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**Explaining Institutional Change:
Why Elected Politicians Implement Direct Democracy**

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Abstract

Why did representative politicians introduce direct democratic reforms, thus binding their own hands? This paper presents a formal model in which (1) voters are uncertain about their representative's preferences; (2) direct and representative elections are substitute methods for voters to control outcomes. Some politicians benefit from the introduction of direct democracy, since they are more likely to survive representative elections. Historical evidence from the introduction of the initiative, referendum and recall in America supports the theory, which also explains two puzzling empirical results: legislators are trusted less, but reelected more, in US states with direct democracy.

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1 Introduction

There are two schools of thought about direct democratic institutions like the US ballot initiative and the popular referendum. One school claims that direct democracy benefits the voters, at the expense of politicians, by allowing voters to override their representatives when they make bad or self-interested choices (Matsusaka 2004, Gerber 1996, Lupia and Matsusaka 2004). The other believes that direct democracy is bad for everybody: politicians lose power, but inept voters are likely to make bad choices (Broder 2000, Schrag 2004). Most recent political science work, both theoretical and empirical, supports the first school: voters are made better off. Whatever their relative merits, both views create a fundamental puzzle. Modern direct democratic institutions cannot be introduced without politicians' consent. But on either of the accounts above, they have no reason to do this.

What about other extant rational choice theories of institutional change? These theories assume (1) that political actors initiate change because they foresee gains from it; (2) complete information among all participants. The assumptions provide a well-defined range of explanations. Weak governments can be forced to introduce change by an opposition coalition; political partners may bargain their way to an efficiency-improving reform; incumbents introduce change to protect themselves from new political entrants, or as concessions to head off deeper change. These theories also implicitly explain why change mostly does not happen. Political outsiders want changes that increase their power, but incumbents do not; if outsiders win power, they become incumbents and lose their incentive to make changes. For example, the British Labour Party supported Proportional Representation during the 1980s, but changed its mind after it came to power.

The introduction of direct democracy in America is problematic for these theories. Under complete information, no party in office gains from introducing direct democracy, as this gives the voters veto power over its decisions. Were weak incumbents forced to make this

concession by opposition parties and interest groups? Sometimes, but sometimes direct democracy was introduced by political parties who had just won power and were in a position of strength – in the US, reformist Democrats and Republicans – and who wanted radical social change, but nevertheless gave the people a veto over these changes. (Section 4 supports these claims in more detail.)

This paper builds a theoretical model in which some elected politicians gain from introducing direct democracy, for two reasons:

1. Politicians who foresee losing office wish to tie their opponents' hands.
2. With politicians' hands tied by direct democratic institutions, voters have less incentive to vote them out of office. So (some) politicians are more likely to get reelected, while implementing policies closer to their own preferences.

The first point has already been mentioned. The innovation is the second point, which gives a new result: even some politicians who expect to be reelected will like direct democracy.

The model ignores the short-term electoral benefits of introducing direct democracy and thus being seen as a reformer. Only the comparative statics of politicians' welfare with and without direct democratic constraints are examined. Also, politicians are purely policy-motivated. A strong office motivation would increase the incentive to introduce direct democracy, by making it more attractive to trade policy power for stable tenure in office.

The model is based on some key assumptions, shown in Table 1. First, as mentioned, voters have incomplete information – they are uncertain about the best policy to pursue. Representatives, by contrast, are informed.¹ However, representatives may not share the

1. Exactly how this happens is not a trivial question but is not the focus here. Kessler (2005) endogenizes the choice to become informed and shows that representatives will do

preferences of the electorate. The electoral mechanism provides a way to remove representatives who stray too far from what the voters want. My second assumption is that this mechanism is imperfect. Representatives cannot always be disciplined by elections. For example, politicians who intend to retire at the end of their term, or who cannot run for re-election due to term limits, will not be constrained by elections. Certain issues may be too complicated or boring for the electorate to understand. Because of these occasions, voters have an interest in the real preferences of those they elect, and they may also benefit from introducing a second kind of control of politicians – direct democratic restraints such as the citizen’s initiative and referendum.

Viewing direct democratic institutions as a curb on the representative leads to the third assumption: these institutions interact with representative democracy. This happens in at least two ways. First, popular referendums and ballot initiatives are introduced in response to the perceived shortcomings of the policy implemented by representatives. For example, in 1978 California passed Proposition 13 – a swingeing tax limitation which is still controversial 30 years later – not because voters were convinced in the abstract of the need for direct popular control over taxation, but because they thought that existing taxes, set by the legislature, were too high. In game-theoretic terms, the representative’s choice of policy provides information to voters about the state of the world. Second, the availability of direct democratic measures affects representative elections: voters will be less concerned about a representative’s policy preferences if they know that these can be overridden, and representatives will behave differently in the light of that knowledge.

The final assumption is about the different ways direct and representative elections work. A ballot initiative or referendum involves overriding a political decision. That is, the voters change their representative’s policy and put another one in its place. In the model

so if the cost of acquiring information is not too high. When they do not do so, there is no advantage to representative democracy.

this happens after the policy is revealed, but before its consequences are discovered. Representative elections, by contrast, are about judging a political decision after the consequences. The trade-off is between *ex ante* ignorance and learning from bitter experience.

[Table 1 about here]

The basic idea here, that the interaction between different kinds of elections provides a motive for elected representatives to support direct democracy, could be modeled in different ways. For example, suppose that politicians have varying policy preferences, and also vary in competence. Under representative democracy, the voters will trade off competence with extremism. Under direct democracy, the trade-off will shift. Policy extremism will matter less, since it can be restrained by referendums or initiatives, and competence will matter more. So competent extremists will be reelected more often, and will have a reason to support direct democracy.

This paper focuses on a different trade-off, which exists even when politicians vary only in their policy preferences. Initiatives and referendums substitute the uninformed choice of the electorate for the informed but perhaps non-centrist choice of the politician. They therefore work best when they are not used, i.e. when the electorate can trust the politician's choice. In effect, from being an elected dictator, the politician becomes a kind of adviser (though with strong agenda power): the voters can choose to accept or reject his proposals. While an extreme dictator is always harmful, an extreme adviser can be corrected for. Knowing a politician's preferences helps the voters decide when to trust him. For example, a left-winger who chooses a rightwing policy is less likely to be motivated by ideology than by a recognition of political circumstances. Thus both the voters and an incumbent politician can gain from the incumbent's reelection. On the other hand, direct democracy is less useful with a newly elected politician whose policy preferences are unknown. So direct democratic restraints make incumbents more electable – as empirical research confirms (Bali and Davis 2007).

Another insight follows from this approach. Since direct democracy allows a wider range of incumbents to be reelected, the average policy distance between voters and politicians increases. This can explain another finding that has puzzled empirical researchers: voters trust their politicians less in direct democratic states (Kelleher and Wolak 2007).

The next section reviews the relevant literature. Section 3 develops the model. Section 4 discusses historical evidence from the development of direct democracy in the United States during the Progressive era. The conclusion contemplates further research on how representative and direct democratic institutions interact, and makes the case for more incomplete information models of institutional change.

2 Literature review

There is a large literature on endogenous institutional change. This review examines existing explanations of deliberate change, as opposed to unintended evolution (e.g. Greif and Laitin 2004), and focuses on rational choice theories, which assume that actors have a sense of their interests and form rational expectations about the future. Myopia, chance and character certainly matter but it is extremely hard to weave them into a systematic theory. Finally, I examine reforms of an existing system, rather than “constitutional choice” in an institutional vacuum (e.g. O’Donnell et al. 1986; Przeworski 1991; Bawn 1993).

These reforms are paradoxical. They are made by powerful actors – the winners under the existing system. Why, then, would they risk changing it? We can categorize existing theories by their answer to this question. First, there are efficiency theories. In these, change takes place because it makes all players better off, or when winners gain more than losers lose, and can compensate them. To avoid vacuity these theories must explain the times

when change does *not* take place. For example, under some circumstances players may be unable to credibly commit to compensate losers. Geddes (1991) suggests that Latin American civil service reform takes place when political parties are roughly equal in strength, so that both lose from patronage – in effect they are in a Prisoner’s Dilemma, which reform can eliminate. Rogowski (1987) claims that states with open economies are more likely to have proportional representation to reduce inefficient distributive politics.

Second, incumbents may make reforms under pressure from a rising opponent. Acemoglu and Robinson (2006) and Boix (2003) claim that the rich introduce democracy so as to avoid revolution. Relatedly, the rules may be changed so as to head off the rise of competitors, following Di Lampedusa’s advice that “everything must change so that everything can stay the same”. For example, it has been suggested that ruling parties brought in proportional representation so as to avoid being wiped out electorally by rising socialist parties (Rokkan 1970, Boix 1999). Similarly, Diaz-Cayeros and Magaloni (2001) show how the Mexican PRI set electoral rules so as to grant some, but not too much, power to its opponents, thus sustaining its hegemony for most of the 20th century. Dunleavy and Margetts (1995) propose that changes in pluralist democracy are in general designed to preserve existing elites from rival coalitions (majority-preferred alternatives in a multi-dimensional policy space).

Third, if a group has power, but does not expect to keep it for long, it may change institutions as a way to embed its interests. This is particularly relevant in democratic contexts with regular institutionalized changes of leadership. McCubbins et al. (1987) theorize that regulations on bureaucracies are designed to ensure that the political coalition which creates a new law is able to monitor its enforcement.

A final group of explanations is closest to the spirit of this paper: that of institutions as “credible commitments”. North and Weingast (1989) explain the institutions brought in by the Glorious Revolution as a way for the sovereign to commit not to expropriate his

subjects. This then allowed greater economic growth, which in turn benefited the sovereign. Acemoglu and Robinson (2006) emphasize that when under pressure, the rich offer democracy as a way to credibly commit to redistributive policies. If they simply promised redistribution, this promise would be broken in times of political stability, and so would not be credible. These papers do not invoke incomplete information: it is assumed that the sovereign would always expropriate if he needed to (the rich would never redistribute if they could avoid it). The literature on the political economy of central bank independence suggests that a Left-wing party may grant central bank independence so as to neutralize voters' worries about its monetary policy (Milesi-Ferretti 1995). This will make the party more electable, so that it can afford to introduce its preferred policies in other areas.

How do these theories fare at explaining the introduction of direct democracy in the United States? The issue is as follows. The constitutional amendment introducing direct democracy was introduced in most states by the legislature, before it was voted on by the people.² Before direct democracy was introduced, legislatures made the law. Afterwards, the people could veto those laws by popular referendum, or introduce laws the legislatures did not want by the ballot initiative. Also, the populace as a whole cannot be a bargaining partner: there is no way that the median voter can “commit” to reelecting legislatures in exchange for any possible gains (cf. Acemoglu 2003). Thus, efficiency explanations are unlikely to work. Nor does it seem plausible that these reforms were granted for fear of something worse. Indeed, handing over law-making power was often a gateway to further constitutional changes. For example, in Oregon, after the 1905 legislature tried to bring in a constitutional convention in order, it was rumored, to rescind the new direct democratic provisions, citizens initiated a constitutional amendment allowing a constitu-

2. In Oklahoma, Arizona and Massachusetts a specially elected constitutional convention brought in direct democratic measures as part of a wholesale rewrite of the state constitution.

tional convention only after a popular vote. And unlike changes to electoral institutions, direct democracy provides no way to buy off particular opponents and preserve an incumbent's power.

The third explanation seems more plausible: reformists gained temporary power, then introduced direct democracy so as to give the people a veto in case their successors undid their reforms. This argument fits many cases quite well (see Section 4), and the model here formalizes the intuition. However, there remain problems. The people's veto was a double edged sword which could be – and was – used against reformers. Only politicians who are likely to lose power will wish to tie their successors' hands in this way. Furthermore, as de Figueiredo (2002) points out, politicians with a long-term perspective can bargain with political opponents to preserve each others' reforms. Finally, constitutional changes in most US states required a 2/3 supermajority in the legislature; and at this time, legislative constituencies were heavily biased towards more conservative rural areas and against the new industrial cities (David and Eisenberg 1961; Hamm and Moncrief 1999). These factors together made it hard to achieve a legislative supermajority for direct democratic reform made only out of extreme reformers who expected to lose office.

The model here combines this explanation with the “credible commitment” story. Some extreme candidates for office, who do not expect to get reelected, prefer direct democracy because it will bind their successors. But less extreme candidates also prefer direct democracy, because voters who can vote down extreme policies in a ballot initiative have less desire to forestall those policies by voting a candidate out. This in turn lets some candidates implement policies closer to their ideal point.

Incomplete information plays a key role in this story, as it does not in previous credible commitment models of institutional reform.³ Voters always prefer politicians whose preferences are closer to their own, so if politicians' preferences are visible, they will always

3. With the exception of some of the work on central bank independence.

reelect an incumbent if and only if he is closer than the average to the median voter, whatever the democratic institutions (see Section 3.2). When politicians' preferences are unknown, voters must learn about them from their policy choices, and there is a trade-off between a known, though extreme incumbent and an unknown challenger. Under direct democracy, a familiar politician becomes more useful, since voters can judge whether to accept his proposals, and incumbents thus become more electable.

Empirical research has not found a very compelling general explanation of the spread of direct democracy. Scarrow (1997) examines the expansion of direct democracy in Germany and finds that parties introduced reforms when the quest for short-term electoral advantage caused a breakdown of long-term inter-party cooperation. However, whenever state parties introduced the statewide initiative and referendum, i.e. chose to limit their own power, her cases show the major parties collaborating. She explains this as a reaction to declining turnout. This may be reasonable but it assumes that parties take a long-term perspective on the health of democracy, which sits oddly with the basic thesis of short-termist competition. Bowler et al. (2002) survey legislators' support for direct democratic reforms in 3 nations. In their theoretical section they admit candidly that "legislators will find direct democracy an unappealing institution". They do find that ideology predicts support for reforms. However, predicting behaviour from surveyed opinions, at best a hopeful enterprise, is particularly problematic in this case. (The same goes for Bowler et al. (2006), which finds quite high levels of expressed support for direct democracy among legislators.) They conclude by suggesting that reforms will be forced on weak legislators by outsider coalitions. Smith and Fridkin (2008) provide supporting evidence, showing that during the progressive era, minority party strength predicted the legislature's likelihood of placing on the ballot a constitutional amendment granting the citizen's initiative.

This argument it is intuitively attractive: if legislators have no reason to bind their hands, they must have been forced to do so. However, there is a problem of commitment on both sides. First, legislators may promise to support reform but fail to deliver once in office.

Indeed, Bowler et al. write “[i]t is not surprising... to find examples of legislators supporting bills in favour of CIRs [Citizen Initiated Referendums] while in Opposition, yet opposing an identical bill, or letting authorizing legislation languish, once they win Government”. Second, voters or interest groups who have threatened to punish these non-performing legislators may face the problem that the alternative is no better. Also, although the argument fits many US states which introduced direct democracy, complementing the case in which reformers gain temporary power, other states do not seem to fit this framework (again, see Section 4). It therefore seems worthwhile to look for further explanations.

This paper also adds to the collection of formal models of direct democracy. The classic models used complete information (Romer and Rosenthal 1978, Gerber 1996), while more recent work introduces incomplete information. In particular, Kessler (2005) shows, in a model with uninformed voters, that direct democracy may lower elected officials’ incentive to become informed – a choice not examined here. The paper’s framework is similar to this one’s, but the interaction between direct and representative democracy is not fully modelled.

3 The model

There are two periods. In each period $t = 1, 2$ a politician observes a shock $\varepsilon_t \sim N(0, \sigma_\varepsilon^2)$ and chooses a policy p_t . The outcome is $w_t = p_t - \varepsilon_t$. (Numbered subscripts will be dropped when the sense is obvious.) The voters do not observe the shock, only the outcome in each period. All players’ utility is quadratic in each period: total utility for a player with ideal point i is $-(i - w_1)^2 - \delta(i - w_2)^2$ where δ is the common discount rate. Rather than simply referring to time, δ can be interpreted as representing the tradeoff between periods 1 and 2, that is, the likelihood, over a range of issues and times, that a

politician will be free of the threat of reelection. When this is very low, all players are more concerned with the “pre-election” period 1 effect of direct democracy. When δ is high they are concerned with period 2, and the possibility of restraining the politician with a ballot proposal.

All players’ ideal points are private information. After period 1, the voters vote to keep the incumbent or elect a challenger, by majority rule. The median voter’s ideal point is 0; Banks and Duggan (2006) provide a median voter theorem for lotteries over outcomes when utility is quadratic. The incumbent and challenger’s ideal points k are drawn from a normal distribution $N(0, \sigma_k^2)$ which is independent of ε . Write φ_k for the density function of k and Φ_k for its cumulative distribution function. Similarly φ_ε and Φ_ε for the shock.

In period 2 the politician is not facing reelection. However, under direct democracy, the voters observe p_2 before the policy is implemented, and vote to keep it or replace it by a default policy of 0. This models a popular referendum process in which voters may choose to challenge the proposed policy and replace it with an existing default, which is assumed to be the optimal policy given the distribution of shocks. (This maximizes the voters’ incentive to choose the default and thus makes life as hard as possible for the politician: if the default were less attractive, the politician would be better off.)⁴ A more complete model would allow voters to do the same in period 1: we limit direct democracy to period 2 for simplicity’s sake. We also allow the politician to step down after period 1 (for example, if the voters would never accept his policies in period 2, and he would do better under a challenger).

4. An alternative assumption would be that there is an initiative process with some kind of open agenda-setting process in which the median voter can select the optimal initiative given p . If so, this essentially becomes a game of cheap talk in which the politician recommends p and the median voter chooses the ultimate policy. This assumption seems optimistic about the openness of direct democratic agenda-setting.

Voters learn the proposed policy p_2 before voting on it in period 2. This can be thought of as the effect of an election campaign, in which those with extreme preferences (on either side of the issue) will make costly efforts to inform others about what is at stake, through advertisements, leaflets et cetera. Thus voters learn p (as opposed to the outcome they experience, w) only when there is a direct democratic campaign.

In any period, a politician who knows his ideal point k and the shock ε gets utility from a policy p of $-(p - \varepsilon - k)^2$. This policy utility is single peaked with the peak at $p = k + \varepsilon$. Call $q = k + \varepsilon$ the politician's induced policy ideal point. Single-peakedness implies that, if policies within an interval $[\underline{p}, \bar{p}]$ are available, and a point in the interval's interior $p \in (\underline{p}, \bar{p})$ is chosen, then $q = p$; otherwise a lower or higher policy would have been chosen instead.

3.1 Results

The setup gives us a game of incomplete information. Perfect Bayesian Equilibrium (PBE) is the standard equilibrium concept for this kind of games (see e.g. McCarty and Meirowitz 2007). Using it I find a set of sensible equilibria. Unfortunately other, less sensible ones also exist: these are ruled out with the Intuitive Criterion, a well-known refinement for signaling games (Cho and Kreps 1987).

We use the model to compare the expected welfare of politicians under the two different systems. The first proposition replicates the findings of the existing literature: if we ignore the effect of representative elections, no politician wants direct democracy. This is trivial. In period 2, under representative democracy, a politician gets exactly what she wants, while under direct democracy in general she does not.

Proposition 1. *In period 2, any politician weakly prefers representative democracy to direct democracy, and an incumbent reelected from period 1 strictly prefers it.*

All proofs are in the appendix.

In the first period, politicians correct for the shock when choosing a policy: in effect, they simply choose an outcome w_1 , and the voters are aware of this. Thus, the first period shock plays no role. Figure 1 shows first period equilibrium behaviour. If the outcome is in an interval around the median voter's ideal point of 0, then the politician is reelected. Politicians with ideal points in the interval implement their ideal outcome, taking into account the effect of the shock. On either side of this reelection region, there is an area where politicians choose the nearest endpoint of the region rather than their own ideal point: they accept a policy loss now, in order to get reelected and choose policy in period 2. Further out, politicians again implement their own most preferred outcome, and are not reelected.

[Figure 1 about here]

The reelection region is small enough that the voters prefer to reelect an incumbent politician who is at the endpoint – knowing that in fact, this politician would prefer a more extreme policy, and will try to implement it in the second period. If this condition is satisfied, then the voters will be happy to reelect the less extreme incumbents politicians who choose outcomes inside the reelection interval. On the other hand, the reelection region is large enough that voters will not reelect a politician who chooses something outside the reelection region. Since some policy outcomes are never observed in equilibrium – the dashed line in the picture – there is a range of reelection regions satisfying both this constraint and the endpoint reelection constraint. So we have multiple equilibria.

We start the analysis of direct democracy by examining period 2. (Period 2 in representative democracy is straightforward: the elected politician implements her ideal outcome.) There are two cases. Either a challenger, with an unknown ideal point, has been elected, or the incumbent has been reelected. If a challenger has been elected, because voters do

not know the likely direction of his bias, the choice to trust him or not is the same whatever policy he proposes. As it turns out, the voters accept any policy proposed if $\sigma_\varepsilon^2 > \sigma_k^2$, and reject any policy proposed if $\sigma_\varepsilon^2 < \sigma_k^2$, replacing it with the default of 0. In effect, the choice is between two kinds of shocks, one caused by the unknown policy environment and one caused by an unknown politician's difference from the median voter.

The case with a reelected politician is quite different. Even if the politician is very extreme, because the direction of his bias is known (by his choice in period 1), it can be accounted for. Indeed, whenever the proposed policy goes against the politician's bias, the voters know they will do better by accepting it. That is, if the politician proposes $p_2 < 0$ and the voters know $k_2 > 0$, they will always accept p_2 instead of the default policy of 0. I.e., if a rightwing politician prefers a more leftwing policy to the default, the median voter will have the same preferences. So, whenever the shock leads the politician to "go against" his prior belief, his policy proposal is accepted. As the saying runs, it takes a Nixon to go to China (Cukierman and Tommasi 1998).

Intuitively, we might expect a rightwing politician proposing an extremely rightwing policy to be voted down. This is not necessarily true. If the politician were really extreme, he would not have been reelected in period 1: a very rightwing policy means he must be countering a big leftwards shock. So there are possible equilibria in which very rightwing policies are accepted when a moderate rightist proposes them. However, for simplicity, we assume that when a rightwing politician proposes any rightwing policy, it is rejected. This is the smallest possible equilibrium in terms of the set of policies accepted in period 2, and therefore the worst possible equilibrium for politicians. If some politicians prefer direct democracy under this equilibrium, this will be true in all cases. Period 2 under direct democracy is illustrated in Figure 2.

[Figure 2 about here.]

We can now say some more about period 1. The different results when a challenger is reelected (his proposal is always accepted if $\sigma_k^2 \leq \sigma_\varepsilon^2$, and always rejected when $\sigma_\varepsilon^2 < \sigma_k^2$) make a large difference to the period 1 equilibria. In fact, if $\sigma_\varepsilon^2 < \sigma_k^2$, a newly elected challenger is a useless object: the voters do not know enough about his ideal point to trust him, whatever policies he proposes! On the other hand, even a very extreme incumbent, whose ideal point is known, can be trusted some of the time. For this reason, in equilibrium when $\sigma_\varepsilon^2 < \sigma_k^2$, *incumbents are always reelected*. This result contains the central intuition of this paper. Direct democracy turns politicians from dictators into advisers. A dictator whose preferences are known is still dangerous, but an adviser whose preferences are known can be corrected for. Thus, direct democracy raises the value of incumbency.

However, this extreme result only applies when $\sigma_\varepsilon^2 < \sigma_k^2$ – that is, when an unconstrained politician is actually worse for the median voter than choosing himself. When $\sigma_\varepsilon^2 \geq \sigma_k^2$, the result is less clear. (A really extreme politician would almost never propose a trustworthy policy in period 2, so the voters would usually choose the default policy of 0 and suffer the effects of the policy shock. So it is better for them to elect an unknown challenger if he is fairly trustworthy.)

Concretely, what does $\sigma_\varepsilon^2 < \sigma_k^2$ mean? The variance of ε measures the unpredictability of the policy environment to voters. Thus, σ_ε^2 will be lower when voters have direct knowledge of outcomes, for example when they feel the effects of the economy on their pocket-books, and higher for, say, foreign affairs. σ_ε^2 will be low for “easy” policy areas (abortion), and high for abstruse ones (financial crisis management). It will be low when there is widespread consensus on the best policy, and high when experts disagree. Finally, σ_ε^2 will rise during times of social change. On the other side of the inequality, σ_k^2 is rather easier to understand. When politicians are trustworthy, or when the campaign process provides a lot of information on candidates so that bad candidates are not elected, σ_k^2 will be low. When politicians are untrustworthy, and when the campaign process is uninformative, σ_k^2

will be higher. It will also be low when strong parties can commit to well-defined programs, and high when parties are weak and individual candidates rely on their local power base rather than campaign promises.

When $\sigma_\varepsilon^2 < \sigma_k^2$, before reelection, some incumbents prefer direct democracy (contrast this with Proposition 1). This does not only include extremists, who are not reelected and therefore want to bind their successors hands; there are always some politicians who would be reelected under representative democracy, but who nevertheless prefer direct democracy. Their loss from direct democracy in period 2 is balanced by being reelected with a policy closer to their ideal point.

All these results are restated formally below. Proofs are in the appendix.

Lemma 1. *Under representative democracy, any equilibrium satisfying the Intuitive Criterion can be characterized by a pair of points $w_\star < 0$ and $w^\star > 0$.*

Equilibrium behaviour is as follows: in period 2 incumbents and challengers implement their ideal point $p_2 = q_2$. In period 1, the voters reelect the incumbent if and only if the outcome $w_1 \in [w_\star, w^\star]$. Incumbents with $w_\star \leq k \leq w^\star$ implement their ideal point $p_1 = q_1$. So do incumbents with $k \geq k^\star$, where $k^\star > w^\star$ and k^\star is uniquely determined by w^\star ; and incumbents with $k \leq k_\star < w_\star$ where k_\star is uniquely determined by w_\star . Incumbents with $k \in (w^\star, k^\star)$ (respectively $k \in (k_\star, w_\star)$) set $p_1 = w^\star + \varepsilon_1$ (respectively $p_1 = -w_\star + \varepsilon_1$) so that the outcome is $w_1 = w^\star$ ($w_1 = w_\star$).

The set of possible equilibria is as follows: w^\star may be any point satisfying $\underline{w} \leq w^\star \leq \bar{w}$; similarly w_\star may be any point satisfying $-\underline{w} \geq w_\star \geq -\bar{w}$. The bounds \underline{w} and \bar{w} are non-negative and fixed by the parameters. When $\delta \geq 1/2$, $\underline{w} = 0$, i.e. there are equilibria in which politicians must implement the median voter's ideal point, $w_1 = 0$ to be reelected.

Lemma 2. *In any equilibrium satisfying the Intuitive Criterion, in period 2 under direct democracy, write A for the acceptance region such that $p_2 \in A$ is accepted, and write Φ_k for the voters' probability distribution over the politician's k at the start of period 2.*

1. *Politicians with ideal policy $q_2 = k_2 + \varepsilon_2$ choose $p_2 = q_2$ if $q_2 \in A$. Otherwise they choose the closest point in A to q_2 . (If q_2 lies closer to 0 than to any other point in A , then any point in A^C may be chosen; we assume they choose 0.)*

2. $\mathbb{R}_- \subset A$ when the politician is known by the voters to have $k \geq 0$. When $k \leq 0$ for sure, $\mathbb{R}_+ \subset A$.

3. *If the voters always know the sign of k and have bounds on k (e.g. $\Phi(k) = 0$ for $k < k'$, $\Phi(k) = 1$ for $k > k''$, $0 < k' < k''$), at the start of period 2, then the following is a possible equilibrium: $A = \mathbb{R}_-$ when k is known positive, $A = \mathbb{R}$ when $k = 0$, $A = \mathbb{R}_+$ when k is known negative.*

Lemma 3. *Under direct democracy, in period 2, if a challenger has been elected, and if $\sigma_k^2 > \sigma_\varepsilon^2$, the voters always reject the challenger's proposal and choose $p_2 = 0$ instead. If $\sigma_k^2 \leq \sigma_\varepsilon^2$ then the challenger proposes $p_2 = q_2$ and the voters always accept.*

Proposition 2. *Under direct democracy, if $\sigma_\varepsilon^2 < \sigma_k^2$, then all politicians are reelected in period 1. Furthermore, at least some politicians who would be reelected under representative democracy nevertheless strictly prefer direct democracy.*

Equilibria when $\sigma_k^2 < \sigma_\varepsilon^2$ can be complex. In particular, even politicians who would get reelected by choosing their ideal point in period 1 do not necessarily do so. (There is an incentive to seem centrist, in order to get more policies accepted in Period 2.) I hypothesize, but do not prove, that for some parameter values there are politicians who prefer direct democracy even though they are reelected under representative democracy, as in Proposition 2.

3.2 A complete information benchmark

To emphasize the effect of voters' incomplete information in the model, consider a benchmark in which everything is unchanged except that the voters learn a politician's ideal point k with certainty after he is elected.

Under representative democracy, voters know that the incumbent will implement his ideal point in period 2. So after period 1, they ignore w_1 and simply reelect the incumbent iff $k_1^2 \leq \sigma_k^2$ i.e. if $|k_1| \leq \sigma_k$. Therefore, in period 1 the politician always chooses $w_1 = k_1$.

Under direct democracy, whether the incumbent or a challenger is reelected, the voters know k_2 in period 2, and set the acceptance region A accordingly. As the voters' loss in period 2 is increasing in $|k_2|$,⁵ again in period 1 they reelect if and only if $k_1^2 \leq \sigma_k^2$. Once again, in period 1 the politician chooses $w_1 = k_1$. As politicians who will not be reelected wish to control their successors through direct democracy, and politicians who will be reelected do not wish to be controlled, the following proposition is now easy to see.

Proposition 3. *if voters learn k with certainty in each period, then only politicians with $|k_1| > \sigma_k$, who will not be reelected, strictly prefer direct democracy in period 2; all other politicians strictly prefer representative democracy.*

Compare this to Proposition 2. There, some politicians prefer direct democracy even though they would be reelected under either institution. Full voter information removes this effect. Now only those in a position of political weakness will prefer direct democracy. This is in line with some conventional explanations of institutional change. But as we shall see in the next section, it does not always fit the facts: the initiative and referendum were not always granted by weak politicians who expected to lose office. The model suggests why. Consider a legislature composed of some politicians who have been reelected, and others who are in their first period. Then, even if all legislators are newly elected, all

5. This is shown by equation (21) in the Appendix.

those with ideal points $|k| < \sigma_k$ – within one standard deviation of the mean, i.e. about two-thirds of legislators – will prefer representative democracy.⁶ And if some legislators were reelected the proportion of opponents would get even higher, making a pro-reform majority, let alone a supermajority, rare indeed.

Adding incomplete information changes the story, so that even politicians in a strong position may favour direct democracy. This improves the odds of a reform passing. It also seems to fit the historical facts, to which I now turn.

4 Historical Discussion

How did direct democracy come to the US?⁷ The standard story is as follows. In the 1900s, the political system in US states came to be seen as broken. Legislators were in hock to special interests from business. The electoral system had been corrupted in some municipalities; on the other hand, many new industrial cities were grossly underrepresented by their allocation of seats in the legislature. Neither of the main parties was trusted: turnout and partisanship, high throughout the 19th century, declined. (In terms of the model, σ_k^2 was high.)

The ideas of direct democracy were first taken up by the Populists in the 1890s, seeking a way round the corrupted and unrepresentative system of state representative democracy. The Populists did not succeed in general, but they did pass the first state initiative law in South Dakota. In the 1900s a succession of reformers such as William U'Ren continued the fight and eventually forced legislatures to concede in half the US states. Supporters of direct democracy included the Progressive movement, Labor unions and farmers' groups,

6. We set aside the issue of strategic voting in the legislature.

7. This section draws on Allswang (2000), Piott (2003), Goebel (2002), Bowler and Donovan (2006), Smith and Lubinski (2002) and Haynes (1919), in particular on the detail in Piott's book.

as well as some Prohibitionists, all of whom hoped to use the ballot box to circumvent obstructionist legislatures.

This story shows us two of the mechanisms for institutional change discussed in Section 2. First, a group that gains short-term power, but does not expect to keep it, may use reform to entrench the policy changes it wants. This is what the Populists did in South Dakota. Similarly, in Oklahoma, direct democracy was introduced by a constitutional convention which was 90% Democratic. Previously Republicans had dominated state politics; this was the turning point. Later the Democratic legislature restricted direct democracy. The change of heart suggests that at convention time, Democrats sought to protect their preferred policies from Republican legislators; they changed their mind only when they foresaw a stable period of Democratic power. Similarly, in Arizona, a constitutional convention introduced direct democracy.

The more important theory is simply that divided or weak legislators may be pressured by outside forces into accepting change. In Oregon, the indefatigable activist William U'Ren got himself elected along with the Populists, and then used logrolling tactics to win over the divided major parties in the legislature, offering Populist legislators' votes in exchange for support for direct democracy. Before the bill introducing the initiative and referendum came up for a second vote in 1901, U'Ren helped legislators who had voted for him before get reelected; further lobbying ensured it passed again. By 1904 U'Ren, now a formidable political force in the State, could say of a measure threatening the new institutions: "The man who votes for the Brownell bill... is digging his own political grave and getting into it."⁸ In some state elections, the Direct Legislation League extracted pledges to support direct democracy from candidates for the legislature. For instance, in the Maine election of 1906, many candidates who had not pledged their support lost their seats; both houses of the subsequent legislature unanimously passed a moderate bill to introduce the initiative and referendum.

8. Quoted in Piott (2003) p. 43.

These theories are powerful and explain many of the historical cases. They also have the advantage of explaining the overall pattern that direct democracy was introduced mostly in Western states. These states had weak party systems so that candidates cared more about their individual electoral fortunes than about preserving the legislature's power as a whole. Reformers had less success in the East where parties were strong, and in the one-party South. Similarly, direct democracy was more likely to be introduced where parties were closely tied in the race for office (Smith and Fridkin 2008).

However, the history also reveals other actors who were instrumental in introducing direct democracy in many states. First, there were "reform" or "insurgent" Democrat and Republican politicians, progressives who aimed to wrest control of their parties from the machine. They were disciplined political groups, not divided individuals, and rather than gaining temporary power, they aimed to take over the political mainstream in the long-term, and often succeeded. When, as often, they supported direct democratic measures, they did so out of principle rather than short-term expediency.

For example, in California, the Direct Legislation League had failed throughout the 1900s to get measures brought in by pressure on individual legislators: the Southern Pacific Railroad, exerted its great influence over parties to prevent a vote. Direct democracy was introduced in 1911 after the Lincoln-Roosevelt League of Progressive Republicans under Hiram Johnson had swept into office. This group had gained control of the Republicans after the introduction of direct primaries in 1910, and passed the initiative and referendum by huge margins – unanimously in the Assembly. In North Dakota, direct legislation in its final form was passed in 1918 by the Nonpartisan League of small farmers – a kind of throwback to the populists which collapsed shortly thereafter. This fits the "short-term power" story. But reform-oriented legislators, having gained the upper hand over the party machines, passed no less than four bills introducing direct democracy in 1911. In the end a relatively weak form, with high signature requirements to put a measure on the

ballot, won out; nevertheless this multitude of alternatives, some quite radical, does not fit the picture of legislators being pushed unwillingly to act.

Why were these reformist members of the main parties keen on binding their future hands? Surely, one reason was the short-term reputational advantage to be gained by introducing the measures. But there were plenty of other reforms that voters wanted, and that would not have tied their hands as legislators in future. It is plausible that, as in the model, they traded off a direct loss in freedom of action, for an increase in freedom of action and reelectability due to future voters' trusting politicians more.

In other cases, traditional parties introduced direct legislation without strong pressure from outside. In Missouri, at a time when the Missouri Direct Legislation League had been weakened by the voters' rejection of direct legislation in 1903, a Democratic governor, Senate and House reintroduced the idea in 1907. Far from embracing the new institutions, Missourians then approved precisely none of the fourteen initiative measures brought before them between 1910 and 1918 (although they also rejected several referred statutes and legislative constitutional amendments). Again, it seems that at least some legislators foresaw they could work better within the new system. Similarly, in Arkansas, after the original direct democracy measure of 1910 had been weakened by the courts, a new law was brought in by the legislature in 1916, but failed at the polls after opposition by prohibitionists. In Michigan, where the Republicans were dominant and were to remain so until the 1930s, a constitutional convention passed a weak measure in 1908; in 1912, prodded by the state governor, the legislature strengthened it.

In fact, state Governors were often key players in calling for direct democracy, including the already-mentioned Hiram Johnson in California and Joseph Folk in Missouri. In Colorado, the popular Progressive Democrat John Shafroth was elected Governor in 1908 after 5 terms in the state Congress. He campaigned for the initiative and referendum throughout the legislative session, brought in a special session to adopt it, and supported

the subsequent measure when it came before the voters, at the time of his successful reelection bid. In Arizona, the president of the 1916 constitutional convention was one George Hunt, a state Senator who had first introduced a bill supporting direct democracy in 1899, and who later became Governor. Governors' support of direct democracy has continued to this day, perhaps as a way to get round an obdurate legislature. But representative politicians introducing their own initiatives is a relatively modern trend (Smith and Tolbert 2001). In the Progressive era the trade-off modeled above seems a more likely cause of their support.

To sum up, outside pressure on legislators was not always enough to introduce direct democracy. Nor, except in the cases of North and South Dakota, did Populist radicals achieve this aim. As Piott puts it (p. 254): "progressive control of state government was key to winning legislative approval of these measures." Often, these progressives were within the main parties and had long-term goals to keep their political power, and often, they introduced reforms not when electorally weak or divided but after winning elections with large majorities. They must therefore have gained something beyond short-term advantage. The model shows two long-term advantages: direct democracy could restrain their opponents who might regain office through the remaining corruption in the political system; and it would win back the electorate's trust, allowing them to pursue their goals more effectively when in power.⁹

One question is harder to answer. How predictable was the political environment of the Progressive era – in terms of the model, how high was σ_ε^2 ? Clearly, the 1890s were a time of economic change and dislocation. At the same time, by the 1900s, a coherent Progress-

⁹. A point not discussed here is that in the era described, the median voter under direct democracy could be very far from the median voter for the legislature, due to malapportionment and other forms of corruption. If Progressives believed that they were close to the real median voter, while their future opponents might be far on the other side, this would strengthen their motives to support direct democracy.

sive program had been formed on a number of issues, and certain states and cities had undertaken reforms and thus acted as pathfinders for others. It seems probable that by the 1910s, when most of the direct democratic reforms were brought in, many voters saw politicians less as stewards to face an unknown and uncertain environment, and more as agents who ought to be implementing a thoroughly worked-out program of reform, whose outline at least was clear.

5 Conclusion

Top-down institutional reform, in which those in power voluntarily give it up, is the hardest kind of institutional change to explain. The introduction of direct democracy is one such tough case. Existing theories fail to appreciate how hard it is: to change a constitution, a supermajority of legislators must be won over. This paper shows that even without internal divisions between those in power, democratic representatives may still prefer direct democracy, since the power they lose is compensated by increased trust during representative elections. Historical data supports the argument.

Two broader conclusions come out of this research. For research on direct democracy, there are complex links between representative and direct elections. We already know how legislators may be threatened by the initiative (Gerber 1996), learn from initiatives in nearby states (Boehmke 2005), or seek to weaken their implementation (Gerber et al. 2001). Scholars have observed that politicians are getting directly involved in initiative campaigns (Smith and Tolbert 2001). Modelling this process, in particular of politicians' and initiative proponents' role as trusted agents, could enhance our understanding further (see also Garrett 2004). In particular, the interaction between the branches of government may explain direct democracy's appeal to politicians: Governors can use ballot initiatives to bypass the legislature, and the House can override recalcitrant Senators the same way.

More generally, our present models of institutional change tend to see the world as a bargaining process in which people know what they are getting. There is room for a middle ground between this rational-choice approach and the historicists who emphasize uncertainty and habit. Incomplete information, signalling and trust ought to be brought in to our understanding of institutional change.

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