always exploiting a centrist veto player to some extent. We then analyze the full model in which the identities of the proposer and veto player may change over time. Finally, we explore how the primitives of the political environment affect proposals, and analyze settings with a dynamically-sophisticated veto player. A conclusion follows. Proofs and additional results are in an appendix.

Related Literature. Our work builds on the pioneering agenda-setting model of Romer and Rosenthal (1979*b*), in which a proposer with fixed identity makes a proposal that is pitted against a default alternative in an up-or-down vote. In our setting, however, decision-making does not end when a proposal is approved: a policy persists only until it is replaced with a new policy. Baron (1996) introduces an endogenous status quo to a spatial legislative bargaining setting with a fixed distribution of agent preferences. He recovers a 'dynamic median voter theorem': policies may move to the left or right in any period, but they gradually converge to the median voter's ideal policy. In our model, by contrast, the preferences of both the proposer and veto player may evolve over time in ways that cannot be perfectly anticipated. We show that convergence to either the present or to the anticipated future veto player's ideal policy need not occur.[5] Chen and Eraslan (2015) allow an initial proposer to choose from one of several issues, but once an issue is addressed it cannot be revisited.

In Penn (2009) a proposal is randomly (non-strategically) drawn at each date and pitted against the status quo. Voters are 'farsighted', taking into account both the immediate and long-term consequences of the immediate policy outcome. Penn highlights how static and dynamic voting considerations may diverge. We extend her work by modeling a strategic agenda-setter, capturing the fact that in many real-world settings, agendas are chosen by strategic agents who trade off current and future policy outcomes.

Dynamic linkages may arise through other channels. Callander and Hummel (2014) explore an information channel: an incumbent's policy choice reveals information to her successor, changing her preferences over policies.[6] Callander and Raiha (2014), explore a

[5]Epple and Riordan (1987) were the first to consider an endogenous status quo in a 'divide the dollar' setting; subsequent work includes Kalandrakis (2004), Duggan and Kalandrakis (2012), and Baron and Bowen (2013). Some authors study policy environments that admit either spatial or distributive interpretations (Bernheim et al. (2006), Diermeier and Fong (2011)) and others include both dimensions, such as Bowen et al. (2014).

[6]Prato (2014) also considers an information channel.

technological channel: the assume that policy investments (infrastructure) persist across periods. Agenda manipulation arises because a successor's preference over subsequent investments depends on previous investments.

Our work also relates to a literature on the political economy of the timing and scope of reform. A long-standing puzzle is why parties with an avowed opposition to reforms such as market liberalization are more likely to implement these policies (Alesina et al. (2006), Roland (2008)). Cukierman and Tommasi (1998) claim that these parties' relative hostility to such policies ensures that only they can credibly claim that they are necessary. Our explanation is instead based on a fear that a failure to implement reform now will make the inevitable actions of a successor even more drastic.

2. Model

We consider a two-date economy, with dates 1 and 2. The policy space is $\mathbb{R}$. There are two agents: a *decisive veto player* ("the veto player"), and a *legislative proposer* ("the proposer"), whose date-t ideal policies are r_t and p_t, respectively. The legislative proposer may be interpreted as the executive or a senior legislative office-holder. The veto player could be the median legislator or the 'effective' pivotal legislator in cases where a super-majority requirement applies. In other settings, the veto player could be the median legislator in a governing party or coalition.

The date-t payoff of an agent with ideal policy i from a date-t policy $y_t \in \mathbb{R}$ is $u_i(y_t) = -(y_t - i)^2$. There is an initial status quo $s_1 > 0$, inherited from a previous legislative cycle. The proposer is either a *reactionary*, or a *radical*, with ideal policies e and $-e$, respectively, where $e > s_1$. Initially, the veto player is a *centrist*, with an ideal policy that we normalize to zero. Symmetry of agents' ideal policies eases analysis, but is not needed for our results.

The timing is as follows. At date 1, the proposer first chooses a policy $y_1 \in \mathbb{R}$ that the veto player may *accept* or *reject*. If accepted, the proposal is implemented; otherwise the status quo s_1 is implemented. The policy implemented at date 1 serves as the status quo s_2 at date 2.

Between dates 1 and 2, an election occurs that may change the identities of the proposer, veto player, or both. For example, in a parliamentary system, both agents may change in the same election; in a presidential system in which election timing is staggered, one agent may remain in office for sure, whilst the other faces potential replacement. In settings where proposals originate in the legislature, a change in veto player could reflect a change in president.

At date 2, the veto player may remain a centrist or be replaced by a *conservative* veto player with ideal policy $m \geq s_1$, or by a *progressive* veto player with ideal policy $-m$. $\Pr(r_2)$ denotes the probability of a type r_2 veto player at date 2. Likewise, the proposer may remain a reactionary (radical) or be replaced by a radical (reactionary). We let α denote the probability of a radical date-2 proposer, and let $\beta = 1 - \alpha$ denote the probability of a reactionary proposer. For simplicity, we assume that the probability distributions over these transitions are independent.

At date 2, the proposer chooses a policy $y_2 \in \mathbb{R}$, which the veto player may *accept* or *reject*. If the proposal is accepted, it is implemented; otherwise the date-2 status quo s_2 is implemented. The game then ends.

In real-world settings, proposer and veto players are often imperfectly aligned (i.e., $e \neq m$). In the United States, it is rare for a single party to control the House, Senate and presidency; and even when the same party controls each branch, a supermajority may be required in the Senate. Moreover, preferences may vary across the three branches, for example, if agents face different electoral constituencies. In parliamentary systems where a single party is likely to hold both a legislative majority and the executive, a party leader who acts as a proposer must still win the support of a majority within the governing party. This problem can be especially severe when parties must work together in a coalition government. Institutional rules may also render the 'effective' veto player different from the median of the legislative chamber in which the party holds a majority. This would be the case if proposals initiate in a lower chamber, but are subject to veto by an upper chamber.

We do not initially order the ideologies of the proposers and the relatively polarized veto players, e and m. However, dynamic trade-offs arise almost exclusively in settings where at least one proposer is more ideologically extreme than the corresponding veto player. Thus, most of our analysis focuses on settings in which the proposer is relatively more 'extreme' than her most closely aligned veto player, i.e., when $e > m$.[7]

The payoff of an agent with ideal policy i is $(1-\delta)u_i(y_1) + \delta u_i(y_2)$. The weight $\delta \in (0, 1)$ captures the degree to which agents value policy made in the next term relative to the current term. A policymaker may place less emphasis on the current term (δ close to one) if an election will soon take place, since there will be an imminent opportunity to revise

[7]In Appendix A, we allow for arbitrary numbers of veto player and proposer types, and a general recognition rule, and show that our characterizations of locally-optimal proposals extend.

policy after the election. The most natural interpretation of our two-date model is that the policy in place at the end of the second term is subsequently locked in over a sufficiently long horizon that future opportunities to change it are largely discounted by relatively impatient politicians. In practice, it is often politically and practically infeasible for lawmakers to implement frequent major innovations to a policy area (e.g., health insurance).

Throughout, we assume that the proposer is 'dynamically sophisticated': she recognizes that political competition is not a one-shot game and fully accounts for the future consequences of her proposal. To simplify exposition, our benchmark setting assumes that the veto player evaluates policy solely according to her status quo payoff. This lets us focus on the dynamic concerns of the proposer. Later, we consider a veto player who is also dynamically sophisticated.

We assume that the distributions over the future holders of proposal and veto power are independent and exogenous. Positive correlation strengthens incentives for an agent to hold back from initially moving policy toward her ideal policy; while negative correlation weakens those incentives. Positive correlation is likely in a parliamentary system, where the forces that make a reactionary proposer more likely, also make a conservative veto player from the same party more likely. In contrast, negative correlation may be likely in an American context where the president faces a mid-term election in which her party typically performs badly. In that case, the veto player's ideology is likely to move away from the proposer's.

We also assume the exogeneity of the distributions over future proposal and veto power. Policy reforms have indirect effects on preferences—given agents' tastes, they affect their *induced* preference trade-offs over future reforms vis-à-vis the induced status quo. Our analysis focuses on this effect. Policy reforms may also change agents' underlying *primitive* preferences. For example, allowing occupants of state-housing to purchase their homes may alter their preferences over different redistributive policies.[8] Translated into our framework, there are settings in which the distribution over proposal and veto power is itself a function of today's policy choices. We make two observations. First, our framework lets us avoid conflating the two channels whilst uncovering a bevy of subtle trade-offs. Second, the underlying demographics of a society typically change slowly, taking several legislative cycles to evolve.[9]

[8] An example is Margaret Thatcher's controversial 'right-to-buy' policy, in the 1980s.

[9] For example, Glaeser and Shleifer (2005) document the process by which James Curley, an Irish Bostonion politician, attempted to supplant the predominantly English Bostonion population with the Irish, a

3. When Won't Politicians Hold Back?

We first identify settings in which politicians *always* want to move policy toward their ideal policies, *past* the policy preferred by a centrist veto player. These include (1) a static setting where there are no future opportunities to revise policies; (2) the veto player is always a centrist; or (3) veto players have more extreme ideologies than proposers, i.e., $m > e$.

Static setting. A static setting is strategically equivalent to date 2 of a dynamic environment, so we drop time subscripts, and refer to the status quo as s, and the ideal points of the proposer and veto player as p and r. When future opportunities to change policy are absent or fully discounted, a proposer wants to move policy as close as possible to her ideal point, subject to receiving approval from the veto player (Romer and Rosenthal (1979*b*)).

[FIGURE 2 ABOUT HERE]

The veto player will accept any policy that is closer to her ideal policy r than the status quo s. Suppose that a radical with ideal policy $-e$ holds proposal power.
(1) If a veto player has ideal policy $r \geq s$, she will veto any proposal that moves policy toward the radical's ideal policy. Thus, the radical can do no better than propose the status quo.
(2) If a veto player has ideal policy $r < s$, and her loss is symmetric around her ideal point, she will accept any proposal lying closer to her ideal point than s. Thus, the most reform she is prepared to accept is the policy $y < r$ satisfying $s - r = r - y$, i.e., the policy $y = 2r - s$.

If a radical proposer's ideal policy is sufficiently palatable to the veto player relative to the status quo, i.e., if $2r - s \leq -e$, then the radical proposes her own ideal policy. Otherwise, she can do no better than $y = 2r - s$. Therefore, the radical's static optimal proposal is:

$$y^*(-e, r, s) = \begin{cases} s & \text{if } s \leq r \\ s - 2(s - r) & \text{if } r < s < e + 2r \\ -e & \text{if } s \geq e + 2r. \end{cases} \tag{1}$$

A proposer's ability to move policy rises with the distance between the status quo s and the veto player's ideal policy r. This is particularly relevant when a radical proposer and

process that succeeded over the course of fifty years. Dziuda and Loeper (2016) present a formal model with an endogenous status quo and preferences that may change over time.

veto player are partially aligned relative to the status quo, so that $s > r$, but not so much that the veto player would let the radical implement her ideal policy, $s < e + 2r$. In this case, the radical fully exploits the veto player's desire for reform, jumping policy past r by $s - r$.

Similarly, the optimal proposal of a reactionary with ideology $e > m$ is:

$$y^*(e, r, s) = \begin{cases} s & \text{if } s \geq r \\ s + 2(r - s) & \text{if } 2r - e < s < r \\ e & \text{if } s \leq 2r - e \end{cases} \tag{2}$$

Thus, if the proposer cares only about the immediate consequences of her proposal, she moves the policy outcome as close as possible to her ideal policy.

This solution has implications for the dynamic setting. When a proposer and veto player are only partially aligned relative to the status quo, a proposer's ability to move policy rises with the distance $|r - s|$ between the status quo and the veto player's ideal policy. When the status quo arises from a previous proposal, this feature provides a proposer incentives to refrain from maximizing her static payoff in order to increase her future advantage.

Centrist Veto Player Always Holds Power. Suppose now that today's proposer is uncertain about the identity of tomorrow's proposer, but the veto player is sure to remain a centrist. This could reflect a setting in which a legislative chamber is the proposer, the president is the veto player, and only the legislative chamber faces an imminent midterm election.

At date 1, a centrist veto player accepts any proposal that is closer to her ideal policy than the status quo. This is not a consequence of our assumption that a veto player evaluates proposals according to her immediate payoff. On the contrary, if a veto player is certain to retain veto power, her acceptance strategy is the same when she is dynamically sophisticated, and therefore internalizes the long-run consequences of her acceptance decisions.

Result 1. Suppose that a centrist is certain to hold veto power at both dates. Then at date one a radical proposes $y_1(-e) \leq 0$, while a reactionary proposes $y_1(e) \geq 0$.

Result 1 follows directly from the observation that for any date-2 status quo $s_2 = y_1 \in [0, s_1]$ or $s_2 = -y_1$, a radical will implement $-y_1$ and a reactionary will implement y_1.

This result does *not* mean that a proposer moves policy as close as possible to her ideal point. In fact, her proposal trades off between static and dynamic incentives. Catering to her immediate payoff also improves future outcomes *if* she is again realized as proposer. This is because she can do no better than lock in her gains at date 2 by maintaining the induced status quo, $s_2(= y_1)$. However, as she moves policy closer to her ideal, the penalty from losing proposal power grows increasingly severe. Thus:

Proposition 1. If a centrist veto player always holds veto power at both dates, then an interior solution for a proposer with ideal policy $i \in \{-e, e\}$ satisfies:

$$y_1(i) = i - \delta i 2 \Pr(i \text{ loses proposal power}). \tag{3}$$

A radical's proposal $y_1(-e) \leq 0$ induces future *mis-alignment* between herself and a centrist, and raises the threat of a *hostile alignment* between a reactionary proposer and a centrist. When a hostile alignment is more likely, a radical proposes less reform in order to avoid antagonizing a centrist, who will be easier for a future reactionary to exploit. A reactionary proposer who proposes $y_1(e) \geq 0$ is guided by similar considerations.

When the veto player is always a centrist, each proposer's concern for the long-run always induces policy moderation. Nonetheless, dynamic incentives need not induce policy moderation when the identity of the veto player can also change between dates.

Veto players are more extreme than proposers. Result 1 extends when (1) the identity of the veto player may change in between periods, but (2) $m > e$, so that the ideologies of non-centrist veto players are more extreme than those of proposers. When $m > e$, a radical who faces a progressive at date 2 can achieve her ideal outcome $-e$ regardless of the location of the status quo $s_1 \geq -e$. The same is true for a reactionary-conservative pairing at date 2 when $s_1 \leq e$. Since the precise location of the date-1 policy only affects the date-2 outcome if the veto player is a centrist, Result 1 extends: a radical at date 1 selects $y_1(-e) \leq 0$, while a reactionary proposer prefers $y_1(e) \geq 0$.

Thus, the strategically-interesting setting is where proposers are more extreme than veto players, i.e., where $e > m$ (see Figure 1). In what follows, to ease presentation, we assume an even greater degree of imperfect alignment between proposers and veto players:

A1. $e - m > m + s_1$.

A1 ensures that for any date-2 status quo resulting from date-1 interactions, each proposer wants to move policy closer to her ideal point than any veto player would accept.[10]

4. Identities of Proposers and Veto Players May Change Over Time

We now study optimal proposals at date 1 when the identities of the proposer and veto player may change over time, and proposers are more extreme than veto players.

When the veto player is always a centrist, the optimal date-1 proposal renders the centrist veto player exploitable only by the opposing proposer, at date 2. When the veto player can change over time, by contrast, each proposer faces a non-trivial decision about which types of veto players she wants to be partially aligned with her at date 2. When the veto player is not dynamically sophisticated, she weakly prefers any policy $y_1 \in [-s_1, s_1]$ to s_1. This means that a proposer faces an initial decision about which side of a centrist's ideal policy to place her date-1 proposal.

A proposer's continuation payoff from a policy y_1 that becomes the date-2 status quo s_2 is:

$$\begin{aligned} V_i(y_1) &= \alpha\Bigg[\sum_{r_2<y_1} \Pr(r_2)u_i(y_1 - 2(y_1 - r_2)) + \sum_{r_2 \geq y_1} \Pr(r_2)u_i(y_1)\Bigg] \\ &+ \beta\Bigg[\sum_{r_2>y_1} \Pr(r_2)u_i(y_1 + 2(r_2 - y_1)) + \sum_{r_2 \leq y_1} \Pr(r_2)u_i(y_1)\Bigg]. \end{aligned} \tag{4}$$

The date-2 proposer will be a radical with probability α. If the radical holds proposal power and $r_2 < y_1$, then the radical will exploit her *friendly alignment* to shift policy to $y_1 - 2(y_1 - r_2)$. If, instead, $r_2 \geq y_1$, the radical and veto player are *mis-aligned*, so she can do no better than maintain the status quo. With probability β, the proposer will be a reactionary. If $r_2 > y_1$, then a reactionary will exploit her own *friendly alignment* with a veto player to move policy to $y_1 + 2(r_2 - y_1)$. If, instead, $r_2 \leq y_1$ then she and the veto player will be *mis-aligned*, and maintain the status quo. Notice that friendly alignment from one proposer's perspective represents hostile alignment from the other's.

Substituting these possible date-2 policy outcomes into $V_i(y_i)$ and recalling the quadratic

[10] When $0 < e - m < m + s_1$: if $y_1 \in [-s_1, 2m - e]$, a date-2 reactionary who faces a conservative veto player can implement her ideal policy e; and if $y_1 \in [e - 2m, s_1]$ a date-2 radical who faces a progressive can implement $-e$. These additional cases complicate the analysis without providing insights.

structure of preferences yields

$$\begin{aligned} V_i(y_1) &= -\alpha\Big[\sum_{r_2<y_1}\Pr(r_2)(2r_2-i-y_1)^2+\sum_{r_2\geq y_1}\Pr(r_2)(i-y_1)^2\Big] \\ &\quad -\beta\Big[\sum_{r_2>y_1}\Pr(r_2)(2r_2-i-y_1)^2+\sum_{r_2\leq y_1}\Pr(r_2)(i-y_1)^2\Big]. \end{aligned} \tag{5}$$

Here, $2r_2-i$ is the date-2 status quo policy $s_2=y_1$ that would allow a proposer with ideology i to move policy all the way to i if she faced an aligned veto player with ideal policy r_2. From Assumption **A1**, $e>2m+s_1$, so a proposer will never move date-1 policy this far. The optimal policy of an agent with ideology i solves:

$$\max_{y_1\in[-s_1,s_1]}(1-\delta)u_i(y_1)+\delta V_i(y_1). \tag{6}$$

Solving yields:

Lemma 1. If the optimal policy of a proposer with ideal point i is interior, then it satisfies:

$$\begin{aligned} y_1(i) &= (1-\delta)i+\delta\Big(\alpha\sum_{r_2>y_1(i)}\Pr(r_2)i+\beta\sum_{r_2<y_1(i)}\Pr(r_2)i\Big) \\ &+ \delta\Big(\alpha\sum_{r_2<y_1(i)}\Pr(r_2)(i+2(r_2-i))+\beta\sum_{r_2>y_1(i)}\Pr(r_2)(i+2(r_2-i))\Big), \end{aligned} \tag{7}$$

where $y_1(i)\in[-s_1,0)$, or $y_1(i)\in(0,s_1]$.

There are at most two solutions satisfying (7)—one on each side of the centrist veto player's ideal policy—reflecting that whether the centrist veto player is aligned with one proposer or the other changes as y_1 switches from one side of a centrist's ideal point to the other. Dynamic incentives are determined by two competing channels, an *alignment* channel,

$$\alpha\sum_{r_2<y_1(i)}\Pr(r_2)(i+2(r_2-i))+\beta\sum_{r_2>y_1(i)}\Pr(r_2)(i+2(r_2-i)), \tag{8}$$

and a *mis-alignment* channel,

$$\alpha\sum_{r_2>y_1(i)}\Pr(r_2)i+\beta\sum_{r_2<y_1(i)}\Pr(r_2)i. \tag{9}$$

Alignment Channel: In equilibrium, the initial proposal $y_1(i)$ becomes the date-2 status quo. With probability α, the date-2 proposer is a radical. If $r_2 < y_1(i)$, the radical is aligned with a veto player. With complementary probability $\beta = 1-\alpha$, the date-2 proposer is a reactionary. If $r_2 > y_1(i)$, the reactionary is aligned with the veto player. The absolute magnitude of $2r_2 - i$ captures ideological conflicts of interest between a proposer and a partially-aligned veto player.

For a radical, the first term in (8) reflects future *friendly alignment*, and the second term reflects *hostile alignment*. For a reactionary, the terms are reversed. Both friendly and hostile alignment encourage a proposer to refrain from moving date-1 policy toward her ideal. However, a risk-averse proposer weighs hostile alignment more heavily than friendly alignment. So, unless she is likely to retain proposal power, a proposer holds back largely to prevent future policy moves away from her ideal.

Mis-alignment Channel: At date 2, the ideologies of the proposer and veto player may admit no mutually acceptable alternative to the induced status quo. This occurs if a proposer holds power but faces a veto player whose ideal point lies on the opposite side of the status quo from her own ideal point. When this happens, $y_1(i)$ will once again be implemented.

As the prospect of this policy inertia rises, a date-1 proposer prefers either to front-load reform (if she is a radical) or to hold the line against reform (if she is a reactionary). Future gridlock limits both the value of holding subsequent proposal power and the cost of losing it. Mis-alignment thus constitutes a form of insurance for a proposer against the adverse consequences of initially accelerating her own agenda.

5. Forces Shaping Incentives to Step Back or Leap Forward

A proposer's immediate interest is to move date-1 policy toward her ideal policy. However, the future consequences of a proposal present conflicting imperatives. We first focus on 'local' comparative statics that change the location of an interior solution $y_1(i) \in (-s_1, 0)$ or $y_1(i) \in (0, s_1)$ within each interval. We then identify forces that lead to 'jumps' in y_1 from one side of the centrist veto player's ideal point to the other.

Changes in Concerns for Current and Future Payoffs. A date-1 proposer has a short-run incentive to exploit a centrist as much as possible. However, *any* prospect of a date-2 proposer-veto player alignment—be it friendly or hostile—consitutes a dynamic force for restraint. Thus,

Proposition 2. If a proposer becomes more concerned about future payoffs (i.e., if δ rises), then she always holds back more from moving her initial proposal toward her ideal point.

Short-run incentives yield no trade-offs for a proposer. By contrast, a future prospect of either a friendly or hostile alignment gives a date-1 proposer a dynamic incentive to refrain from unfettered exploitation of the centrist. And since dynamic incentives always urge more restraint than static incentives, raising a proposer's concern for future outcomes gives her a stronger incentive to hold back at date 1.

Proposition 2 implies that proposers will allocate major policy initiatives that depart most significantly from the status quo to the start of a legislative cycle. For example, George W. Bush proposed *No Child Left Behind* within three days of taking office, and the first of his major tax reforms was passed within five months of the start of his presidency. Likewise, the Conservative-led UK Coalition government introduced one of its most controversial reforms—the *Academies Act 2010*—within fourteen days of its commencement. By contrast, critics contended that its final year was stymied by a lack of policy initiatives, serving merely as a "long anteroom" to the next election.[11] Our explanation for front-loading major initiatives is distinct from 'honeymoon' arguments that emphasize a legislature's deference to an executive just after his or her election (McCarty (1997)). Instead, we emphasize the relative imminence of subsequent opportunities to change policy in the future.[12]

Changes in Uncertainty about Future Power. We next characterize the possibly paradoxical effects of a probabilistic shift toward a more reform-minded veto player: under plausible circumstances, *both* a radical *and* a reactionary proposer respond by accelerating reform.

Proposition 3. Consider a shift in the distribution over date-2 veto players that redistributes probability mass from a conservative to a progressive. Regardless of whether a proposer is a radical or a reactionary, she responds by offering less reform if and only if the probability she holds future proposal power exceeds $\frac{1}{2} + \frac{m}{2e}$.

[11]See "'Zombie coalition has run out of things to say' say critics", *The Independent*, 25 January 2014, `http://goo.gl/9RgRfd`.

[12]Alternatively, Proposition 2 predicts that legislative activity, as measured by the submission of bills, should peak at the start of a legislative cycle, and steadily decline as the next cycle approaches. For example, over the period 1974-2013 in the United States Congress, in each two-year congressional session, on average, 35% of all bills were introduced in the first four months, 50% in the first seven months, and almost 70% in the first year. See `https://www.govtrack.us/congress/bills/statistics`.

To illustrate, suppose the date-1 proposer is a radical. When a probability mass of $\epsilon > 0$ is taken from the future prospect of a conservative and redistributed to a progressive, the local change in a date-1 radical's proposal is:

$$\delta\epsilon\left(-e(\beta-\alpha)+\alpha(e-2m)-\beta(e+2m)\right). \tag{10}$$

The probability of a mis-aligned future proposer-veto player pairing rises by $\epsilon(\beta-\alpha)$. This difference is positive when a reactionary proposer is more likely than a radical to hold future proposal power, since a progressive is mis-aligned with a reactionary. A higher likelihood of *mis-alignment* encourages a proposer to move her proposal in the direction of her ideal policy.

The other two terms in (10) come from the alignment channel. A radical's prospect of a future *friendly alignment* with a progressive rises by $\alpha\epsilon$, and the prospect of a *hostile alignment* between a reactionary proposer and a conservative falls by $\beta\epsilon$. Expression (10) reflects that these two terms are not weighted equally: a risk-averse proposer cares more about policies that result from hostile alignment.

If the probability of mis-alignment rises, i.e., if $\beta > \alpha$, then a radical always accelerates reform. What if, instead, a radical is more likely to hold proposal power in the future? Holding back more allows a radical to better exploit a future friendly alignment. However, unless she is very likely to retain proposal power, the first-order effect of a more 'reform-friendly' distribution of veto power is to *lower* her risk-adjusted alignment consideration via the reduced risk of a future hostile alignment. This leads her to bring reform forward. The impact of risk aversion is clearest when the distribution over future proposal power is balanced, i.e., $\alpha = \beta = \frac{1}{2}$: the radical moves policy closer to her ideal point by a distance $2\delta\epsilon m$. Combining the mis-alignment and alignment channels, a radical holds back more if and only if:

$$\alpha > \frac{1}{2} + \frac{m}{2e}. \tag{11}$$

The requisite threshold on a radical's prospect of holding power also rises as her primitive alignment with a progressive and a reactionary's primitive alignment with a conservative—both captured by $\frac{m}{e}$—rise. This reflects that, due to risk aversion, more aligned hostile pairings make bad policy outcomes even worse; while more aligned friendly pairings make good policy outcomes even better. This raises the wedge between the risk-averse radical's evaluation of these two considerations.

A symmetric logic implies that a reactionary responds with less reform only if she is very likely to hold proposal power, i.e.,

$$\alpha < \frac{1}{2} - \frac{m}{2e}, \tag{12}$$

as only then will mis-alignment dominate the change in her risk-adjusted alignment.

To place the proposition in context, consider a president facing a midterm election who is sure to remain in office, but is uncertain about the election's consequences for the ideology of the pivotal legislator in the lower chamber. The proposition implies that if a president anticipates a favorable shift in the preferences of the pivotal legislator, it is better to hold off on executing her agenda. If instead, the president anticipates an unfavorable shift, then the next legislative session yields less scope for reversing initial concessions, so she prefers to accelerate her agenda prior to the midterm election. Finally, if the president *also* faces election and there is sufficient uncertainty about whether she will retain office, the proposition reveals that *regardless* of her ideological preferences, she moves the initial policy toward the anticipated location of the new pivotal legislator's ideal policy.

Changes in Ideology. Changes in the ideological conflict between proposers and veto players affect the date-1 trade-offs a proposer faces to: (1) increase *friendly alignment* with future veto players, (2) lower *hostile alignment* of an opposing proposer with veto players, and (3) accelerate her agenda in anticipation of future *mis-alignment*.

The effect of greater polarization of veto players on date-1 proposals hinges solely on the probability of a future alignment.

Proposition 4. Regardless of whether the date-1 proposer is a radical or a reactionary, more polarized veto players (increased m) induce the proposer to offer more reform if and only if:

$$\beta \Pr(r_2 = m) < \alpha \Pr(r_2 = -m). \tag{13}$$

When a friendly alignment is more likely than a hostile alignment, raising m reduces the imperative to raise the value of future *friendly alignment* by holding back, since a proposer can achieve more with the now more-aligned veto player for any date-2 status quo. The proposer responds by moving policy in the direction of her ideal point. In contrast, when a hostile alignment is more likely, if a hostile veto player moves closer to a hostile proposer, it raises the imperative to mitigate future *hostile alignment*.

To place Proposition 4 in context, suppose there is a right-wing status quo, and an imminent election is expected to bring both the presidency and legislature under the control of the

Left. This could arise from a 'coattail' effect, in which legislators who are politically aligned with the winning presidential candidate benefit from their candidate's popular support (Ferejohn and Calvert (1984)), and which Halberstam and Montagnes (2015) show leads to the election of more ideologically-extreme senators who support the president. When the legislature is expected to become more ideologically polarized, the initial incumbent proposer—regardless of her ideology—offers more reform. A reactionary makes concessions to avert more drastic future policy shifts. By contrast, a radical initiates more reform today since she can already achieve more in the future with a more ideologically polarized aligned veto player regardless of her initial proposal.

Greater polarization of proposers affects both static and dynamic trade-offs. It raises a proposer's immediate incentive to move policy toward her ideal, since more extreme ideological preferences raise the direct cost of holding back. Greater polarization of proposers also affects both the alignment and mis-alignment channels, by raising a proposer's conflict of interest with both aligned and mis-aligned veto players.

Proposition 5. Suppose the polarization e of proposers rises. Then if mis-aligned proposer-veto player pairings are more likely than aligned pairings, each proposer moves her date-1 proposal *closer* to her ideal policy. If, instead, aligned pairings are more likely, then there exists a $\bar{\delta} < 1$ such that if and only if $\delta \geq \bar{\delta}$, each proposer moves her date-1 proposal *further* from her ideal policy.

A more extreme proposer suffers a higher date-1 cost from failing to move policy toward her ideal. She also suffers a higher cost of date-2 mis-alignment, since the status quo will be implemented. If the net likelihood of future mis-alignment exceeds that of alignment, static and dynamic considerations both lead a more extreme proposer to accelerate her agenda.

However, a more extreme proposer also has greater intrinsic conflicts of interest with all veto players. This raises her incentive to hold back to raise future friendly alignment and reduce hostile alignment. By holding back, she lowers her conflict with aligned friendly veto players; and she reduces an opposing proposer's ability to exploit aligned hostile veto players.

If aligned proposer-veto player pairings are more likely than mis-aligned pairings, static and dynamic incentives oppose each other. Then, if and only if a date-1 proposer cares enough about future outcomes—for example, due to an imminent election—will she respond by holding back. As the prospects of aligned pairings rise, the requisite size of δ falls since the initial proposer is more certain about the need to hold back from exploiting the centrist for the sake of her date-2 payoff.

To place Proposition 5 in context, suppose that the next election may change the identity of both the president and legislative majority. If control of the two branches is likely to fall to different political parties, a more ideological president will accelerate her agenda before the election. If, instead, the same party is likely to control both branches, the impact of more extreme proposer preferences depends on the imminence δ of the election. If an election is imminent and there will be an opportunity to revisit the issue in the next legislative session, the president holds off working on the issue. This may be due to (1) a fear of losing power to an opposing aligned proposer-veto player pairing, or (2) an attempt to create even more favorable conditions for aggressive reform. Otherwise, despite the likely prospect of either favorable or unfavorable unified government, a more extreme proposer accelerates her agenda.

Discrete Changes in Proposals. Changes in tastes, uncertainty and concern for the future affect local comparative statics through the alignment and mis-alignment channels. They also affect the discrete trade-offs associated with whether a proposer wishes to (partially) align herself with a centrist veto player, whenever there is uncertainty about whether the centrist will hold future veto power. If the centrist will never hold future veto power, the alignment of future veto players and proposers is unaffected by initial policy outcomes, and the local solutions characterized in Lemma 1 coincide. If the centrist always holds veto power, Result 1 implies that each proposer always prefers a date-1 outcome that lies between her own ideal point and the centrist's.

Suppose, therefore, that the probability tomorrow's proposer faces a centrist veto player is strictly positive, but less than one. Jumps in optimal policies require that there exist *multiple* interior solutions $y_1^-(i) \in [-s_1, 0)$ and $y_1^+(i) \in (0, s_1]$. In turn, multiple interior solutions require that the date-1 proposer be more likely than not to retain proposal power. To see why, recognize that Lemma 1 implies that for a date-1 proposer,

$$y_1^+(i) - y_1^-(i) = -2i\delta(\alpha - \beta)\,\Pr(\text{centrist}), \tag{14}$$

which, for example, can only result in $y_1^+(-e) > 0 > y_1^-(-e)$ if $\alpha > \beta$.

We explore how changes in the uncertainty associated with future proposal power affect an initial radical proposer's preference for aligning herself with a future centrist veto player. Suppose, then, that $\alpha > \beta$. When is it worthwhile for the radical to refrain from exploiting the centrist at date 1, (1) in the hopes of retaining proposal power and facing a progressive veto player, and (2) inoculating herself against a future reactionary-conservative pairing? Let $y_1^*(-e)$ denote a radical's globally optimal interior solution. We have:

Proposition 6. Suppose a radical is more likely to hold future proposal power, i.e., $\alpha > \beta$.

1. If $\frac{\Pr(\text{conservative veto player})}{\Pr(\text{progressive veto player})} \leq 1 - \frac{2m}{e}$ then there exists $\alpha^*(\delta)$ (*decreasing* in δ) such that $y_1^*(-e) > 0$ if $\alpha > \alpha^*(\delta)$ and $y_1^*(-e) < 0$ otherwise.

2. If $1 - \frac{2m}{e} < \frac{\Pr(\text{conservative veto player})}{\Pr(\text{progressive veto player})} \leq 1$, then $y_1^*(-e) < 0$ for all δ.

3. If a conservative veto player is more likely than progressive veto player, then there exists $\alpha^{**}(\delta)$ (*increasing* in δ) such that $y_1^*(-e) < 0$ if $\alpha > \alpha^{**}(\delta)$ and $y_1^*(-e) > 0$ otherwise.

(1) When $\frac{\Pr(\text{conservative veto player})}{\Pr(\text{progressive veto player})} \leq 1 - \frac{2m}{e}$ a conservative veto player is much less likely than a progressive. Then, when proposal power is fairly balanced—i.e., when $\alpha > \beta$, but the difference is small—a date-1 radical proposer is largely concerned about the risk of a future mis-alignment between a reactionary and a progressive. This implies that future policy is likely to remain 'stuck' at the new status quo, so an initial radical proposer prefers to exploit the centrist veto player immediately.

As the radical's prospects α for retaining proposal power rise, so does the relative value to her of holding back, since she is more likely to benefit from a friendly alignment with a progressive. There exists a threshold $\alpha^*(\delta)$ at which the radical switches from exploiting the centrist to holding back in the hope of extracting more from a future progressive veto player. This is the point at which it is better to 'step back in order to leap forward more vigorously'. The threshold $\alpha^*(\delta)$ *declines* in δ since a greater concern for the future raises a radical's willingness to hold back with even less favorable prospects of holding proposal power.

(2) When $1 - \frac{2m}{e} < \frac{\Pr(\text{conservative veto player})}{\Pr(\text{progressive veto player})} \leq 1$, a progressive veto player is still more likely than a conservative, but their likelihoods are closer. When the initial distribution of proposal power is evenly balanced, today's radical proposer again favors accelerating early reform. However, as her prospect α of retaining proposal power rises, the greater prospect of a conservative veto player raises the prospect of future mis-alignment. This leads the radical to propose a policy to the left of the centrist's ideal: a radical *never* steps back to leap

forward, because the possibility of drawing an aligned progressive is not high enough to sacrifice her ability to better exploit a centrist in one 'jump' rather than two.

(3) When $\frac{\Pr(\text{conservative veto player})}{\Pr(\text{progressive veto player})} > 1$, a conservative veto player is more likely than a progressive. Then, if proposal power is initially fairly balanced, a radical is primarily concerned about a future hostile alignment between a reactionary proposer and conservative veto player. The radical initially prefers to neutralize the reactionary's ability to implement a counter-reform in the future by opting for a policy that aligns the centrist with the radical. Relatively low prospects of holding future proposal power now lead the radical to favor *less* initial reform.

As the prospect that a radical retains proposal power rises, the value of forestalling a reactionary falls. There exists an $\alpha^{**}(\delta)$ at which a radical switches to accelerating reform, in anticipation of future gridlock. At $\alpha^{**}(\delta)$, the need to hold back from exploiting the centrist for fear of a future reactionary-conservative pairing is trumped by a desire to accelerate reform now in anticipation of future gridlock. The threshold $\alpha^{**}(\delta)$ *rises* in δ since a more patient proposer is more willing to hold back from exploiting the centrist to inoculate herself against a future reactionary-conservative pairing.

The asymmetry in the thresholds for $\frac{\Pr(\text{conservative veto player})}{\Pr(\text{progressive veto player})}$ reflects risk aversion, since a radical proposer's date-2 payoff is most strongly affected by hostile alignment or misalignment. The ratio $\frac{2m}{e}$ reflects the intrinsic alignment between the progressive and radical. As m rises, the urgency of holding back at date 1 to raise her future alignment with a progressive falls. This raises the bar for a radical to forego early exploitation of the centrist.

[FIGURE 3 ABOUT HERE]

Figure 3 illustrates a radical's globally optimal proposal. In the Appendix, we extend the example to compare with a reactionary's proposal. Note the non-monotonicity in the third panel: here, the date-2 veto player is most likely to be a centrist, but a conservative veto player is far more likely than a progressive. When an initial radical proposer is unlikely to retain proposal power ($\alpha \leq \alpha^{**}$), she foregoes her ability to exploit the centrist in order to reduce the damage from a future hostile alignment between a reactionary proposer and conservative veto player. As a result, a radical proposer will be aligned with a centrist at date 2. As her prospect α of retaining proposal power rises, a radical initially holds back *even more*, but not out of fear of a conservative veto player. Instead, she holds back to raise her alignment with the centrist. The radical's decision not to exploit the centrist initially leaves open the possibility of exploiting her in the future, and a centrist veto player is relatively likely to arise at that date.

At α^{**}, the fear of a hostile aligned reactionary-conservative pairing is trumped by the prospect of a mis-aligned radical-conservative pairing. If the radical holds future proposal power, she is most likely either to face a centrist with whom she can achieve no more than she could today, or a conservative with whom she can achieve no reform, at all. So, further increases in proposal power lead the radical to *accelerate* reform as much as possible, as if she had based her initial proposal solely on static considerations.

Reversals. We highlight conditions under which a paradoxical 'reversal' occurs: a reactionary proposer moves policy further from her ideal and closer to the radical's ideal than would the radical, herself.

Proposition 7. If, at date two, the radical proposer is likely to hold power ($\alpha > \beta$) and the veto player is likely to be a progressive ($\Pr(r_2 = -m) > \frac{1}{2}$) then there exists a $\delta^* < 1$ such that if $\delta \geq \delta^*$, a reactionary proposer proposes more reform at date one than a radical.

If agents who favor reform are likely to enjoy future proposal and veto power, a radical proposer 'steps back' in order to 'leap forward more vigorously' in the future. For the same reason, a reactionary offers incremental reform to forestall a wave of even more potent future reform. Risk aversion plays no role in this result. Rather, the key force is a net present value calculation, which trades off a date-1 proposer's prospective future policy gains from holding back, relative to the immediate policy loss from failing to exploit the centrist.

This result can illuminate contemporary and historical examples in which politicians advocate or oppose policies that do not cater to their contemporaneous interests. We earlier elaborated on an attempt in 1969 to reform the House of Lords by the British Labour government that was vanquished, in part, by opposition from within the Labour party. Strikingly, an earlier Conservative government implemented the *Life Peerages Act of 1958*. This Act allowed individuals who did not hold hereditary peerages to be appointed to the House of Lords,[13] and it allowed female peers to sit in the House of Lords. It was bitterly opposed by the Labour party, embodied in Hugh Gaitskell's accusation during the bill's debate:

> "[t]he Bill is not really a reform Bill, as we see it.... It leaves the present powers of

[13]Law Lords were previously the only class of non-hereditary peers.

> the House of Lords unchanged and it gives, conveniently, an apparently slightly more respectable appearance to the House of Lords. We are opposed to a cloak of respectability put upon a person when the reality is quite unchanged."[14]

Subsequent retrospection by Conservatives supports Gaitskell's concerns. In a 1998 policy briefing, Conservative Member of Parliament Andrew Tyrie argued: "It was Conservative reforms of the late 1950s and early 1960s which... modernised the Lords enough to protect it from those who wanted it abolished"(Tyrie, 1998, ii). In this policy context, the forces identified in Proposition 7 appear to be relevant.

6. Dynamically-Sophisticated Veto Player

We have focused on the strategic considerations of a proposer given a veto player who evaluates proposals solely according to her period payoffs. However, a veto player who is a pivotal legislator may have the same dynamic sophistication as the proposer, i.e., she evaluates date-1 proposals based on current *and* future payoffs.

In general, there may be policies that a date-1 dynamically-sophisticated veto player rejects that a myopic veto player would accept; or policies that a date-1 dynamically-sophisticated centrist veto player accepts, but a myopic veto player would not. For example, if a future reactionary-conservative pairing is likely, a dynamically-sophisticated centrist veto player may accept proposals that move date-1 policy *past* the status quo toward the reactionary's ideal point, since they forestall more extreme future outcomes. A date-1 radical proposer likewise may exploit this opportunity to propose a policy that she likes *even less* than the status quo, but which nonetheless reduces the risk of an even more reactionary policy in the future.[15] This is consistent with the well-documented phenomenon that left-wing governments are as likely as right-wing governments to privatize state-owned industries, or to engage in deficit-cutting and other pro-market reforms (Alesina et al. (2006), Roland (2008)). Our explanation is closest to Schroeder's defense of 'Agenda 2010': "Either we modernize ourselves, and by that I mean as a social market economy, or others will modernize us, and by that I mean unchecked market forces which will simply brush aside the social element".[16]

[14]HC Deb 12 February 1958 vol 582, c 423

[15]Appendix B considers a setting with a dynamically-sophisticated veto player, illustrating these possibilities, and establishing other results—including the robustness of Proposition 7.

[16]Gerhard Schroeder, 'Agenda 2010—The Key to Germany's Economic Success', *Social Europe*, 23 April 2012, `http://goo.gl/yCuxgd`

Indeed, a proposer may be able to exploit a date-1 dynamically-sophisticated veto player to achieve more extreme date-1 policy outcomes than would be feasible with a myopic veto player. If, for example, a future radical-progressive pairing is likely, a dynamically-sophisticated centrist veto player may accept proposals that move date-1 policy toward the radical's ideal point, *past* the *progressive* veto player's ideal, thereby precluding a future radical's ability to effect further policy change. A date-1 radical may exploit the centrist veto player's fear of a future radical-progressive pairing to obtain relatively extreme date-1 policy outcomes. A centrist veto player may be worse off for her dynamic sophistication: in contrast with the myopic setting, she cannot commit to rejecting relatively extreme proposals.

7. Conclusion

Knowing when to 'step back' —whether primarily to leap forward or instead to keep back—is a strategic imperative for political agents seeking not only to make short-run gains, but also to achieve long-term policy goals. We show that the prospect of losing *or* retaining political power yield two distinct rationales for agents to refrain from moving policy fully toward their ideal points. We characterize when radical reform advocates prefer less short-run reform, and illuminate our results with examples in which politicians advocate or oppose policies that do not cater to their contemporaneous interests.

The dynamic trade-offs that we uncover have more general significance. Gupta (2009) argues that incremental victories can have unintended consequences for social movements' ability to mobilize resources in the future. She finds "movements seek to make incremental gains in advancing their larger policy agenda; [but] this success... [can] enervate programmatic activity as continued gains potentially diminish the urgency of the issue or the demonstrable need for greater activism" (Gupta (2009), 406). Thus: "[s]uccess can be a bit of a poisoned chalice to groups if their demonstrated ability to achieve good outcomes leads to subsequent attrition in support levels" (Gupta (2009), 408).

Similar issues arise in legal contexts. Bell (1976) assesses the trade-offs faced by the NAACP in pursuing legal attacks on racial segregation in U.S. schools. After *Brown v. Board of Education of Topeka* (1954), civil rights lawyers who prosecuted local cases faced a tension between "serving two masters": their local clients, and the NAACP, which sought "to develop a broad scale attack on Jim Crow institutions" (Schraub (2013), 1288). In particular, "civil rights lawyers would not settle for anything less than a desegregated system", even when local plaintiffs might have settled litigation in return for promises of better segregated schools. As a counsel to the NAACP in Mississippi, Bell advised a community whose segregated school had been closed by local authorities. He warned that they would not receive support if they just attempted to re-open the school, but that they would receive support if they pursued a full-scale desegregation suit, inducing them to file one of the first desegregation suits in the state (Bell (1976), 476-477).

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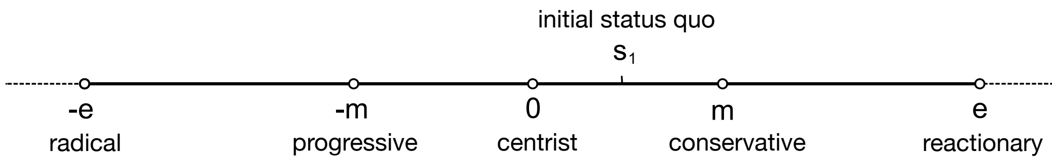


Figure 1: Agents' ideal policies, and the location of the initial status quo

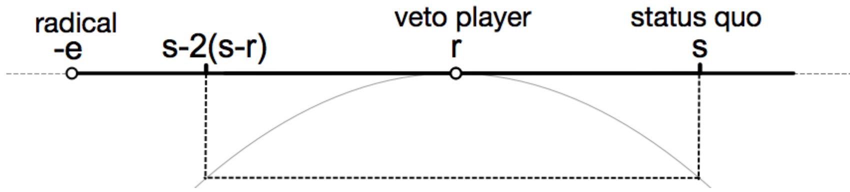
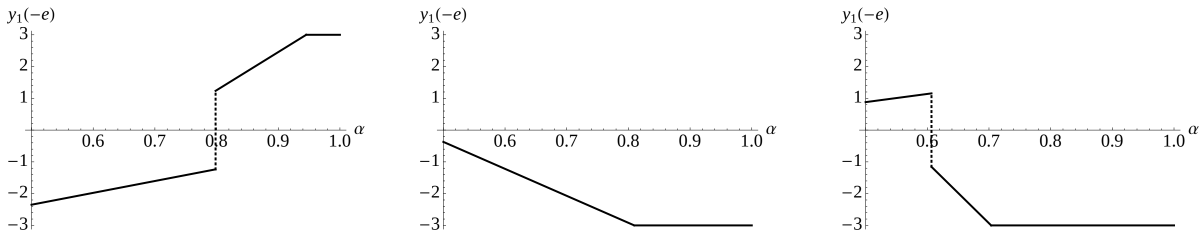


Figure 2: How a radical proposer can exploit the veto player in a static environment.



(a) $\frac{\Pr(r_2=m)}{\Pr(r_2=-m)} \leq 1 - \frac{2m}{e}$ (b) $1 - \frac{2m}{e} < \frac{\Pr(r_2=m)}{\Pr(r_2=-m)} \leq 1$ (c) $\frac{\Pr(r_2=m)}{\Pr(r_2=-m)} > 1$

Figure 3: Illustration of how a radical's optimal date-1 proposal varies with her prospects of holding future proposal power. Parameters: $\delta = 1$, $e = 10$, $m = 3.5$ and $s_1 = 3$. In (a) $\frac{\Pr(r_2=m)}{\Pr(r_2=-m)} = .083$, in (b) $\frac{\Pr(r_2=m)}{\Pr(r_2=-m)} = .744$, and in (c) $\frac{\Pr(r_2=m)}{\Pr(r_2=-m)} = 3.42$.

ONLINE APPENDIX to "Dynamics of Policymaking", by P. Buisseret and D. Bernhardt.

8. Appendix A: More Proposers and Veto Players, General Recognition Rule.

In this Appendix, we generalize our benchmark setup to allow for a set of N agents with ideal policies $x_1 < x_2 < ... < x_N$. To simplify presentation, we assume that $x_i - x_{i-1} = \epsilon > 0$ for all $i \in \{2, ..., N\}$, i.e., the ideal policies are evenly located across the policy space.

At date 2, an agent with ideal policy x_i is recognized to serve as the proposer with some probability $p(x_i)$. Similarly, an agent with ideology x_j—including, possibly, the proposer—is recognized as the date-2 veto player, with probability $r(x_j)$. The model is otherwise unchanged. We characterize optimal (interior) date-1 proposals, and relate them to our benchmark analysis. We first write down the continuation payoff of an agent with ideal policy x_i, for any date-1 outcome y_1, generalizing (4), in the main text:

$$\begin{aligned} V_i(y_1) &= \sum_{x_j<y_1} p(x_j)\Big[\sum_{x_k\le\frac{1}{2}(x_j+y_1)} r(x_k)u_i(x_j) + \sum_{x_k\in(\frac{1}{2}(x_j+y_1),y_1)} r(x_k)u_i(y_1-2(y_1-x_k)) + \sum_{x_k\ge y_1} r(x_k)u_i(y_1)\Big] \\ &+ \sum_{x_j>y_1} p(x_j)\Big[\sum_{x_k\ge\frac{1}{2}(x_j+y_1)} r(x_k)u_i(x_j) + \sum_{x_k\in(y_1,\frac{1}{2}(x_j+y_1))} r(x_k)u_i(y_1+2(x_k-y_1)) + \sum_{x_k\le y_1} r(x_k)u_i(y_1)\Big] \\ &+ \sum_{x_j=y_1} p(x_j)u_i(x_j). \end{aligned} \tag{15}$$

To understand this expression, first consider a date-two interaction in which the proposer has ideal policy x_j, and the date-1 policy outcome is $y_1 > x_j$. If the date-2 veto player has an ideal point $x_k \le \frac{1}{2}(x_j + y_1)$, then the receiver weakly prefers the proposer's ideal policy, x_j, to the status quo. If the date-2 veto player has an ideal point $x_k \in (\frac{1}{2}(x_j+y_1), y_1)$, then the proposer and veto player are imperfectly aligned: they both prefer a policy $y_2 \in [y_1-2(y_1-x_k), y_1]$ to the policy y_1. Since the proposer has bargaining power, she will propose the policy closest to her ideal policy, from this interval. Next, if $x_k \ge y_1 > x_j$, the receiver and proposer are mis-aligned: there are no policies that both strictly prefer to the status quo policy. In that event, the policy outcome will be y_1. The second line analyzes the analogous setting in which the date-1 policy outcome is $y_1 < x_j$. Finally, if the date-2 proposer's ideal policy coincides with the status quo policy, y_1, the date-2 proposer can implement this policy by proposing it.

It follows that if the date-1 proposer has ideal policy x, and its optimal proposal is on the interval (x_i, x_{i+1}), for some $i \in \{1, ..., N-1\}$ then the proposal can be written in the form:

$$y(x, x_i) = \frac{(1-\delta)x + \delta M x + \delta A}{1 - \delta F} \tag{16}$$

where:

$$\begin{aligned} A = & \sum_{x_j < y(x,x_i)} p(x_j) \sum_{x_k \in (\frac{1}{2}(y(x,x_i)+x_j), y(x,x_i))} r(x_k)(x + 2(x_k - x)) \\ & + \sum_{x_j > y(x,x_i)} p(x_j) \sum_{x_k \in (y(x,x_i), \frac{1}{2}(y(x,x_i)+x_j))} r(x_k)(x + 2(x_k - x)), \end{aligned} \tag{17}$$

$$M = \sum_{x_j < y(x,x_i)} p(x_j) \sum_{x_k \geq y(x,x_i)} r(x_k) + \sum_{x_j > y(x,x_i)} p(x_j) \sum_{x_k \leq y(x,x_i)} r(x_k), \tag{18}$$

and

$$F = \sum_{x_j < y(x,x_i)} p(x_j) \sum_{x_k \leq \frac{1}{2}(y(x,x_i)+x_j)} r(x_k) + \sum_{x_j > y(x,x_i)} p(x_j) \sum_{x_k \geq \frac{1}{2}(y(x,x_i)+x_j)} r(x_k). \tag{19}$$

Our expression for $y(x, x_i)$ generalizes the interior solution characterized in (7), in the main text. The term M constitutes the *mis-alignment* channel. It sums over all proposer-veto player pairings for which no mutually preferred policy to the status quo, $y(x, x_i)$, exists. As in the benchmark setting, this is a force for the initial proposer to move the date-1 policy closer to her ideal policy, x. The term A constitutes the *alignment* channel. The term F is the total probability that the proposer and veto player both prefer the proposer's ideal policy to the status quo. Whenever this proposer-veto player pairing occurs, the precise location of $y(x, x_i)$ on the interval (x_i, x_{i+1}) makes no difference to the outcome: the proposer proposes her ideal point. In the benchmark setting, we ruled out any such pairings by assuming that proposers are sufficiently more extreme than the polarized veto players, i.e., $e - m > m + s_1$: our interior solution in equation (7) reflects that $F = 0$, in that case.

9. Appendix B: Results With a Dynamically Sophisticated Centrist Veto Player

We provide additional results and analysis for settings in which a date-1 centrist veto player internalizes date-2 outcomes when deciding whether to accept or reject date-1 proposals.

We first characterize the set of policies that a dynamically sophisticated date-1 centrist veto player prefers to the status quo when the date-2 veto player is certain to be either a progressive or a centrist. This allows us to illustrate the key forces that contrast with a setting in which the date-1 veto player is myopic. Today's centrist veto player internalizes the dynamic benefit from policies that restrict the scope for future movement away from her ideal point. Since either she or the progressive will hold future veto power, she is concerned about the prospect of a radical-progressive pairing. A dynamically-sophisticated centrist even more strongly prefers a policy $y_1 \in [-s_1, s_1)$ to the status quo than does a myopic centrist. Like a myopic centrist, she enjoys a higher period payoff from such a policy vis-à-vis the status quo. In addition, her dynamic benefit rises because the new status quo reduces the ability of the radical to exploit the progressive.

This observation means that there are now policies $y_1 < -s_1$ that are further from a centrist's ideal than the status quo—policies that are closer to a radical's ideal point—that a date-1 dynamically-sophisticated centrist veto player will accept over the status quo, even though such policies yield a lower period payoff: a sophisticated centrist will accept policies $y_1 < -s_1$ when the probability of a future radical-progressive pairing is high enough.

Indeed, a dynamically-sophisticated centrist veto player may accept policies $y_1 \in (-e, -m)$ that lie to the *left* of a progressive veto player's ideal. This is because $s_2 \in (-e, -m)$ *ensures* that policy cannot move further toward a radical's ideal point. When a radical-progressive pairing is likely and δ is high, a centrist veto player may want to inoculate herself against the future ability of a radical proposer to exploit a progressive veto player.

The set of proposals that a sophisticated centrist veto player accepts need not be connected: she may accept proposals to the left and right of the progressive veto player's ideal point, but reject some that are in an interval around the progressive's ideal. This can happen when a future reactionary-progressive pairing is likely: policies to the left of the progressive (but not the right) align a reactionary and progressive; and a far-sighted centrist can then gain when a future reactionary 'exploits' this by moving policy closer to the centrist's ideal.

Proposition 8. If a date-2 veto player is always a progressive or centrist, then a dynamically-sophisticated centrist veto player prefers

$$y_1 \in [\max\{-m, -s_1 - 4\delta\alpha \Pr(r_2 = -m)m\}, s_1)$$

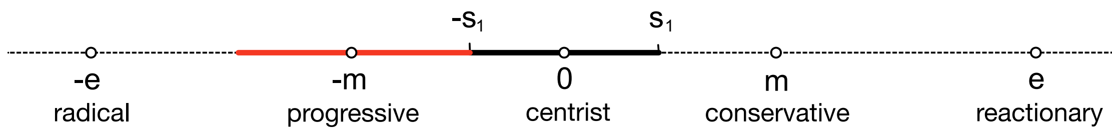


Figure 4: Illustration of the dynamically-sophisticated centrist veto player's acceptance set at date 1 when the probability of a radical proposer at date 1 is high. The red line represents additional policies that she accepts because she partly internalizes the value of averting a future policy outcome that is closer to the radical's ideal policy.

to s_1. If $\delta\alpha \Pr(r_2 = -m) \geq \frac{1}{4}\left(1 - \frac{s_1}{m}\right)$, she prefers some policies $y_1 \in [-2m - s_1, -m]$ to s_1.

Proof. We characterize the set of policies weakly preferred by a centrist veto player over the status quo. Define $p \equiv \Pr(-m)$ and $1 - p = \Pr(0)$. Define:

$$\psi(\alpha, p, m, \delta, s_1) \equiv 4\delta m^2 p \left(2\alpha + \alpha^2\delta p - 2\alpha\delta p + \delta p - 1\right) + 4\alpha\delta m p s_1 + s_1^2. \tag{20}$$

We show that if the veto player at date 1 is always a progressive or centrist, a dynamically-sophisticated centrist veto player prefers to the status quo s_1 any y_1 satisfying:

$$y_1 \in \left[\max\{-m, -s_1 - 4\alpha\delta p m\}, s_1\right]. \tag{21}$$

If, in addition, $\psi(\alpha, p, m, \delta, s_1) \geq 0$ and $-(1-\alpha)2\delta p m - \sqrt{\psi(\alpha, p, m, \delta, s_1)} < -m$, then a sophisticated centrist veto player also prefers to s_1 any policy y_1 satisfying:

$$y_1 \in \left[-(1-\alpha)2\delta p m - \sqrt{\psi(\alpha, p, m, \delta, s_1)}, \min\{-m, -(1-\alpha)2\delta p m + \sqrt{\psi(\alpha, p, m, \delta, s_1)}\}\right]. \tag{22}$$

The payoff of a centrist veto player from y_1 is $(1-\delta)u_0(y_1) + \delta V_0(y_1)$, where $u_0(y_1)$ is the date-1 payoff and $V_0(y_1)$ is the continuation payoff. So, the centrist's payoff from $y_1 = s_1$ is:

$$(1-\delta)u_0(s_1) + \delta\alpha\left(p u_0(-2m - s_1) + (1-p)u_0(-s_1)\right) + \delta\beta u_0(s_1). \tag{23}$$

Define $\Delta(y_1) \equiv (1-\delta)(u_0(y_1) - u_0(s_1)) + \delta(V_0(y_1) - V_0(s_1))$, which is the difference in a centrist's payoff from y_1 and her payoff from the status quo, s_1.

(i) The payoff to a centrist veto player from $y_1 < -e$ is:

$$(1-\delta)u_0(y_1) + \delta\alpha u_0(-e) + \delta\beta\left(p u_0(\min\{-2m - y_1, e\}) + (1-p)u_0(e)\right). \tag{24}$$

Since $e > 2m + s_1$ and $y_1 < -e$, we have $-2m - y_1 > s_1$. Then, since $u_0(y_1) < u_0(s_1)$ and $V_0(y_1) < V_0(s_1)$ for any $y_1 < -e$, we have shown $\Delta(y_1) < 0$.
(ii) The payoff to a centrist veto player from $y_1 \in [-e, -m]$ is:

$$(1-\delta)u_0(y_1) + \delta\alpha u_0(y_1) + \delta\beta\left(pu_0(\min\{-2m - y_1, e\}) + (1-p)u_0(-y_1)\right). \tag{25}$$

By inspection, we have $\Delta(y_1) < 0$ if $y_1 < -2m - s_1$. Consider, instead, $y_1 \geq -2m - s_1$. Then:

$$\Delta(y_1) = 4(2\alpha - 1)\delta m^2 p + 4\alpha\delta m p s_1 - 4(1-\alpha)\delta m p y_1 + s_1^2 - y_1^2, \tag{26}$$

which is strictly concave in y_1, and has roots $-2(1-\alpha)\delta pm \pm \sqrt{\psi(\alpha, p, m, \delta, s_1)}$. When $\psi(\alpha, p, m, \delta, s_1) > 0$ and $-2(1-\alpha)\delta pm - \sqrt{\psi(\alpha, p, m, \delta, s_1)} < -m$, $\Delta(y_1) \geq 0$ only if:

$$y_1 \in [-2(1-\alpha)\delta pm - \sqrt{\psi(\alpha, p, m, \delta, s_1)}, \min\{-m, -(1-\alpha)2\delta pm + \sqrt{\psi(\alpha, p, m, \delta, s_1)}\}]. \tag{27}$$

The second claim in the Lemma follows because $\Delta(-m) = (m + s_1)(m(4\alpha\delta p - 1) + s_1)$ is strictly positive if $\delta\alpha p > \frac{1}{4}\left(1 - \frac{s_1}{m}\right)$.
(iii) The payoff to a centrist veto player from $y_1 \in [-m, 0]$ is:

$$(1-\delta)u_0(y_1) + \delta\alpha\left(pu_0(-2m - y_1) + (1-p)u_0(y_1)\right) + \delta\beta\left(pu_0(y_1) + (1-p)u_0(-y_1)\right). \tag{28}$$

Thus, $\Delta(y_1) = (s_1 - y_1)(4\alpha\delta m p + s_1 + y_1) \geq 0$ if and only if $y_1 \geq \max\{-s_1 - 4\alpha\delta m p, -m\}$.
(iv) The payoff to a centrist veto player from $y_1 \in [0, s_1]$ is:

$$(1-\delta)u_0(y_1) + \delta\alpha\left(pu_0(-2m - y_1) + (1-p)u_0(-y_1)\right) + \delta\beta u_0(y_1). \tag{29}$$

We obtain $\Delta(y_1) = (s_1 - y_1)(4\alpha\delta m p + s_1 + y_1)$, which implies $\Delta(y_1) \geq 0$ since $y_1 \in [0, s_1]$.
(v) The payoff to a centrist veto player from $y_1 \in [s_1, e - 2m]$ is:

$$(1-\delta)u_0(y_1) + \delta\alpha\left(pu_0(-2m - y_1) + (1-p)u_0(-y_1)\right) + \delta\beta u_0(y_1). \tag{30}$$

Thus, we obtain $\Delta(y_1) = (s_1 - y_1)(4\alpha\delta m p + s_1 + y_1) < 0$ for $y_1 \in [s_1, e - 2m]$.
(vi) Consider $y_1 \in (e - 2m, e]$. The payoff to a centrist veto player from $y_1 \in (e - 2m, e]$ is:

$$(1-\delta)u_0(y_1) + \delta\alpha\left(pu_0(-e) + (1-p)u_0(-y_1)\right) + \delta\beta u_0(y_1). \tag{31}$$

By inspection, $u_0(y_1) < u_0(s_1)$ and $V_0(y_1) < V_0(s_1)$, so $\Delta(y_1) < 0$ for $y_1 \in (e-2m, e]$.
(vii) The argument for $y_1 > e$ is similar to (i). $\square$ $\square$

A radical proposer can exploit a dynamically-sophisticated centrist veto player's fear of a future radical-progressive pairing. Since the veto player is prepared to accept policies closer to the radical's ideal point at the outset, the opportunity cost to a radical proposer of holding back at date 1 rises. This induces a radical to exploit a dynamically-sophisticated centrist to a greater extent than she would exploit a myopic centrist. In fact, a centrist veto player may be worse off for her dynamic sophistication, as it renders her vulnerable to such exploitation.

Proposition 7 showed that if the prospect of a radical-progressive pairing is quite likely, the radical initially proposes less reform than a reactionary. This result presumed a myopic centrist veto player. We now provide sufficient conditions for reversals with a sophisticated centrist veto player. To illustrate such sufficient conditions we consider a setting in which the date-2 veto player is always a progressive or a centrist.

Suppose a radical-progressive pairing is sufficiently likely that a dynamically-sophisticated centrist veto player would accept some proposals $y_1 \in (-e, -m)$. On this interval, a radical wants to propose policy *as close* as possible to her ideal point. This is because there is no prospect of future reform: her initial proposal renders her mis-aligned with all future veto players. In contrast, a date-1 reactionary who is sufficiently fearful of a radical-progressive pairing prefers to propose $-m$, since it is the closest policy to her ideal that ensures date-2 policy will move no further away from her ideal. Thus, a high prospect of a radical-progressive pairing may no longer imply that a radical adopts less initial reform than a reactionary.

A radical may still choose less initial reform than a reactionary. Sufficient conditions for this to arise are (1) a radical is likely to hold proposal power in the future, but (2) is not so likely to hold proposal power as to trigger the above effects.

Proposition 9. Suppose the date-2 veto player is a centrist or a progressive, where the progressive is more likely. If $\alpha \in \left(\frac{1}{2}, \frac{1}{2} + \frac{m}{2e}\right)$, and δ is sufficiently large, a reactionary proposes more initial reform than a radical.

Proof. First, we provide conditions on α and δ such that a radical proposes $y_1^*(-e) \in [\max\{-m, -s_1 - 4\alpha\delta pm\}, 0)$. We then show these conditions are sufficient for $y_1^*(e) \leq y_1^*(-e)$.
Step 1: *If $\alpha \in \left(\frac{1}{2}, \frac{1}{2} + \frac{m}{2e}\right)$, then for δ sufficiently close to 1, a radical strictly prefers an interior solution $y_1(-e) \in [\max\{-m, -s_1 + 4\delta\alpha pm\}, 0]$, to interior solutions $y_1(-e) \in (0, s_1]$*

and

$$y_1(-e) \in \left[-(1-\alpha)2\delta pm - \sqrt{\psi(\alpha,p,m,\delta,s_1)}, \min\{-m, -(1-\alpha)2\delta pm + \sqrt{\psi(\alpha,p,m,\delta,s_1)}\}\right].$$

Note that we do not claim the existence of these interior solutions. If $\alpha > \frac{1}{2}$, then $\psi(\alpha,p,m,\delta,s_1) > 0$ and by Proposition 8, $\alpha > \frac{1}{2}$ and $p > \frac{1}{2}$ and δ sufficiently close to 1 imply that a centrist veto player would strictly prefer some policies on the interval $[-2m-s_1,-m)$ to the status quo, s_1. Suppose a date-1 radical proposer chooses an interior solution:

$$y_1(-e) \in \left[-(1-\alpha)2\delta pm - \sqrt{\psi}, \min\{-m, -(1-\alpha)2\delta pm + \sqrt{\psi}\}\right]. \quad (32)$$

The difference of a radical proposer's value from proposing an interior solution on this interval, and her value from proposing an interior solution $y_1(-e) \in [0, s_1]$ is:

$$4(2\alpha-1)\delta\left(e^2(1-\delta) - 2(1-\delta)emp + m^2p(1-\delta p)\right), \quad (33)$$

which is strictly positive for $\delta = 1$. So, interior solution $y_1(-e) \in [0, s_1]$ is strictly dominated for a radical by interior solution $y_1(-e) \in [-2m-s_1, -m]$ when δ is sufficiently close to 1.

We now compare a radical proposer's payoff from an interior solution $y_1(-e) \in [\max\{-m, -s_1 - 4\delta\alpha mp\}, 0]$ to that from an interior solution on the interval in (32). The former is greater if:

$$4(2\alpha-1)\delta p(m-e)(e(\delta(2\alpha-2\alpha p+p-2)+1)+m(\delta p-1)) \geq 0. \quad (34)$$

The LHS is strictly concave in α, with roots $\alpha = \frac{1}{2}$ and $\alpha = \frac{\delta e(2-p)+m(1-\delta p)-e}{2\delta e(1-p)} \equiv \bar{\alpha}(\delta,e,p,m) < 1$. If $\delta > \frac{e-m}{e-mp}$, then $\bar{\alpha}(\delta,e,p,m) > \frac{1}{2}$, and a radical strictly prefers interior solution $y_1(-e) \in [\max\{-m, -s_1 - 4\delta\alpha mp\}, 0]$ to interior solution $y_1(-e)$ on interval (32) if $\alpha < \bar{\alpha}(\delta,e,p,m)$. The threshold $\bar{\alpha}(\delta,e,p,m)$ strictly increases in δ, and satisfies $\bar{\alpha}(1,e,p,m) = \frac{1}{2} + \frac{m}{2e}$.

Step 2: *When $\alpha \in \left(\frac{1}{2}, \frac{1}{2}+\frac{m}{2e}\right)$, $p > \frac{1}{2}$ and δ is sufficiently close to one, an interior solution, $y_1(-e) \in [\max\{-m, -s_1 - 4\delta\alpha pm\}, 0]$ exists, and is a radical's globally optimum, $y_1^*(-e)$.*
We show that for δ sufficiently close to one, the following conditions are satisfied:

$$\max\{-m, -s_1 - 4\delta\alpha pm\} \leq (1-\delta)(-e) + \delta e(\alpha-\beta)(2p-1) - 2\alpha\delta mp \leq 0. \quad (35)$$

where the middle expression is a radical's interior solution on $[\max\{-m, -s_1 - 4\delta\alpha pm\}, 0]$. This solution is strictly increasing in δ. For δ sufficiently large, the first inequality holds if

$\max\{-m, -s_1 - 4\delta\alpha mp\} \neq -m$. Suppose, instead, $\max\{-m, -s_1 - 4\delta\alpha mp\} = -m$. Then, for the first inequality to be satisfied, for δ sufficiently large, we need $e(\alpha-\beta)(2p-1)-2\alpha mp \geq -m$, which holds since $\alpha > \frac{1}{2}$ and $p > \frac{1}{2}$. So, we need only verify $e(\alpha-\beta)(2p-1)-2\alpha mp < 0$ for (35) to hold for δ sufficiently close to one. Suppose, instead, that the inequality fails, i.e.,

$$2\alpha(e(2p-1) - mp) \geq e(2p-1). \tag{36}$$

Then $e(2p-1) \geq mp$. Inequality (36) is equivalent to $\alpha \geq \frac{e(2p-1)}{2(e(2p-1)-mp)}$. However, $\frac{e(2p-1)}{2(e(2p-1)-mp)} - \bar{\alpha}(1, e, m, p) = \frac{m(e(1-p)+mp)}{2e(e(2p-1)-mp)} > 0$. So, for δ sufficiently close to 1, $\alpha < \bar{\alpha}(1, e, m, p)$ rules out $\alpha \geq \frac{e(2p-1)}{2(e(2p-1)-mp)}$. Thus, an interior solution $y_1(-e) \in [\max\{-m, -s_1 - 4\delta\alpha mp\}, 0]$ exists. By the previous step, $\alpha < \bar{\alpha}(1, e, m, p)$ and δ sufficiently close to one imply that this interior solution is also the radical's global optimum.

Step 3: *When $\alpha \in \left(\frac{1}{2}, \frac{1}{2} + \frac{m}{2e}\right)$, $p > \frac{1}{2}$ and δ is sufficiently close to one, a reactionary proposer at date 1 makes a proposal satisfying $y_1^*(e) \leq y_1^*(-e)$.*

Suppose, first, $y_1^*(e) \in (0, s_1]$. Then $y_1^*(e) = \min\{e(1-\delta) - \delta e(\alpha - \beta) - 2\delta\alpha pm, s_1\}$, and for δ sufficiently close to one, $\alpha > \frac{1}{2}$ yields $y_1^*(e) < 0$, a contradiction. So, $y_1^*(e) \leq 0$. If $y_1^*(e) \leq \max\{-m, -s_1 - 4\delta\alpha pm\}$, the Proposition is correct, by Step 2. Suppose, instead, $y^*(e) \in (\max\{-m, -s_1 - 4\delta\alpha pm\}, 0]$. Then $y^*(e) = \max\{e(1-\delta) - \delta e(\alpha - \beta)(2p-1) - 2\delta\alpha pm, 0\}$, which yields $y_1^*(e) < 0$ for δ sufficiently close to one. Recalling the formula for $y_1^*(-e)$ from the previous step, we thus have $y_1^*(e) < y_1^*(-e)$ for δ sufficiently close to one. $\square$

If a future reactionary-conservative paring is likely, a dynamically-sophisticated centrist veto player may accept proposals that move date-1 policy *past* the status quo toward the reactionary's ideal point, since they forestall more extreme future outcomes. In this case, the centrist may *not* accept proposals close to $-s_1$: her acceptance set expands in one direction, but may shrink in the other.

Proposition 10. Suppose the date-2 veto player is always a centrist or a conservative. Then, a date-1 radical proposer proposes a policy $y_1 \in [s_1, e)$ if δ is sufficiently large and either:

1. s_1 is close enough to a centrist's ideal, $s_1 \leq 2\beta \Pr(r_2 = m)m$, or;

2. s_1 is far enough from a centrist's ideal, $s_1 > 2\beta \Pr(r_2 = m)m$; a reactionary-conservative pairing is relatively likely; and proposers are polarized, i.e., e is sufficiently large.

Proof. Define $q \equiv \Pr(r_2 = 0)$, $1 - q \equiv \Pr(r_2 = m)$, and

$$\phi(\alpha, q, m, \delta, s_1) = 4\delta m^2(1-q)\left(1 - 2\alpha + \alpha^2\delta(1-q)\right) - 4(1-\alpha)\delta m(1-q)s_1 + s_1^2. \quad (37)$$

Lemma 2. If the veto player at date 1 is certain to be either a centrist or conservative ($p = 0$), then the dynamically-sophisticated centrist veto player at date 1 prefers any policy

$$y_1 \in \begin{cases} [-s_1 + \delta 4\beta(1-q)m, s_1] & \text{if } s_1 \geq 2\delta\beta(1-q)m \\ [s_1, \min\{-s_1 + \delta 4\beta(1-q)m, m\}] & \text{if } s_1 \leq 2\delta\beta(1-q)m \end{cases} \quad (38)$$

over the status quo. If $\phi(\alpha, q, m, \delta, s_1) \geq 0$ and $\alpha 2\delta(1-q)m + \sqrt{\phi(\alpha, q, m, \delta, s_1)} > m$ then the proposer weakly prefers to s_1 any proposal

$$y_1 \in [\max\left\{m, \alpha 2\delta(1-q)m - \sqrt{\phi(\alpha, q, m, \delta, s_1)}\right\}, \alpha 2\delta(1-q)m + \sqrt{\phi(\alpha, q, m, \delta, s_1)}]. \quad (39)$$

Proof: A centrist's payoff from y_1 is $(1-\delta)u_0(y_1) + \delta V_0(y_1)$, where $u_0(y_1)$ is the date-1 payoff and $V_0(y_1)$ is the continuation payoff. So, the payoff to a centrist veto player from $y_1 = s_1$ is:

$$(1-\delta)u_0(s_1) + \delta\alpha(qu_0(-s_1) + (1-q)u_0(s_1)) + \delta\beta\left(qu_0(s_1) + (1-q)u_0(2m - s_1)\right) \quad (40)$$

It is easy to show that a veto player never prefers $y_1 < -s_1$ to s_1. So, we focus on the following cases: $y_1 \in [-s_1, 0]$, $y_1 \in (0, s)$, $y_1 \in [s, m]$, $y_1 \in (m, e]$, $y_1 > e$. For any such y_1, define:

$$\Delta(y_1) \equiv (1-\delta)(u_0(y_1) - u_0(s_1)) + \delta(V_0(y_1) - V_0(s_1)), \quad (41)$$

which is the difference in a centrist's payoff from policy y_1 rather than the status quo s_1.
(i) The payoff to a centrist veto player from $y_1 \in [-s_1, 0]$ is:

$$(1-\delta)u_0(y_1) + \delta\alpha u_0(y_1) + \delta\beta\left(qu_0(-y_1) + (1-q)u_0(2m - y_1)\right). \quad (42)$$

We thus obtain $\Delta(y_1) = (s_1 - y_1)(s_1 + y_1 - 4\beta\delta m(1-q))$ which implies $\Delta(y_1) \geq 0$ if and only if $y_1 \geq -s_1 + \delta 4\beta(1-q)m$. This is consistent with $y_1 \leq 0$ if and only if $s_1 \geq \delta 4\beta(1-q)m$.

(ii) The payoff to a centrist veto player from $y_1 \in [0, s_1]$ is:

$$(1-\delta)u_0(y_1) + \delta\alpha(qu_0(-y_1) + (1-q)u_0(y_1)) + \delta\beta(qu_0(y_1) + (1-q)u_0(2m - y_1)). \quad (43)$$

We thus obtain $\Delta(y_1) = (s_1 - y_1)(s_1 + y_1 - 4\beta\delta m(1-q))$ which implies $\Delta(y_1) \geq 0$ if and only if $y_1 \geq -s_1 + \delta 4\beta(1-q)m$. This is consistent with $y_1 \leq s_1$ only if $s_1 \geq \delta 2\beta(1-q)m$.
(iii) The payoff to a centrist veto player from a policy $y_1 \in [s_1, m]$ is:

$$(1-\delta)u_0(y_1) + \delta\alpha(qu_0(-y_1) + (1-q)u_0(y_1)) + \delta\beta(qu_0(y_1) + (1-q)u_0(2m - y_1)). \quad (44)$$

We therefore obtain $\Delta(y_1) = (s_1 - y_1)(s_1 + y_1 - 4\beta\delta m(1-q))$ which implies $\Delta(y_1) \geq 0$ if and only if $y_1 \leq -s_1 + \delta 4\beta(1-q)m$. This is consistent with $y_1 \geq s_1$ if and only if $s_1 \leq \delta 2\beta(1-q)m$.
(iv) The payoff to a centrist veto player from policy $y_1 \in [m, e]$ is:

$$(1-\delta)u_0(y_1) + \delta\alpha\left(qu_0(-y_1) + (1-q)u_0(2m - y_1)\right) + \beta u_0(y_1). \quad (45)$$

Thus, $\Delta(y_1) = 4(1-2\alpha)\delta m^2(1-q) - 4(1-\alpha)\delta m(1-q)s_1 + 4\alpha\delta m(1-q)y_1 + s_1^2 - y_1^2$, which is negativefor $y_1 > 2m + s_1$. Then, $\Delta(y_1) \geq 0$ if and only if $\phi(\alpha, q, m, \delta, s_1) \geq 0$ and

$$y_1 \in [\max\left\{m, \alpha 2\delta(1-q)m - \sqrt{\phi(\alpha, q, m, \delta, s_1)}\right\}, \alpha 2\delta(1-q)m + \sqrt{\phi(\alpha, q, m, \delta, s_1)}]. \quad (46)$$

(v) It is easy to show that a centrist veto player strictly prefers s_1 to any policy $y_1 > e$. □

We now prove the proposition, starting with point (i). By Lemma 3, $s_1 \leq 2\beta m(1-q)$ implies that the veto player weakly prefers l y_1 to s_1 only if $y_1 \geq s_1$. We next prove point (ii). If $s_1 > 2\delta\beta(1-q)m$ and $\delta \geq \frac{s_1}{m4(1-q)\beta} \equiv \delta_1(\beta, q, m, s_1)$, then a policy $y_1 \in [-e, s_1]$ is preferred by a centrist veto player to the status quo only if $y_1 \in [0, s_1]$. Since $4(1-q)\beta > 1$ for $q < \frac{1}{2}$ and $\beta > \frac{1}{2}$, we have $\delta_1(\beta, q, m, s_1) < 1$. This step implies that for $\delta > \delta_1$, we have:

$$y_1^*(-e) \geq \min\{\max\{0, -e(1-\delta) + \delta e(\alpha - \beta)(2q-1) + 2\delta\beta(1-q)m\}, s_1\} \quad (47)$$

Thus, $y_1^*(-e) \geq s_1$ if $e\left(\delta(\alpha - \beta)(2q-1) + \delta - 1\right) \geq s_1 - \delta\beta 2(1-q)m > 0$ (by supposition). The LHS is positive if $\delta \geq (1 + (\alpha - \beta)(2q-1))^{-1} \equiv \delta_2$. Since $\alpha < \beta$ and $q < \frac{1}{2}$, $\delta_2 < 1$. So, for $\delta > \max\{\delta_1, \delta_2\}$, there exists $\underline{e}(\delta)$ such that $e \geq \underline{e}(\delta)$ implies $y^*(-e) \geq s_1$.

□

Proposition 10 can explain the well-documented phenomenon that left-wing governments are as likely as right-wing governments to privatize state-owned industries, or to engage in deficit-cutting and other pro-market reforms (Alesina et al. (2006), Roland (2008)). A prominent explanation offered by Cukierman and Tommasi (1998) is that politicians have private information about the necessity of these policies. In such a setting, left-wing parties can more credibly appeal to the necessity of such policies than can a right-wing party because left-wing parties are intrinsically more hostile to these policies, regardless of fundamentals. Though we also lean on the primitive hostility of a radical to the status quo as a source of 'reversals', the only uncertainty in our model concerns who holds power in the future. Our explanation is closest to Schroeder's defense of 'Agenda 2010': "Either we modernize ourselves, and by that I mean as a social market economy, or others will modernize us, and by that I mean unchecked market forces which will simply brush aside the social element".[17]

Illustration of Myopic vs. Dynamically-Sophisticated Centrist Veto Player. We illustrate numerically the difference in policy outcomes that can arise in the two environments. Consider the following parameters: $\alpha = .9$, $\delta = .9$, $\Pr(-m) = .8$, $\Pr(0) = .2$, $s_1 = 4$, $m = 5$ and $e = 14$. This corresponds to a context in which the date-1 policy is implemented very close to an election, after which there will be an imminent opportunity to change policy. Moreover, all agents believe that a date-2 radical-progressive pairing is overwhelmingly likely.

A *myopic centrist veto player* accepts proposals only if they are located weakly closer to her ideal point (0) than the status quo $s_1 = 4$, i.e., she accepts only policies on the interval $[-4, 4]$. Suppose, instead, that she is *dynamically sophisticated* and evaluates alternative against the status-quo based on both current and future payoffs. She expects that there will be an imminent opportunity to change any policy that is implemented today, and that a radical-progressive axis is very likely to control date-2 proposal and veto power.

- A dynamically-sophisticated centrist veto player still prefers a policy $y_1 \in [-4, 4]$ to the status quo $s_1 = 4$. These policies are both better for her date-1 payoff (they are closer to her ideal point), and they also forestall even more extreme date-2 policy outcomes in the event of a future radical-progressive pairing.

- In contrast with a myopic centrist veto player, however, the dynamically-sophisticated

[17] Gerhard Schroeder, 'Agenda 2010—The Key to Germany's Economic Success', *Social Europe*, 23 April 2012, `http://goo.gl/yCuxgd`

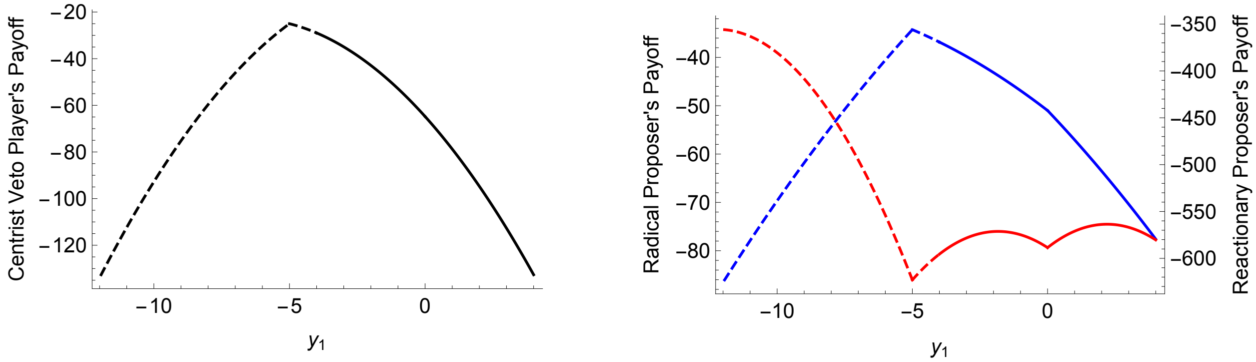


Figure 5: The first panel shows the induced preferences of a dynamically-sophisticated veto player over policies that she weakly prefers to the status quo. The second panel shows the induced preferences of a date-1 radical proposer (blue) and a date-1 reactionary proposer (red) over proposals in the *myopic* veto player's acceptance set (thick) and the *dynamically-sophisticated* veto player's acceptance set (thick and dashed).

> centrist veto player also prefers any policy $y_1 \in [-11.94, 4]$ to the status quo $s_1 = 4$. These policies will stymie the attempts of a subsequent radical proposer to attain even more extreme policy outcomes by reducing the radical's alignment with the progressive veto player (with ideal policy $-m = -5$). In particular, a date-1 policy outcome that lies to the left of the progressive veto player's ideal policy completely neutralizes a date-2 radical proposer's ability to effect any further policy changes.

The left panel of Figure 5 illustrates the dynamically-sophisticated veto player's induced preferences over policies that she weakly prefers to the status quo. The right panel shows the corresponding induced date-1 preferences of the radical (red) and reactionary (blue) proposer, for both (1) proposals that lie in the myopic centrist veto player's acceptance interval ($[-4, 4]$, *thick* line) and (2) proposals that lie in the dynamically-sophisticated centrist veto player's acceptance interval ($[-11.94, 4]$, *thick* and *dashed* lines).

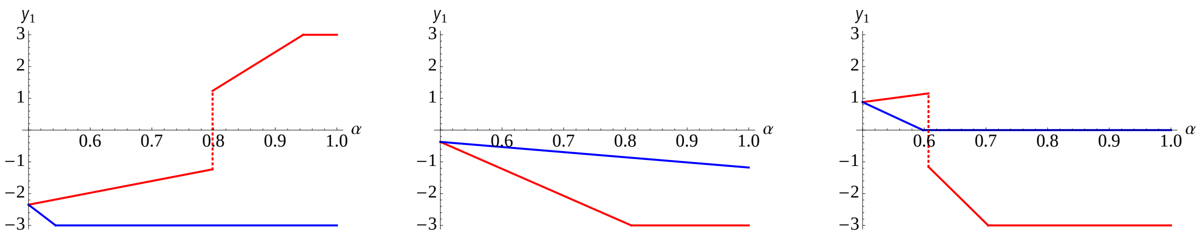
Date-1 Reactionary Proposer. A date-1 reactionary proposer suffers even more from a date-2 radical-progressive pairing than the centrist veto player. A reactionary proposer therefore prefers to implement the closest policy to her own static ideal policy that rules out *any* further slippage of date-2 policy towards the radical proposer's ideal policy. This policy is $y_1(e) = -5$, the static ideal policy of the progressive veto player. Moving policy any further towards the radical proposer's ideal policy ($-e = -14$) would not only be worse for the reactionary proposer at date-1, but also would no more forestall even more radical date-2 policy outcomes than the policy -5, since that policy guarantees that a date-2 radical is mis-aligned with every veto player.

If the reactionary holds date-1 proposal power and faces a myopic centrist veto player, she cannot implement the policy -5. Instead, she is constrained to move policy to $y_1(e) = -4$. If, instead, she faces a dynamically-sophisticated centrist veto player, she can propose her most-preferred date-1 policy, $y_1(e) = -5$, which is also the dynamically-sophisticated centrist veto player's most preferred date-1 policy. This reflects that, despite their primitive misalignment, the centrist and the reactionary share a common interest in avoiding very radical date-2 policy outcomes. They are endogenously aligned.

Date-1 Radical Proposer. If a date-1 radical proposer faces a myopic centrist veto player, the proposer is constrained to implement a policy on the interval $[-4, 4]$. She therefore prefers to 'step back', offering only an incremental reform policy $y_1(-e) = 2.2$: she holds back from exploiting a myopic centrist in the hope of extracting more from a future progressive veto player.

Suppose, however, a date-1 radical proposer faces a dynamically-sophisticated veto player, who accepts any proposal $y_1 \in [-11.94, 4]$. Now the radical does not need to hold out for a date-2 radical-progressive alignment. Since the dynamically-sophisticated centrist is willing to accept more radical date-1 policies, a date-1 radical proposer can immediately exploit the centrist's fear of a future radical-progressive pairing to move policy straight to $y_1(-e) = -11.94$. By exploiting the centrist, at date 1, the radical enjoys the immediate benefits of a policy outcome that is relatively close to her ideal point. But, she is also willing to take the near-certainty of a comparatively favorable date-2 policy rather than hold back in the hope of achieving even more extreme policy outcomes, given that she also faces a risk that she will not be able to induce any further changes, i.e., if she retains proposal power but faces the conservative veto player. Observe that a dynamically-sophisticated date-1 centrist veto player that faces a radical proposer would be strictly better off if she could have committed to act as if she were myopic, i.e. if she could commit to accepting only policies that lie on the interval $[-4, 4]$.

This example highlights (a) the importance of a myopic versus a dynamically-sophisticated veto player, and also (b) that the identity of the agenda-setter matters for date-1 policy outcomes. In the example, a dynamically-sophisticated veto player always prefers policies that are closer to -5. In the presence of a strategic proposer, however, the veto player's induced preferences over the status quo are an important but incomplete first step to predicting date-1 policy outcomes. This is because a veto player cannot commit to rejecting policies that she prefers to the status quo. In real-world legislative settings, policy agendas are pur-



(a) $\frac{\Pr(r_2=m)}{\Pr(r_2=-m)} \leq 1 - \frac{2m}{e}$ (b) $1 - \frac{2m}{e} < \frac{\Pr(r_2=m)}{\Pr(r_2=-m)} \leq 1$ (c) $\frac{\Pr(r_2=m)}{\Pr(r_2=-m)} > 1$

Figure 6: Illustration of how a radical's (*red*) and a reactionary's (*blue*) optimal date-1 proposal varies with her prospects of holding future proposal power. Parameters: $\delta = 1$, $e = 10$, $m = 3.5$ and $s_1 = 3$. In (a) $\frac{\Pr(r_2=m)}{\Pr(r_2=-m)} = .083$, in (b) $\frac{\Pr(r_2=m)}{\Pr(r_2=-m)} = .744$, and in (c) $\frac{\Pr(r_2=m)}{\Pr(r_2=-m)} = 3.42$.

posively chosen by strategic agents. Our model shows (a) how a strategic agenda-setter may be constrained or even empowered by a dynamically-sophisticated ("far-sighted") voter, and (b) how the policy preferences of the agenda-setter shape date-1 policy outcomes. More generally, *neither* far-sightedness of the proposer *nor* of the veto player implies that a proposer always prefers to hold back from implementing more extreme policies. In the example, a date-1 reactionary proposer that faces a dynamically-sophisticated centrist would propose the centrist veto player's most preferred policy, whereas a date-1 radical would opt for a more extreme policy outcome.

10. Appendix C: Discrete Changes in Proposals

In the main text, we illustrate how a date-1 radical proposer's optimal proposal, $y_1^*(-e)$, varies with uncertainty over the identity of the date-2 proposer. In this Appendix, we extend the example in Figure 3, showing how a date-1 reactionary proposer's optimal proposal, $y_1^*(e)$, varies with uncertainty over the identity of the date-2 proposer.

Figure 6 replicates the example highlighted in Figure 3. It plots the most-preferred policy $y_1^*(-e)$ of a date-1 radical proposer (*red*) and a date-1 reactionary proposer (*blue*), as the prospect of a date-1 radical ranges from $\alpha = \frac{1}{2}$ to $\alpha = 1$. Notice, first, that in all three settings, fixing all other primitives, a reactionary either *always* prefers $y_1(e) \geq 0$, or *always* prefers $y_1(e) \leq 0$: her optimal proposal never 'jumps' as the probability α that she retains proposal power varies in $[.5, 1]$. This reflects that jumps in optimal policies require that there exist *multiple* interior solutions $y_1^-(e) \in [-s_1, 0)$ and $y_1^+(-e) \in (0, s_1]$. But multiple interior solutions for a reactionary proposer requires that she be more likely than not to retain proposal power—as shown in expression (14), which, after substituting $i = e$, becomes:

$$y_1^+(e) - y_1^-(e) = 2e\delta(\beta - \alpha), \tag{48}$$

and which can only result in $y_1^+(e) > 0 > y_1^-(-e)$ if $\beta > \alpha$. We proceed through each of the three panels, discussing a date-1 reactionary proposer's incentives, then contrast with a date-1 radical. Since we already describe a radical's incentives in detail, in the main text, we focus on the comparison with a date-1 reactionary.

(1) When $\frac{\Pr(\text{conservative veto player})}{\Pr(\text{progressive veto player})} \leq 1 - \frac{2m}{e}$, a conservative veto player is much less likely than a progressive. Since a date-2 radical proposer is more likely than a date-2 reactionary proposer, a date-1 reactionary proposer is primarily concerned about a future hostile radical-progressive alignment. Hence, a date-1 reactionary proposer wants to move the initial policy past the ideal policy of the centrist veto player: this reduces a radical's alignment with the progressive veto player, diminishing the prospect of even more extreme policy outcomes at date 2.

When proposal power is fairly balanced—i.e., when $\alpha > \beta$, but the difference is small—a date-1 reactionary does not move the date-1 policy outcome as far as possible in the direction of the progressive. The reason is that there is still a non-negligible prospect that the reactionary will retain proposal power, in which case she is likely to face a progressive veto-player with whom she is mis-aligned. This means that any movement towards the progressive's ideal policy today is unlikely to be reversed in the future. However, due to agents' risk aversion, the prospect of a hostile alignment between the radical and the progressive weighs more heavily even than a mis-alignment between the reactionary and the progressive. So, as α rises, the reactionary quickly reverts to moving policy as close to the progressive veto player's ideal policy as the date-1 centrist veto player permits, i.e., to $-s_1$.

Contrast with date-1 radical proposer. When proposal power is fairly balanced—i.e., when $\alpha > \beta$, but the difference is small—a date-1 radical is most concerned about the prospect of a mis-alignment between the reactionary and the progressive veto player. While the reactionary moves policy past the centrist's ideal point out of a fear of a radical-progressive pairing from which *more extreme policy changes* will emerge, the radical moves policy past the centrist's ideal point out of fear of a reactionary-progressive mis-alignment from which *no more policy change* will emerge. Thus, when proposal power is fairly balanced, very different concerns nonetheless induce similar agendas: both proposers initially accelerate reform.

As the prospect of a date-2 radical α increases, however, the proposal strategies diverge.

A date-1 reactionary's concerns over a radical-progressive pairing continue to favor policy outcomes closer to the progressive's ideal policy and thus incremental reform. The radical's response is quite different. As α increases, her attention shifts towards a date-2 status quo that most effectively buttresses her future negotiating position vis-a-vis the progressive. And, at $\alpha^* = .798$, the radical 'steps back to leap forward', sacrificing her ability to exploit the centrist in the hopes of extracting more in the future from a progressive veto player.

(2) When $1 - \frac{2m}{e} < \frac{\Pr(\text{conservative veto player})}{\Pr(\text{progressive veto player})} \leq 1$, a progressive veto player is still more likely than a conservative, but their likelihoods are closer. For any distribution of proposal power that implies a higher likelihood of a date-2 radical proposer, a date-1 reactionary is still primarily worried about a future hostile radical-progressive alignment. Thus, she continues to move the initial policy in the direction of the progressive veto player, beyond the centrist's ideal policy. But since there is a higher relative prospect that a date-2 radical proposer faces a conservative veto player—with whom she is mis-aligned—a date-1 reactionary anticipates that a date-2 status quo is more likely to remain in place as the date-2 policy. Thus, she does not move policy as close to the progressive's ideal policy as she does in the case $\frac{\Pr(\text{conservative veto player})}{\Pr(\text{progressive veto player})} \leq 1 - \frac{2m}{e}$, where the relative threat of a a date-2 progressive veto player is higher.

Contrast with date-1 radical proposer. With a heightened relative prospect of a conservative veto player, a date-1 radical who is relatively likely to retain power also moves policy closer to the progressive's ideal point as her prospect of retaining power rises. Unlike a date-1 reactionary, who does so out of a fear of a *radical-progressive alignment*, a date-1 radical moves policy out of a fear of a *radical-conservative mis-alignment*. In the example, the radical's proposal always moves policy closer to the progressive's ideal point than a reactionary. More generally, however, this ordering may be reversed. A date-1 reactionary is more likely to propose a smaller shift from the status quo towards the progressive's ideal point than a date-1 radical when the prospect of a date-2 progressive veto player is not too large (subject to the condition $1 - \frac{2m}{e} < \frac{\Pr(\text{conservative veto player})}{\Pr(\text{progressive veto player})} \leq 1$). This emboldens a date-1 reactionary not to make too many initial concessions in the hope of a date-2 mis-alignment, and the same prospect of future mis-alignment drives a date-1 radical to hasten reform.

(3) When $\frac{\Pr(\text{conservative veto player})}{\Pr(\text{progressive veto player})} > 1$, a conservative veto player is more likely than a progressive. In the numerical example, moreover, the date-2 veto player is most likely to be a centrist.

Since a date-2 progressive is very unlikely in both absolute and relative terms, a date-1 reactionary proposer never chooses to move policy beyond the centrist veto player's ideal policy, in the direction of the progressive. Since the date-2 veto player is likely to be a centrist or a conservative, the date-2 policy outcome is likely to remain stuck at a status quo $y_1 < 0$ if the date-2 proposer is radical. And, since $\alpha > \beta$, the date-2 proposer is more likely to be a radical than a reactionary. So, moving policy beyond the centrist's ideal point to $y_1 < 0$ conveys little strategic benefit to a date-1 reactionary.

A date-1 reactionary's calculation is driven largely by the prospect of mis-alignment between a date-2 radical proposer who faces either a centrist or conservative veto player. When proposal power is evenly balanced, i.e., α is close to one half, a date-1 reactionary is willing to hold back on reform, gambling on the prospect of date-2 mis-alignment that keeps the status quo in place. But as the prospect of a date-2 radical rises, a date-1 reactionary responds by insuring herself to a greater extent from the risk of a future radical-centrist alignment. This leads her to target the centrist's ideal policy with her initial proposal, choosing the policy on the interval $[0, s_1]$ that minimizes the risk of a further movement toward the radical's ideal.

Contrast with date-1 radical proposer. When date-2 proposal power is even balanced—i.e., $\alpha > \beta$ but the difference is small—a date-1 radical proposer is concerned about the risk of a future reactionary proposer that faces a conservative veto player, with whom she is aligned. Thus, a date-1 radical also prefers not to exploit the date-1 centrist by moving policy past her ideal point. While the proposers' policies are not too distinct, however, their motivations are quite different. A radical holds back from early reform out of a desire to mitigate the prospect of future reactionary-conservative *hostile alignment*. By contrast, a reactionary holds back from early reform out of a fear that policy will get stuck at date 2 if there is a future radical-conservative *mis-alignment*.

As the prospect α of a date-2 radical proposer increases, a date-1 radical prefers to *hold back* in order to exploit a future friendly alignment with the progressive. For the same reason, a date-1 reactionary *accelerates* reform, since by doing so reduces a future radical's alignment with the progressive. At the critical threshold $\alpha^{**} = .613$, a date-1 radical's fear of a future *aligned* reactionary-conservative pairing is trumped by the prospect of a *mis-aligned* radical-conservative pairing. She therefore moves policy in her statically preferred direction, exploiting the centrist veto player right from the start. As her prospect α of retaining further increases, a date-1 radical—who now expects to retain power and face either a conservative or centrist veto player with whom she is mis-aligned—moves policy even more in the direction of her ideal, as if she were guided entirely by static considerations. The reactionary, by contrast, continues to pursue an intermediate path. She also accelerates reform in order to neutralize the consequences of a future radical-centrist future alignment. However, she does not move the initial policy beyond the centrist's ideal point, since she anticipates that any policy on the interval $[-s_1, 0]$ is likely to get stuck at date 2.

Notice that a change in primitives may generate either *similar* or *opposite* responses from a date-1 radical or a date-1 reactionary. The reason is that agents are risk-averse, so the same change in primitives can affect their calculations in very different ways. In panel (a), a common belief about a very likely date-2 radical-progressive alignment leads a date-1 radical to *hold back* reform, and a date-1 reactionary to *accelerate* reform. In panel (b), however, *both* a radical and reactionary prefer to *accelerate* the reform. A radical accelerates because she is afraid that policy will get stuck at date-two—so, dynamic incentives may align with static incentives. A reactionary accelerates because—despite its relatively low likelihood—a future radical-progressive alignment will lead to disastrous policy outcomes unless the reactionary can reduce the alignment between a future radical proposer and progressive veto player. Both agents agree on the distribution over future proposal and veto power, but they put different weights on each of the possible future policy outcomes, and this may lead to very different agendas.

11. Appendix D: Reversals Without Risk Aversion

Proposition 7 provides conditions under which a date-1 reactionary proposes a policy that is closer to the radical's ideal policy than does the radical herself (a "reversal"). We now show that Proposition 7 does not depend on risk aversion, by proving the same result when agents incur linear policy losses. That risk aversion does not play a role follows from the fact that all possible policy outcomes at both dates lie on the same side of a proposer's ideal policy.

The sole change to the model is that we replace the quadratic disutility specification with linear loss: $u_i(y_t) = -|y_t - i|$. For simplicity, we assume that the veto player at date 1 is certain to be a progressive (with probability p) or a centrist (with probability $1 - p$). The characterization of date-2 policy outcomes as a function of the inherited status quo, $s_2 (= y_1)$ is unchanged since it follows from the symmetry of the date-2 veto player's policy losses around her ideal point. We therefore focus on each proposer's date-1 proposal.

Proposition 11. Suppose that agents have linear policy losses. If, at date two, the radical proposer is relatively likely to hold power ($\alpha > \beta$) and the veto player is likely to be a progressive ($p > \frac{1}{2}$) then there exists a $\delta^* \in \left(\frac{1}{2}, 1\right)$ such that: if $\delta \geq \delta^*$, a reactionary proposer successfully proposes more reform at date one than a radical proposer.

Proof. A radical proposer prefers s_1 to 0 if $\delta \geq \frac{1}{2\alpha} \equiv \delta_1(\alpha)$, and she prefers the policy s_1 to $-s_1$ if $\delta \geq \frac{1}{1+p(2\alpha-1)} \equiv \delta_2(\alpha, p)$, where $1 > \delta_2(\alpha, p) > \delta_1(\alpha)$ for $\alpha > \frac{1}{2}$. Finally, a radical proposer prefers the policy 0 to the policy $-s_1$ if $\delta \geq \frac{1}{2(1-p-\alpha+2p\alpha)} \equiv \delta_3(\alpha, p)$. So, $y_1^*(-e) = 0$ only if $\delta \geq \delta_3(\alpha, p)$, and $\delta \leq \delta_1(\alpha)$, which cannot hold since $\delta_1(\alpha) < \delta_3(\alpha, p)$. We conclude:

$$y_1^*(-e) = \begin{cases} s_1 & \text{if } \delta \geq \delta_2(\alpha, p) \\ -s_1 & \text{if } \delta < \delta_2(\alpha, p). \end{cases} \tag{49}$$

Similarly, we obtain the optimal date-1 proposal of a reactionary:

$$y_1^*(e) = \begin{cases} s_1 & \text{if } \delta \leq \delta_1(\alpha) \\ 0 & \text{if } \delta \in (\delta_1(\alpha), \delta_3(\alpha, p)] \\ -s_1 & \text{if } \delta > \delta_3(\alpha, p). \end{cases} \tag{50}$$

We conclude that when $\delta > \delta_2(\alpha, p)$, $y_1^*(e) < y_1^*(-e)$. □

12. Appendix E: Fixed Proposer, Changing Veto Players

In Section 3, we analyze a setting in which the centrist veto player is certain to retain veto power across dates, but in which the identity of the proposer may change in between dates. In this Appendix, we analyze an alternative setting in which the initial proposer is certain to retain power across dates, but in which the identity of the veto player may change in between dates.[18] This corresponds to a setting in which the proposer and veto player face staggered elections, and in which the proposer is in an 'off year' but the veto player is in an 'on year'. For exposition, we focus on a setting in which the date-1 proposer is a radical with probability one—the corresponding analysis for a reactionary is similar. To allow for the possibility of jumps in a radical's optimal proposal, we assume that the probability of a date-2 centrist veto player is strictly positive, and strictly less than one.

[18] We are grateful to an anonymous referee for encouraging us to explore this setting.

Using Lemma 1, we obtain the interior optimal policy of a date-1 radical proposer who is sure to retain proposal power at date 2:

$$y_1(i) \quad = \quad (1-\delta)(-e) + \delta \sum_{r_2 > y_1(i)} \Pr(r_2)(-e) + \delta \sum_{r_2 < y_1(i)} \Pr(r_2)(e + 2r_2), \tag{51}$$

where $y_1(i) \in [-s_1, 0)$, or $y_1(i) \in (0, s_1]$. The first term multiplied by $1-\delta$ reflects a radical's immediate incentives to move the date-1 policy outcome towards her ideal policy.

The first term multiplied by δ is the *mis-alignment* channel—to the extent that a radical expects that tomorrow's veto player will be mis-aligned with her, relative to the policy $y_1(i)$, dynamic and static considerations converge in anticipation of future grid-lock that keeps today's status quo in place. This force for acceleration remains despite the proposer's certainty that she will retain proposal power. Such a situation may have been reflected in the 111$^{\text{th}}$ Congress, in which the Democrats believed that their unified control of Congress was likely to be a brief punctuation of business-as-usual divided control of government. A return to divided government would likely result in gridlock between the branches, so that dynamic and static considerations urged the Democrats to seize the moment, locking in today's policy gains in the certainty that policies will remain stuck in the future.

The second term multiplied by δ is the *alignment* channel, and reflects a date-1 radical's incentive to hold back. By the assumption that a radical is certain to retain proposal power, there is no prospect of a future *hostile alignment*—the only possibility for alignment is friendly.

Even when a radical is certain to stay in power, she faces a non-trivial decision about whether to choose a date-1 policy that aligns herself with the centrist, or instead ensures that she is mis-aligned with the centrist. She will always be mis-aligned with a future conservative veto player. How a radical should proceed depends on her confidence that tomorrow's veto player will be a progressive. If she is very confident that the veto player will be a progressive, she prefers not to exploit today's centrist veto player, in the hopes of 'leaping forward' at date-2 in a single jump, rather than in two. If, on the other hand, either a centrist or reactionary veto player is likely, she prefers to accelerate at date-1. If the date-2 veto player remains a centrist, the proposer will be in no better (or worse) position to exploit her proposal tomorrow than she is today—she simply loses out on the ability to enjoy better date-1 policy outcomes that could have been achieved by moving the date-1 policy outcome past the centrist's ideal. And, if the date-2 veto player is a conservative, today's policy stays in place.

More precisely, the radical prefers to exploit the centrist by choosing an interior policy $y_1(i) < 0$ rather than an interior policy $y_1(i) > 0$ if and only if:

$$\frac{\Pr(\text{date-2 progressive veto player})}{1 - \delta \Pr(\text{date-2 centrist veto player})} \leq \frac{e}{2\delta(e-m)}. \tag{52}$$

Notice that when a proposer is completely pre-occupied with date-2 policy outcomes, i.e., $\delta = 1$, the LHS can be expressed:

$$\frac{\Pr(\text{date-2 progressive veto player})}{\Pr(\text{date-2 progressive veto player}) + \Pr(\text{date-2 conservative veto player})}. \tag{53}$$

Conditional on tomorrow's veto player remaining a centrist, a completely date-2 oriented radical is indifferent between moving policy past the centrist's ideal outcome today or tomorrow—a radical's primitive alignment with the veto player is constant across dates. So, the radical proposer's trade-offs center on the relative prospect of a progressive veto player, *conditional on a change in the identity of tomorrow's veto player*. The RHS of (52) reflects a radical's trade-off between her static cost of holding back (which is proportional to her ideological extremism, e, the numerator) and her dynamic gain from holding back (the denominator). Her dynamic gain is proportional to her intrinsic mis-alignment with the progressive veto player, $e - m$. When this primitive conflict of interest is large, the value of holding back in order to endogenously reduce the conflict of interest is larger, since this allows the radical to exploit the progressive more in the future.

An illustration is provided in Figure 7. To emphasize the role of dynamic incentives, we set $\delta = 1$, so that a date-1 radical is entirely future-oriented. We also assume that there is a prospect .1 of a date-2 centrist veto player. The horizontal axis tracks the probability of a date-2 progressive veto player, with probability $p \in [0, .9]$. When the probability of a progressive veto player is not very large, a date-1 radical buttresses herself against the risk of future mis-alignment with the conservative veto player by choosing a policy that *further* mis-aligns her with the centrist. Initially, the optimal agenda $y_1(-e) < 0$ adjusts only incrementally as the prospect of a date-2 progressive increases. However, when the prospect of a date-2 progressive reaches the critical threshold implicit defined by (52)—in this example, $p = .7$—the radical 'steps back in order to leap forward'. This is the point at which she is sufficiently confident of a future alignment with the progressive that she prefers

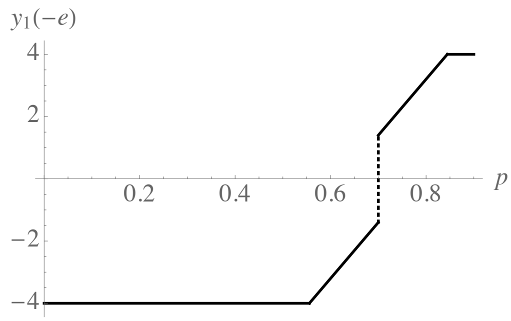


Figure 7: Illustrating a date-1 radical's optimal agenda when she is certain to hold date-2 proposal power. Parameters are: $e = 14$, $\delta = 1$, $m = 5$, $\alpha = 1$, $\beta = 0$, $s_1 = 4$, $\Pr(r_2 = 0) = .1$. The x-axis is the probability that the date-2 veto player is progressive, $p \in [0, 1]$, and the y-axis identifies the optimal proposal for a radical amongst the set of proposals $[-4, 4]$ that is weakly preferred by the centrist veto player to the status quo, $s_1 = 4$.

to leap past the centrists ideal policy in one jump, rather than two.

13. Appendix F: Proofs

We adopt the parameterization $\Pr(r_2 = -m) = p$, $\Pr(r_2 = 0) = q$, and $\Pr(r_2 = m) = 1 - p - q$.

Proof of Result 1. We first show that if the centrist veto player is certain to hold veto power then a radical proposes $y_1 \leq 0$ and a reactionary proposes $y_1 \geq 0$. A proposer with ideology i derives payoff $(1 - \delta)u_i(y_1) + \delta(\alpha u_i(-y_1) + \beta u_i(y_1))$ from $y_1 \in (0, e)$ and payoff $(1 - \delta)u_i(-y_1) + \delta(\alpha u_i(-y_1) + \beta u_i(y_1))$ from proposal $-y_1 < 0$, The payoff difference is $(1 - \delta)(u_i(y_1) - u_i(-y_1))$, strictly negative if $i = -e$, and strictly positive if $i = e$.

Suppose, next, that the date-2 veto player may be a progressive, centrist or conservative. We show that if $e < m$, then Result 1 again applies. The payoff from $y_1 > 0$ is

$$\begin{aligned} & (1 - \delta)u_i(y_1) + \delta\alpha(pu_i(-e) + qu_i(-y_1) + (1 - p - q)u_i(y_1)) \\ + \quad & \delta\beta(pu_i(y_1) + qu_i(y_1) + (1 - p - q)u_i(e)), \end{aligned} \tag{54}$$

and that from proposal $-y_1 < 0$ is:

$$\begin{aligned} & (1 - \delta)u_i(-y_1) + \delta\alpha(pu_i(-e) + qu_i(-y_1) + (1 - p - q)u_i(-y_1)) \\ & + \delta\beta(pu_i(-y_1) + qu_i(y_1) + (1 - p - q)u_i(e)). \end{aligned} \tag{55}$$

Taking the difference of these two expressions yields the result. $\square$

Proof of Proposition 1. Immediate from the first-order condition of the proposer. □

Proof of Lemma 1. Solve the first-order condition to $\max_{y_1 \in [0,s_1]}(1-\delta)u_i(y_1)+\delta V(y_1)$ for:

$$y_1(i) = (1-\delta)i + \delta\Big(\alpha \sum_{r_2 > y_1(i)} \Pr(r_2) + \beta \sum_{r_2 \leq y_1(i)} \Pr(r_2)\Big) i$$
$$+ \delta\Big(\alpha \sum_{r_2 \leq y_1(i)} \Pr(r_2)(2r_2 - i) + \beta \sum_{r_2 > y_1(i)} \Pr(r_2)(2r_2 - i)\Big), \tag{56}$$

which characterizes an interior solution in $[0, s_1]$. Likewise, an interior solution to $\max_{y_1 \in [-s_1, 0]}(1-\delta)u_i(y_1) + \delta V(y_1)$, is characterized by:

$$y_1(i) = (1-\delta)i + \delta\Big(\alpha \sum_{r_2 \geq y_1(i)} \Pr(r_2) + \beta \sum_{r_2 < y_1(i)} \Pr(r_2)\Big) i$$
$$+ \delta\Big(\alpha \sum_{r_2 < y_1(i)} \Pr(r_2)(2r_2 - i) + \beta \sum_{r_2 \geq y_1(i)} \Pr(r_2)(2r_2 - i)\Big). \ \square \tag{57}$$

Proof of Proposition 2. We have:

$$\frac{1}{2}\frac{\partial y(i)}{\partial \delta} = \alpha \sum_{r_2 < y_1(i)} \Pr(r_2)(r_2 - i) + \beta \sum_{r_2 > y_1(i)} \Pr(r_2)(r_2 - i), \tag{58}$$

and since $|i| \geq |r_2|$ for all $r_2 \in \{-m, 0, m\}$, $\operatorname{sgn}\left(\frac{\partial y(i)}{\partial \delta}\right) = -\operatorname{sgn}(i)$. □

Proof of Proposition 3. This is proven in the text. □

Proof of Proposition 4. The result is immediate from $\frac{1}{2\delta}\frac{\partial y_1(i)}{\partial m} = -\alpha p + \beta(1-p-q)$. □

Proof of Proposition 5. $\operatorname{sgn}\Big(\frac{\partial y_1(i)}{\partial |i|}\Big) = \operatorname{sgn}(i)\Big(1-2\delta\big(\alpha \sum_{r_2<y_1(i)} \Pr(r_2)+\beta \sum_{r_2>y_1(i)} \Pr(r_2)\big)\Big)$. If $\alpha \sum_{r_2<y_1(i)} \Pr(r_2) + \beta \sum_{r_2>y_1(i)} \Pr(r_2) \leq \frac{1}{2}$, then $\operatorname{sgn}\left(\frac{\partial y_1(i)}{\partial i}\right) = \operatorname{sgn}(i)$. If the reverse strict inequality holds, then:

$$\operatorname{sgn}\left(\frac{\partial y_1(i)}{\partial |i|}\right) = \begin{cases} \operatorname{sgn}(i) & \text{if } \delta \leq (2(\alpha \sum_{r_2<y_1(i)} \Pr(r_2) + \beta \sum_{r_2>y_1(i)} \Pr(r_2)))^{-1} \\ -\operatorname{sgn}(i) & \text{if } \delta > (2(\alpha \sum_{r_2<y_1(i)} \Pr(r_2) + \beta \sum_{r_2>y_1(i)} \Pr(r_2)))^{-1}. \ \square \end{cases} \tag{59}$$

Proof of Proposition 6. For a proposer with ideology i, let $y_1^-(i) < 0$ be a proposer's interior solution aligning a reactionary and centrist, and $y_1^+(i) > 0$ be an interior solution aligning a radical and centrist.

Lemma 3. A proposer with ideal point i is indifferent between a proposal $y_1^+(i) > 0$ aligning the centrist veto player with the radical and a proposal $y_1^-(i) < 0$ aligning the centrist with the reactionary if and only if the centrist veto player is indifferent between these proposals.

Proof. Letting $p \equiv \Pr(r_2 = -m)$ and $q = \Pr(r_2 = 0)$, define the payoff difference function:

$$Z(i, \alpha, m, p, q) \equiv (1-\delta)(u_i(y_1^+(i)) - u_i(y_1^-(i)) + \delta \left(V_i(y_1^+(i)) - V_i(y_1^-(i))\right). \qquad (60)$$

$Z(i, \alpha, m, p, q)$ can be written $(y_1^+(i) - y_1^-(i))(y_1^+(i) + y_1^-(i))$, which has roots at $y_1^+(i) = y_1^-(i)$ and $y_1^+(i) = -y_1^-(i)$. In both cases, the centrist veto player is indifferent between these proposals. However, we have $y_1^+(i) = y_1^-(i)$ only if $y_1^+(i) = y_1^-(i) = 0$, which implies $\alpha = \beta = \frac{1}{2}$. We have $y_1^+(i) - y_1^-(i) = 2(\beta - \alpha)\delta i \Pr(r_2 = 0)$, so $y_1^+(-e) = -y_1^-(-e) > 0$ only if $\alpha > \beta$. □

Next, notice $Z(i, \alpha, m, p, q) = 0$ at $\alpha = \frac{1}{2}$ and at most one other value of $\alpha \in \left(\frac{1}{2}, 1\right]$, which solves $y_1^+(i) = -y_1^-(i)$. For $\alpha > \frac{1}{2}$, we have:

$$\begin{aligned} \varphi(\alpha, \delta, i, p, q) \equiv y_1^+(i) + y_1^-(i) &= (1-\delta)i + \delta\big(\alpha \sum_{r_2 > 0} \Pr(r_2) + \beta \sum_{r_2 \leq 0} \Pr(r_2)\big) i \qquad (61) \\ &+ \delta\big(\alpha \sum_{r_2 \leq 0} \Pr(r_2)(2r_2 - i) + \beta \sum_{r_2 > 0} \Pr(r_2)(2r_2 - i)\big) \\ &+ (1-\delta)i + \delta\big(\alpha \sum_{r_2 \geq 0} \Pr(r_2) + \beta \sum_{r_2 < 0} \Pr(r_2)\big) i \\ &+ \delta\big(\alpha \sum_{r_2 < 0} \Pr(r_2)(2r_2 - i) + \beta \sum_{r_2 \geq 0} \Pr(r_2)(2r_2 - i)\big). \end{aligned}$$

Setting $p = \Pr(r_2 = -m)$ and $q = \Pr(r_2 = 0)$, substitution yields:

$$\varphi(\alpha, \delta, i, p, q) = i(\delta(4\alpha - 8\alpha p + 4p - 4\alpha q + 2q - 4) + 2) - 4\delta m(\alpha + p - \alpha q + q - 1), \quad (62)$$

which is linear in δ and in α. For $\alpha \in \left(\frac{1}{2}, 1\right)$, $\varphi(\alpha, \delta, -e, p, q)$ strictly increases in δ. Finally, $\varphi(\alpha, \delta, -e, p, q)$ strictly increases in α only if: $\frac{1-p-q}{p} < \frac{e-m}{e+m}$.

1. Suppose $\frac{1-p-q}{p} < 1 - \frac{2m}{e}$. Since $1 - \frac{2m}{e} < \frac{e-m}{e+m}$, $\varphi(\alpha, \delta, -e, p, q)$ strictly increases in

$\alpha \in \left(\frac{1}{2}, 1\right)$, and strictly increases in δ. Define:

$$\alpha^*(\delta) = \frac{e(\delta(2p+q-2)+1) + 2\delta m(p+q-1)}{2\delta(e(2p+q-1)+m(q-1))} \tag{63}$$

Thus, $y_1^*(-e) > 0$ if and only if $\alpha > \alpha^*(\delta)$. The cut-off $\alpha^*(\delta)$ strictly *decreases* in δ, since:

$$\frac{\partial \alpha^*(\delta)}{\partial \delta} = -\frac{e}{2\delta^2(e(2p+q-1)+m(q-1))}, \tag{64}$$

and so $\frac{\partial \alpha^*(\delta)}{\partial \delta} < 0$ by $\frac{1-p-q}{p} < \frac{e-m}{e+m}$. We have $\alpha^*(\delta) < 1$ if and only if $\delta > \frac{e}{2ep+eq-2mp} \equiv \delta_1$, where $\delta_1 < 1$ by $\frac{1-p-q}{p} < 1 - \frac{2m}{e}$.

2. Consider $\frac{1-p-q}{p} \in \left[1 - \frac{2m}{e}, 1\right]$. Then $\varphi(\frac{1}{2}, 1, -e, p, q) \leq 0$ and $\varphi(1, 1, -e, p, q) \leq 0$. Since $\varphi(\alpha, \delta, -e, p, q)$ is linear in α and strictly increases in δ, $y_1^*(-e) < 0$ for all $\alpha \in \left(\frac{1}{2}, 1\right]$.

3. Consider $\frac{1-p-q}{p} > 1$. Since $\frac{e-m}{e+m} < 1$, $\varphi(\alpha, \delta, -e, p, q)$ falls in $\alpha \in \left(\frac{1}{2}, 1\right)$, and rises in δ. Thus, $y_1^*(-e) > 0$ if and only if $\alpha < \alpha^*(\delta)$. But, $\alpha^*(\delta)$ *increases* in δ, since $\frac{1-p-q}{p} > 1 > \frac{e-m}{e+m}$. Thus, $\alpha^*(\delta) > \frac{1}{2}$ if and only if $\delta > \frac{e}{e+m(1-2p-q)} \equiv \delta_2$, where $\delta_2 < 1$ by $\frac{1-p-q}{p} > 1$. $\square$

Proof of Proposition 7. Let the global solution for agent i in $[-s_1, s_1]$ be $y_1^*(i)$.

(1) Suppose $y_1^*(-e) \geq 0$. If $y_1^*(e) \leq 0$, the claim is trivial. If $y_1^*(e) > 0$, then $y_1^*(e) = \min\{y_1^+(e), s_1\}$, and $y_1^*(-e) \geq 0$ implies $y_1^*(-e) = \min\{\max\{0, y_1^+(-e)\}, s_1\}$. Then, $y_1^*(e) \leq y_1^*(-e)$ if $\delta \geq (1 + (2\alpha - 1)(2(p+q)-1))^{-1} \equiv \delta_1(\alpha, p, q)$.

(2) Suppose, instead, $y_1^*(-e) \leq 0$. Then it suffices to show (1) $y_1^-(e) \leq y_1^-(-e)$ and (2) $y_1^*(e) = \min\{\max\{y_1^-(e), -s_1\}, 0\}$. (1) holds if $\delta \geq (1 + (2\alpha-1)(2p-1))^{-1} \equiv \delta_2(\alpha, p)$. To see (2), $\alpha > \frac{1}{2}$ implies $y_1^+(e) < y_1^-(e)$ and $y_1^+(-e) > y_1^-(-e)$. Suppose $y_1^-(-e) \geq 0$. Then, $y_1^+(-e) > y_1^-(-e) \geq 0$ implies $y_1^*(-e) = \min\{y_1^+(-e), s_1\} > 0$, contradicting $y_1^*(-e) \leq 0$. So, $y_1^*(-e) \leq 0$ implies $y_1^-(-e) < 0$ and $y_1^*(-e) = \max\{y_1^-(-e), -s_1\}$. Since $\alpha > \frac{1}{2}$ and $\delta \geq \delta_2$ implies $y_1^+(e) < y_1^-(e) \leq y_1^-(-e) < 0$, we infer that $y_1^*(e) = \max\{y_1^-(e), -s_1\} \leq \max\{y_1^-(-e), -s_1\} = y_1^*(-e)$.