

Punching above One's Weight –  
On Overcommitment in Election Campaigns\*

Marco A. Haan<sup>†</sup>                      Sander Onderstal<sup>‡</sup>  
University of Groningen              University of Amsterdam

Yohanes E. Riyanto<sup>§</sup>  
Nanyang Technological University Singapore

April 19, 2024

**Abstract**

In this paper, we develop a game-theoretic model to study how candidates compete in elections when voters care about the winner's ability to implement policies. In our model, the candidates make commitments before the election regarding the plans they will try to implement if elected. These commitments serve as a signal of ability. In equilibrium, candidates make overambitious promises. While the candidate with the highest ability wins, the electorate may be better off having a random candidate implement her best plan, rather than seeing the winner implementing an overambitious plan.

*Keywords: election promises, signalling, overcommitment*

*JEL classification: D72*

---

\*The authors have no conflicts that are directly or indirectly related to this work.

<sup>†</sup>Corresponding author. Economics Department, P.O. Box 800, 9700 AV Groningen, the Netherlands. m.a.haan@rug.nl. ORCID 0000-0003-2295-1854

<sup>‡</sup>onderstal@uva.nl. ORCID 0000-0002-4700-870X. Onderstal gratefully acknowledges financial support from the Dutch National Science Foundation (NWO-VICI 453.03.606).

<sup>§</sup>yeriyanto@ntu.edu.sg. ORCID 0000-0001-7343-4043.

# 1 Introduction

Ever since Hotelling (1929) and Downs (1957), game-theoretic models of electoral competition tend to focus on the ideological position on which candidates run. However, in practice, the electorate may be interested not only in the ideological position of a candidate but also in her ability to get things done. For example, suppose that the median voter has the opinion that economic reforms are sorely needed. Yet, powerful vested interests oppose such reforms. The median voter may then very well prefer a candidate with a policy platform that differs somewhat from his own but who is able to carry through substantial reforms, over a candidate with exactly the same preferences who fails to get anything done once elected.

In this paper, we develop a game-theoretic model to study how electoral competition is affected when voters care about the ability of the candidate elected. In our model, politicians run in an election. Each has an ability that is private information. More able candidates are more likely to achieve something once in office. For example, a highly competent politician may try to reduce bureaucracy by half, whereas a less able politician might find it challenging to even reduce it by 10%. During the election campaign, candidates make binding commitments to the plans they intend to implement if elected. Election platforms then serve as a signal of the true ability of a candidate. More able politicians will run on more ambitious platforms. From their platforms, voters can infer the ability of the politician.<sup>1</sup> Rationally, voters choose the most ambitious candidate.<sup>2</sup>

We assume that more ambitious plans yield a higher pay-off to the electorate when successful. However, while more ambitious plans are prone to failure, more able politicians are likelier to pull off a plan. Of course, the assumption that plans are

---

<sup>1</sup>For example, in the campaign for the 2000 US presidency, Al Gore not only indicated that he intended to supplement Social Security, but also presented detailed plans as to how to achieve this: through the creation of new tax-free, voluntary retirement accounts that would supplement Social Security benefits (see e.g. Nagourney, 2000).

<sup>2</sup>For example, in the 2007 South-Korean elections Lee Myung-bak ran on a plan dubbed “747” as it promised GDP growth of 7%, GDP per capita of USD40,000, and to make Korea the seventh-largest economy. This plan indeed got him elected. Commentators opined that “[i]f anybody can achieve economic goals as ambitious as the new 747 plan it is surely [...] Lee Myung-bak. [...] But it is unreasonable for anyone to expect [him] to actually hit the targets he promised the Korean people” (Jackson 2007).

either completely successful or not at all, is a simplifying one. Still, we feel that in many cases, it is not too far from the truth.<sup>3</sup>

In the political economy literature, it is routinely assumed that politicians simply choose a policy that they can implement when elected. This is where our model fundamentally differs. In our world, a politician that tries to implement a policy has no guarantee that she will be successful in doing so: this will depend on her ability.<sup>4</sup> During the election she merely makes a commitment that she will try to implement her plan. Her effort to do so is observable.

The equilibrium of our model has politicians making more ambitious promises than they would make without the need to signal their ability. This *overambition effect* is bad news for the electorate: it would be better off if a politician tried to implement a plan that she can actually handle, rather than a plan that is overambitious. But election promises also entail good news: by comparing the different plans, the electorate is at least able to pick the best politician. This is a *selection effect*. We show that the overambition effect may dominate the selection effect. As a result, the electorate is then better off picking a random candidate and letting her implement the plan that she thinks best, rather than having an election to pick the best candidate who will implement an overambitious plan. This is more likely if the distribution of abilities is skewed towards high values, if the number of candidates is high, if there are primary elections, or if there are high private benefits from office.

We are not the first to study how election campaigns affect electoral competition. In Banks (1990) and Haan (2004) election promises serve as signal of a politician's true position on the Hotelling line. In Harrington (1993) and Aragonés, Postlewaite and Palfrey (2007) chances of reelection are affected by the extent to which politicians keep

---

<sup>3</sup>For example, the first Clinton administration came with an ambitious health care reform plan. Ultimately, the administration failed to persuade Congress to implement it, which meant that the status quo remained (see Clymer, 1994). The same could have happened to Obama's health care plan in 2010.

<sup>4</sup>One example of an electorate being more interested in the ability of a candidate rather than his platform is the recent rise in the Netherlands of Pieter Omtzigt, a politician who earned a stellar reputation as an outstanding member of parliament. For the 2023 election, he started his own party that was leading in the opinion polls before even announcing which platform he would run on. See <https://www.dutchnews.nl/2023/08/new-poll-illustrates-political-upheaval-ahead-omzigt-ahead/>

election promises. Yet, in these papers private information concerns policy preferences rather than ability.

In Rogoff and Sibert (1988) politicians also have private information concerning their ability. More competent politicians require less revenue to deliver the same amount of public goods. The incumbent uses tax policy as a signal. This gives rise to political business cycles. In Rogoff (1990) the incumbent can use both taxes and government spending as a signal. However, these papers do not study electoral competition between multiple candidates that can signal their ability.

One implication of our model is that having more candidates in an election may have an adverse effect on social welfare. In Lizzeri and Persico (2005), as the number of parties increases, each party focuses its electoral promises on a narrower constituency, so special interest politics replace more efficient policies with more diffuse benefits.

In our model, election promises are enforceable commitments. This notion is supported by Pétry and Collette (2009). Their meta-analysis of 21 studies on election promises reveals that approximately 67% were fulfilled, indicating that elected candidates make a substantial effort to deliver on their promises. Analysing data from 69 elections in 14 countries, Matthieß (2020) shows that a government party that fulfils more election pledges is more likely to prevent electoral losses. She proposes two possible mechanisms. First, voters may want to reward politicians that have kept their promises. Second, they may regard this as a sign of the politician's competence. The latter also drives the result in our model.

That politicians may not keep their election promises is also the focus of some laboratory studies, that also study the difference between elected officials and randomly selected ones. In Geng, Weiss and Wolff (2011) elections do not lead to higher promises regarding the amount of funds to be transferred to voters, than randomly appointing a politician. In Corazzini, Kube, Maréchal and Nicolò (2014) candidates in an election do promise significantly more than those randomly appointed. Walkowitz and Weiss (2017) find that elected officials shirk less on fulfilling their promises, but find no difference in promises made. Born, van Eck and Johannesson (2018) find that promises are more likely to be kept if reelection is possible and if the politician was

elected rather than randomly appointed. In Feltovich and Giovannoni (2015) officials with lower transfers do worse in subsequent elections. In Fehrler, Fischbacher and Schneider (2020), politicians with a lower aversion to lying are more likely to win their party’s primary, as they are willing to invest more. Hence, those ending up in politics are also those less likely to keep their promises.

The remainder of this paper is structured as follows. Section 2 gives the set-up of the model. In Section 3, we analyze a simple example with 2 candidates and a particular distribution of abilities. The electorate is then always better off picking a random candidate, rather than having an election in which candidates make costly promises. In Section 4, we study a more general set-up, and derive the exact conditions under which the electorate prefers a random candidate. Section 5 studies a number of extensions. In Section 5.1 candidates obtain private benefits of being in office, while in Section 5.2, candidates compete in primary elections before being put forward by political parties in the general election. Both scenarios only strengthen our main result, in the sense that the electorate is more likely to want to pick a random candidate. Section 5.3 shows how our model can allow for the choice of ideological position. Section 6 concludes.

## 2 Set-up of the model

Consider an election in which  $n$  candidates participate. For ease of exposition, we assume that voters do not care about the ideological disposition of a candidate. This is just a simplifying assumption: it is straightforward to extend the model to one in which the choice of platform does play a role, as we will do in Section 5.3. For now, we assume that voters are only interested in a candidate’s ability to ‘get the job done’. In the context of our model, ‘the job’ refers to some project that needs to be implemented. For example, this may be a country in which bureaucracy has gone out of control. Alternatively, corruption may have become a problem. In either case, it is obvious that something has to be done, yet politicians differ in their ability to successfully tackle the problem.

The ability of politician  $i$  is denoted  $\theta_i$ . This is private information. It is common knowledge that  $\theta_i$  is drawn from a continuous cumulative probability distribution  $F$  on  $[0, 1]$ . For simplicity, we will assume that  $F(\theta) = \theta^\alpha$ , with  $\alpha$  some strictly positive parameter. This specification allows for ample flexibility, while still being able to yield closed-form solutions. In the election campaign, each candidate chooses a platform. This is some policy  $x$  that the politician promises to implement once elected, with  $x \geq 0$ . Crucially, we assume that politicians can commit to policy  $x$ . Thus, if a politician has promised to try to implement a policy  $x$  during the campaign, she has no other choice but to do so if elected. One justification for this assumption is that a politician's reputation will suffer greatly if she makes an election promise, but does not even make an effort to try to implement that promise. In any case, the purpose of this paper is precisely to study how the possibility of such binding commitments affect the electoral process.

Some policies are more ambitious than others. For example, one politician may run on a platform to root out corruption entirely, while another may promise to cut it in half. Of course, politicians also have to come up with detailed plans as to how they think to achieve these objectives. If such a plan is implemented, there is a probability that it will fail. Naturally, a more able politician will be more likely to pull off an ambitious plan than a less able one.

We therefore make the following assumptions. Suppose that a politician with ability  $\theta_i$  tries to implement some policy  $x$ . If she is successful, the payoff to the electorate is  $x$ . A higher  $x$  thus corresponds to a more ambitious plan. If she is unsuccessful, we are back to the status quo, which has payoff 0. We assume that the probability that the politician will be successful equals  $\theta_i - x$ .<sup>5</sup> This captures that a more able politician (i.e. one with a higher  $\theta$ ) is more likely to pull off any project than a less able one. The expected payoff to the electorate of a project  $x$  implemented by a politician with ability  $\theta_i$  then is  $W(\theta_i, x) = (\theta_i - x)x$ : the probability that the politician is successful multiplied by their payoff if that occurs.

---

<sup>5</sup>Throughout the paper, we assume that parameters are such that probabilities are always well-defined. In all equilibria that we derive, this will indeed be the case.

We assume that the utility of an elected politician is proportional to how successful she turns out to be. There can be many reasons for this. A politician that delivers a higher payoff to her electorate will be more likely to be reelected, to be remembered as an outstanding politician, or otherwise to obtain future benefits. Thus, a politician that would run unopposed in an election, would set  $x$  to maximize  $U_i(\theta_i, x) = \gamma(\theta_i - x)x$ , with  $\gamma$  some strictly positive parameter. Her first-best choice is to propose a project  $\hat{x}_i = \theta_i/2$ , a choice that is also first-best from the point of view of the electorate.

A politician that does not run unopposed, however, will take into account that the policy  $x$  that she proposes in the election campaign will serve as a signal of her true ability. A politician thus faces a trade-off: if she proposes a plan that is more ambitious than her first-best, she will be more likely to get elected, as the electorate will expect more ambitious plans to come from more able politicians. However, if she does get elected, her payoff will be lower as her plan is over-ambitious. This trade-off is very much like the trade-off that a bidder in an first-price sealed bid auction faces (see e.g. Krishna (2010): a higher bid implies a higher probability of winning the auction, but also a lower payoff upon winning. In our set-up, proposing a higher  $x$  implies a higher probability of winning the election (as one's  $x$  is more likely to be the highest among all candidates), but implies a lower pay-off upon winning (the highest possible payoff would be secured by implementing  $\hat{x}_i$  as defined above, any higher  $x$  would yield a lower payoff).

Our model builds on the existing literature studying signaling in elections, such as Rogoff's (1990) classic paper. We follow Rogoff (1990) by developing a game-theoretic model of electoral competition in which candidates can send a costly signal regarding their ability, about which they are privately informed, to the electorate by making particular policy choices. Our model differs from Rogoff's (1990) in two important ways: (1) instead of a single politician having private information about their ability, in our model, all candidates are privately informed about their ability; (2) rather than having two politician types (high ability, low ability), our setting contains a continuum of politician types.

In the next section, we study a simple example with 2 politicians and a specific distribution of possible abilities. We will show that, in this context, picking a politician at random yields higher welfare than having an election in which both candidates make commitments during the election campaign. In Section 4, we study a more general set-up.

### 3 A simple example

Consider the set-up described in the previous section, with two politicians. Assume that  $F(\theta) = \theta^3$ . We look for the equilibrium platform function  $x(\theta)$ . As noted, the full information outcome has  $\hat{x} = \theta/2$ . To derive a symmetric perfect Bayesian equilibrium, we use standard techniques from mechanism design theory.<sup>6</sup> We start by assuming an equilibrium exists in which politicians with a higher ability  $\theta$  commit to a strictly higher policy  $x$  and in which the electorate always picks the politician committing to the higher policy. We then derive the utility that a type  $\theta_T$  obtains if she behaves as if she were a type  $\theta_A$ , and the other politician behaves according to the equilibrium. For an equilibrium we then need that the type  $\theta_T$  finds it optimal to behave as herself, so she chooses to optimally set  $\theta_A = \theta_T$ .

First of all let us assume that, when confronted with two election platforms  $x_1$  and  $x_2$ , it is always a best response for the electorate to choose the candidate with the highest  $x$ .<sup>7</sup> Thus, just as in an auction the bidder with the highest bid wins the auction, we have in our model that the candidate with the ‘highest platform’ wins the election.

Suppose that in a tentative equilibrium a politician with true type  $\theta_T$  behaves as if she had type  $\theta_A$ . Given that the other candidate sticks to the equilibrium strategy, this candidate would then win the election if the other candidate had an ability lower than  $\theta_A$ . This occurs with probability  $F(\theta_A)$ . If it occurs, this candidate’s utility will

---

<sup>6</sup>Klemperer (1999), Krishna (2010) and Maasland and Onderstal (2006) apply similar techniques in the context of auctions. Börgers (2015) provides an excellent discussion of mechanism design theory and its applications.

<sup>7</sup>This is true if the equilibrium platform function  $x(\theta)(\theta - x(\theta))$  is strictly increasing in  $\theta$ , which will turn out to be the case.



be  $\gamma(\theta_T - x(\theta_A))x(\theta_A)$ . Defining  $v(\theta_T, \theta_A)$  as the expected utility of a type  $\theta_T$  that behaves as a type  $\theta_A$ , we thus have

$$v(\theta_T, \theta_A) = F(\theta_A)\gamma(\theta_T - x(\theta_A))x(\theta_A).$$

With  $F(\theta) = \theta^3$ , we have

$$v(\theta_T, \theta_A) = \theta_A^3\gamma(\theta_T - x(\theta_A))x(\theta_A).$$

Taking the derivative with respect to  $\theta_A$ :

$$\frac{\partial v}{\partial \theta_A} = \theta_A^3\gamma(\theta_T - 2x(\theta_A))x'(\theta_A) + 3\gamma\theta_A^2(\theta_T - x(\theta_A))x(\theta_A).$$

Equilibrium requires that the type  $\theta_T$  chooses to behave as her own type, i.e. that this first-order condition is solved for  $\theta_T = \theta_A$ , so

$$\theta_T^3\gamma(\theta_T - 2x(\theta_T))x'(\theta_T) + 3\gamma\theta_T^2(\theta_T - x(\theta_T))x(\theta_T) = 0.$$

It can be verified that this differential equation is solved by

$$x(\theta) = \frac{4}{5}\theta,$$

using the boundary condition  $x(0) = 0$ . Note that this implies that politicians are indeed overambitious in order to win the election: with complete information, each politician would simply run on her first best  $x = \theta/2$ .

We now compare the outcome of this model with election campaigns to a world in which politicians for some reason are not able to make commitments during the election. In such a world, voters do not obtain any information about the ability of candidates, and can do no better than simply picking a politician at random. That politician, say she has type  $\theta$ , will then implement  $x = \theta/2$ , which yields  $\theta^2/4$  to the electorate. The equilibrium expected payoff to the electorate of picking a random

candidate is

$$W_R^* = \int_0^1 \frac{\theta^2}{4} f(\theta) d\theta = \int_0^1 \frac{3}{4} \theta^4 d\theta = \frac{3}{20}.$$

In the world with election platforms, the electorate can simply pick the best politician. The probability distribution of her quality is the expected value of the highest of two draws from distribution  $F$ . Denote the cumulative distribution as  $G(\theta) \equiv F(\theta)^2$ . In this case, we thus have  $G(\theta) = \theta^6$  and  $g(\theta) = 6\theta^5$ . As we showed above, the winning politician will implement  $x = \frac{4}{5}\theta$ , which yields a payoff to the electorate that equals  $(\theta - \frac{4}{5}\theta)(\frac{4}{5}\theta) = \frac{4}{25}\theta^2$ . The equilibrium expected payoff from the election process then is

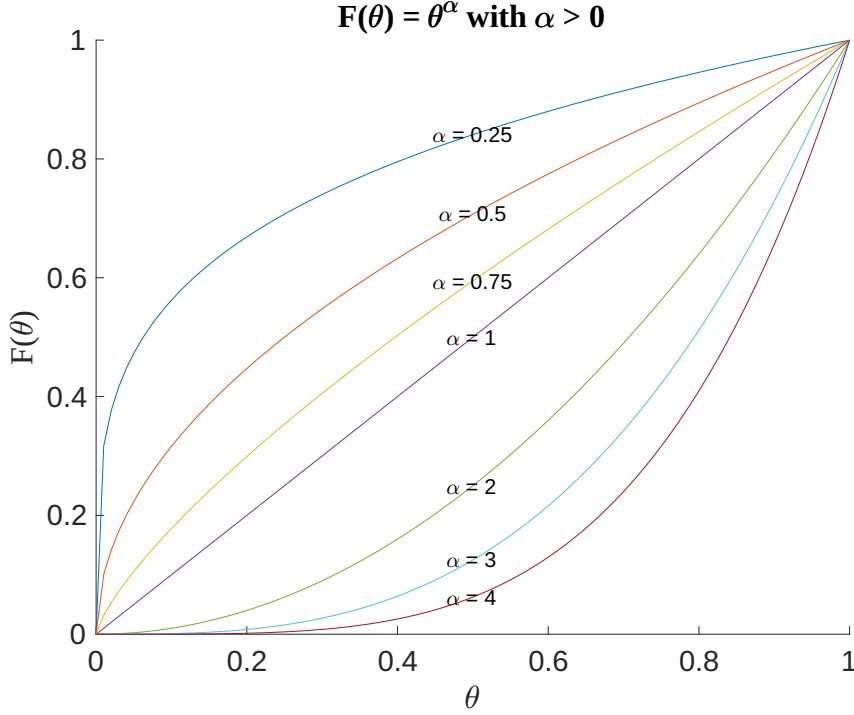
$$W_E^* = \int_0^1 \frac{4\theta^2}{25} g(\theta) d\theta = \int_0^1 \frac{24}{25} \theta^7 d\theta = \frac{3}{25}.$$

which is lower than  $W_R^*$ . Intuitively, we have a trade-off. In a world with election platforms, the electorate is able to pick the best politician, which is good news. We will call this the *selection effect*. However, the winning politician will always implement a policy that is overambitious, which is bad news. We will call this the *overambition effect*. In the example we consider here, the bad news dominates: the overambition effect is stronger than the selection effect. In the next section, we give a more general analysis and derive results under which the electorate would be better off not having an election.

## 4 The general model

In this section, we construct the optimal selection mechanism in our general model. We thus consider any power distribution of abilities  $F(\theta) = \theta^\alpha$ , with  $\alpha > 0$ , and  $\theta \in [0, 1]$ , and  $n$  risk neutral politicians that compete to be elected. Figure 1 illustrates how a change in  $\alpha$  affects the cumulative density function from which abilities are drawn:  $\alpha = 1$  implies a uniform distribution; as  $\alpha$  increases (decreases) the distribution of abilities is more skewed towards higher (lower) abilities.

Figure 1: Power Distribution of Abilities.



We restrict our attention to symmetric perfect Bayesian equilibria in which politicians with a higher ability  $\theta$  commit to a strictly higher policy  $x$  and where the electorate prefers to pick the politician offering the highest policy  $x$ , consistent with their beliefs about the politicians' abilities deduced from the politicians' equilibrium strategy.<sup>8</sup>

If a politician with true type  $\theta_T$  behaves as if she has type  $\theta_A$ , her expected utility would equal

$$v(\theta_T, \theta_A) = (\theta_A)^{\alpha(n-1)} \gamma(\theta_T - x(\theta_A)) x(\theta_A).$$

Taking the derivative wrt  $\theta_A$  :

$$\frac{\partial v}{\partial \theta_A} = (\theta_A)^{\alpha(n-1)} \gamma(\theta_T - 2x(\theta_A)) x'(\theta_A) + \alpha(n-1) (\theta_A)^{\alpha(n-1)-1} \gamma(\theta_T - x(\theta_A)) x(\theta_A).$$

<sup>8</sup>Other perfect Bayesian equilibria exist too, including a pooling equilibrium in which all politicians commit to policy  $x = 0$  and in which the electorate never picks a politician committing to another policy  $y > 0$  under the belief that a politician committing to policy  $y$  has the lowest possible ability  $\theta = 0$ . It is readily verified that the latter equilibrium does not survive Cho and Kreps' (1987) intuitive criterion.

Equilibrium then requires  $\theta_A = \theta_T$ , so that

$$\theta_T (\theta_T - 2x(\theta_T)) x'(\theta_T) + \alpha (n - 1) (\theta_T - x(\theta_T)) x(\theta_T) = 0.$$

It can be easily verified that this differential equation is solved by

$$x(\theta) = \frac{1 + \alpha (n - 1)}{2 + \alpha (n - 1)} \theta, \quad (1)$$

using the boundary condition  $x(0) = 0$ .<sup>9</sup> Again, this implies that politicians are always overambitious in order to win the election, as we always have  $x(\theta) > x^*(\theta) = \theta/2$  if  $n \geq 2$ .

Expected welfare is given by

$$W(\alpha, n) = E \left\{ x(\theta^{(1)}) \left( \theta^{(1)} - x(\theta^{(1)}) \right) \right\}$$

where  $\theta^{(1)}$  denotes the first-order statistic out of  $n$  draws from  $F$ . So

$$\begin{aligned} W(\alpha, n) &\equiv E \left\{ \frac{1 + \alpha (n - 1)}{(2 + \alpha (n - 1))^2} \left( \theta^{(1)} \right)^2 \right\} \\ &= \frac{1 + \alpha (n - 1)}{(2 + \alpha (n - 1))^2} \int_0^1 \left( \theta^{(1)} \right)^2 dF(\theta^{(1)})^n \\ &= \frac{((n - 1) \alpha + 1) n \alpha}{((n - 1) \alpha + 2)^2 (n \alpha + 2)}. \end{aligned} \quad (2)$$

Rather than having an election in which several candidates compete by proposing a policy, the electorate could also decide to pick a candidate at random and let this candidate choose the policy. Note that this is analytically equivalent to having an election in which exactly one candidate participates, so  $n = 1$ . This sole candidate will run on platform  $x(\theta) = \theta/2$ , as can also be readily verified from (1). This is also her preferred policy. Expected welfare then equals  $W(\alpha, 1) = \alpha/4(\alpha + 2)$ , which follows directly from (2).

The following table reports welfare for selected values for  $n$  and  $\alpha$ .

---

<sup>9</sup>In line with our starting assumption, the electorate indeed prefers to pick the candidate offering the highest policy  $x$  because the candidate's policy commitment  $x(\theta)$  and the electorate's expected payoff  $W(\theta, x(\theta)) = x(\theta)(\theta - x(\theta))$  are strictly increasing in  $\theta$ .

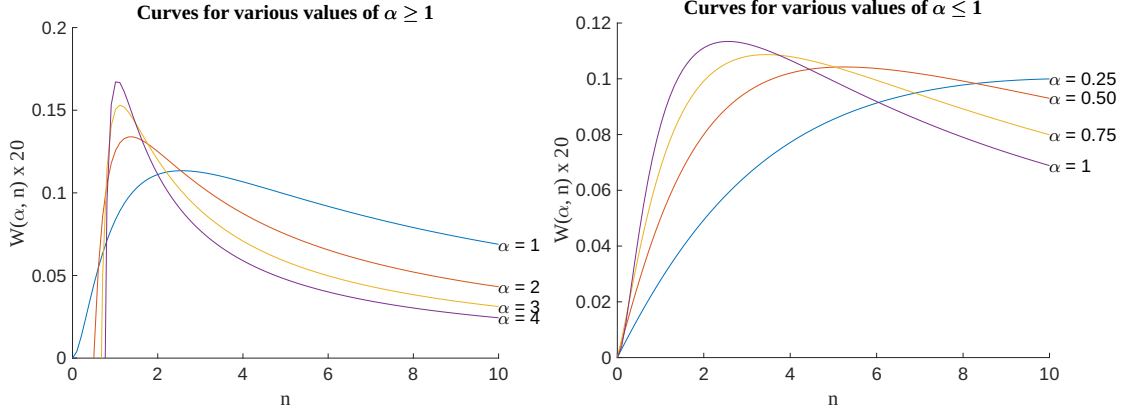
$n$	$W(\frac{1}{2}, n)$	$W(1, n)$	$W(2, n)$	$W(3, n)$
1	0.0500	0.0833	0.1250	0.1500
2	0.0800	0.1111	0.1250	0.1200
3	0.0952	0.1125	0.1042	0.0895
4	0.1020	0.1067	0.0875	0.0708
5	0.1042	0.0992	0.0750	0.0585
6	0.1037	0.0918	0.0655	0.0498
7	0.1018	0.0851	0.0580	0.0434
8	0.0992	0.0790	0.0521	0.0384
9	0.0962	0.0736	0.0472	0.0344
10	0.0930	0.0689	0.0432	0.0312
$\infty$	0.0000	0.0000	0.0000	0.0000

Table 1: Expected welfare  $W(\alpha, n)$  for selected values of  $\alpha$  and  $n$ .

The first thing to note is that the result that we derived in Section 3 is not general. For  $\alpha = 1/2$  or  $\alpha = 1$ , the electorate is strictly better off with an election with two candidates, rather than by picking a candidate at random, i.e. having  $n = 1$ . With  $\alpha = 2$ , the electorate is exactly indifferent between one or two candidates. Hence, in that case, the selection effect and the overambition effect exactly cancel out. Adding more candidates, however, does make the electorate strictly worse off: beyond two candidates, the overambition effect again dominates the selection effect. For lower values of  $\alpha$ , a similar mechanism is at work; for low values of  $n$ , the selection effect dominates, but for large values, the overambition effect does. With  $\alpha = 1/2$ , the optimal number of candidates from a welfare point of view, equals  $n = 5$ . If  $\alpha = 1$ , the optimal number is  $n = 3$ . Hence, at least for the values of  $\alpha$  considered here, the optimal number of candidates seems to decrease with  $\alpha$ .

Figure 2 also illustrates these insights. For selected values of  $\alpha$  and  $n$ , we have plotted the resulting expected welfare. The left-hand panel focuses on higher values

Figure 2: Expected welfare  $(\alpha, n)$  for selected values of  $\alpha$  and  $n$ .



of  $\alpha$ , while the left-hand panel focuses on lower values. Both panels clearly show the optimal number of candidates. For  $\alpha > 2$ , the electorate is clearly better off having just one candidate. As  $\alpha$  decreases, the optimal number of candidates increases.

In the remainder of this section, we will make these insights more precise, and prove them.

**Theorem 1** *The optimal number of candidates  $n^*$  is finite. Let  $N^* \subset \mathbb{N}$  be the set of the number of candidates from which welfare is maximized. Then  $|N^*| \in \{1, 2\}$ . If  $|N^*| = 2$ , the two elements in  $N^*$  are adjacent.*

**Proof.** The first part of the theorem follows immediately from the observation that  $W(\alpha, 1) > 0$  and  $\lim_{n \rightarrow \infty} W(\alpha, n) = 0$  for all  $\alpha > 0$ . To prove the other claims in the theorem, we treat  $n$  as a continuous variable for the moment and check how the welfare function  $W$  varies with it. Notice that  $W(\alpha, n)$  is a differentiable function in  $n$  for  $n \geq 1$ . Taking the derivative of  $W(\alpha, n)$  with respect to  $n$  yields

$$\frac{\partial W(\alpha, n)}{\partial n} = -\alpha \frac{\alpha(n-1)(2\alpha + n^2\alpha^2 - 6) - 4}{((n-1)\alpha + 2)^3 (n\alpha + 2)^2}. \quad (3)$$

Define

$$z(\alpha, n) \equiv \alpha(n-1)(2\alpha + n^2\alpha^2 - 6) - 4. \quad (4)$$

Note that  $\frac{\partial W(\alpha, n)}{\partial n} = 0$  iff  $z(\alpha, n) = 0$ . Because  $z$  is strictly increasing in  $n$ , there is at most one  $\tilde{n} \in \mathbb{R}$  for which  $\frac{\partial W(\alpha, \tilde{n})}{\partial n} = 0$ . Also note that for constant  $\alpha$ ,  $W$  is single peaked in  $n$ . The reason is that for all  $n > \tilde{n}$  [ $n < \tilde{n}$ ],  $z(\alpha, n) > 0$  [ $z(\alpha, n) < 0$ ]. Because  $W$  is single peaked in  $n$ , the set  $N^*$  of optimal number of candidates is constructed as follows. If  $\tilde{n} \leq 1$ ,  $N^* = \{1\}$ . Otherwise,  $n^* \in \arg \max_{n \in \{\lfloor \tilde{n} \rfloor, \lceil \tilde{n} \rceil\}} W(\alpha, n) \equiv N^* \subset \{\lfloor \tilde{n} \rfloor, \lceil \tilde{n} \rceil\}$ . ■

The following theorem specifies for which  $\alpha$  the electorate is always strictly better off by picking a candidate at random.

**Theorem 2** *If  $\alpha > 2$ , the electorate is always strictly better off by picking a candidate at random rather than having an election in which  $n \geq 2$  candidates participate. For  $\alpha < 2$ , an election with two candidates makes the electorate better off than picking a candidate at random.*

**Proof.** Consider a move from 1 to 2 candidates. Using (2) the net effect on welfare of such a move is

$$\Delta W = \frac{(2\alpha - \alpha + 1)2\alpha}{(2\alpha - \alpha + 2)^2(2\alpha + 2)} - \frac{(\alpha - \alpha + 1)\alpha}{(\alpha - \alpha + 2)^2(\alpha + 2)} = \frac{(2 - \alpha)\alpha}{4(2 + \alpha)^2}.$$

This is negative if  $\alpha > 2$  and 0 for  $\alpha = 2$ . To see that welfare is also lower with a higher number of candidates, note from (4) that  $z(\alpha, 2) > 0$  for  $\alpha \geq 2$ , hence from (3), we then have  $W$  decreasing in  $n$ . For  $\alpha < 2$ ,  $\Delta W > 0$ , so that an election with two candidates makes the electorate better off than picking a candidate at random.

■

For picking a random candidate to maximize the electorate's welfare we thus need that  $\alpha$  is sufficiently high, hence that the distribution of potential candidate is sufficiently skewed to the right. In that case, picking a particularly bad candidate at random is sufficiently unlikely.

As noted, Table 1 also suggests that the optimal number of candidates is decreasing in  $\alpha$ . We can show that this is generally true for a continuous proxy  $\tilde{n}$  for the optimal number of bidders  $n^*$ , i.e., if  $\tilde{n} \leq 1$ ,  $n^* = 1$ . Otherwise,  $n^* \in$

$\arg \max_{n \in \{\lfloor \tilde{n} \rfloor, \lceil \tilde{n} \rceil\}} W(\alpha, n)$ .

**Theorem 3** *Let  $\tilde{n} \in \mathbb{R}$  for which  $\frac{\partial W(\alpha, \tilde{n})}{\partial n} = 0$ . Then  $\tilde{n}$  is unique and decreasing in  $\alpha$ .*

**Proof.** From the proof of Theorem 1  $\tilde{n}$  is unique and implicitly defined by

$$z(\alpha, \tilde{n}) \equiv \alpha(\tilde{n} - 1)(2\alpha + \tilde{n}^2\alpha^2 - 6) - 4 \equiv 0. \quad (5)$$

That implies that

$$\begin{aligned} \frac{d\tilde{n}}{d\alpha} &= \frac{-\partial z / \partial \alpha}{\partial z / \partial \tilde{n}} = \frac{-(\tilde{n} - 1)(4\alpha + 3\tilde{n}^2\alpha^2 - 6)}{\alpha(2\alpha - 6 + 3\tilde{n}^2\alpha^2 - 2\tilde{n}\alpha^2)} \\ &= \frac{-2(\tilde{n} - 1)(2\alpha + \tilde{n}^2\alpha^2 - 6) - (\tilde{n} - 1)(6 + \tilde{n}^2\alpha^2)}{\alpha(2\alpha - 6 + \tilde{n}^2\alpha^2) + \alpha(2\tilde{n}^2\alpha^2 - 2\tilde{n}\alpha^2)}. \end{aligned}$$

From (5), we have that at the optimum

$$2\alpha + \tilde{n}^2\alpha^2 - 6 = \frac{4}{\alpha(\tilde{n} - 1)}$$

hence

$$\frac{d\tilde{n}}{d\alpha} = \frac{-\frac{8}{\alpha} - (\tilde{n} - 1)(6 + \tilde{n}^2\alpha^2)}{\frac{4}{\tilde{n} - 1} + 2\alpha^3(\tilde{n} - 1)\tilde{n}} < 0,$$

since the numerator is clearly negative, and the denominator clearly positive. ■

Taken together, our results imply that, for sufficiently high  $n$ , the overambition effect always dominates the selection effect. Hence, regardless of the exact parameters of our model, it is never true that having more candidates is always better for welfare. Moreover, this effect becomes more pronounced for higher  $\alpha$ . Once  $\alpha \geq 2$ , the optimal number of candidates simply equals 1, and the electorate would rather pick a candidate at random rather than having an election. Intuitively, a higher value of  $\alpha$  implies that there is a higher probability of having candidates with high ability. An individual candidate with high ability is then more likely to face a contestant that also has high ability. This implies that she has to exaggerate even more to convince



the electorate that she really is the best candidate. Hence, under such circumstances, a candidate will be even more overambitious, which we can also see from (1). This implies that the overambition effect is more likely to dominate the selection effect.

## 5 Extensions

In this section, we study a number of extensions to our basic model. Section 5.1 considers the case in which candidates obtain benefits from being in office, over and beyond the benefits that accrue to them due to the payoff to the policy that they implement. In Section 5.2, we study the case in which candidates first compete in primary elections to be put forward by political parties for the general election. The findings in Sections 5.1 and 5.2 strengthen the results derived in our basic model, in that the electorate is more likely to want to pick a candidate at random rather than to have an election. Section 5.3 shows that it is easy to extend our model to allow for the choice of platform. Such an extension does not affect our results.

### 5.1 Benefits from office

So far, we have assumed that the only payoff for the politician is related to the payoffs to the project that he implements while in office. Yet, there may be additional benefits to being in office as such, and that are unrelated to the project that is implemented. For example, when in office, a politician can channel funds to preferred projects, appoint cronies to influential positions with the implicit understanding that there will be some quid pro quo in the future, etc. In this section, we study the effect of such benefits from office on our analysis.

We assume that benefits from office are given by  $b\gamma$ , where  $b$  reflects the importance of these benefits, and the multiplication by  $\gamma$  just amounts to a normalization. We assume that  $b$  is small enough relative to  $\alpha$  and  $n$  to always obtain internal solutions. The utility function of a candidate with true ability  $\theta_T$  that behaves as if her ability

is  $\theta_A$ , is now given by

$$v(\theta_T, \theta_A) = (\theta_A)^{\alpha(n-1)} \gamma((\theta_T - x(\theta_A)) x(\theta_A) + b).$$

Taking the first-order condition with respect to  $\theta_A$  and then imposing  $\theta_A = \theta_T$  yields

$$\theta_T (\theta_T - 2x(\theta_T)) x'(\theta_T) + \eta((\theta_T - x(\theta_T)) x(\theta_T) + b) = 0, \quad (6)$$

where we have defined  $\eta \equiv \alpha(n-1)$ .

We now have the following result:

**Theorem 4** *Suppose the distribution of abilities is given by  $F(\theta) = \theta^\alpha$  on  $[0, 1]$ . Then for private benefits  $b$  sufficiently high, the electorate is always strictly better off by picking a candidate at random rather than having an election in which  $n \geq 2$  candidates make costly campaign promises.*

**Proof.** First, suppose that the benefits from office are  $b\gamma\theta^2$  instead of  $b\gamma$ . The utility function of a candidate with true ability  $\theta_T$  that behaves as if her ability is  $\theta_A$ , is now given by

$$v(\theta_T, \theta_A) = (\theta_A)^{\alpha(n-1)} \gamma((\theta_T - \tilde{x}(\theta_A)) \tilde{x}(\theta_A) + b\theta_T^2).$$

Taking the first-order condition with respect to  $\theta_A$  and then imposing  $\theta_A = \theta_T$  yields

$$\theta_T (\theta_T - 2\tilde{x}(\theta_T)) \tilde{x}'(\theta_T) + \eta((\theta_T - \tilde{x}(\theta_T)) \tilde{x}(\theta_T) + b\theta_T^2) = 0. \quad (7)$$

Now assume that this differential equation has a linear solution  $\tilde{x}(\theta) = \zeta\theta$  for some  $\zeta > 0$ . Plugging in  $\tilde{x}(\theta) = \zeta\theta$  in (7) yields

$$\theta(\theta - 2\zeta\theta)\zeta + \eta((\theta - \zeta\theta)\zeta\theta + b\theta^2) = 0 \Rightarrow (1 - 2\zeta)\zeta + \eta((1 - \zeta)\zeta + b) = 0, \quad (8)$$

which implies

$$\zeta = \left( \frac{\eta + 1}{2\eta + 4} + \frac{1}{2} \sqrt{\left( \frac{\eta + 1}{\eta + 2} \right)^2 + \frac{4b\eta}{\eta + 2}} \right), \quad (9)$$

so that

$$\tilde{x}(\theta) = \left( \frac{\eta + 1}{2\eta + 4} + \frac{1}{2} \sqrt{\left( \frac{\eta + 1}{\eta + 2} \right)^2 + \frac{4b\eta}{\eta + 2}} \right) \theta. \quad (10)$$

From the differential equations (6) and (7), it follows that  $x(\theta) > \tilde{x}(\theta)$  for all  $\theta \in (0, 1]$  and  $n \geq 2$ . The reason is that  $x(0) = \tilde{x}(0) = 0$ , and  $x(\theta) = \tilde{x}(\theta) \Rightarrow x'(\theta) > \tilde{x}'(\theta)$  for all  $\theta \in [0, 1]$ . Note that for  $n = 1$ ,  $x(\theta) = \tilde{x}(\theta) = \frac{1}{2}\theta$ . So, if we can show that welfare is maximized at  $n = 1$  in the case that the benefits from office are  $b\gamma\theta^2$ , then we have that welfare is also maximized at  $n = 1$  for the true benefits from office  $b\gamma$ , since  $\beta\gamma\theta^2 < \beta\gamma$  for all relevant  $\theta$ .

Suppose in general that equilibrium promises in an election are given by  $x(\theta) = \beta\theta$ . Note from (10) that promises are of this form in our model with private benefits from office. Welfare then equals

$$\begin{aligned} W(\alpha, n) &= E \left\{ x(\theta^{(1)}) \left( \theta^{(1)} - x(\theta^{(1)}) \right) \right\} = \beta(1 - \beta) E \left\{ \left( \theta^{(1)} \right)^2 \right\} \\ &= \beta(1 - \beta) \int_0^1 \left( \theta^{(1)} \right)^2 dF(\theta^{(1)})^n = \beta(1 - \beta) \frac{\alpha n}{\alpha n + 2} \end{aligned}$$

When picking a candidate at random, this candidate will again implement policy  $\theta/2$  and generate welfare equal to  $\alpha/(4\alpha + 8)$ , as was the case in our standard model.

Hence, the electorate is better off by picking a candidate at random if

$$\beta(1 - \beta) \frac{\alpha n}{\alpha n + 2} < \frac{\alpha}{4\alpha + 8}$$

or

$$\beta > \frac{1}{2} + \frac{1}{2} \sqrt{1 - \frac{4n\alpha + 8}{4n\alpha + 8n}} \equiv \beta^*$$

Note that  $\beta^* < 1$  for all  $\alpha, n$ . In (10), we have that  $\theta(x)$  is increasing in  $b$ , and  $\theta(x) = x$  if  $b = 1/\eta$ . Taken together, this implies the required result. ■

Thus, having benefits from office only strengthens our results: we now have that the electorate is *always* better off picking a candidate at random rather than having an election, provided that private benefits are large enough. Private benefits make winning the election more valuable for a given candidate, which implies that she is willing to put up an even more overambitious plan, that ultimately will yield a low expected utility not only to her, but also to the electorate. The stronger the private benefits, the stronger the overambition effect. Theorem 4 implies that it is always possible to have private benefits that are so strong that the overambition effect dominates the selection effect.

## 5.2 Primary elections

In our analysis so far, we have assumed that any candidate can run in a general election. In practice, this is often not the case. Candidates have to win the primary election of a large political party in order to stand any chance in the general election. In the US, a candidate for almost any elected office first needs to win the nomination from either the Democratic or the Republican party to stand a serious chance. In the UK, a candidate first has to win the nomination of either the Labour or the Conservative Party, or perhaps the Liberal Democrats. Other examples abound. In this subsection, we show that such a set-up will only strengthen the results derived in our basic model.

Suppose there are two parties, 1 and 2. They will both field one candidate in the general election, and decide upon this candidate through some internal process. Naturally, each party will try to field the candidate with the highest ability. Suppose that for each party  $\nu$  candidates are running to obtain the candidacy of that party. Each candidate has an ability that is drawn from the cdf  $F(\theta) = \theta^\alpha$  on  $[0,1]$ . For simplicity, we assume that party is able to fully observe the quality of a candidate of its own party. Party barons already have ample experience with the members of their own party, and through such intensive interaction, are able to fully assess their

quality, something the general public is not able to do. That implies that, from the point of view of the electorate, the distribution of the ability of the candidate that party  $i$  will field in the general election is that of the first-order statistic out of  $\nu$  draws from  $F$ , i.e.  $F_i(\theta) = \theta^{\alpha\nu}$ . In the general election, the electorate then has a choice between two candidates with an ability that is drawn from that distribution. Theorem 2 then immediately implies

**Corollary 1** *Consider a general election in which two parties field a candidate that has been selected from  $\nu$  internal candidates that each have an ability that is drawn from  $F(\theta) = \theta^\alpha$  on  $[0, 1]$ . Then the electorate is better off by picking a candidate at random rather than having an election if  $\alpha\nu > 2$ .*

In Section 4, we argued that the electorate is more likely to want to pick a candidate at random if the distribution of abilities is skewed towards high values. But if we first let parties pick the best candidate from among their ranks, we exactly achieve such skewness.

### 5.3 Ideologies

In this subsection we show that our basic model straightforwardly extends to a case in which not only the abilities of politicians matter, but also their ideology. Suppose that ideological preferences of voters are uniformly distributed on  $[0, 1]$ , where 0 represents the most left-wing, and 1 represents the most right-wing position. The position of the median voter is then given by  $p = 1/2$ . Suppose that the utility to the voter located at  $L$  when a candidate is elected who offers ideological position  $p$ , has ability  $\theta$ , and promises to implement policy  $x$ , is given by

$$U(L, p, \theta, x) = -(p - L)^2 + x(\theta - x). \quad (11)$$

As in the standard Downs (1957) model, we assume that candidates have no ideology preference. The timing of the game is as follows:

1. The candidates independently choose an ideological position in the interval  $[0, 1]$

and commit to a policy  $x \geq 0$ .

2. A voter located at  $L \in [0, 1]$  votes for candidate  $i$  if and only if  $i \in \operatorname{argmax}_j E_{\hat{\theta}_j} \{U(L, p_j, \hat{\theta}_j, x_j)\}$ , where  $p_j$  is candidate  $j$ 's position,  $\hat{\theta}_j$  is the voter's belief about candidate  $j$ 's ability, and  $x_j$  is the policy candidate  $j$  commits to.

We obtain the following result:

**Theorem 5** *Suppose the ideological preferences of the voters are uniformly distributed on  $[0, 1]$  and the distribution of abilities is given by  $F(\theta) = \theta^\alpha$  on  $[0, 1]$ . Then, a symmetric perfect Bayesian equilibrium exists in which all candidates choose the ideological position that is the preference of the median voter, i.e.,  $p = 1/2$ ; a candidate having ability  $\theta$  chooses the policy according to equation (1); the voters pick the candidate offering the highest  $x$ .*

**Proof.** Suppose that all candidates choose  $p = 1/2$  and make commitments according to (1). Suppose that candidate  $i$  considers a defection in one of the two dimensions (the policy  $x_1$  and the ideological position  $p_1$ ). By construction, given that all candidates choose position  $1/2$ , proposing a policy different from (1) decreases the expected utility of candidate  $i$ , hence she has no incentive to do so. Now, consider candidate  $i$  considering her ideological position  $p_1 \neq 1/2$  while proposing a policy according to (1). Given (1), candidate  $i$  wins the election if she is preferred by the median voter and hence by the majority of the electorate. This is the case if

$$-(p_1 - 1/2)^2 + \theta_1^2 \frac{n\alpha - \alpha + 1}{(n\alpha - \alpha + 2)^2} > \theta_{-1}^2 \frac{n\alpha - \alpha + 1}{(n\alpha - \alpha + 2)^2},$$

where  $\theta_{-1}$  is the highest  $\theta$  of all other candidates:  $\theta_{-1} \equiv \max\{\theta_2, \dots, \theta_n\}$ . This probability is maximized at  $p_1 = 1/2$ , which is a contradiction to the assumption that  $p_1 \neq 1/2$ . Analogously, it does not pay to defect in both dimensions at the same time.

■

As the choices of platform and ideological position are separable, we can focus on the choice of platform without having to take the choice of position into account. Therefore, all results for the original model carry over, in particular Theorems 1-3.

Note that this conclusion does not hinge on the additive separability that we assume in (11). Any specification where the median voter’s utility is decreasing in distance from  $1/2$ , but increasing in  $x(\theta - x)$ , will do.

## 6 Concluding remarks

In this paper, we proposed a game-theoretic model in which candidates compete in elections when voters care about the winner’s ability to implement policies. We have shown that the candidates are inclined to come up with overambitious policy proposals in an attempt to convince the electorate that they are of the utmost competence. In that process, however, politicians may be so ambitious that the electorate would be better off by just picking an average candidate rather than going for the best politician that will attempt to implement some grandiose plan that is likely to fail.

We have thus shown that the disadvantage of having overambitious promises being implemented may dominate the advantage of being able to choose the best candidate. In other words, the overambition effect of election platforms may very well outweigh the selection effect of elections. This is particularly likely if the distribution of abilities is skewed toward high values, or if the number of candidates is large. We also showed that the electorate is always better off picking a candidate at random rather than having elections if the private benefits from office are high enough.

Intriguingly, our model thus gives a rationale for *sortition*, the assignment of political offices by lot. It was widely used by the Ancient Greeks. In Athens, in the fifth and fourth centuries B.C., virtually all administrative positions were filled in this way. It was also used in renaissance Venice and Florence. Ostfeld (2020) highlights modern sortition practices<sup>10</sup> We provide a new argument for sortition: it prevents the use of costly overambitious campaign promises.

---

<sup>10</sup>These include Ireland’s 2012 citizen assembly on reforms, Mongolia’s 2017 assembly on constitutional changes, and Porto Alegre’s budget recommendations. US states like Oregon, Minnesota, Arizona and New Mexico have similarly engaged citizen assemblies on varied issues. Lockard (2003) gives an overview of the arguments for and against sortition. Most importantly, it can reduce the influence of money and political elites and lead to more inclusive and representative decision-making. Jacquet, Niessen and Reuchamps (2022) provide a recent overview of the history of sortition. In a book-length treatment, van Reybrouck (2016) argues for sortition in modern-day parliamentary democracies.

Nevertheless, our results should not necessarily be construed as an argument to abolish elections altogether. We would rather like to think of our analysis as an argument against election campaigns, rather than one against elections. At least, it suggests that society may be better off if politicians postpone detailed policy proposals until after the election.

## References

- Aragonès, Enriqueta, Thomas Palfrey and Andrew Postlewaite. 2007. “Political Reputations and Campaign Promises.” *Journal of the European Economic Association* 5:846–884.
- Banks, Jeffrey S. 1990. “A Model of Electoral Competition with Incomplete Information.” *Journal of Economic Theory* 50:309–325.
- Börger, Tilman. 2015. *An introduction to the theory of mechanism design*. Oxford University Press, USA.
- Born, Andreas, Pieter van Eck and Magnus Johannesson. 2018. “An Experimental Investigation of Election Promises.” *Political Psychology* 39(3):685–705.
- Cho, In-Koo and David M. Kreps. 1987. “Signaling Games and Stable Equilibria.” *Quarterly Journal of Economics* 102(2):179–221.
- Clymer, Adam. 1994. “National Health Program, President’s Greatest Goal, Declared Dead in Congress.” *New York Times* September 27:1.
- Corazzini, Luca, Sebastian Kube, Michel André Maréchal and Antonio Nicolò. 2014. “Elections and Deceptions: An Experimental Study on the Behavioral Effects of Democracy.” *American Journal of Political Science* 58(3):579–592.
- Downs, A. 1957. *An Economic Theory of Democracy*. New York: Harper & Row.
- Fehrler, Sebastian, Urs Fischbacher and Maik T Schneider. 2020. “Honesty and Self-Selection into Cheap Talk.” *The Economic Journal* 130(632):2468–2496.



- Feltovich, Nick and Francesco Giovannoni. 2015. "Selection vs. accountability: An experimental investigation of campaign promises in a moral-hazard environment." *Journal of Public Economics* 126:39–51.
- Geng, Hong, Arne Robert Weiss and Irenaeus Wolff. 2011. "The Limited Power of Voting to Limit Power." *Journal of Public Economic Theory* 13(5):695–719.
- Haan, Marco A. 2004. "Promising Politicians, Rational Voters, and Election Outcomes." *Spanish Economic Review* 6:227–241.
- Harrington, Joseph E. 1993. "The Impact of Reelection Pressures on the Fulfillment of Campaign Promises." *Games and Economic Behavior* 5(1):71–97.
- Hotelling, Harold. 1929. "Stability in competition." *Economic Journal* 39(1):41–57.
- Jackson, Van. 2007. "Promises undermine democracy in Korea." *Asia Times Online* December 21.
- Jacquet, Vincent, Christoph Niessen and Min Reuchamps. 2022. "Sortition, its advocates and its critics: An empirical analysis of citizens' and MPs' support for random selection as a democratic reform proposal." *International Political Science Review* 43(2):295–316.
- Klemperer, Paul. 1999. "Auction Theory: A Guide to the Literature." *Journal of Economic Surveys* 13(3):227–286.
- Krishna, Vijay. 2010. *Auction Theory*. Second ed. San Diego: Academic Press.
- Lizzeri, Alessandro and Nicola Persico. 2005. "A Drawback of Electoral Competition." *Journal of the European Economic Association* 3:1318–1348.
- Lockard, Alan A. 2003. Sortition. In *The Encyclopedia of Public Choice*, ed. Charles K. Rowley and Friedrich Schneider. New York: Springer pp. 857–860.
- Maasland, Emiel and Sander Onderstal. 2006. "Going, going, gone! A swift tour of auction theory and its applications." *De Economist* 154(2):197–249.

- Matthieß, Theres. 2020. “Retrospective pledge voting: A comparative study of the electoral consequences of government parties’ pledge fulfilment.” *European Journal of Political Research* 59(4):774–796.
- Nagourney, Adam. 2000. “Gore Embraces Clinton Economic Record and Vows to Expand on It.” *New York Times* June 14:1.
- Ostfeld, Jacob. 2020. “The Case for Sortition in America.” *Harvard Political Review* November 19.
- Pétry, François and Benoît Collette. 2009. Measuring How Political Parties Keep Their Promises: A Positive Perspective from Political Science. In *Do They Walk Like They Talk?*, ed. Louis M. Imbeau. Studies in Public Choice Springer chapter 5, pp. 65–80.
- Rogoff, Kenneth. 1990. “Equilibrium Political Budget Cycles.” *American Economic Review* 80(1):21–36.
- Rogoff, Kenneth and Anne Sibert. 1988. “Elections and Macroeconomic Policy Cycles.” *Review of Economic Studies* 40:1–16.
- van Reybrouck, David. 2016. *Against Elections*. The Bodley Head Ltd.
- Walkowitz, Gari and Arne R. Weiss. 2017. ““Read my lips! (but only if I was elected!)” Experimental evidence on the effects of electoral competition on promises, shirking and trust.” *Journal of Economic Behavior and Organization* 142:348–367.