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Expert Captured Democracies

By ARCHISHMAN CHAKRABORTY, PARIKSHIT GHOSH AND JAIDEEP ROY*

Does public cheap talk by a biased expert benefit voters? The answer depends on the nature of democratic institutions and the extent of communication possibilities. Expert endorsements induce office-seeking parties to serve the expert's interests, hurting voters. Expert advocacy makes policies respond to information, helping voters. Together, policy advocacy and partisan endorsements are often better than either alone. Their interaction creates a delegation benefit that makes indirect democracy superior to direct democracy and office seeking parties better than those motivated by public interest. But voter welfare is highest when an expert captured technocratic party competes against an uninformed populist one.

JEL: C72, D72, D82.

Keywords: experts, endorsements, advocacy, electoral competition, indirect democracy, cheap talk, intermediation, delegation.

Democratic decision making in modern societies increasingly relies on critical scientific input. The following questions are instantly recognizable from contemporary policy debates. Is there anthropogenic global warming? Are genetically modified foods safe to eat? Can radiation from cell phones cause cancer? Is free trade good for the average American?

These kinds of questions are central to the design of environmental policy, food and drugs regulation, technology adoption and international relations. Voters and politicians must turn to a small coterie of specially trained experts to learn the answers. Yet, incorporating expert advice into policy making is not straightforward because experts are often perceived to be biased. Scientists who certify GM foods as safe are accused of being funded by large agribusiness companies.¹

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¹The homepage of Britain's *Royal Society* (<https://royalsociety.org/topics-policy/projects/gm-plants/is-it-safe-to-eat-gm-crops/>), says, "Since the first widespread commercialisation of GM produce 18 years ago there has been no evidence of ill effects linked to the consumption of any approved GM crop." Yet, *Greenpeace* has declared golden rice, a fortified rice variety developed to tackle Vitamin A deficiency, as "subjecting the population to unknown health risks" (**Greenpeace**. 2013. *Golden Illusion: The Broken Promises of "Golden" Rice*. <https://www.greenpeace.org/international/publication/7136/golden-illusion/>). The mistrust between scientists and activists was underscored when 107 Nobel Prize winners signed a letter condemning the opposition to GM technology (**Washington**

Climate scientists who warn of climate change do not face the economic burden of abatement the way coal miners and steel workers do.² Researchers who certify the safety of consumer products like cell phones are not trusted because of their reliance on research funding from industry.³

On economic policy, Sapienza and Zingales (2013) document that informing people about the consensus among professional economists does not always bring their positions closer. This is especially true for issues involving distributive conflicts like trade and immigration policy.⁴ Furthermore, trust in experts correlates with education level and partisan affiliation, indicating that it matters how aligned voters' economic interests and values are with the expert's.⁵

In discussions of public policy and the proper functioning of democracies, often there is disagreement. Populist voices emphasize the values and interests of average citizens, while technocratic ones stress the importance of specialized knowledge in solving social problems. Plato's advocacy of rule by philosopher kings, and Pol Pot's persecution of the educated elite in Cambodia, are perhaps the most extreme expressions of this conflict. But the tension is also present in modern representative democracies. While one side accuses political parties of being inadequately responsive to the public interest, the other side accuses the same parties of being all too responsive and excessively poll driven, unable to propose responsible policies based on scientific knowledge (Caramani (2017)). How parties balance these pressures while seeking electoral success is of great relevance for democracies. The complex challenges of globalization, automation and climate change have given credence to the technocratic view. These same challenges may also have generated a backlash in the form of election of populist governments across the world.⁶

Post. 2016. "107 Nobel Laureates Sign Letter Blasting Greenpeace Over GMOs." June 30. <https://www.washingtonpost.com/news/speaking-of-science/wp/2016/06/29/more-than-100-nobel-laureates-take-on-greenpeace-over-gmo-stance/>.

²In 2009, a global controversy was triggered by email correspondence among climate scientists that were made public when servers at the University of East Anglia were hacked. "These e-mails show a pattern of suppression, manipulation and secrecy that was inspired by ideology, condescension and profit," said Rep. James Sensenbrenner (R-Wisconsin) in the U.S. Congress. The scientific community denied the charges (**Borenstein, Seth.** 2009. "Obama Science Advisers Grilled Over Hacked Emails." *Associated Press*, December 3. <https://phys.org/news/2009-12-obama-science-grilled-hacked-e-mails.html>).

³A critical report in the *Guardian Observer* says: "(L)ike the tobacco and fossil-fuel industries, the wireless industry has "war-gamed" science...War-gaming science involves playing offence as well as defence – funding studies friendly to the industry while attacking studies that raise questions; placing industry-friendly experts on advisory bodies such as the World Health Organisation ... " **Hertsgaard, Mark, and Mark Dowie.** 2018. "The Inconvenient Truth About Cancer and Mobile Phones." *The Guardian Observer*, July 14. <https://www.theguardian.com/technology/2018/jul/14/mobile-phones-cancer-inconvenient-truths>.

⁴While there is near consensus among economists that trade with China makes most Americans better off, only about 20% of the general public agree with that view (Johnston and Ballard (2016)).

⁵**Funk, Cary, Meg Hefferon, Brian Kennedy, and Courtney Johnson.** 2019. "Trust and Mistrust in Americans' View of Scientific Experts." Pew Research Center, August 2. <https://www.pewresearch.org/science/2019/08/02/trust-and-mistrust-in-americans-views-of-scientific-experts/>.

⁶**Posner, Eric.** 2019. "The Meritocracy Muddle." *Project Syndicate*, September 13, <https://www.project-syndicate.org/onpoint/the-meritocracy-muddle-by-eric-posner-2019-09-2>.

In this paper, we construct a framework to evaluate the role of expertise in democracies. We also examine the role of the party system in incorporating expert knowledge into policy making. In our framework, optimal policy is a function both of objective information and subjective preferences. Experts do not wield power directly but influence policy through publicly stated opinion and advice. In doing so, they bring both their private information and their special interest to the table. Aware of this, voters and politicians face a signal extraction problem. To what extent is expert advice derived from the expert's scientific knowledge and to what extent is it shaped by her non-scientific preferences and values?⁷

We present a Downsian model in which voters and an expert have state-contingent distance-based quadratic preferences with different bliss points. Only the expert is privately informed about the state-of-the-world and she strategically communicates her information through public messages. Under representative or indirect democracy, office seeking politicians commit to policy platforms and compete for votes. The expert may send a public message before platforms are chosen to influence political parties. We call this policy advocacy. The expert may also communicate after platform choice to influence voters. We call this partisan endorsements.

This framework combines in a natural way the Hotelling (1929) model of spatial competition and the Crawford and Sobel (1982) model of strategic communication or cheap talk. When policies are not directly chosen by the voter but mediated by third parties (politicians), Blackwell's theorem cannot be invoked to infer that the social value of experts must be non-negative. As it turns out, voter welfare critically depends on which form(s) of communication the expert can engage in, policy advocacy aimed at parties or partisan endorsements aimed at voters. Importantly, the interaction of the two forms of communication has interesting effects.

Suppose first the expert only practices partisan endorsements. For reasons familiar from the complete information Hotelling model, electoral competition leads to platform convergence. But the convergence is not at the expected ideal point of the median voter. Since parties seek expert endorsements, platforms converge closer to the expected ideal point of the expert. There is expert pandering. This platform distortion is not counteracted by any informational gain. Neither platform choice that comes before the expert speaks, nor voter choice exercised over identical platforms, uses expert information. Consequently, the expert imposes a net harm on the average voter.

Suppose next the expert cannot provide endorsements but can engage in policy

⁷A report of the House of Lords in the British Parliament acknowledges quite clearly the problems created by the bundling of information and preferences: "Some issues currently treated by decision-makers as scientific issues in fact involve many other factors besides science. Framing the problem wrongly by excluding moral, social, ethical and other concerns invites hostility." **House of Lord's UK Parliament**. 2003. *Third Report of the Select Committee on Science and Technology*. <https://publications.parliament.uk/pa/ld199900/ldsselect/ldsctech/38/3801.htm>.

advocacy. Since there is no last minute partisan endorsement to influence voter choice, equilibrium platforms will always converge to the median voter's optimal policy conditional on the expert's advice. It follows that the expert's presence can only benefit the median voter; strictly so if the expert speaks informatively.

What happens when the expert engages in both kinds of communication, policy advocacy followed by partisan endorsements? Endorsements reduce voter welfare ex post by distorting platforms. However, this distortion also encourages the expert to engage in more informative policy advocacy. Unless the expert is extremely biased, the interaction of advocacy and endorsements creates a synergy. Voter welfare is higher under advocacy and endorsement than under either form of communication by itself. This synergy effect is present as long as the preference conflict between voters and the expert is not so large as to make completely uninformed policy choice optimal.

The intuition behind this result is related to the delegation literature for cheap talk games (Holmstrom (1984), Dessein (2002)). An uninformed decision maker, in deciding whether to delegate decision making to an informed but biased advisor, faces a trade-off between tolerating distorted choices (in the case of delegation) versus less informed choices (when relying on advice). Unless the advisor is extremely biased, the trade-off is resolved in favor of delegation. A similar force is at play here. The expert assumes de facto decision making power through her ability to pull electoral outcomes towards her preferred policies using her endorsements. This incentivizes her to provide more informative policy advice before campaigns. Most voters are better off gaining information at the cost of policy distortion. This trade-off between the voter's ex post and ex ante interests is the key insight that can be leveraged to answer other questions of contemporary relevance.

The opposing pressures of technocracy and populism have led to calls for democratic reform. From the technocratic end of the spectrum, Brennan (2016) argues in favor of assigning different weights to voters demonstrating different levels of policy relevant knowledge.⁸ From the populist end, Bovens and Wille (2017) provide evidence that governments in Europe have become increasingly dominated by an educated elite. As an antidote, they advocate the use of direct democracy for critical policy decisions. Matsusaka (2005) similarly favors direct democracy, documenting a rise in the use of ballot proposals and referendums.

We take universal adult suffrage and 'one voter one vote' as bedrock principles. In our framework, direct democracy generally produces lower welfare than indirect democracy. Under direct democracy policy is chosen directly by the median voter or a utilitarian social planner to maximize voter payoff, conditional on any information revealed by the expert. Therefore, direct democracy is outcome

⁸This echoes Mill's (1861) concern about the tradeoff between competence and participation in democracies. This concern led him to propose allocating six votes each to lawyers on the ground that lawyers are better able to evaluate complex policy proposals. While this idea of knowledge based voting is sometimes called epistocracy, we treat this and other similar ideas (such as Plato's noocracy or rule by a philosopher king) as rough synonyms for what we mean by technocracy in the context of this paper.

equivalent to indirect democracy, but when the expert engages only in policy advocacy without any partisan endorsements. Exactly when the interaction of advocacy and endorsements creates synergies, indirect democracy with advocacy *and* endorsements is better than direct democracy for a majority of voters.

The dominance of indirect democracy underscores the importance of political parties. It is the office motive of political parties that leads to expert pandering, creating the synergy gains from advocacy and endorsement. If politicians were committed to the public interest, there would be no platform distortion. Consequently, voter welfare would be lower.

This benefit of office seeking parties does not however imply that it is the ideal institution from the perspective of voters. We show that the ideal institution consists of political competition between two ideological parties, each of a particular sort. One party is technocratic and captured by the expert. Consequently, it shares her information and policy goals. The other party is uninformed but populist, i.e., motivated to maximize the median voter's welfare. Electoral competition between these two parties yields the optimal mechanism in our framework.

The optimal mechanism takes the form of capped delegation, first identified by Holmstrom (1984). The expert gets her ideal policy subject to a pre-specified bound or cap. In terms of our game of electoral competition, the technocratic party proposes the expert's ideal policy and quite often gets elected. But when the expert's information is extreme, and in the direction of her ideological conflict with the average voter, the populist platform is preferred by a majority and it is the one that is elected. The probability of the populist winning is increasing in the expert's conflict with the median voter.

In a stylized way, this variant of our baseline model captures the increased elite dominance of mainstream political parties (Bovens and Wille (2017)) and the emerging populist challenge from the likes of UKIP, National Front and Donald Trump. The resultant polarization has attracted much negative commentary.⁹ We offer a different perspective. Technocracy, operating under the shadow of a populist threat, may offer voters the best prospect for harnessing expert knowledge. It maximizes ex ante average voter welfare.

Overall, our analysis shows that the widely discussed tradeoff between technocracy and populism may be a false one. Indirect democracy operating under expert influence has desirable welfare properties. It aggregates expert information better than public spirited decision making, leading to policies that better serve the average voter's ex ante interests.

This conclusion needs three key ingredients. First, for expertise to improve democratic outcomes, it is necessary that experts have a long term engagement with the political process, conveying their opinion about the intrinsic merits of different policies and shaping the political agenda before elections, not merely throwing their support behind particular parties and candidates late in the game. Experts must engage in public debate on both policy and politics. This impor-

⁹See Posner (2019), supra footnote 6.

tance of expert engagement is underscored by the fact that voters get the best possible institutional arrangement when the expert goes beyond mere speeches and actually controls a party competing against a populist rival.

Second, even when the expert only makes public speeches, the institution of narrowly office seeking parties has a commitment role in aggregating policy relevant information. To reap this commitment benefit, it is important for the parties to commit to specific policy platforms rather than commit merely to a policy stance by nominating a candidate with the appropriate ideology. In the latter case, we show that electoral competition leads to convergence on candidates who share the median voter's preference, and who therefore do not pander to experts to elicit more information from them. Programmatic politics dominates personality centered politics in our framework.¹⁰

The assumption that experts have an incentive to exaggerate is the third key ingredient of our analysis. Expert pandering by office seeking parties creates value for voters exactly because it improves the expert's incentive constraints, allowing her to credibly reveal better information. When the expert can credibly commit to an information revelation policy (Kamenica and Gentzkow (2011)), we show that this force is reversed. Because political parties choose policies that serve the expert's ideological interests to a greater extent, the expert prefers to hide at least some information under indirect democracy in order to obtain policies that favor her. Under direct democracy, the expert would commit to revealing all her information, a better outcome for voters. Indirect democracy is the better institution only if voters are concerned about the expert's credibility and her incentive to exaggerate.

The themes that we explore in this paper have roots in antiquity. But they are also important strands of current public debates. Before the Brexit referendum, there was a strong consensus among both institutional bodies (like the British Treasury, IMF and OECD) and individual experts that leaving the European Union would have a negative impact on the British economy.¹¹ Yet, Boris Johnson derided such predictions as "Project Fear" and Michael Gove declared, "This country has had enough of experts."¹² The results of the 2016 referendum vindicated Gove and Johnson. At the same time, David Cameron's decision to hold the Brexit referendum was labelled by critics as "Russian roulette for re-

¹⁰The difference between platform commitment versus a policy stance is reminiscent of Burke's (1774) distinction between "delegate" versus "trustee" modes of representation. A delegate faithfully implements his pre-election pledges while a trustee can use his judgment and opinion to decide on actual policy once elected. In our model, the delegate mode of representation is better for voters. It provides more commitment to the voter and aggregates more information from the expert.

¹¹Sodha, Sonia, Toby Helm, and Phillip Inman. 2016). "Economists Overwhelmingly Reject Brexit in Boost for Cameron." *The Guardian Observer*, May 28. <https://www.theguardian.com/politics/2016/may/28/economists-reject-brexite-boost-cameron>.

¹²Gove's claim was not unfounded. A 2016 YouGov poll found that among Leave voters, the net trust of economists (proportion saying they trust economists minus those who say they don't) was negative 36%. See <https://www.telegraph.co.uk/news/2016/06/16/eu-referendum-leave-supporters-trust-ordinary-common-sense-than/>. This relatively recent trust deficit is a reversal of the earlier critical role economists played in the spread of trade liberalization and economic integration across the globe, starting from around 1980 (Fairbrother (2014)).

publics.”¹³ Interestingly, as of late 2019, 57% of the British public believed the issue should have been settled through the parliamentary route rather than a referendum.¹⁴ Consistent with this paper, there was skepticism of experts but also of direct democracy as a solution.

The rest of the paper is organized as follows. In Section I we present our benchmark model of indirect democracy with office seeking parties operating under the influence of expert advice and endorsements. We also compare welfare across alternative institutions and environments. Section II analyzes the case of an expert captured informed technocratic party competing against an uninformed populist party. Section III reviews the related literature while Section IV contains our concluding remarks. All proofs and ancillary results are in the Appendix.

I. Indirect democracy under expert influence

A. Players, preferences and information

A unit mass of voters, indexed by $b \in [-1, 1]$, face an uncertain state of the economy captured by a random variable $y \in [0, 1]$, where y follows the uniform distribution. The utility of voter b in state y from a policy $x \in \mathbb{R}$ is given by a quadratic loss function

$$(1) \quad u(x; y, b) = -(y + b - x)^2.$$

Thus, the ideal policy of voter b in state y is $y + b$, where b is the voter’s ideological bias. Let G be the (atomless) distribution of voters when they are ordered according to their ideology and normalize so that $b_{mv} = 0$ is the ideology of the median voter.

Policies are not directly chosen by the voters. Instead they are determined via electoral competition. Two office-seeking parties commit to platforms x_L and x_R respectively that they will implement if elected to office. The parties do not know the realization of y and neither do any of the voters, except for one, the expert. The expert, with ideological bias $b_e > 0$, privately learns the realization of y . The two political parties and all voters hold uniform priors about y .¹⁵

The expert can publicly communicate with the electorate and with the parties via cheap talk. We allow for two stages of communication. The first stage of communication takes place before the parties have made their platform choices. We call this the policy advocacy stage and denote the expert’s message at this

¹³Rogoff, Kenneth. 2016. “Britain’s Democratic Failure.” *Project Syndicate*, June 24. <https://www.project-syndicate.org/commentary/brexit-democratic-failure-for-uk-by-kenneth-rogooff-2016-06/>.

¹⁴Helm, Toby. 2019. “Brexit Referendum Should Never Have Been Called, Say A Majority of Voters.” *The Guardian*, October 26. <https://www.theguardian.com/politics/2019/oct/26/opinion-poll-observer-uk-voters-regret-brexit-referendum-conservative-lead-over-labour>.

¹⁵In what follows, we focus on the case $b_e < 1/2$. If $b_e \geq 1/2$, the expert’s presence has no effect on outcomes. Equilibria are identical to the classical Hotelling-Downs model without any informed voter and both parties locate at the expected ideal policy of the median voter.

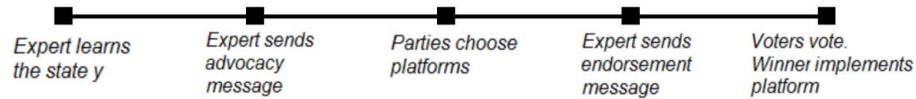


FIGURE 1. TIMING OF MOVES.

stage by m_a .¹⁶ The message m_a may contain information about the state y and influence the platform choices of the parties and the subsequent voting behavior of the electorate.

The second stage of communication takes place after the parties have committed to their platforms but before voters vote. We call this the endorsement stage and denote the corresponding message by m_e . Since m_e arrives after parties have committed to platforms, endorsements can only affect the behavior of voters, although anticipated future endorsements can affect platforms. In the final stage of the game, each voter votes in favor of her preferred platform after taking into account all available information. The party that wins a majority of votes is elected and implements its platform. Ties in votes are resolved uniformly.¹⁷ The equilibrium notion is perfect Bayesian equilibrium with some restrictions that we detail below. Figure 1 describes the timing structure of our model of representative or indirect democracy operating under the influence of an informed expert.

This simple model of electoral competition among two office seeking parties differs from the canonical Hotelling-Downs framework in two ways. First, we introduce an uncertain state of the world that is relevant to determine the ideal policies of all voters. Second, we suppose that one particular voter, the expert, is privately informed about this state. The expert only uses public communication to influence the electoral process but does not directly control any other aspect of the elections. So this is a model of indirect expert capture, in contrast with a model of direct expert capture of policy making by one or both political parties or any other institution.¹⁸

While we model the expert as a single agent, this assumption should not be taken literally. The expert in our model represents a particular interest group, such as the scientific community or an elite who have an informational advantage over the average voter and are able to exploit this advantage because of their access to scientific journals and media outlets. A common theme heard both from the left and the right about the functioning of modern democracies is that

¹⁶As is standard in cheap talk games, messages have no intrinsic cost or benefit associated with them or even any meaning. Rather, meaning is derived in equilibrium after taking into account incentives. We assume that the underlying message space is rich enough so that information transmission is constrained only by incentives and not by the availability of messages.

¹⁷This simplifies the exposition. Assuming uniform tie breaking does not affect our conclusions. In many cases, it is a necessary property of any equilibrium.

¹⁸We consider a version of such direct capture of a political party by the expert in Section II.

its proper operation is distorted by the concerted actions of an ideologically biased elite. Our formulation allows us to evaluate this kind of critique in its bleakest form.¹⁹ We also assume the expert's information can only be revealed through unverifiable cheap talk and not through voluntary public disclosure of verifiable information (Milgrom (1981)). This seems to be the appropriate assumption if the relevant information is highly technical in nature whose implications can be understood only by those who have specialized training and education. We now present a lemma that will be useful throughout the paper.

LEMMA 1: *Fix x_L, x_R . If the median voter strictly prefers one platform given all available information, then so does a majority of voters.*

Lemma 1 states that it is enough to focus on the behavior of the median voter to determine electoral outcomes.²⁰ This is true not only under the institution of indirect democracy described above, but also under alternative institutions that we consider below, such as direct democracy or indirect democracy with more restricted communication possibilities than in the main model.

B. Two benchmarks

The fundamental goal of this paper is to understand the effect of experts and office seeking political parties on voter welfare. To evaluate these effects, we need to construct benchmarks where either the expert or the political parties are absent from the setup. We discuss these two benchmarks in this section, returning to the main model of indirect democracy outlined above in the next section.

In our first benchmark, there is no expert. Uninformed office-seeking parties simultaneously propose platforms. Then voters cast their votes.

BENCHMARK 1: (*Uninformed democracy*) *Suppose there is no expert. In the unique equilibrium both parties locate at $E[y] = 1/2$, the ex ante expected ideal policy of the median voter.*

When there is no expert, both parties locate at the unconditional mean of the state y , the expected ideal policy of the median voter. This follows immediately from Lemma 1 and standard logic familiar from the Hotelling-Downs model under complete information. The median voter's expected payoff is equal to (the

¹⁹As we show, even with a monopolist expert the overall welfare effect of indirect capture is quite beneficial for voters because the electoral process results in significant information revelation. With multiple ideologically distinct and competing groups of experts, this information revelation effect should only be enhanced (see, e.g., Krishna and Morgan (2001)). For instance, with three or more experts with the same information, speaking simultaneously, full revelation is an equilibrium. If the public ignores a dissenting minority opinion, no expert has an incentive to deviate. We look at the worst case scenario from the perspective of average voter welfare.

²⁰For general twice continuously differentiable preferences $u(x; y, b)$, Lemma 1 obtains if $u_{13} > 0$. In our setting where the state y and ideology b enter the utility function in the additive form $y + b$, this is identical to the condition $u_{12} > 0$, a sorting condition used to generate informative communication. See, e.g., Crawford and Sobel (1982).

negative of) the unconditional variance of y . We call this benchmark uninformed democracy. Its outcome is the classical median voter theorem, adjusted to account for uncertainty.

In what follows, we will consider many alternative institutions (direct democracy, indirect democracy, etc.) and for each institution we will define the social value of expertise. When the expected payoff to the median voter under any given institution is greater than that under uninformed democracy, we will say the social value of expertise for that institution is positive. If the median voter is worse off compared to uninformed democracy, the social value of expertise for that institution is negative.

We define the social value of expertise in terms of the median voter's welfare for the following reasons. Under our specification of voter preferences, when the median voter prefers one institution to another (e.g., indirect democracy over direct democracy), so will a strict majority of voters. Only a minority may prefer the alternative institution. Evaluating different institutions according to the median voter's welfare corresponds to a majoritarian welfare criterion. In addition, as long as the mean of the distribution G of voter ideologies equals its median, the utilitarian sum of ex ante voter welfare equals the median voter's welfare less a constant equal to the variance of voter ideologies according to G . In these cases, using the median voter's payoff as our welfare criterion is the same as the utilitarian welfare criterion.²¹ For these reasons and also Lemma 1, we will track the median voter's behavior and welfare in what follows, often referring to the median voter simply as the voter.

We now introduce our second benchmark. In this benchmark, the expert is present but political parties are absent. The informed expert sends a public cheap talk message after which the median voter directly chooses a policy. We will call this direct democracy. This scenario will obtain when the median voter is the mean voter and policy choice is determined not through electoral competition but by a utilitarian planner. Alternatively, following Osborne and Slivinski (1996), consider a citizen-candidate model preceded by expert cheap talk where the cost of running for office and the intrinsic benefit of being elected are small and comparable to each other. The median voter emerges as an uncontested winner in such a scenario.²²

The equilibrium outcome of direct democracy corresponds to that of the Crawford and Sobel (1982, henceforth CS) game of strategic information transmission between an expert and a decision-maker who in this case is the voter. For ease of reference, we describe the key properties of equilibrium outcomes for this benchmark that we will use.

²¹If one allows additive transfers, then using the utilitarian criterion is equivalent to using the Pareto criterion.

²²In Osborne and Slivinski (1996, Propositions 1 and 2), office is sought not by professional politicians but by citizen candidates who are primarily motivated by the desire to affect policy outcomes. Citizens have a cost of running for office and an intrinsic benefit of being elected themselves, in addition to policy payoffs.

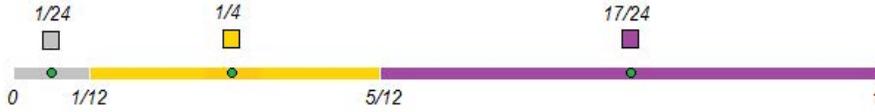


FIGURE 2. DIRECT DEMOCRACY.

BENCHMARK 2: (*Direct democracy*) Suppose there are no parties and policies are chosen to maximize voter welfare after communicating with the expert. The expert is informative if and only if $b_e < 1/4$. The social value of expertise is positive when the expert is informative and zero otherwise.

Under direct democracy the expert cannot credibly reveal the exact value of y . For if she is expected to do so, the chosen policy will equal the expert's stated value of y . This cannot be an equilibrium since $b_e > 0$ and the expert then has an incentive to overstate the value of y in order to get policies that are closer to her own ideal policy. In equilibrium, the expert can only credibly transmit coarse information, revealing for each state an interval in which the state lies. The number, size and location of these intervals is determined by b_e , the conflict of interest between the expert and the voter.

As shown in CS, the number of intervals N is finite and in our setting the expert is informative ($N > 1$) if and only if $b_e < 1/4$. Figure 2 illustrates Proposition 2 for the case where $b_e = 1/16$. In the ex ante payoff optimal equilibrium for the voter (and the expert), the expert reveals in which of three intervals the state belongs: $[0, 1/12]$, $[1/12, 5/12]$, or $[5/12, 1]$. The voter chooses actions $1/24$, $1/4$ or $17/24$, equal to the expectation of the state conditional on the message, once he learns the relevant interval.²³

Since the payoff of the voter is maximized conditional on any information coming from the expert, by Blackwell's theorem, he cannot be worse off ex ante, compared to our previous benchmark of uninformed democracy. The social value of expertise under direct democracy cannot be negative. It is positive whenever the expert reveals non-trivial information.

While the social value of expertise is always non-negative under direct democracy, voter welfare is lower than the symmetric information case where the state y is common knowledge. The credibility constraints of the expert create two kinds of informational (and welfare) loss. First, information is coarsened, as captured by the partitioning of the state space by the expert's message. Second, the coarsening is not uniform. There is an inflation in interval size, i.e., greater coarsening,

²³For fixed b_e , there are many interval cheap talk equilibria, but the one with the highest number of intervals is the ex ante optimal one from the perspective of all voters. Following the literature, we select this equilibrium in what follows. Given our assumptions, the exact intervals for this equilibrium can be found via the difference equation $l_{i+1} = l_i + 4b_e$, where l_i is the length of the i -th interval, using the boundary condition that the interval lengths sum up to 1.

as one moves in the direction of bias. Coarsening and inflation both reduce voter welfare below the symmetric information case.

As we show below, indirect democracy shares these sources of welfare loss. Because of intermediation by the political parties, it may also give rise to policies that are not necessarily equal to the voter's ideal given all available information. Consequently, Blackwell's theorem cannot be invoked. The social value of expertise takes into account the value of the information obtained from the expert net of the average cost of policy distortion away from what the voter would like. It can be either positive or negative under indirect democracy. We turn to our analysis of this institution now.

C. Endorsements and platforms

In this section we solve for what happens at the endorsement stage when platforms are chosen and endorsed by the expert, assuming voters have interval beliefs after the advocacy message m_a . In the next section we roll back to the advocacy stage and describe the equilibria of the full game. Subsequently, we evaluate the welfare of voters and the expert.

Suppose that after hearing the advocacy message m_a , voters and parties hold interval beliefs on the distribution of y , i.e., y is believed to be uniformly distributed over a sub-interval $[y_l, y_h] \subseteq [0, 1]$. Suppose further that the contesting parties have chosen platforms x_L, x_R with $x_L \leq x_R$. Let x_{mid} be the midpoint of the two platforms. Our next result describes the effect of the expert's second message m_e on voting behavior. It identifies conditions under which the expert is *influential*, i.e., her endorsement affects voting outcomes. We use this result subsequently to characterize the equilibrium platform choices by the political parties.

LEMMA 2: *Suppose the expert has revealed an interval $[y_l, y_h]$ that contains y with her advocacy message m_a . Suppose also $x_L < x_R$. If the expert's second message m_e influences voting, it can only reveal the platform the expert prefers, i.e., whether $y > x_{mid} - b_e$ or $y < x_{mid} - b_e$; and the platform the expert prefers is elected. An influential endorsement equilibrium exists if and only if $x_{mid} \in (y_l + b_e, y_h - b_e]$. When m_e is not influential, the platform closest to $E[y|m_a]$ is elected regardless of m_e .*

Lemma 2 is a standard result for binary action cheap talk games. When the message m_e influences voting behavior, the expert has an incentive to send the message that elects the expert's more favored platform. Voters account for this incentive and so the message m_e can only convey the expert's preferences to the voter, i.e., whether or not $y > x_{mid} - b_e$.

Lemma 2 identifies the interval $(y_l + b_e, y_h - b_e]$ as the expert's "zone of influence", depicted in Figure 3. When the midpoint of the two policy platforms, x_{mid} , lies in the zone of influence, the expert will endorse either platform with positive probability and her endorsement determines the electoral outcome. For the expert to prefer (and endorse) both candidates with positive probability we



FIGURE 3. EXPERT'S ZONE OF INFLUENCE.

must have $x_{mid} > y_l + b_e$. If this is violated the expert cannot be informative (or influential) since she prefers the right platform regardless of the state. An expert endorsement for the right platform influences a majority if and only if $E[y|y > x_{mid} - b_e] \geq x_{mid}$, equivalently, $x_{mid} < y_h - b_e$. We assume throughout that the influential equilibrium is played whenever it exists.²⁴

We turn now to the determination of equilibrium platform choices. Let $r(m_a) = y_h - y_l$ measure the residual uncertainty about the state faced by the general public after the first message m_a . Lemma 3 shows that this residual uncertainty is a key determinant of equilibrium platforms.

LEMMA 3: *Suppose the expert has revealed an interval $[y_l, y_h]$ that contains y with her advocacy message m_a . Suppose also that whenever an influential endorsement equilibrium exists, it is played. Then the unique equilibrium outcome in platform choice involves the two parties choosing a common policy platform, $x_L = x_R = x^*$ given by:*

$$(2) \quad x^* = \begin{cases} E[y|m_a] + b_e & \text{if } r(m_a) \geq 4b_e \text{ (expert pandering)} \\ y_h - b_e & \text{if } 2b_e < r(m_a) < 4b_e \text{ (partial pandering)} \\ E[y|m_a] & \text{if } r(m_a) \leq 2b_e \text{ (voter pandering)} \end{cases}$$

Platform convergence occurs for essentially the same reason as in the classical median voter theorem. Suppose $x_L \neq x_R$. If the expert's endorsement is influential, the party which is winning with probability less than 1/2 can gain by matching its platform with the other party's platform. If, on the other hand, the expert's endorsement is not influential, the right party wins with zero probability, which implies it has a profitable deviation to the other party's platform. Since the two parties play a zero sum game, it follows that this is the unique outcome in platform choice, under the conditions of Lemma 3.

Where do platforms converge to? Whether parties pander to the median voter or the expert depends on the residual uncertainty r about the state y . Greater

²⁴In any cheap talk game, there is always a babbling equilibrium where voters refuse to ascribe any meaning to the message m_e and so the expert can do no better than be uninformative. When endorsements are credible, an influential equilibrium also exists and it yields higher expected payoff to both the expert and the voter, conditional on m_a and the platforms. We select the Pareto dominant influential equilibrium of the continuation game. In the statement of Lemma 2 we also break ties by assuming that the voter follows the expert's advice when she is indifferent. This is in the spirit of selecting the efficient outcome and does not affect our results. We discuss the equilibrium set in more detail later in the paper.

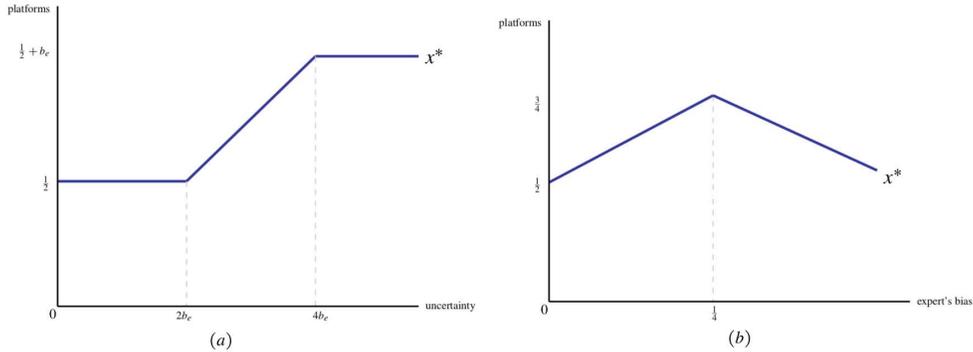


FIGURE 4. PLATFORMS, UNCERTAINTY AND BIAS.

uncertainty leads to equilibrium platforms being pulled closer to the expert's ideal policy rather than the median voter's. Figure 4(a) depicts the relationship between the degree of uncertainty r and the common equilibrium platform x^* , for fixed bias of the expert. Figure 4(b) plots the common equilibrium platform x^* as a function of the expert's bias b_e , for fixed uncertainty about the state.²⁵

To understand Figure 4(a), recall that the expert's endorsements are influential if and only if the midpoint of the two platforms lies in the expert's zone of influence $(y_l + b_e, y_h - b_e]$. If the residual uncertainty about the state is small enough ($r \leq 2b_e$), the zone of influence is empty. In this case, both parties will pander to the voter and locate at $E[y|m_a]$. If any party deviates towards the expert, the expert's endorsement for that party will not be influential and so its rival will win the election for sure. At the other extreme, when the uncertainty about the state is large enough ($r \geq 4b_e$), both the median voter's and the expert's expected ideal policies lie in the zone of influence. An expert endorsement for any party decides the election. In this case both parties pander completely to the expert.

In the intermediate case ($2b_e < r < 4b_e$), the voter's expected ideal policy lies in the zone of influence while the expert's expected ideal point lies to its right. In this case, parties will choose platforms at the right edge of the zone of influence, i.e., at $y_h - b_e$. If a party moves its platform further right, it breaches the zone of influence and an endorsement in its favor will not translate into electoral victory, so parties pander to the expert subject to remaining in the zone.

The relationship between uncertainty about the state and the degree of expert (or voter) pandering depicted in Figure 4(a) plays a key role in the analysis of the next section where we describe the strategic considerations affecting policy advocacy by the expert. Fixing this uncertainty, Figure 4(b) depicts a non-monotonicity in the expert's influence on policy as a function of her bias. For

²⁵In Figure 4(a), we set $y_l = \frac{1}{2} - \frac{r}{2}$ and $y_h = \frac{1}{2} + \frac{r}{2}$, so that $E[y] = \frac{1}{2}$ and vary $r = y_h - y_l$, fixing $b_e = 1/4$. In Figure 4(b), we fix $[y_l, y_h] = [0, 1]$ and vary $b_e \in [0, 1/2]$.

small b_e , both parties pander to the expert. If the expert's bias increases slightly, equilibrium platforms move further away from what is ideal for the median voter. The voter's welfare is decreasing in the expert's bias in this zone. For larger values of b_e however, the voter's welfare is increasing in the expert's bias. This is because highly biased experts struggle to issue credible endorsements, reducing the incentive of political parties to pander to them, reverting platforms closer to the voter's ideal policy. Experts lose influence when they desire to change the course of public policy substantially rather than modestly, making such ambitions self-defeating. Experts of intermediate bias exert the most distortionary influence on policies and impose the most harm on the average voter.

Using lemma 3 we now describe the equilibrium outcome of indirect democracy when the expert's public communication is limited only to partisan endorsements.

PROPOSITION 1: (*Endorsements only*) Consider the truncated game where the expert cannot send the advocacy message m_a at the beginning. She sends only the endorsement message m_e after platforms are chosen. In equilibrium, the common policy platform, $x_L = x_R = x^*$ is given by

$$(3) \quad x^* = \begin{cases} \frac{1}{2} + b_e & \text{if } b_e \leq \frac{1}{4} \text{ (expert pandering)} \\ 1 - b_e & \text{if } \frac{1}{4} < b_e < \frac{1}{2} \text{ (partial pandering)} \end{cases}$$

The social value of expertise is negative. But the expert prefers this outcome to that of uninformed democracy.

Proposition 1 is a restatement of Lemma 3 for the special case where $[y_l, y_h] \equiv [0, 1]$. Even when the expert only sends endorsements, there is a potential channel for incorporating expert information into policy choices. But this requires the creation of a non-trivial menu of policy choices for voters through platform differentiation. Unfortunately, due to platform convergence in response to electoral incentives, there is no such choice for the voter and so endorsements cannot produce any useful information in equilibrium.

The expert still exerts a distortionary effect on platforms. Her ability to influence choices off-the-equilibrium-path allows the expert to move policy towards her own expected ideal. This is why the expert prefers this outcome to that under uninformed democracy described by Benchmark 1. But the social value of expertise is negative. The voter's welfare is driven below its level under uninformed democracy.

D. Policy advocacy

Consider now the expert's first period policy advocacy message m_a . We describe first a benchmark where the expert sends only the advocacy message m_a before party platforms are chosen. She is not allowed to send the second endorsement message m_e after platforms are chosen.

After every such message m_a , it is not difficult to see that both the parties will locate at $E[y|m_a]$, the expected ideal policy of the voter given m_a . This is the unique equilibrium in platform choices for each m_a .²⁶ From the expert's perspective, it is as if she faces a decision maker who chooses the policy that maximizes the welfare of the voter after each message m_a . The resulting communication game is outcome equivalent to direct democracy.

PROPOSITION 2: *(Advocacy only) Consider the truncated game where the expert cannot send the endorsement message m_e after platforms are chosen. She sends only the advocacy message m_a at the beginning. The equilibrium coincides with that under direct democracy and the social value of expertise is non-negative.*

With this last benchmark in place, we turn now to the equilibrium of our full model where the expert can engage both in policy advocacy before platforms are chosen as well as platform endorsements after parties commit to platforms. The full game of electoral competition with multi-stage cheap talk has a large multiplicity of equilibria. We focus on equilibria where the expert's first period messaging strategy takes an interval partitional form. Lemma 3 shows that platforms must converge after a message m_a that reveals an interval for y . They converge to the policies identified by Lemma 3 as long as we select the informative equilibrium at the endorsement stage whenever it exists, for every possible pair of platform choices.

In what follows, we refer to equilibria with these two restrictions, (a) advocacy takes an interval partitional form and (b) endorsements are influential whenever they are credible, simply as equilibria. These restrictions limit our freedom to select between different kinds of endorsement equilibria made in order to support particular outcomes of the overall game of electoral competition. As a consequence, we do not necessarily select the ex ante payoff optimal equilibrium, either for the expert or for the other voters. In this sense, we understate the benefits of expert influence on electoral competition from the perspective of voter welfare.²⁷

In the equilibria of the full model with advocacy and endorsements, the expert faces similar incentive problems as under the benchmark of direct democracy (or, CS). For instance, the expert cannot fully reveal her information. For if she is expected to do so, there will be no residual uncertainty at the platform endorsement stage. In accordance with Lemma 3, the parties will not pander to the expert,

²⁶The reasoning is identical to that for Benchmark 1 (and Lemma 3, for the case $r(m_a) \leq 2b_e$). Since the expert cannot send any information after platforms are chosen, the parties must locate at the expected ideal policy of the voter given all available information.

²⁷Our selection rule is in the spirit of restrictions usually imposed in the literature on cheap talk games such as NITS (Chen, Kartik and Sobel, (2008)), but applied iteratively at each stage of a multi-stage communication game. See Chakraborty and Ghosh (2016), Argenziano, Severinov, and Squintani (2016) for other models where selecting the payoff-dominant equilibria at later stages of communication games does not necessarily select the ex ante payoff dominant equilibrium outcome. In the Appendix, we provide examples of equilibria where advocacy takes a non-interval partitional form. We also illustrate how to generate a large multiplicity of equilibria by suitably selecting between different kinds of continuation equilibria at the endorsement stage.

choosing instead policies that are equal to the voter's ideal. But then the expert will have an incentive to overstate the realized value of the state. Just like under direct democracy, under indirect democracy the expert can only credibly disclose coarse information. But there is an additional incentive effect. The coarser the information revealed, the more the parties pander to the expert because of the threat of subsequent expert endorsements. This pandering mitigates the incentive of the expert to hide information under indirect democracy. It is the key difference between indirect and direct democracy with respect to the expert's strategic incentives.

The next result identifies the most informative equilibrium under indirect democracy, i.e., the one with the highest number of intervals. To present the result concisely, define $\widehat{N} \geq 0$ to be the integer part of $1/4b_e$ and let $R = 1 - 4b_e\widehat{N}$ be the "remainder." Note $0 \leq R < 4b_e$.

PROPOSITION 3: (*Advocacy with endorsements*) *Suppose the expert provides both policy advocacy and platform endorsements and that the policy advocacy message m_a discloses an interval $[c_{i-1}, c_i]$ that contains y , $i = 1, \dots, N$, with $0 = c_0 < c_1 < \dots < c_N = 1$. Suppose also that at the endorsement stage, an influential equilibrium is played whenever it exists. Such interval equilibria exist and there is a finite upper bound $N^*(b_e) \geq 1$ on the number of intervals N . When $b_e > \frac{1}{3}$, $N^*(b_e) = 1$ and policy advocacy is uninformative. Otherwise, $N^*(b_e) > 1$ and policy advocacy is informative. Ex ante, the expert and the voter prefer an equilibrium with N intervals to one with $N' < N$ intervals. The most informative equilibrium with $N^*(b_e)$ number of intervals is given by the following:*

- 1) *If $R > 3b_e$ then $N^*(b_e) = \widehat{N} + 2$ with cutoffs $c_1 = \frac{2}{3}R - 2b_e$, $c_2 = R$, and $c_i = c_{i-1} + 4b_e$, $i \geq 3$.*
- 2) *If $2b_e \leq R \leq 3b_e$ then $N^*(b_e) = \widehat{N} + 1$ with cutoffs $c_1 = R$ and $c_i = c_{i-1} + 4b_e$, $i \geq 2$.*
- 3) *If $R < 2b_e$ then $N^*(b_e) = \widehat{N} + 1$ with cutoffs $c_1 = \frac{2}{3}(R + b_e)$, $c_2 = R + 4b_e$, and $c_i = c_{i-1} + 4b_e$, $i \geq 3$.*

Proposition 3 completely characterizes the partition corresponding to the most informative equilibrium, as a function of the expert's ideological bias b_e . For each interval revealed by the expert with her advocacy message m_a , the parties choose common platforms in accordance with Lemma 3. Figure 5 depicts the case where $b_e = 1/16$ so that $N^*(b_e) = 5$.

In the equilibrium depicted in Figure 5, the left most interval is the smallest, with length $1/24$ which is less than $2b_e$. Consistent with Lemma 3, both the parties locate at $1/48$, the expected ideal policy of the median voter conditional on the expert's policy advocacy message that reveals $y \in [0, 1/24]$. The next interval to the right is larger and of length in between $2b_e$ and $4b_e$. In this interval, both parties locate at $3/16$ which is the right boundary of the expert's zone of influence

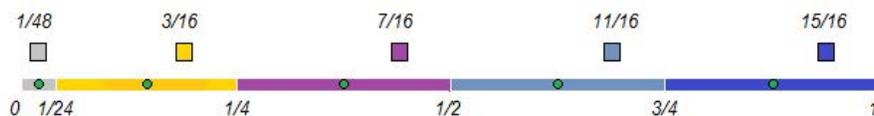


FIGURE 5. ADVOCACY & ENDORSEMENTS.

conditional on y belonging to this interval. All remaining intervals starting from the third from the left interval are each of length exactly $4b_e$. In each such interval, both parties fully pander to the expert and locate at the expected ideal policy of the expert given that the state y lies in that interval, as depicted in the figure.

The most informative interval equilibrium with $N^* \geq 2$ always has the qualitative features depicted in Figure 5. As b_e falls, the number of intervals N^* rises. The left-most interval is the smallest. In this interval, the parties locate either at the voter's expected ideal point, or partially pander to the expert by locating at the right edge of the expert's zone of influence. The second from left interval is larger than the left-most interval. The parties either partially or fully pander to the expert in this interval. When $N^* \geq 3$, every interval further to the right is exactly of length $4b_e$. The parties pander fully to the expert in every such interval.

The fact that the intervals are weakly larger in size, as one moves from left to right, is a property of all equilibria and not only the most informative one.²⁸ But this inflation stops once an interval length crosses $4b_e$ and platforms pander fully to the expert. From this point on, there is effectively no conflict between the expert and the 'as if' decision maker (the two pandering parties). For this reason, all intervals from the third one onwards must display expert pandering.

In the full model of indirect democracy described by Proposition 3, the social value of expertise may be positive or negative. Voter welfare may be as low as when the expert only sends endorsements, or higher than when the expert only engages in advocacy, or it may be somewhere in between. If voter welfare is higher than the best of what the voter can get when the expert engages in only one of the two forms of communication, then advocacy and endorsements acting in concert exhibit a positive synergy. This synergy is the key determinant of the social value of expertise under indirect democracy, as we show next.

²⁸This property says that the expert can credibly reveal less precise information the more her information favors her bias. The inflation in interval size occurs for the same reason as in CS. Since $b_e > 0$ and the bliss point $c + b_e$ of an indifferent type c (located at the border of two adjacent intervals) must equal the mid-point of the policies for those two intervals, interval sizes must grow (weakly). See the proof of Proposition 3 for details of the necessary properties of all equilibria.

E. Welfare

The comparison of voter welfare between direct and indirect democracy hinges on a trade-off between informed decisions and distorted decisions. This trade-off is shown in Figure 6 for the same choice of $b_e = 1/16$ used in Figures 2 and 5. The top panel of the figure depicts the most informative equilibrium under direct democracy while the bottom panel depicts the same for indirect democracy.

Comparing the two figures, we see that there is better information transmission by the expert under indirect democracy— while the equilibrium under direct democracy partitions the state into three intervals, the equilibrium under indirect democracy partitions it into five smaller intervals. But this improvement in information transmission comes at a cost to the voter. Under indirect democracy, platforms are distorted away from what the voter would like and towards what the expert would like for all but the left most interval. Under direct democracy, policies are always optimal for the voter for each message of the expert. The next result compares the two institutions from the perspective of voter welfare.

PROPOSITION 4: *The following statements are equivalent:*

- (a) *Indirect democracy is better than direct democracy.*
- (b) *Advocacy acting together with endorsements is better than either form of communication alone.*
- (c) *The social value of expertise under indirect democracy is positive.*
- (d) *The expert's bias $b_e < \frac{5}{18}$.*

In the Appendix we show that statement (a) is equivalent to statement (d). Here we establish the other claims. First, consider the equivalence of (a) and (b). From Proposition 1, the social value of expertise is negative when the expert only engages in platform endorsements. From Proposition 2, the social value of expertise is non-negative when the expert only engages in policy advocacy. So, when the expert engages in only one form of communication, voter welfare is higher under policy advocacy and, further, the outcome is equivalent to direct democracy. It follows that (b) is equivalent to a comparison of voter welfare under indirect and direct democracy, namely (a).

Next, consider the equivalence of (a) and (c). Since the social value of expertise is non-negative under direct democracy, when (a) holds the social value of expertise under indirect democracy must be positive. So (a) implies (c). In the other direction, when (a) does not obtain and direct democracy is the better institution, since (a) is equivalent to (d), we must have $b_e > 5/18$. But then $b_e > 1/4$ and, further, via Benchmark 2, the social value of expertise must be zero under direct democracy. It follows the social value of expertise must be negative under the inferior institution of indirect democracy. So (c) implies (a).

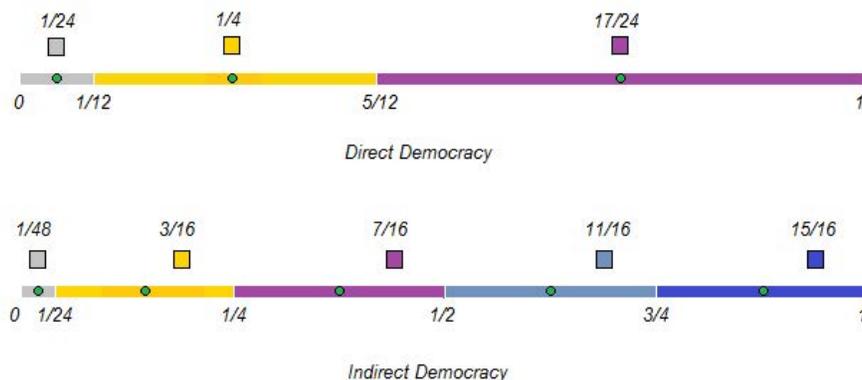


FIGURE 6. INDIRECT VS. DIRECT DEMOCRACY.

The equivalence between (a) and (b) directly links the two institutions of direct and indirect democracy with the two forms of communication, advocacy and endorsements. Precisely when the interaction of advocacy with endorsements under indirect democracy creates a positive synergy, indirect democracy dominates direct democracy. The equivalence between (b) and (c) further clarifies matters. The synergy is the only reason why the social value of expertise under indirect democracy can be positive.

The equivalence between (a) and (c) is the most instructive. It tells us that whenever the social value of expertise is positive under indirect democracy, it must be larger than the social value of expertise under direct democracy, no matter how large the latter is. This makes indirect democracy the better institution to adopt. For biases so large that indirect democracy is harmful, the best option is to expunge expertise altogether and resort to uninformed policy choices based on priors. Direct democracy is outcome equivalent to uninformed democracy in these cases. It is as if the institution of indirect democracy is designed to extract information from the expert. Voters will only want to give up on indirect democracy when they want to give up on acquiring information.

Proposition 4 drives home the important role played by electoral competition among office seeking politicians, as opposed to public spirited decision makers or direct citizen participation in policy making. The agency problem latent in representative democracy may actually help to counteract the welfare loss arising from expert bias and informational manipulation. It does so by providing a *de facto* delegation instrument to voters, who can leverage the pandering motive of politicians to partially commit to policy choices serving the expert's interests, thereby inducing him to reveal more.

As noted by Holmstrom (1984) and Dessein (2002), partial or complete delegation of decision making authority to an informed expert serves the interest of an uninformed receiver of information unless the bias is too high. In our model,

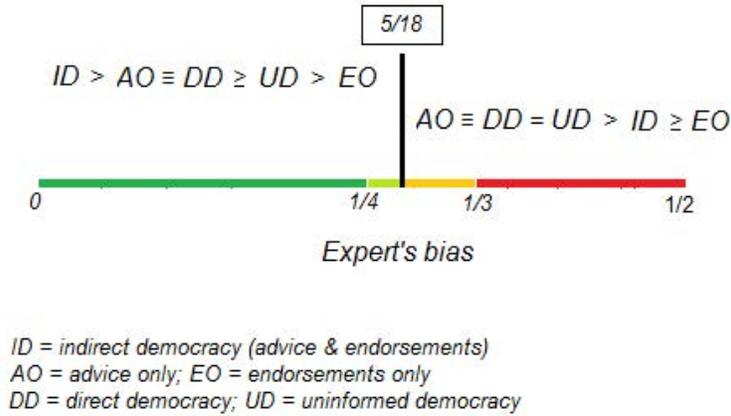


FIGURE 7. VOTER'S RANKING OF INSTITUTIONS.

electoral competition serves in effect as the *delegation* mechanism, albeit an imperfect one. Since the expert can influence policy making only through public speeches, the delegation benefits in our model fall short of the benefits of optimal delegation identified by Holmstrom (1984).²⁹

Figure 7 provides the ranking of alternative institutions from the perspective of voter welfare as a function of the conflict b_e . Consistent with Proposition 4, indirect democracy is the top choice of the voter when $b_e < 5/18$, while direct democracy is the best institution when $b_e > 5/18$. At $b_e = 5/18$, the benefit of informative advocacy exactly offsets the cost of policy distortions caused by the threat of platform endorsements and the social value of expertise under indirect democracy equals zero.

Direct democracy, which is identical to the advocacy only benchmark, is uninformative and coincides with uninformed democracy when $b_e > 1/4$. Similarly, indirect democracy coincides with the endorsements only benchmark when $b_e > 1/3$ since policy advocacy is uninformative in these cases. The synergy effect is absent and the social value of expertise is negative. Even when $5/18 < b_e < 1/3$ and advocacy is informative under indirect democracy, the platform distortion effect is dominant. Although the expert is informative, the social value of expertise is negative and the voter prefers uninformed democracy. When platforms are distorted without any information being gained, the voter is even worse off. The worst institution for the voter in all cases is when the expert only sends partisan endorsements.

The expert's ranking of these institutions is similar to the voter's, but not

²⁹In Section II, we extend this intuition and introduce the possibility of direct capture by the expert of the platforms chosen by a political party. We show that in such a situation voter welfare becomes equal to that under optimal delegation.

identical. When $b_e < 5/18$, the expert ranks indirect democracy as her top choice, just like the voter. Indeed, in this case all voters to the right of the median do so. But, unlike the voter, indirect democracy remains the top choice for the expert regardless of her bias. The expert never ranks direct democracy at the top. This is because indirect democracy is not only more informative but also gives rise to policies that favor the expert more.³⁰

F. Necessity

We now consider two modifications of our baseline model of indirect democracy. Both modifications concern assumptions about commitment that we have made so far. The first modification varies the commitment available to the parties and provides insight into what allows voters to obtain the benefits of delegation under indirect democracy. The second modification varies instead the commitment power available to the expert when she chooses her information transmission strategies. These two benchmarks identify necessary conditions for the welfare result in Proposition 4.

Consider a scenario where political parties cannot commit to *policy* platforms. Instead, they can achieve a degree of commitment by nominating *candidates* with known preferences (captured by the biases b_L and b_R of the nominated candidates) from the full set of voters. As before, the parties are office-seeking and choose a candidate to maximize their probability of winning the election. The expert provides advice before the parties choose candidates and endorsements after they do so. Subsequently voters vote. The winning candidate chooses a policy to maximize her own payoff given all available information. Our next result shows that the equilibrium outcome in this model of candidate commitment (as opposed to platform commitment) yields the same outcome as direct democracy.

PROPOSITION 5: *In the model of indirect democracy with candidate commitment, both parties choose candidates that are ideologically identical to the median voter, $b_L = b_R = 0$, and so the welfare of the voter is identical to that under direct democracy.*

Proposition 5 identifies a necessary condition underlying our main welfare result in Proposition 4. It underscores the benefits of programmatic politics over personality centric ones. To reap the delegation benefits of indirect democracy, it is important that parties commit through platforms rather than personalities.

We turn now to the second modification of our baseline model. This has to do with the commitment power (or lack thereof) on the part of the expert. So

³⁰Regardless of b_e , the worst institution for the expert is uninformed democracy (UD). Since policies are uninformed also in the endorsements only (EO) benchmark but closer to the expert's ideological interests, she always prefers EO to UD. She may even rank EO as her second choice, above direct democracy. Direct democracy is the expert's second ranked institution, above EO, only when the gain to the expert from greater information exchange under direct democracy offsets the loss from policies that serve the voter's interests ex post. This occurs for $b_e < 1/\sqrt{32}$.

far we have assumed that the expert has no commitment power and engages in cheap talk. The information she can reveal in equilibrium depends entirely on her incentive or credibility constraints. We now ask how our welfare result depends on these constraints, reverting back to our baseline assumption that parties commit to platforms. Our next result compares voter welfare under direct and indirect democracy, when the expert faces no incentive constraints. She can commit ex ante to a (multi-stage) information policy or persuasion mechanism (Kamenica and Gentzkow, 2011).

PROPOSITION 6: *Suppose the expert can commit to an information policy. Then direct democracy is better for voter welfare than indirect democracy.*

When the relevant institution is direct democracy (i.e., the CS model), it is well known that the optimal information policy with commitment is the policy of revealing all information. In contrast, under indirect democracy we show that the expert's optimal information policy will reveal some but not all information.

From the perspective of voter welfare, direct democracy must then be the superior institution. Under direct democracy, the voter gets his first best full information payoffs. Under indirect democracy, fixing the information policy of the expert, voter payoffs can be at most as high as the benchmark where policies necessarily equal the expected ideal policy of the voter given all available information. But the payoff from this benchmark must be strictly lower than the full information payoff. The expert does not disclose all information under indirect democracy and so the voter faces residual uncertainty about the state of the world. This uncertainty lowers voter payoffs. Proposition 6 shows that a necessary condition for indirect democracy to dominate direct democracy is a lack of commitment on the part of the expert. Voters prefer indirect democracy only if the expert cannot commit and her credibility is a justifiable concern.

We prove Proposition 6 by performing the following thought experiment. Suppose that at the ex ante stage the expert can commit to delegating her messaging to a voter with ideological bias b_s . Call this voter the *surrogate*. The surrogate obtains the expert's information and engages in strategic information transmission given her own incentives. The surrogate's ideology b_s is a choice variable for the expert with ideology b_e . Who is the ideal surrogate from the ex ante perspective of the expert?

The expert can always choose a perfectly voter aligned surrogate who will reveal all information. But we show that under indirect democracy the optimal surrogate is never perfectly voter aligned. The expert resolves the trade off between informed policies and policies that serve her interest by choosing a surrogate who hides some information and ensures that parties pander partially to the expert's ideological interests. Since the set of all possible information policies include the set of policies that can be generated by choosing a surrogate, this shows that the optimal general information policy under indirect democracy will also hide some information.

II. Ideal democracy: technocrats versus populists

Our model in Section I describes situations where the expert influences electoral outcomes purely through public communication. She does not directly affect party platforms but nevertheless has significant influence on electoral outcomes. We now contrast this situation of indirect capture with one where the expert *directly* controls the platform choices of one (or more) of the political parties. We revert also to our baseline assumptions that the expert cannot commit to an information disclosure policy and that the parties commit to platforms.

Suppose that one of the two political parties is directly controlled by the expert. The expert chooses this party's platform, possibly as a function of her own private information, in order to serve her ideological interests. We call this the technocratic party. The other party is also ideological but uninformed. It chooses its platform to maximize the welfare of the median voter. It is a populist party. After the two parties simultaneously select their platforms, the voter elects her preferred platform given the information inferred from the observed platform choices. Our next result characterizes the best equilibrium for the voter in this game of electoral competition between technocrats and populists.

PROPOSITION 7: *Suppose that the expert with ideology $b_e > 0$ directly chooses the platform of the technocratic party, while the other uninformed populist party simultaneously chooses its own platform. In the best equilibrium for the voter, the technocratic party will choose a platform $x_e^* = y + b_e$ in state y , while the populist party will choose a platform $x_u^* = 1 - b_e$, following which the voter will elect the smaller of the two observed platforms.*

In the equilibrium described by Proposition 7, the technocratic party's platform choice perfectly reveals the state but the chosen platform is the expert's ideal policy in each state. The voter elects the technocratic platform x_e as long as it is to the left of the uninformed populist party's platform x_u . If $x_e > x_u$, the voter prefers the populist platform and elects it for sure. Figure 8 depicts the platforms and outcomes as a function of the state.

Information gives a competitive edge to the technocratic party. Whenever the expert prefers a policy to the left of the populist party's equilibrium platform, she can adopt it as her party's platform and get the support of a majority of voters, since the departure from her rival is in a direction opposite to the direction of her bias, indicating a lower state. This happens whenever $y < 1 - 2b_e$. When the expert's information is relatively extreme and in the direction of her preference conflict with the average voter, $y > 1 - 2b_e$, a majority prefers the uninformed populist platform and the populist party wins the election. The probability that the populist wins is $2b_e$, which is increasing in the conflict between the voter and the expert. Voters will often elect technocrats. But they prefer populists when technocrats propose policies that seem extreme, resembling support for

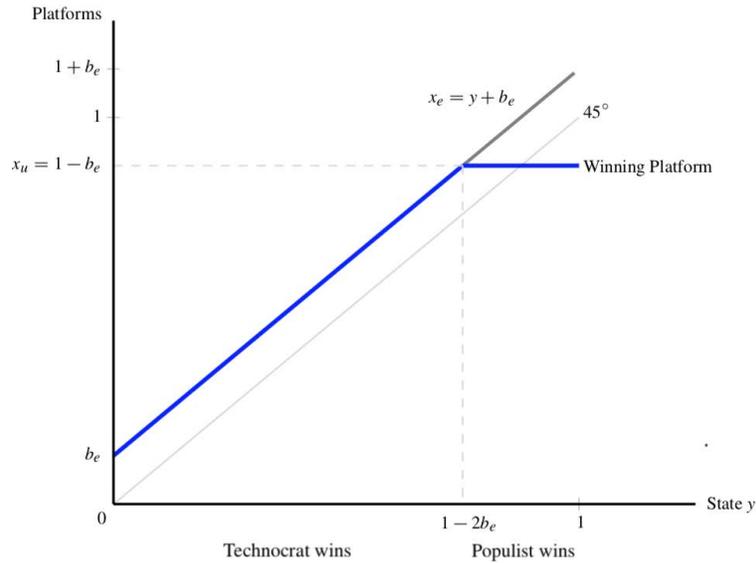


FIGURE 8. IDEAL DEMOCRACY: TECHNOCRATS VS. POPULISTS.

their special interests (e.g., when the threat of climate change is real).³¹

On average, direct expert capture of one party is good for voters. Seen as a mapping from the state y to elected policies, electoral outcomes take the form of a capped delegation mechanism. In fact, it is the optimal mechanism, in the class of all mechanisms without transfers (Holmstrom (1984)). A technocratic party competing against uninformed populists leads to the best of all possible institutions for the voter. The source of the voter's ex ante welfare gain is the greater informativeness of the platform proposed by the expert captured technocratic party.³²

What happens if the expert captures not one but both the political parties? It is easy to see that both parties will propose platforms equal to the expert's ideal policy $y + b_e$ in each state and such a policy will be implemented. We then have a dictatorship of technocrats, corresponding to the notion of full delegation to the expert considered in Dessein (2002). It can be shown that such complete expert capture yields better outcomes for the voter, compared to indirect capture via public communication (i.e., the model of Section I), if and only if $b_e < 1/3$.

³¹The signaling game of Proposition 7 has other equilibria, including uninformative pooling equilibria. We present the voter's most preferred equilibrium in the spirit of our previous equilibrium selection.

³²This variant of the model is reminiscent of Gilligan and Krehbiel (1987), where a biased but informed committee proposes policy choice to a legislature. The closed rule (which does not allow the legislature to amend the committee's proposal—policy must revert to the status quo if the proposal is rejected) is usually superior to the open rule (which allows amendments), for informational reasons. In our framework, the populist party's platform acts like the status quo policy in committee settings, except that its position is determined endogenously through electoral competition.

Since the capped delegation mechanism of Holmstrom (1984) is the optimal mechanism, direct capture of only one party is the best of all outcomes for the voter. It is better than dictatorship of technocrats. In other words, the extent of expert capture has an interesting non-monotonic effect on voter welfare. When the expert captures only one party, the presence of the other uninformed, populist party provides a constraint on the expert's party that is strictly beneficial for voters. Dictatorship of technocrats is reminiscent of Plato's favored institution of a philosopher-king. Unlike Plato, we find that a philosopher competing in an election against a know-nothing populist is optimal.³³

III. Related literature

Our paper is broadly related to a theoretical literature on media bias which examines selective or distorted presentation of information to the voting public. The media, like the expert in our framework, is assumed to have an informational advantage over the public, which can be leveraged for policy influence. In some papers, the conclusion rests on the assumption that the informed manipulator can restrict her message to a subset of voters (Grossman and Helpman (1999), Stromberg (2004), Chan and Suen (2008)). Wittman (1983), Calvert (1985), and Gul and Pesendorfer (2012) consider fully public messages, but differ from our baseline model in that parties are policy motivated, not office motivated. Unlike in our paper, this results in policy divergence.

There is a literature in which political parties, rather than the media or experts, hold private information about the state-of-the-world. This literature investigates to what extent private information is revealed through platform choices (Martinelli (2001), Martinelli and Matsui (2002), Heidhues and Lagerlof (2003), Laslier and Van de Straeten (2004), Kartik, Squintani and Tinn (2015)) or cheap talk messages, i.e., non-binding campaign promises (Harrington (1992), Chakraborty and Harbaugh (2010), Schnakenberg (2016), Panova (2017), Kartik and Van Weelden (2019)). Gilligan and Krehbiel (1987, 1989; see also Krishna and Morgan (2001)) study policy advice under asymmetric information, but in a legislative rather than electoral setting.

There is a literature on candidate valence, which may be a source of asymmetric information and electoral manipulation but of a fundamentally different kind. In our framework, voters do not know their policy preference since it is state-contingent. In the valence literature, voters have deterministic preference over policies but also care about a second dimension—the ability or character of elected candidates. Groseclose (2001) and Aragonés and Palfrey (2002) examine policy outcomes when one candidate has a *known* valence advantage, while Kartik and McAfee (2007), Boleslavsky and Cotton (2015) and Chakraborty and Ghosh

³³It can be shown that if the uninformed party is office-seeking, instead of being ideological, the same optimal capped delegation mechanism is an equilibrium outcome of electoral competition between the expert's technocratic party and the uninformed office-seeker. In effect, therefore, such an uninformed office-seeker is a pseudo-populist.

(2016) look at asymmetric information. In particular, the results in Chakraborty and Ghosh (2016) suggest that private information about *valence* can give substantial manipulative powers to the media or expert that can reduce voter welfare. The message of this paper is that private information on *policy* can lead to manipulation but the welfare effect on the average voter is generally positive.

Finally, there is a literature that compares direct and indirect democracy from the perspective of voter welfare (see Matsusaka (2005) for a survey). This literature views direct and indirect democracy as processes that trade off politicians' corruptibility (Kalt and Zupan (1984), Peltzman (1984), Gerber (1996)) against voters' ignorance of policy issues (Maskin and Tirole (2004)). We bring a different perspective to this debate, comparing direct and indirect democracy as mechanisms for acquiring information from third parties (experts).

IV. Conclusion

We reconsider the Hotelling-Downs model of two party electoral competition in the presence of an ideologically biased but informed expert. The expert can engage in strategic and public information transmission, providing platform endorsements as well as policy advice. Platform endorsements may influence voters and determine the electoral prospects of office-seeking parties. In order to obtain favorable endorsements, parties have an incentive to choose platforms that serves the expert's ideological interests. This by itself hurts voters.

However, expert pandering incentivizes the expert to provide detailed policy advice that allows parties to choose platforms that vary with the information held by the expert. This information dependence benefits voters. When the expert is not too ideologically biased, decentralized electoral competition influenced by the expert yields better average outcomes for voters, compared to directly communicating with the expert and choosing their own ideal policies. Voter welfare is maximized if instead of public speeches, the expert directly controls the platform choices of one of the parties that competes in an election against an uninformed populist party.

V. Appendix

A. Proofs

Proof of Lemma 1. Fix any two platforms x_L, x_R . If $x_L = x_R$ then there is no choice facing the electorate so suppose $x_L < x_R$. Let $x_{mid} = \frac{x_L + x_R}{2}$ be the midpoint of the platforms. Let \mathcal{I} be the information available to all voters at the voting stage. Our specification of voter preferences implies that a voter with ideology b strictly prefers x_R iff

$$E[y|\mathcal{I}] + b > \frac{x_L + x_R}{2} = x_{mid}$$

It follows that if the median voter with ideology $b_{mv} = 0$ strictly prefers x_R (resp., x_L) so do all voters with ideology $b > 0$ (resp., $b < 0$). ■

Proof of Lemma 2. Fix x_L, x_R . If $x_L = x_R$ then endorsements have no role to play, so suppose $x_L < x_R$. In an influential equilibrium, the expert has (at least) two different endorsement messages m_e and m'_e that result in x_R being elected with different probabilities after each message. Whenever $y + b_e > x_{mid}$ so that the expert strictly prefers x_R , the expert will send the message that elects x_R with the highest probability; and similarly for x_L . It follows that the expert's endorsement can only reveal if $y + b_e > x_{mid}$ or not.

For the expert to endorse both candidates with positive probability we need $x_{mid} - b_e \in (y_l, y_h)$. If the expert endorses x_L , the voter learns $y \leq x_{mid} - b_e$. Then the voter also prefers x_L since $E[y|y < x_{mid} - b_e; m_a] < x_{mid}$. On the other hand, If the expert endorses x_R , the voter learns $y > x_{mid} - b_e$. The voter is willing to vote for x_R iff

$$E[y|y > x_{mid} - b_e; m_a] \geq x_{mid}$$

Since y is uniformly distributed in the interval $[y_l, y_h]$ given m_a , the last inequality holds iff $x_{mid} \leq y_h - b_e$. We conclude that a necessary condition for endorsements to be influential is $x_{mid} \in (y_l, y_h - b_e]$. Sufficiency is immediate.

When endorsements are not influential, it could be because $y_l \geq x_{mid} - b_e$ in which case the expert always prefers x_R ; or it could be because $x_{mid} > y_h - b_e$ in which case an endorsement for x_R does not sway the voter. In either case, the voter's decision does not depend on the expert's endorsement and so the voter must prefer whichever platform is closest to $E[y|m_a]$, the expected value of the state before hearing the expert's endorsement m_e . ■

Proof of Lemma 3. Fix the expert's advocacy message that reveals that $y \in [y_l, y_h] \subset [0, 1]$. We proceed in cases.

Case 1. $E[y|m_a] \geq y_h - b_e$, equivalently, $y_h - y_l \leq 2b_e$.

We show that in this case both candidates locating at $x^* = E[y|m_a]$, with each candidate equally likely to win, is a strict Nash equilibrium in platform choices. For if one candidate deviates to $x' \neq x^*$, since $y_h - y_l < 2b_e$, the expert's zone of influence $(y_l + b_e, y_h - b_e]$ is empty. So by lemma 2, the platform $x^* = E[y|m_a]$ will win for sure, implying the deviation to x' is strictly unprofitable for the other party.

Case 2. $E[y|m_a] + b_e \leq y_h - b_e$, equivalently, $y_h - y_l \geq 4b_e$.

We show that in this case both candidates locating at $x^* = E[y|m_a] + b_e$, with each candidate equally likely to win, is a strict Nash equilibrium in platform choices.

If one candidate deviates rightward to $x' > x^*$ with $(x' + x^*)/2 \leq y_h - b_e$, then by lemma 2, an expert endorsement will be influential and the platform that receives the endorsement will win the election. For the deviating candidate, such

an endorsement that guarantees the election will arrive when

$$y > (x' + x^*)/2 - b_e > E[y|m_e].$$

Since this event has probability less than $1/2$, the deviation is strictly unprofitable. So suppose that the candidate deviates rightward to $x' > x^*$ such that $(x' + x^*)/2 > y_h - b_e$. Then by lemma 2 an endorsement for x' will not be influential and the deviating candidate will never win the election so such a deviation is also strictly unprofitable.

Consider next a leftward deviation to $x' < x^*$. Since

$$(x' + x^*)/2 < x^* = E[y|m_a] + b_e \leq y_h - b_e$$

the expert will be influential after such a deviation and the platform that receives the endorsement will win the election. The left platform x' will receive the endorsement if

$$y < (x' + x^*)/2 - b_e < E[y|m_e].$$

which occurs with probability strictly less than $1/2$ and so this deviation is also strictly unprofitable.

Case 3. $y_l + b_e < E[y|m_a] < y_h - b_e < E[y|m_a] + b_e$, equivalently, $2b_e < y_h - y_l < 4b_e$.

We show that in this case both candidates locating at $x^* = y_h - b_e$, with each candidate equally likely to win, is a strict Nash equilibrium in platform choices.

If one candidate deviates rightward to $x' > x^*$ then $(x' + x^*)/2 > y_h - b_e$, then by lemma 2, an expert endorsement for x' will not be influential. Since $E[y|m_s] < y_h - b_e = x^*$, by lemma 2, the deviating candidate will lose the election for sure and so such a deviation is strictly unprofitable.

Consider next a leftward deviation to $x' < x^*$. Since

$$(x' + x^*)/2 < x^* = y_h - b_e$$

the expert will be influential after such a deviation and the platform that receives the endorsement will win the election. The left platform x' will receive the endorsement if

$$y < (x' + x^*)/2 - b_e < E[y|m_e],$$

an event that occurs with probability less than $1/2$ and so such a deviation is strictly unprofitable.

CLAIM 1: *In each of the three cases above, the Nash equilibrium described is the unique equilibrium in platform choices.*

To prove the claim, we note first that the game of platform choice between the two parties is a two person zero sum game. We recall here a known result that Nash equilibria are exchangeable in two-person zero sum games, i.e., if (a_1, a_2)

and (b_1, b_2) are both Nash equilibria (possibly in mixed strategies) then so are (a_1, b_2) and (b_1, a_2) and, further, all these equilibria yield the same payoffs to the two players (see, e.g., Raghavan, (1994)). From this it is immediate that a strict Nash equilibrium must be unique.³⁴ This concludes the proof of the lemma. ■

Proof of Proposition 1. Follows from Lemma 3. ■

Proof of Proposition 2. Follows from the discussion in the text. ■

Proof of Proposition 3. Existence of an equilibrium where the expert's advocacy message reveals an interval is immediate since the expert can be uninformative in the first stage. From Lemma 3, for any first stage message that reveals an interval, platforms converge. Standard arguments (see, e.g., Lemma 1 in CS) then imply $N^*(b_e)$ is finite.

Consider an N - element partition of the state space $[0, 1]$ given by

$$\{[c_0, c_1), [c_1, c_2), \dots, [c_{i-1}, c_i), [c_i, c_{i+1}), \dots, [c_{N-1}, c_N)\}, c_0 = 0, c_N = 1.$$

Recall that for an arbitrary interval $[c_{i-1}, c_i)$ of length $l_i = c_i - c_{i-1}$, Lemma 3 implies the following:

- $4b_e \leq l_i$ iff $x^*(c_{i-1}, c_i) = \frac{c_{i-1} + c_i}{2} + b_e$ (expert pandering);
- $2b_e < l_i < 4b_e$ iff $x^*([c_{i-1}, c_i)) = c_i - b_e$ (partial pandering);
- $l_i \leq 2b_e$ iff $x^*([c_{i-1}, c_i)) = \frac{c_{i-1} + c_i}{2}$ (voter pandering).

We first show that if an interval length $l_i \leq 2b_e$ then $i = 1$, i.e., voter pandering can only occur in the left-most interval. Suppose to the contrary that message $[c_{i-1}, c_i)$ leads to voter pandering with $i > 1$. What happens in the interval $[c_{i-2}, c_{i-1})$ immediately to the left that has length $l_{i-1} > 0$? If it also displays voter pandering then we must have

$$c_{i-1} + b_e - \frac{c_{i-2} + c_{i-1}}{2} = \frac{c_i + c_{i-1}}{2} - (c_{i-1} + b_e)$$

using the indifference of type c_{i-1} . This yields $l_i - l_{i-1} = 4b_e$ which is impossible since $l_i \leq 2b_e$. If instead that the interval $[c_{i-2}, c_{i-1})$ displays partial pandering, then indifference for type c_{i-1} implies

$$c_{i-1} + b_e - (c_{i-1} - b_e) = \frac{c_i + c_{i-1}}{2} - (c_{i-1} + b_e)$$

This yields $l_i = 4b_e$ which is impossible since $l_i \leq 2b_e$. So the interval $[c_{i-2}, c_{i-1})$ immediately to the left must involve expert pandering. Indifference for type c_{i-1}

³⁴Notice that in the unique Nash equilibrium in cases 2 and 3, it is necessary that each platform is equally likely to win, otherwise one candidate will have a profitable deviation. In case 1, if we do not assume uniform tie breaking, there is some indeterminacy in equilibrium win probabilities, just as in the classical median voter theorem, but this has no bearing on elected platforms and on welfare.

then implies

$$c_{i-1} + b_e - \left(\frac{c_{i-1} + c_{i-2}}{2} + b_e \right) = \frac{c_i + c_{i-1}}{2} - (c_{i-1} + b_e),$$

which yields $l_i = l_{i-1} + 2b_e$ which is also impossible since $l_i \leq 2b_e$ and $l_{i-1} > 0$. We conclude that if $l_i \leq 2b_e$ then $i = 1$.

We show next that if expert pandering occurs in some interval $[c_{i-1}, c_i)$ with $i < N$, then $l_{i+1} = l_i$, i.e., if expert pandering occurs in i -th interval with $i < N$, then every interval to the right must be of the same length as the i -th interval and also display expert pandering. To see this, consider two successive intervals $[c_{i-1}, c_i)$ and $[c_i, c_{i+1})$ and suppose the interval $[c_{i-1}, c_i)$ displays expert pandering with $i < N$. We must then have $l_i \geq 4b_e$. Let $x \in [c_i, c_{i+1})$ be the policy for the interval $[c_i, c_{i+1})$. Indifference of type c_i implies $x > c_i + b_e$ and

$$(c_i + b_e) - \left(\frac{c_{i-1} + c_i}{2} + b_e \right) = x - (c_i + b_e).$$

From the previous step $l_{i+1} > 2b_e$ since voter pandering can occur only in the left-most interval. If $2b_e < l_{i+1} < 4b_e$, then $x = c_{i+1} - b_e$ and the indifference condition above yields $l_{i+1} = l_i/2 + 2b_e \geq 4b_e$, a contradiction. So it must be that that $l_{i+1} \geq 4b_e$ and the policy $x = \frac{c_i + c_{i+1}}{2} + b_e$ displays expert pandering. The indifference condition above yields $l_i = l_{i+1} \geq 4b_e$ and all such intervals must have the same length.

Next, consider an interval $[c_{i-1}, c_i)$ with $2b_e < l_i < 4b_e$ that leads to partial pandering. We show now that if $i < N$, then we must have $l_{i+1} = 4b_e$. To see this, recall from above that since $[c_i, c_{i+1})$ is not the left-most interval, $l_{i+1} > 2b_e$. If $l_{i+1} > 4b_e$, then using the indifference of type c_i

$$c_i + b_e - (c_i - b_e) = \frac{c_{i+1} + c_i}{2} + b_e - (c_i + b_e),$$

we see $l_{i+1} = 4b_e$, a contradiction. But if $l_{i+1} \leq 4b_e$, then using the indifference of type c_i

$$c_i + b_e - (c_i - b_e) = c_{i+1} - b_e - (c_i + b_e),$$

we see $l_{i+1} = 4b_e$ and this interval displays expert pandering.

In sum, the necessary properties of an equilibrium are as follows: only the left-most interval can display voter pandering, if an interval displays partial pandering then every interval to its right displays expert pandering, and if an interval displays expert pandering so must every interval to its right that must also all be of the same length.

Fix the state space $[0, 1]$ and let R be the remainder when $4b_e$ divides 1. Consider the equilibrium with the highest ex ante expected payoffs to the expert and the median voter. Call this the most informative equilibrium (for brevity). We

show now that this equilibrium is given by a unique N^* - element interval partition of the state space that has the following properties:

- 1) Policy advice is uninformative (i.e., $N^* = 1$) if and only if $1/3 \leq b_e$;
- 2) If $1/4 \leq b_e < 1/3$, then $N^* = 2$ with voter pandering in the left interval and partial pandering in the right interval with the cutoff type $c_1 = \frac{2}{3} - 2b_e$;
- 3) If $b_e < 1/4$, then there are three cases to consider
 - a) if $R > 3b_e$, then $N^* = \lfloor \frac{1}{4b_e} \rfloor + 2$, the left-most interval yields voter pandering, followed by partial pandering, followed by expert pandering with the cutoffs given by $c_1 = \frac{2}{3}R - 2b_e$ and $c_i = R + 4b_e(i - 2)$ for $i \geq 2$.
 - b) if $2b_e \leq R \leq 3b_e$, then $N^* = \lfloor \frac{1}{4b_e} \rfloor + 1$, the left-most interval yields partial pandering while all other intervals yield expert pandering with the cutoffs given by $c_1 = R$ and $c_i = R + 4b_e(i - 1)$ for $i \geq 2$;
 - c) if $R < 2b_e$, then $N^* = \lfloor \frac{1}{4b_e} \rfloor + 1$, the left-most interval yields voter pandering, followed by partial pandering, followed by expert pandering with the cutoffs given by $c_1 = \frac{2}{3}(R + 4b_e) - 2b_e$ and $c_i = R + 4b_e(i - 1)$ for $i \geq 2$.

Part (1): Assume on the contrary that $b_e \geq \frac{1}{3}$ and there exists an informative equilibrium. Then the only candidate is of the form $\{[0, c), [c, 1]\}$ such that the interval $[0, c)$ leads to a voter pandering policy $x^* = \frac{c}{2}$ while the interval $[c, 1)$ yields a partial pandering policy $x^* = 1 - b_e$. The expert of type $c > 0$ is indifferent so that $c = 2/3 - 2b_e < 0$, a contradiction.

Part (2) follows immediately from the proof of Part (1) and the earlier characterization of the necessary properties of equilibria in this proof.

Part (3): Since $1 > 4b_e$ it follows that $R > 0$. When $R > 3b_e$, we create $\frac{1-R}{4b_e}$ intervals of size $4b_e$ from the right and apply Part (2) of the lemma on the ‘remaining’ left-most section $[0, R)$ to obtain the partition. When $2b_e \leq R \leq 3b_e$, we again create $\frac{1-R}{4b_e}$ intervals of size $4b_e$ from the right and this time apply Part (1) of the lemma on the ‘remaining’ left-most section $[0, R]$ to obtain the partition. When $R < 2b_e$, we create $\frac{1-R}{4b_e} - 1$ intervals of size $4b_e$ from the right and apply Part (2) of the lemma on the ‘remaining’ left-most section $[0, R + 4b_e)$ to obtain the partition.

To complete the proof of the proposition, we now show that the expert and the median voter have identical preference rankings over the equilibrium set and that the most informative equilibrium described above yields the highest ex ante payoff. To prove this we employ the following steps.

STEP 1: Let $\mathcal{P}_1 = \{[0, c_1), [c_1, c_2), \dots, [c_{N-1}, 1]\}$ be an equilibrium such that the length of the interval $l_i = 4b_e$ for all $i \geq 3$, $l_1 < 2b_e$ and $2b_e < l_2 < 4b_e$ with $l_1 + l_2 < 4b_e$. Consider the partition $\mathcal{P}_2 = \{[0, c_2), [c_2, c_3), \dots, [c_{N-1}, 1]\}$.

CLAIM 2: *The partition \mathcal{P}_2 is also an equilibrium but the median voter and the expert strictly prefer \mathcal{P}_1 to \mathcal{P}_2 .*

Notice that under the assumed conditions, the policy $x^*([0, c_2])$ for \mathcal{P}_2 is equal to the policy $x^*([c_1, c_2])$ under \mathcal{P}_1 . It follows that \mathcal{P}_2 is also an equilibrium partition. It is necessary and sufficient to compare the welfare of the agents concerned over the state sub-interval $[0, c_2]$.

Note that by construction, $x^*([0, c_1])$ is the median voter's best policy conditional on the event $[0, c_1]$. Hence, conditional on the event $[0, c_1]$, the median voter's expected payoff from $x^*([0, c_1])$ is strictly higher than from $x^*([0, c_2]) = x^*([c_1, c_2])$. Also, conditional on the event $[c_1, c_2]$, the expected payoff of the median voter from $x^*([c_1, c_2])$ equals that from $x^*([0, c_2])$ since $x^*([0, c_2]) = x^*([c_1, c_2])$. Given $[0, c_1]$ is a strictly positive probability event, it follows that the median voter strictly prefers \mathcal{P}_1 to \mathcal{P}_2 .

Now consider the expert. Since \mathcal{P}_1 and \mathcal{P}_2 are equilibrium partitions, the expert strictly prefers $x^*([c_{i-1}, c_i])$ to $x^*([c_{j-1}, c_j])$ for all $y \in [c_{i-1}, c_i]$, $i \neq j$, $i, j = 1, 2$. Again, since $x^*([0, c_2]) = x^*([c_1, c_2])$, it follows that conditional on the event $[0, c_1]$, the expected payoff of the expert from $x^*([0, c_1])$ is strictly greater than that from $x^*([0, c_2])$. Finally, conditional on the event $[c_1, c_2]$, the expected payoff of the expert is equal as $x^*([0, c_2]) = x^*([c_1, c_2])$. Thus the expert also strictly prefers \mathcal{P}_1 to \mathcal{P}_2 .

STEP 2: Let $\mathcal{P}_3 = \{[0, c_1], \dots, [c_{N-1}, 1]\}$ and $\mathcal{P}_4 = \{[0, c'_1], \dots, [c'_{M-1}, 1]\}$ be two equilibrium partitions such that l_i and l'_j are each greater or equal to $4b_e$, where l_i and l'_j are the interval lengths for \mathcal{P}_3 and \mathcal{P}_4 respectively.

CLAIM 3: *The median voter and the expert strictly prefer \mathcal{P}_3 to \mathcal{P}_4 iff $N > M$.*

The expected utility of any agent with arbitrary bias $\beta \geq 0$ from partitions \mathcal{P}_3 and \mathcal{P}_4 are given by

$$W(\mathcal{P}_3; \beta) = -\frac{1}{12N^2} - \frac{1}{N} \sum_{i=1}^N (E[y|[c_{i-1}, c_i]] + \beta - x^*([c_{i-1}, c_i]))^2,$$

and

$$W(\mathcal{P}_4; \beta) = -\frac{1}{12M^2} - \frac{1}{M} \sum_{i=1}^M (E[y|[c'_{i-1}, c'_i]] + \beta - x^*([c'_{i-1}, c'_i]))^2.$$

Also, $x^*([c_{i-1}, c_i]) = E[y|[c_{i-1}, c_i]] + b_e$ and $x^*([c'_{i-1}, c'_i]) = E[y|[c'_{i-1}, c'_i]] + b_e$. Hence,

$$W(\mathcal{P}_3; b_e) = -\frac{1}{12N^2}, W(\mathcal{P}_4; b_e) = -\frac{1}{12M^2}$$

and the result follows for the expert. Further,

$$W(\mathcal{P}_3; 0) = -\frac{1}{12N^2} - b_e, W(\mathcal{P}_4; 0) = -\frac{1}{12M^2} - b_e,$$

and the result follows for the median voter as well.

This concludes the proof of the proposition. ■

Proof of Proposition 4. We show here that (a) is equivalent to (d). The proofs of the other claims follow from the discussion in the text.

If the expert's bias $b_e > 1/24$, we can show by direct calculation that the voter is better off in the most informative equilibrium of our model compared to the most informative equilibrium of CS as long as $b_e < 5/18$. Accordingly, we focus attention on the case where $b_e \leq 1/24$ in what follows.

Recall that the loss to the median voter from a N element CS equilibrium is

$$(4) \quad L_{CS}(N) = \frac{1}{12} \sum_{i=1}^N l_i^3,$$

where

$$(5) \quad l_i = l_1 + 4b_e(i-1), i \geq 2$$

and $\sum_{i=1}^N l_i = 1$. Since $l_1 \geq 0$, using (5) in (4) we obtain

$$L_{CS}(N) \geq \frac{1}{12} \left(64b_e^3 \left(\frac{N(N-1)}{2} \right)^2 \right).$$

Let L^* be the loss to the median voter from the most informative equilibrium of our model. Let $L_*(M)$ be the loss from the most informative "equal length equilibrium". In such an equilibrium with M intervals, $M = \lfloor \frac{1}{4b_e} \rfloor$ with each interval of equal length $1/M$ and of size at least $4b_e$. Such an equilibrium exists for $b_e \leq 1/4$ and, by Lemma 3, platforms display complete expert pandering in each interval. By Proposition 3, we have

$$L^* < L_*(M) = \frac{1}{12} \sum_{i=1}^M \frac{1}{M^3} + b_e^2 = \frac{1}{12} \frac{1}{M^2} + b_e^2$$

Therefore, to show $L_{CS}(N) > L^*$ for all $b_e \leq 1/24$, it suffices to show

$$(6) \quad 64b_e^3 \left(\frac{N(N-1)}{2} \right)^2 \geq \frac{1}{M^2} + 12b_e^2.$$

Note that since $b_e \leq 1/24$, we have $N \geq 4$ and $M \geq 6$.

Let $b^*(N) = \frac{1}{2N(N-1)}$ the cutoff at which the N element CS equilibrium is born, i.e., at $b_e = b^*(N)$, $l_1 = 0$ so that $l_2 = 4b_e$, $l_3 = 8b_e$, and so on and all CS intervals have lengths that are multiples of $4b_e$. It follows that at this value of b_e we must have $M = \frac{N(N-1)}{2} = 1/4b_e$ in the most informative equal length equilibrium with

M elements with each interval of length exactly $4b_e$. In this case (6) becomes

$$64b_e^3 \left(\frac{1}{4b_e} \right)^2 > 16b_e^2 + 12b_e^2$$

or $b_e < 1/7$ which holds since $1/7 > 1/24 \geq b_e$. We conclude that (6) holds at $b_e = b^*(N)$ for all $N \geq 4$. It remains to establish (6) for $b_e \in (b^*(N+1), b^*(N))$ for all $N \geq 4$.

We proceed as follows. Starting from $b^*(N)$, as we lower b_e slightly, N and M remain fixed in (6). But when we lower b_e all the way to $b^*(N+1)$, we get a new $N+1$ element CS equilibrium and a corresponding $M' = \frac{N(N+1)}{2} = M + N$ element most informative equal-length equilibrium. As shown above, $L_{CS}(N+1) > L_*(M')$.

In between $b^*(N+1)$ and $b^*(N)$, there are $N-1$ further cutoff values of b_e at each of which the number of intervals of the most informative equal-sized equilibrium grow by 1. Let $b'(M+k)$ be these cutoff values of b_e , with $k = 0, \dots, N$, and

$$b^*(N) = b'(M) > \dots > b'(M+k) > \dots > b'(M+N) = b^*(N+1).$$

Notice that the r.h.s. of (6), if one uses the $M+k$ element most informative equal length equilibrium, is less than what obtains if one uses the M element equal length equilibrium.

We now introduce further slack into our analysis by comparing the loss from the N element CS equilibrium with the M element equal length equilibrium, which is not necessarily the most informative equal length equilibrium when $b_e \in (b^*(N+1), b^*(N))$. For such b_e , N and M are fixed, $M = \frac{N(N-1)}{2}$ and so (6) becomes

$$(7) \quad 64b_e^3 M^2 > 1/M^2 + 12b_e^2.$$

The difference between the l.h.s. and r.h.s. of (7) is monotone increasing in b_e if and only if $b_e > 1/8M^2$. But this is readily verified to be true using $b_e \geq b^*(N+1) = \frac{1}{2N(N+1)}$, $M = \frac{N(N-1)}{2}$ and $N \geq 4$. ■

Proof of Proposition 5. Suppose the two parties have committed to candidates with ideologies b_L and b_R . Fix the first stage message m_a and the second stage message m_e . The median voter (and hence a majority) will strictly prefer to elect the candidate who is ideologically closest to the median voter since such a candidate will choose policies that are closest to what the median voter likes given all available information. So such a candidate will win the election for sure, regardless of the information revealed by the expert. It follows that is in the incentive of each office-seeking party to choose a candidate that is identical in his ideology to the median voter. ■

Proof of Proposition 6. We suppose that the expert's role is played by a voter with ideology b_s (the surrogate) and consider the payoff to the expert with

ideology b_e from choosing such a surrogate. We provide a proof only for the claim that the optimal surrogate will have ideology $b_s > 0$ under indirect democracy, since it is well known that under direct democracy (the CS model) the optimal surrogate has bias $b_s = 0$.

Suppose the expert (with bias $b_e > 0$) commits to reveal all her information privately to a surrogate with bias $b_s > 0$ before the game of electoral competition starts. Subsequently, the surrogate takes the role of the expert in the game summarized in Figure 1. The loss to the expert from a N -interval equilibrium with the surrogate b_s is

$$L(b_s; b_e) = \sum_{i=1}^N l_i \int_{l_i} (y + b_e - \hat{y}_i)^2 \frac{dy}{l_i}$$

where l_i = length of i th interval and \hat{y}_i = ‘‘action’’ in the i th interval. Let \bar{y}_i = expected value of y given it is in i -th interval and let $\delta_i = \hat{y}_i - \bar{y}_i$ be the ‘‘distortion’’ in the action from what the voter would like. We can write

$$\begin{aligned} L(b_s; b_e) &= \sum_{i=1}^N l_i \int_{l_i} (y - \bar{y}_i + b_e - \delta_i)^2 \frac{dy}{l_i} \\ &= \sum_{i=1}^N l_i \int_{l_i} (y - \bar{y}_i)^2 \frac{dy}{l_i} + \sum_{i=1}^N l_i \int_{l_i} (b_e - \delta_i)^2 \frac{dy}{l_i} \\ &= \frac{1}{12} \sum_{i=1}^N l_i^3 - \sum_{i=1}^N l_i (2b_e - \delta_i) \delta_i + b_e^2 \end{aligned}$$

The expected loss to the expert from choosing a voter aligned surrogate, i.e., $b_s = 0$, is b_e^2 . So the difference in the loss between full disclosure to the voter and choosing a surrogate with bias $b_s > 0$ is

$$\Delta = b_e^2 - L(b_s; b_e) = \sum_{i=1}^N l_i (2b_e - \delta_i) \delta_i - \frac{1}{12} \sum_{i=1}^N l_i^3.$$

To show that $b_s = 0$ is not optimal it suffices to find some b_s and associated N for which $\Delta > 0$. We pick a N partition equilibrium where a $N + 1$ equilibrium is ‘just born’ for some $N > 1$. In this equilibrium, the left most interval is of length $3b_s$ (with partial pandering) and every other interval is of length $4b_s$ (with surrogate pandering). For such an equilibrium, we must have $l_1 = 3b_s$ and $l_i = 4b_s$ for $i \geq 2$, with $\sum_i l_i = 1$. Further, $\delta_1 = \frac{b_s}{2}$ and $\delta_i = b_s$ for $i \geq 2$. Using these, we obtain

$$\Delta = \sum_{i=1}^N l_i (2b_e - \delta_i) \delta_i - \frac{1}{12} \sum_{i=1}^N l_i^3 = b_s^2 \left[3b_e + 4b_s + 8(N - 1)b_e - \frac{7}{3} \right].$$

As long as $b_s \neq 0$, $\Delta > 0$ if and only if the term in braces above is strictly positive. Furthermore, for fixed b_e , as b_s becomes small, N grows and so $8(N-1)b_e$ becomes arbitrarily large and so the term inside braces must be positive for b_s small enough. This completes the proof. ■

Proof of Proposition 7. We need to show that the following profile of strategies is an equilibrium. The (expert captured) technocratic party chooses a platform $x_e^* = y + b_e$ as a function of y while the uninformed populist party chooses a platform $x_u^* = 1 - b_e$. Notice that $x_e^* \in [b_e, 1 + b_e]$. Let x_e denote a generic platform choice by the expert's technocratic party and x_u a generic platform choice by the uninformed populist party.

First consider the voter's sequential rationality in this candidate equilibrium. When $x_e \notin [b_e, 1 + b_e]$, the voter's beliefs are free. We choose beliefs that allow the voter elect the populist platform for sure in this case. Otherwise, the voter infers $y = x_e - b_e$ and elects the platform closest to this inferred state, randomizing if indifferent in a manner to be specified below. Notice that if the two parties behave as specified, the voter elects $\min[x_e^*, x_u^*]$. Since the specified profile of strategies implements the outcome of the optimal mechanism, it follows that if this profile is an equilibrium it is also the best equilibrium for the voter.

Consider now the techocratic party's rationality. If it behaves as specified, then for all $y < x_u^* - b_e$, we get $x_e = x_e^* = y + b_e < x_u^*$ and so the voter elects x_e^* . Since this is the ideal policy of the expert in these states, there is no profitable deviation for her party in such cases. On the other hand, if $y + b_e \geq x_u^*$, and the expert chooses $x_e = x_e^* = y + b_e$, the voter's loss from electing the expert's platform is b_e while his loss from electing the uninformed platform is at most b_e . So the voter weakly prefers to elect the populist platform and we suppose that the voter elects the populist platform when indifferent. If the expert deviates to any other platform $x_e < x_u^*$, and in the interval $[b_e, 1 + b_e]$ in these states, then the voter infers $y = x_e - b_e < x_e < x_u^*$ and elects the technocratic platform. But since $y + b_e > x_u^*$, this outcome is worse for the expert than letting x_u^* get elected. So such a deviation is unprofitable. On the other hand, if the expert's party deviates to some $x_e \notin [b_e, 1 + b_e]$, then voter beliefs are free and the voter elects x_u^* so such a deviation is not profitable either. We conclude that the technocratic party's behavior is sequentially rational in all states y .

It remains to check that populist party is playing a best response, given the technocratic party's specified behavior. Since the voter infers the state $y = x_e^* - b_e$ from the informed party's platform, the populist platform is elected whenever $x_u \in [y - b_e, y + b_e]$ and loss to the voter from electing this party is not higher than the loss b_e^2 from electing the other party. So the ex ante expected loss (negative of payoff) to the populist party from an arbitrary platform x_u is

$$\int_0^{\max[x_u - b_e, 0]} b_e^2 dy + \int_{\max[x_u - b_e, 0]}^{\max[x_u + b_e, 1]} (y - x_u)^2 dy + \int_{\max[x_u + b_e, 1]}^1 b_e^2 dy$$

and it is straightforward to check that $x_u^* = 1 - b_e$ minimizes this, completing the proof. ■

B. Other equilibria

The equilibrium characterized in Proposition 3 is the most informative equilibrium (and payoff dominant for both the expert and the voter) within the class of equilibria where (i) the expert's advocacy message is interval partitional and (ii) we select an influential equilibrium in the endorsement stage whenever one exists. Such a selection rule does not necessarily select the ex ante payoff dominant equilibrium.

Are there other equilibria under indirect capture, that do not satisfy the restrictions above and that are better for the voter than the equilibria we analyze? For completeness, we present two examples in this section that show that such equilibria may exist. For both examples, we take $b_e = 1/8$.

EXAMPLE 1: *Non-interval advocacy.*

We construct an equilibrium where the expert's first stage advocacy message does not necessarily reveal an interval for y and the parties choose different platforms after such non-interval stage messages.³⁵ In the top panel of Figure 9, we present the most informative equilibrium for $b_e = 1/8$, using Proposition 3. This equilibrium has three intervals, with corresponding convergent platform choices, as depicted in the figure. The left-most interval displays voter pandering, followed by partial pandering in the middle, followed by expert pandering in the right-most interval.

In the bottom of Figure 9, we depict another equilibrium that we construct from the top equilibrium. In this equilibrium, policy advocacy does not necessarily take an interval partitional form. The expert sometimes sends a message that reveals that y lies in the union of two disjoint, equally probable intervals, $[1/20, 1/10]$ and $[19/20, 1]$ (depicted in red in Figure 9). The other possible advocacy messages each reveal an interval for y with subsequent platform choices in accordance with Lemma 3, as depicted in the figure.

For the non-interval message, $y \in [1/20, 1/10] \cup [19/20, 1]$, there is platform divergence of a particular sort. One party chooses a platform exactly at $13/40$, the common platform choice after the interval message $y \in [1/10, 9/20]$. The other party chooses its platform at $33/40$, the common platform choice after the interval message $y \in [9/20, 19/20]$. Subsequently, the expert endorses the left platform $13/40$ if $y \in [1/20, 1/10]$ and the right platform $33/40$ when $y \in [19/20, 1]$. The endorsement is influential and the endorsed party wins the election with probability 1. When the parties choose their platforms, each party expects to receive an

³⁵If the parties choose the same platform for every possible message, then standard arguments show that advocacy must take an interval partitional form (see lemma 1 in CS, for instance). So for platform divergence to occur in our model, it is necessary that the expert's first message does not take the form of revealing an interval for y .

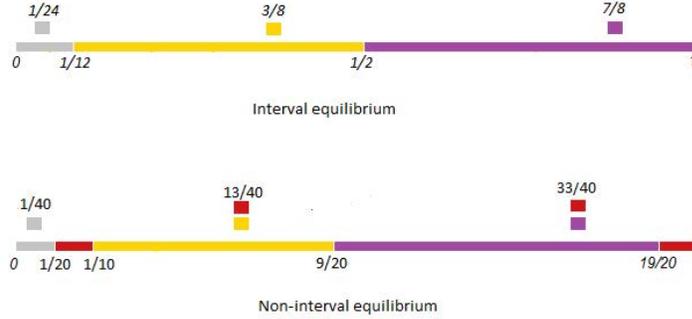


FIGURE 9. NON-INTERVAL EQUILIBRIUM.

influential endorsement and win the election with probability $1/2$, given the choice of the other party. It is straightforward to check the expert's advocacy strategy and subsequent platform choices by the two parties, as depicted in Figure 9 and described above, constitute an equilibrium. We omit the details.

The key feature that allows one to construct such an equilibrium is that the conditional expectation $E[y|y > x_{mid} - b_e, m_a]$ is not *strictly* increasing in x_{mid} when m_a reveals that y is in the union of two disjoint intervals. This creates a multiplicity in possible equilibrium platform choices following a non-interval advocacy message. This allows to choose platforms in precisely a way that makes it incentive compatible for the expert to send a first stage non-interval message (and all her other messages).

EXAMPLE 2: *Selection at the endorsement stage.*

In this example, we create an interval partitioned equilibrium using the non-interval equilibrium depicted in the bottom of Figure 9. We do this by altering the selection rule at the endorsement stage. Specifically, we select the babbling outcome at the endorsement stage, after certain platform choices, even though the expert can credibly send influential endorsements. Freedom in selecting between equilibria in the continuation game allows a wide range of possible outcomes.

In the top of Figure 10, we present the non-interval partitioned equilibrium of Figure 9. In the bottom of Figure 10, we present an outcome equivalent interval partitioned equilibrium, constructed by coalescing the two segments, $[1/20, 1/10]$ and $[19/20, 1]$, of the non-interval message with an adjacent interval message. In particular, we specify that at the advocacy stage the expert either reveals $y \in [0, 1/20]$ or that $y \in [1/20, 9/20]$, or that $y \in [9/20, 1]$. For each such interval advocacy message, we specify that both parties choose a common platform identical to what they would choose in the top panel of Figure 10, after an interval advocacy message from the expert, as depicted in the figure.

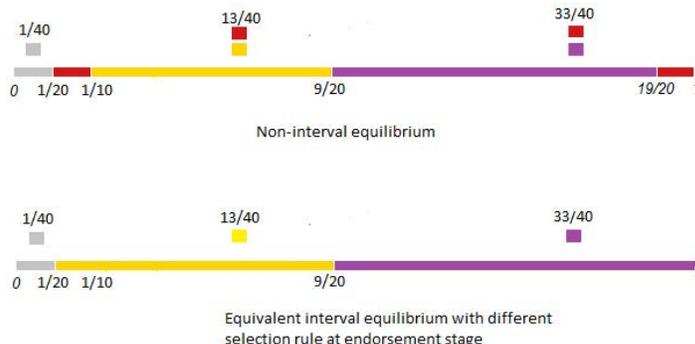


FIGURE 10. SELECTION AT ENDORSEMENT STAGE.

These platform choices are not consistent with Lemma 3. But we ensure that it is incentive compatible for the parties to choose the specified platforms by suitable selection at the endorsement stage. For instance, when the expert's first stage message reveals $y \in [9/20, 1]$, Lemma 3 states that both parties should locate at $17/20$, the expert's expected ideal point. However, in the bottom of Figure 10, we support the common platform choice at the lower point $33/40$ by selecting the babbling outcome at the endorsement stage if any party deviates rightwards. This eliminates the possibility of a profitable deviation that relies on credible endorsements, forcing both parties to behave as specified.

It should not be surprising that communication games with multiples stages of communication may have a large multiplicity of equilibria. The two examples of this section show that the restriction to the class of equilibria that we focus on limits our freedom to support a wider range of possible outcomes. Since we do not necessarily select the ex ante payoff dominant equilibrium for the voter, we understate the welfare benefits of indirect democracy under expert capture.

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