Delegation in a Cheap-Talk Game: A Voting Example

1 Introduction

Suppose an agent is contemplating an action with state-contingent payoffs, and has a prior belief about the probability of the states. She hires an expert to update her priors before the action. Experts, it is known, may be both informed as well as uninformed, and are not necessarily truthful. The question asked in this paper is when, if at all, is it better for the agent to assign the task of playing with experts and deciding on the action to another agent with a different set of priors. In particular, can an agent increase her payoff in a cheap-talk game by delegating to others to play the game on her behalf? This paper shows that such profitable delegation is possible and characterizes the agents to whom a given agent may delegate the responsibility.

While this generic problem can arise in many different contexts, we have chosen to model it in a simple voting situation where the electoral issue is whether a certain policy with contingent outcomes should or should not be implemented. Voters have different priors about the probable states of the world, and hence their expected pay-offs from the policy vary. The elected decision-maker can use the institution of an advisor before deciding whether to implement the policy. We show that unless the median voter has very sure beliefs about the probable states, she would be better off getting someone else elected than herself as the decision-maker. In particular, if the median is predisposed to (against) the policy action, she would be better off choosing a candidate more (less) pro-action than herself. The optimal choice of the decision-maker is shown to depend on the cost of misdirected policy, i.e. of implementing it when it is actually unwarranted.

There are a number of recent papers contesting or refining the standard Downsian model, for example Harrington [3], Caillaud and Tirole [2], Martinelli [6], Martinelli and Matsui [7] and Schultz [10]. Though our voting result can be counted as part of this family, its substantive query is different from the concern of the cited papers which explore the structure and conduct of political parties and the political process. Our paper shares the concerns of the literature on cheap-talk games with reputational concern. The analysis of repeated cheap-talk games with reputational issues was initiated by Sobel [11] and explored further by Bénabou and Laroque [1]. The central concern of our paper belongs to this literature, though the game analyzed here is a single-period game. Experts in our paper care to appear knowledgeable so as to enhance the probability of getting rehired at the end of the period. An uninformed expert tries to masquerade as knowledgeable to the decision-making agent by randomizing her advice according to the decision-maker's priors about the state of the world. Thus different players playing against an uninformed expert will face different mixes of advice in equilibrium. Some agents will be able to invoke an 'informative' equilibrium even as other agents might fail, thus creating the possibility of delegation.

A second substantive issue of our paper relates to the question of perverse reputational incentives first raised by Hölmstrom and Ricart i Costa [5]. In Sobel [11] and Bénabou and Laroque [1] 'good' experts are *assumed* to always tell the truth. By contrast, in models where the behavior of experts is endogenized, there can be a perverse effect of reputational concern. Perverse effect of reputation has been modelled in a variety of contexts. Scharfstein and Stein [9] show that if managers have a reputational concern, good managers have to sometimes say what is expected of them rather than the truth. Hölmstrom [4] models how an employee's concern for a future career may influence his or her incentives to put in effort or make decisions on the job, creating both positive as well as adverse effects. Morris [8] models an informed expert who endogenously develops an 'instrumental' interest in appearing politically correct in repeated games, though she does not have any direct concern for reputation. This instrumental concern for reputation, too, leads to suppression of information. Perverse effect of reputational concern in these models generally leads to loss of information. Our paper examines the possibility that some agents (and not others) are able to invoke equilibria without information loss, despite endogenous expert behavior and their concern for reputation. The gain from delegation in our paper arises from the fact that others may be able to realize an informative equilibrium (defined below) in the cheap talk game while the median voter might not. The best delegate for the median voter among the agents who are able to realize an informative equilibrium, is one whose subsequent choice of policy using the information maximizes the median voter's payoff.

The paper is organized as follows. Section 2 describes the overall model. Section 3 defines and characterizes informative equilibria of the cheap-talk game between an arbitrary pair of decision-maker and expert. Section 4 then uses these results to characterize the conditions for delegation and the optimal choice of decision-maker by the median voter. Section 5 concludes with a discussion of the crucial assumptions of the model and its robustness.

2 The Model

Voters have identical state-contingent payoffs from two alternative policies. They however differ in terms of their prior probability assessment about the state of the world. In particular, we assume that there are two states 0 and

1 and two policies P_0 and P_1.

With the choice of P_1, each voter's payoff is 1 if the state of the world is 1 while their payoff is $-\lambda$, $\lambda > 1$ if the state is 0. With policy P_0 in place, the payoff to a voter is the same in both states and we normalize this payoff to 0.

A representative voter has a prior probability p that the state is 1. Agents differ in terms of their initial priors and we assume that p is distributed over the interval $[0, 1]$. Agents will be referred to by their prior p. We denote the prior probability assessment of the median voter by p_M.

The vote is for choosing a decision maker (DM) who will be in charge of implementing policy. We denote the decision maker by her prior assessment p_D. Before making the policy choice, DM however can consult an expert E. The task of the expert is to gather information about the state of the world and convey it to the decision maker. There are two types of experts. Type 1 experts can choose to receive a noisy signal $s \in \{s_0, s_1\}$ by incurring a small cost c. The probability of getting the signal s_i when the state is i is given by $1 \geq q > 1/2$. These signals are thus informative of the state. Type 2 experts referred to as uninformed experts do not receive any informative signals.[1] We use p_E to denote the prior of an expert that the state is 1. Finally let r be the proportion of type I experts in the population, $0 < r < 1$.

The sequence of events is as follows. First voters elect a decision maker from among themselves. The decision maker then hires an expert from the population of experts. DM's prior belief about the probability that the hired expert is a type 1 expert is r.

Now a cheap-talk game between the expert and the decision maker ensues. In this game, a chosen expert can send a message m. Before sending a message, a type 1 expert may decide to incur the cost c and obtain a signal. No such choices are available to an uninformed expert. The decision maker does not observe whether the expert has received a signal. Without loss of generality, we assume that a message m is restricted to the binary set $\{m_0, m_1\}$. Upon receiving a message m_j, the decision maker updates her prior about the state of the world p_D and the type of expert that she is dealing with. Given these posteriors, DM chooses a policy. Voters' payoffs are then realized depending on the policy choice and the state of the world.

In the final stage of the game, DM updates her belief to form the posterior $\hat{r}$ that the expert is of type 1. This updating depends both on the message m sent by the expert and the subsequent events. In case of the policy choice P_1, the actual state of the world is inferred accurately from voters' payoffs, and DM can use this knowledge to revise her belief on the type of the expert. However no such knowledge is available if the choice was P_0, and

[1]We can alternatively interpret such experts as those whose costs c of gathering information are prohibitively high for them to ever become informed.

the updating rule in this case can only condition on the original message sent by the expert. Given this posterior assessment, DM then decides to re-hire or fire the expert. Re-hiring decision of DM follows a simple rule: if $\hat{r} > r$ then the expert is rehired with probability 1, while if $\hat{r} < r$ the expert is fired with probability 1 . Finally, if $\hat{r} = r$, DM rehires the expert with probability π where $\pi \in [0, 1]$ and is chosen by DM. The payoff to the expert is V >0 if she is rehired and zero otherwise. We assume that experts care only about being re-hired and thus follow the objective of maximizing the probability of getting re-hired.[2] We assume as is standard in much of the literature that the decision maker's payoff is identical to that of a voter with identical prior.

3 The Equilibrium of the Cheap-Talk Game

In this section, we take a decision maker p_D and an expert p_E and characterize the set of Bayesian-Nash equilibria of the cheap-talk game. It is well known that cheap-talk games are typically characterized by a multiplicity of equilibria. The same is true here as well. There are equilibria in this game where all experts, irrespective of their types, would send the same message. In that equilibrium the decision maker would choose the policy that is optimal according to her initial prior p_D. Subsequently her updated prior on the expert would be r independent of the outcomes and she would decide to keep the expert with any probability $\pi \in [0, 1]$. There are also equilibria depending on the value of p_D, where, though both messages are sent in equilibrium, DM always chooses the same policy. We are however interested in equilibrium outcomes where both messages are sent with positive probability, and DM's choice of policy is influenced by the message received. These constitute the only class of equilibria that is of interest since any other equilibrium will not require the use of an expert's advice. We will refer to such an equilibrium as informative equilibrium.

Consider the following strategy profile denoted as the $(*)$ strategy profile.

Expert's Strategy: Type 1 experts choose to receive a signal. If the signal is s_i, they send the message m_i with probability 1. Uninformed expert send the signal m_1 with probability $t^*(p_D) = 1 - p_D(1-q) - q(1-p_D)$ and send m_0 with the remaining probability.

Decision Maker's Strategy: The decision maker chooses P_i with probability 1 when she receives the message m_i. Further if the message m_0 is sent, the expert is re-hired with probability $\pi = p_E$. With message m_1 and policy choice P_1, the expert is rehired with probability 1 (resp. probability 0) if the state of the world turns out to be 1 (resp. state 0).

[2]Substantive results of the paper do not change if the expert's payoff also depends on the choice of the policy. See section 5.

Remark 1 Note that $1 - p_D(1-q) - q(1-p_D)$ is the probability DM attaches to the event that an informed expert will send the message m_1. If and only if uninformed experts too send m_1 with that probability, DM's posterior about the expert, $\hat{r}$, can equal r upon receiving a message m_i. This explains why in the $(*)$ profile, t^* equals $1 - p_D(1-q) - q(1-p_D)$.

Proposition 1 In any equilibrium in which an expert of type 1 decides to become informed, the equilibrium strategy profile must coincide with the $(*)$ profile.

To prove this proposition we need the following lemma.

Lemma 1 In an equilibrium where a type 1 expert becomes informed, her strategy must be what is described as Type 1 expert's strategy in the $(*)$ strategy profile.

Proof. Consider an equilibrium where type 1 experts get informed. Let $\pi^i = \pi(P_1, \{i\})$ be the probability that the expert is re-hired if policy P_1 is chosen and the realized state is i. Denote by π_0 the probability of re-hiring if message m_0 is received and policy P_0 is chosen. Let $k(s_i, m_i)$ be the probability that a type 1 expert sends the message m_i when she receives the signal s_i and let t be the probability that an uninformed expert sends the message m_1. The lemma is proved by ruling out the following three contrary possibilities.

Possibility 1: $k(s_i, m_i) \in (0,1)$ for $i = 0, 1$.

In this case, an expert of type 1 randomizes over the messages for each of the signal realizations. Let $p_E(s_i)$ be the posterior of the expert when she receives signal s_i. Given s_1, if the expert sends m_1, her payoff is $p_E(s_1)\pi^1 V + (1 - p_E(s_1))\pi^0 V$, while from sending m_0 her payoff is $\pi_0 V$. Thus for her to randomize when the signal is s_1, we must have

$$p_E(s_1)\pi^1 + (1 - p_E(s_1))\pi^0 = \pi_0$$

Similarly when she receives s_0, if she has to randomize between the messages, we must have

$$p_E(s_0)\pi^1 + (1 - p_E(s_0))\pi^0 = \pi_0$$

Since $p_E(s_1) > p_E(s_0)$, the above equalities can hold only if $\pi^1 = \pi^0 = \pi_0$. But in that case an expert of type 1 will be better off gathering no information and sending messages with arbitrary probability. Hence case 1 can not occur if type 1 experts choose to be informed in equilibrium.

Possibility 2: $k(s_1, m_1) = 1$ and $k(s_0, m_0) \in (0,1)$.

In this case, an expert of type 1 randomizes over messages if her signal is s_0. Hence

$$p_E(s_0)[\pi^1 - \pi^0] + \pi^0 = \pi_0$$

Since $p_E(s_1) > p_E(s_0)$ and the expert who gets signal s_1 always sends m_1, it must be that $\pi^1 \geq \pi^0$. But if $\pi^1 = \pi^0$, then as in case 1, there is no gain for a type 1 expert from being informed. Thus $\pi^1 > \pi^0$. Since $p_E > p_E(s_0)$, we have $p_E[\pi^1 - \pi^0] + \pi^0 > \pi_0$. Therefore an uninformed expert will prefer to send the message m_1 with probability 1. Hence in this equilibrium, m_0 is sent only by experts of type 1. But then DM's posterior $\hat{r}$ that she faces an expert of type 1 is 1 when she receives the message m_0. Thus $\pi_0 = 1$. But then a type 1 expert can not send message m_1 when she receives s_0. Hence case 2 can not occur either.

Possibility 3: $k(m_1, s_1) \in (0,1)$ and $k(m_0, s_0) = 1$

This case is analogous to the previous one. Since the expert randomizes when she receives s_1, we have

$$p_E(s_1)[\pi^1 - \pi^0] + \pi^0 = \pi_0$$

Since the expert with s_0 always sends m_0, we must have $\pi^1 \geq \pi^0$. With $\pi^1 = \pi^0$, like earlier, there is no advantage of being informed. Hence $\pi^1 > \pi^0$. Now if $\pi_0 > 0$, then $p_E < p_E(s_1)$ implies that the uninformed type will send the message m_0 with probability 1. Since expert of type 1 sends message m_0 with probability strictly less than 1, DM's posterior that she faces a type 1 expert when she receives m_0 must be strictly less than r. But then the expert must be fired, i.e, $\pi_0 = 0$. With $\pi_0 = 0$, the uninformed expert is strictly better off sending only the message m_1. But then we are back to the situation in case 2 where the message m_0 is sent only by type 1. It would imply that DM must assign posterior probability 1 that she is facing a type 1 expert when she gets the message m_0 and then π_0 can not be zero.

Eliminating all the possibilities above we arrive at the result that in any such equilibrium we must have $k(m_1, s_1) = 1 = k(m_0, s_0)$. This proves the lemma.

To prove proposition 1, we need two further notations. For any strategy profile for the experts where expert of type 1 plays by $(*)$ profile and the uninformed expert sends m_1 with probability t, denote by $r(m_i, t)$ the posterior of DM that she faces an informed expert when she receives m_i. Further let $r(P_1, t, i)$ denote the posterior of DM after the policy choice P_1 and with the realization of the state i. Using Remark 1, one can easily check the validity of the following observation.

Observation 1 For the $(*)$ strategy profile

(a) $r(m_0, t) > r$ if and only if $t > t^* = 1 - p_D(1-q) - q(1-p_D)$

(b) $r(P_1, t, 0) > r$ implies $t < t^*$.

(c) $r(P_1, t, 1) < r$ implies $t > t^*$.

Proof of Proposition 1. By Lemma 1, we know that in any informative equilibrium a type 1 expert must play the strategy corresponding to the $(*)$ profile. We first show that the strategy of the uninformed expert is to send m_1 with probability t^*. Let t be this probability. We show that if t is not t^*, it leads to a contradiction.

Case 1: $t > t^*$

In this case by observation 1, part (a), $r(m_0, t) > r$. Since DM chooses policy P_0 when the message is m_0 and no further information is revealed about the state of the world and thus of the type of the expert, DM must rehire the expert with probability 1. This gives a payoff of V to experts sending m_0. Now if m_1 is sent, by observation 1,part (b), the posterior of DM after the choice of P_1 followed by the materialization of state 0 must be less than r. Hence the expert will be fired in that event. Hence the expected payoff to an uninformed expert from sending m_1 can at most equal $p_E V < V$. This implies that an uninformed expert will be better off sending message m_1 with probability $t = 0$. Hence t can not be greater than t^*.

Case 2: $t < t^*$.

By part (a) of observation 1, the posterior of DM upon receiving m_0 must be less than r and thus an expert will be fired if she sends m_0. The payoff to an expert sending message m_0 is thus zero. Moreover since $t < t^*$, by part (c) of observation 1, it follows that the posterior of DM if she chooses P_1 and observes state 1 is strictly greater than r. The expert in this case will then be re-hired with probability 1. Thus the uninformed expert can assure herself a payoff of $p_E V$ by sending the message m_1 with probability 1. Hence t can not be less than t^*.

We now consider the behavior of DM. Since the strategies of the experts correspond to the $(*)$ strategy profile, upon receiving the message m_i, the posterior of DM that she faces an informed expert is exactly equal to r. Since choice of P_0 does not lead to any further information, it is clearly optimal for the DM to choose $\pi = p_E$. However after the choice of P_1 (following the message m_1), DM's posterior will be greater than r if and only if the state realized is 1. Hence the strategy of DM in the $(*)$ profile which calls for rehiring the expert with probability 1 (resp. probability 0) after the choice of P_1 and the realization of the state 1 (resp. 0) is also optimal. ■

Does an informative equilibrium always exist? Not necessarily.

For any p_D, define $p_D(m_i)$ as the posterior of DM that the state is 1 when she receives the message m_i given that the experts are playing by the $(*)$ strategy. It is easy to check that

$$p_D(m_1) = \frac{p_D[rq + (1-r)t^*(p_D)]}{r[p_D q + (1-q)(1-p_D)] + (1-r)t^*(p_D)}$$

$$p_D(m_0) = \frac{p_D[r(1-q)+(1-r)(1-t^*(p_D))]}{r[p_D(1-q)+q(1-p_D))+(1-r)(1-t^*(p_D))]}$$

Also define

$$A(p_D) = \{p_D | p_D(m_1)(1+\lambda) - \lambda \geq 0\}$$

$$B(p_D) = \{p_D | p_D(m_0)(1+\lambda) - \lambda \leq 0\}$$

The following observation will be useful for future reference.

Observation 2 There exists a non-empty set $C = [p_*, p^*] \subset [0,1]$ such that $p \in A(p) \cap B(p)$ if and only if $p \in C$.

Note that if the decision maker's p_D satisfies $p_D \in A(p_D)$ (resp. $B(p_D)$), then this decision maker will choose policy P_1 (resp. P_0) when she receives m_1 (resp. m_0) if the experts play by the $(*)$ strategy profile. We can now state the following proposition.

Proposition 2 Fix (p_D, p_E).

(a) If $(*)$ profile is a Bayesian-Nash equilibrium then we must have $p_D \in C$.

(b) For $q > 1/2$ and $p_D \in C$, there exists c sufficiently small[3] such that $(*)$ profile is indeed a Bayesian Nash equilibrium of the game between (p_D, p_E).

Remark 2 It should be noted that the outcome in this informative equilibrium (when it exists) is completely independent of the prior p_E of the expert and depends only on the prior of the decision maker. The prior of the expert is important only in determining whether the expert of type 1 will find it in her interest to become informed and thus in determining whether one obtains an informative equilibrium in the cheap-talk game. In what follows we assume the cost c to be sufficiently small (close to zero) such that whenever $p_D \in C$, an informative equilibrium is obtained.

Proof of Proposition 2 .

(a) Assume that the $(*)$ profile is an equilibrium of the cheap-talk game. If $p_D \notin A(p_D)$, then DM will not choose the policy P_1 upon receiving the message m_1 and thus DM's strategy will not correspond to the $(*)$ strategy profile, while if $p_D \notin B(p_D)$, DM will not choose P_0 if she receives m_0. Thus for $(*)$ profile to be an equilibrium we must have $p_D \in A(p_D) \cap B(p_D)$.

(b) Assume that the DM follows the strategy given by $(*)$ profile. Consider now the uninformed expert. If she sends in the message m_1, policy P_1 will be chosen. As she reckons, with probability p_E the state will be 1 and she will be retained with probability 1, while she will be fired and get zero

[3]Possibly dependent on the value of p_E

with probability $(1 - p_E)$. Thus her expected payoff is $p_E V$. By sending in the message m_0, she also nets $p_E V$ since following m_0, the expert is re-hired with probability p_E. Thus the uninformed expert's strategy is optimal.

Consider now an expert of type 1. If she does not collect any information, her payoff is exactly $p_E V$. Now assume that she decides to receive signals. Given s_i, let $p_E(s_i)$ be her posterior that the state is i. Since $q > 1/2$, $p_E(s_1) > p_E > p_E(s_0)$. Thus the strategy of expert 1 in the $(*)$ profile that asks for sending m_i with probability 1 on observing s_i is optimal. Expected payoff of the informed expert from obtaining information and playing $(*)$ (exclusive of the cost) is

$$p_E(qV + (1-q)p_E.V) + (1-p_E)q.p_E.V$$

Since this payoff is strictly increasing in q and equals $p_E V$ at $q = 1/2$, the result follows.

The proof that DM's strategy is optimal follows exactly the same lines as in the proof of Proposition 1. ∎

One interesting implication of Proposition 2 is that if p_D is too high (or too low), then $p_D \notin A(p_D) \cap B(p_D)$, consequently with such a representative, there will be no role of an advisor since the cheap-talk game will not admit of any informative equilibria. Such decision makers therefore never listen to an advisor. A decision maker who makes use of an expert's information must necessarily be moderate in terms of her priors.

4 Who serves the median voter best?

Which decision maker will best represent the interests of the median voter? Let us recall that a median voter is characterized by her prior p_M. Let $\hat{p}$ satisfy $\hat{p}(1+\lambda) = \lambda$. Clearly $\hat{p}$ is in C. Moreover $p_* < \hat{p} < p^*$. If an arbitrary p_D is chosen to implement policy on behalf of the median voter p_M, then the payoffs for the median voter are as follows.

Lemma 2 The payoffs to the median voter from a choice of p_D are given by

(a) 0 if $p_D < p_*$,

(b) $p_m(1+\lambda) - \lambda$ if $p_D > p^*$,

(c) $r[p_m q - (1-p_m)(1-q)\lambda] + (1-r)t^*(p_D)[p_m(1+\lambda) - \lambda]$ otherwise.

The optimal choice of DM for the median voter directly follows from lemma 2 and is stated in the following proposition.

Proposition 3 Let $p_D(p_m)$ be the optimal choice of DM by the median voter.

(a) Suppose $p_m \notin C$ then $p_D(p_m) = p_m$.

(b) Suppose $p_m \in C$ and $p_m < \hat{p}$, then $p_D(p_m) = p_*$

(c) Suppose $p_m \in C$ with $p_m > \hat{p}$, then $p_D(p_m) = p^*$[4]

Part (a) of the proposition is trivial. The proof of the other two parts follow from the following observations. If $p_m < \hat{p}$, then $[p_m(1+\lambda) - \lambda] < 0$. From lemma 2 (c), the median voter's payoff in this case would be higher if t^* is smaller. Since t^* decreases with p_D, p_* maximizes the median's payoff. On the other hand when $p_m > \hat{p}$, $[p_m(1+\lambda) - \lambda] > 0$ and thus the payoff to p_M can be maximized by delegating to one with the highest p_D in C.

5 Discussion

The model of this paper shows the possibility of delegation in cheap talk games in general and can be used in various contexts. Here we will use the voting example to elaborate on its interesting properties. suppose P_0 represents the *status quo* which can be broken by the reform action P_1. Voters for whom $p(1+\lambda) - \lambda > 0$ are those whose priors make them pro-reform, and $p(1+\lambda) - \lambda < 0$ are those against the reform. Proposition 3 suggests that if the median voter has strong beliefs ($p_m \notin C$), then there is no scope for delegation. But if she is moderately pro-reform ($p_m \in C$), then she would gain by electing an agent who is more pro-reform than herself. Likewise if she is moderately anti-reform, she should elect one who is even more oriented to *status quo*. In general, a moderate median should delegate to candidates who have a stronger leaning for what she herself prefers. Note however that it does not help to elect arbitrarily extreme candidates. If pro-reform, the median's choice is p^*, and if against, her choice is p_*. A candidate more extreme than p^* or p_* would be able to get experts to play their part of the (*) strategy, but will not be influenced by their signals. Since they would not use the experts' information, they would not improve the median voter's payoff.

In the model λ represents the cost of a misdirected policy – of going for the reform when it is actually unwarranted. How does the probability of reform change with λ? Note that Both p_* and p^* are increasing functions of λ. Suppose p_M was initially for reform, and subsequently the cost of making the policy mistake increases, but it leaves the median still pro-reform. In the new situation the median voter should choose a candidate who is even more pro-reform than she should have chosen previously. On the other hand, if p_M was for *status quo*, then an increase in λ would bring the median's choice closer to herself.

[4]For $p_m = \hat{p}$, any choice of p_D is an equilibrium choice.

How robust are these results? First, our model assumes identical utility functions for voters who differ over their priors. With some change in the structure, comparable results can be produced in a model where agents have identical priors but vary in terms of utility functions.

Secondly, in our model the expert maximizes the chance of getting rehired, and does not care about the choice of policy. Would the results change if she also had a stake in the policy choice? Suppose the expert's payoff is $\pi V + w[p_E(1+\lambda) - \lambda]$, where w is a positive constant. Clearly this would not alter an informed expert's strategy. Therefore the probability of sending m_1 by the uninformed expert, $t^*(p_D) = 1 - p_D(1-q) - q(1-p_D)$, would not change either. It is only the probability of rehiring that would change in equilibrium and therefore the payoffs of the experts. Thus the substantive results will remain unchanged.

The results would be however dramatically altered if the decision-maker herself becomes the expert. Suppose the decision-maker does not hire an expert, and has a payoff related to the probability of getting re-elected. In that case the decision-maker can be seen as the expert while the median voter decides on rehiring. From the model we have seen that the prior of the expert does not play any role in equilibrium. This would imply that the median voter would have no reason to choose a decision-maker with a prior different from p_M.

Finally, in this model when P_0 is chosen subsequent events do not produce any further information about the expert. This is a crucial assumption. Suppose both policy choices would eventually lead to information about the soundness of the expert's advice. In that case there can not be an informative equilibrium.

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