Communicating judicial retirement

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ABSTRACT

Justices can strategically shape perceptions of their likely retirements, and so influence the President and Senate in choosing an ideologically compatible replacement. Relatively new justices can vote insincerely to affect how their ideologies are perceived, but their strategies are shaped by older justices' expected retirement probabilities. We show that "strong messages" of retirement are likely when new justices vote insincerely and the new and retiring justices' ideologies are aligned. "Weak messages" are more likely when new justices vote sincerely or, if they do vote insincerely, the old and new justices' ideologies are unaligned.

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1. Introduction

That justices care about the ideological and intellectual composition of the Supreme Court after their own departures is demonstrated not only from evidence that they time their retirements to coincide with friendly political regimes (Hagle, 1993; Bustos and Jacobi, 2015), but is even seen in the form of "strategic death"—that is, they fail to retire, and so are more likely to die, when the President is their intellectual opposite (Stolzenberg and Lindgren, 2010). But a strategic outgoing justice is not limited to timing his retirement during a given president's term, relying on his ideological ally to choose a suitable replacement. He can further his influence by shaping which nominee a given president will propose, and the Senate confirm.

When the President and the Senate have divergent preferences, the only nominee they will be able to agree on is one who continues to reflect the median of the Court absent a replacement (Moraski and Shipan, 1999, hereinafter MS). In previous work, we showed that a relatively new justice can shape the feasible nominee

by strategically voting insincerely[1], so as to shift her own perceived ideological position, and so move the perceived median of the Court (Bustos and Jacobi, 2014 hereinafter BJ). However, unlike freshmen justices, by the time a senior justice retires, his ideological position is well-established, so this option offers little chance of influencing the choice of the nominee. We show here that the retiring justice can nonetheless shape the costs and benefits for the newer justice in voting insincerely, and so the retiree can indirectly shape the equilibrium nominee.

A justice's perceived probability of retirement depends on exogenous factors, such as age or ill health, but judicial hints can shape external perceptions of those and other factors. Such hints can take many forms, from direct declarations of intent to remain on the Court or reporting improvements in health, to more obtuse indicators, such as meeting with key members of the Judiciary Committee or failing to hire new judicial clerks. We show that unlike

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[1] The term "insincere" does not imply irrationality or dishonesty. The term "insincere voting" sometimes referred to as "sophisticated voting" (*e.g.* Caldeira et al., 1999) or "strategic voting" (*e.g.* Caminker, 1999) describes rational justices voting their true ideological preferences. The difference is that an "insincere vote" is forward-looking, whereas a "sincere vote" is the mechanical and non-strategic vote of a justice that only cares about the current case.

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strategic insincere voting by new justices, messages from potentially retiring justices occur regardless of whether the President and Senate have opposed or aligned ideologies. Instead, what determines whether judicial retirement communications occur is the level of ideological alignment between the outgoing justice and the freshman justice, and the likelihood that the new justice will vote sincerely or insincerely.

The benefit to the new justice in voting insincerely is to move the equilibrium outcome – the position of a feasible judicial nominee – closer to her own preferences, either by shifting the perceived median of the Court closer to her true ideology (if the President and Senate are ideologically opposed[2]) or further from her true ideology (if the Senate somewhat constrains the President[3]). But there are direct costs to voting insincerely, including potentially casting the deciding vote contrary to a justice's own preferences, as well as instrumental and reputational costs stemming from voting contrary to her true ideology (see Cross and Tiller, 1998; Jacobi, 2008). The cost-benefit ratio will determine how frequently the new justice is likely to vote insincerely, which in turn shapes the extent to which the senior justice will communicate his own probable retirement. The retiring justice can strengthen or dilute the informational content of the new justice's vote, altering her cost-benefit equation. Essentially, the retiring justice can increase or decrease the bias that the new justice can create in the President and Senate's assessment of her ideological position. If the new justice and the retiring justice have aligned interests, the retiring justice will enable more effective signaling by the new justice.

We differentiate between 'strong' and 'weak' retirement messages—that is, communicating whether a justice's probability of retirement is more or less than his initially perceived probability of retirement, respectively. We show that weak messages occur when the two justices' ideologies are not aligned. For example, if the justice who is considering retirement is conservative, then he will try to hide his intentions from a new liberal justice so she will not be able – through adjustments in her voting strategy – to move the perceived Court to the left, which would decrease the chances that the new member of the Court would be more like the retiring justice. In contrast, strong messages occur when the two justices' interests are aligned—then they want to move the perception of the Court in the same direction, through the newer justice voting insincerely, which the retiring justice wants to enable as much as possible.

In addition to the political alignment between the two justices, the frequency with which the new justice votes insincerely also determines the strength of the retirement message. If freshman insincere voting is possible but not common, then the more a new liberal justice votes insincerely, the more she moves the expected ideology of the Court to the left; hence a rather conservative retiring justice is interested in discouraging insincere voting as much as possible and diluting the newer justice's vote. But if freshman insincere voting becomes too common, the relationship is exactly the opposite: the more a new liberal justice votes insincerely, the more she moves the expected ideology of the Court to the right; hence a rather conservative retiring justice wants to encourage insincere voting as much as possible. We focus on the results associated with infrequent insincere voting by the new justice because, as we discuss in the extensions, there is good reason to think that frequent insincere voting is less realistic.

These results contribute to the judicial appointments and strategic judicial behavior literatures, showing that justices considering retirement from the Supreme Court have more options to influence their replacements than simply the blunt instrument of timing their retirements to coincide with a friendly regime. Our findings explain the minute scrutiny that Court watchers give to subtle indications of private judicial information regarding retirement possibilities. Section 2 briefly describes some such signals and the attention they receive, and so illustrates the realism of our assumptions. Section 3 presents some preliminary considerations about the model. Section 4 formalizes the model, Section 5 presents our main results, Section 6 discusses extensions and Section 7 concludes.

2. Does this behavior occur?

Our theory considers that (1) external actors take information from judicial signs of likely retirement, and (2) that those retirement possibilities themselves are affected by institutional conditions, including political alignment with other justices on the Court and with the other branches that choose the replacement justice[4]. It follows that (3) it can be in the interests of the potentially outgoing justice to manipulate that message so as to influence the choice over the future nominee. Before presenting the model, it is worth considering these three elements.

Considerable attention is given to hints of judicial retirement possibilities. This is particularly the case for justices who are considered likely retirees, such as older justices: for instance, at the end of each term in the years before Justice Stevens retired, speculation was rampant regarding his imminent departure (e.g. Lat, 2006). It is also the case for justices who are considered likely retirees for more idiosyncratic reasons: for instance, Justice Souter was renowned for disliking Washington (see Associated Press, 2009), so close attention was given to whether he had hired clerks for the each following term (see e.g. Article III Groupie, 2009).

For both of these justices, the speculation was heightened once President Obama entered office, because despite the fact that both Stevens and Souter were appointed by Republican presidents, their ideologies were actually comparable to Obama's[5]. Recently, Justice Ginsburg felt it necessary to respond to criticisms that she was inappropriately failing to retire while and ideologically aligned president was in office.

> Who do you think President Obama could appoint at this very day, given the boundaries that we have? If I resign any time this year, he could not successfully appoint anyone I would like to see in the court. [The Senate] took off the filibuster for lower federal court appointments, but it remains for this court. So anybody who thinks that if I step down, Obama could appoint someone like me, they're misguided. (Weisberg, 2014)

This suggests that not only are outsiders paying close attention to likely judicial retirement, but also that the justices themselves are giving keen attention to the political conditions that shape the future Court composition. As Justice Ginsburg's statement makes clear, those institutional constraints include not only the

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[2] In MS terms, a fully constrained game, where the existing median is the equilibrium outcome.

[3] In MS terms, a semi-constrained game, where the point to the Senate's right that is equidistant to the Court median at its left is the equilibrium outcome, and so the justice benefits from making the median appear farther from her own true ideology.

[4] As we show below, there is no distinction between the communication strategies followed by a retiring justice who faces a President and Senate with opposed or semi-opposed ideologies (in MS terminology) but there is a central distinction between the communication strategies followed by the retiring justice who faces a President and Senate with opposed and with aligned ideologies. In the second case, the justice is indifferent between sending a message and not communicating at all.

[5] Then Senator Obama's common space score for the 109th and 110th Congresses was −0.313; Stevens and Souter's judicial common space scores in 2007 were −0.531 and −0.453 respectively (the 2007 mean was −0.016, with a 0.488 standard deviation)—see Keith Poole's Common Space scores (available at http://www.voteview.com/DWNL.htm).

preferences of the President, but as has been well-established in the literature, also the preferences of the Senate (*e.g.* Segal, 1987; Ruckman, 1993).

Such a close level of attention to this private judicial information sets up an incentive for the justices to manipulate expectations regarding their likely retirement. That the justices actually attempt to manipulate those perceptions can only be inferred, but Court watchers regularly make such inferences. For instance, when speculation was abounding over Chief Justice Rehnquist's expected departure, due to a battle with a lethal form of thyroid cancer, he announced publicly that he was recovering and would stay on the Court. He issued a press release declaring his good health and denying the "unfounded rumors" of his imminent departure; however, he died within months of that announcement (Totenberg, 2005), suggesting his messages were in fact cheap talk[6]. Rehnquist's actions were reportedly aimed at affecting Justice O'Connor's own choice over whether to retire (Greenhouse, 2010; Jenkins, 2012).

Occasionally, justices are more direct in their signaling. As seen in the above quote, Justice Ginsburg, for instance, has made explicit her intention to stay on the Court for as long as possible—she was signaling to decrease expectations of her retirement. In contrast, Justice Stevens clearly signaled to *increase* expectations of his own retirement during the administration of President Obama, saying: "I have a great admiration for him, and certainly think he's capable of picking successfully, you know, doing a good job of filling vacancies. . . You can say I will retire within the next three years. I'm sure of that." (Toobin, 2010)

These cases illustrate that justices issue hints of their retirement possibilities; that external attention is paid to such messages; that justices manipulate those external expectations, through the use of these communications, including through insincere messaging; and that the justices consider the ideological positions of the President the Senate, and the remaining Court in their retirement decisions.

This evidence provides support for the framework that we model in the next section, which explores when a potentially retiring justice will have an incentive to send messages regarding the likelihood of his retirement. Doing so can shape the incentive of the freshman justice to insincerely signal her own ideological preferences. This is because, as BJ showed, early in their careers, by voting insincerely, justices can manipulate the nominating players' perceptions of the justice's own substantive preferences, in order to mislead the nominating players as to the true median of the Court. As per MS, the median of the court is (or determines) the position of any realistic judicial nominee[7]. But by the time justices face potential retirement, their preferences are too well-known for this effect to be plausible. However, freshman justices will only want to manipulate their votes if they anticipate an imminent Court vacancy. As such, potentially retiring justices can send their own messages, which will determine the attractiveness of freshman signaling. This would mean, for instance, that when Justice Sotomayor was appointed to the Supreme Court in 2009,

knowing that Justice Stevens was then 89 years old, she could anticipate a likely imminent nomination would be pending from her ideological ally, President Obama. As BJ showed, depending on the political alignment, it could have been in Justice Sotomayor's interest to vote insincerely to shape the nominating players' perception of the Court. Our model shows exactly how and when such symbiotic messaging occurs, as well as when other, less cooperative communication behavior arises, and when those messages are credible.

3. The model

Our basic framework is based on BJ, but whereas BJ focused on the voting strategies followed by justices that have recently joined the Court, here we focus on a justice who has decided to retire, and we consider his incentives to shape the perceived probability of his own retirement. Because retirement messaging is likely to come through speeches and other public comments, rather than through voting, we assume that the communication game that takes place between the retiring justice and the other agents is costless—an assumption we relax in Section 6.4. Accordingly, we follow the seminal work of Crawford and Sobel (1982) on the characterization of the cheap talk communication equilibria[8].

3.1. Players

The Court has three Justices, $\{J_1, J_2, J_3\}$, and operates for two periods $t \in \{1, 2\}$. Two justices have been with the Court for some time (original justices). The other justice has just joined the Court at period 1 (new justice). One of the original justices (justice J_r) has already decided to retire at the beginning of the second period[9]. That is, the true probability of retirement of J_r, which we denote p, is 1[10]. However, all the other agents only know at the beginning of the first period that p is uniformly distributed in $[0,1]$, which means that in expected value J_r may die or retire with probability 0.5, or alternatively, no justice dies or retires with probability 0.5[11]. The retiring justice has the option to shape his perceived probability of retirement by sending a costless message $m \in [0,1]$. We define $\mu(m|p)$ as the probability with which J_r, whose true probability of retirement is p, sends a message m. In addition, we define other agents' beliefs about the justice's retirement probability as $g(p|m)$. It follows that if J_r sends a message m, the other agents use Bayes to update their beliefs about his retirement probability from 0.5 to $\bar{p}$ [12].

We say that the justice strongly communicates retirement if $\bar{p} > 0.5$ but weakly communicates retirement if $\bar{p} \leq 0.5$ [13].

As in MS and BJ, if a justice dies or retires, then the President, P, proposes a candidate and the Senate, S, confirms or rejects the nominee. If the former, the nominee becomes the new justice; if the latter, then the seat remains vacant and the Court keeps the default median, constituted by the mid-point between the two remaining justices. Later we provide more details on the nomination game equilibria.

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[6] It is empirically well-established in both the certiorari and judicial voting literature that justices vote untruthfully – that is, contrary to the true preferences over a specific case outcome – for strategic reasons (see *e.g.* Schubert, 1965; Ulmer, 1978; Caldeira et al., 1999), and a growing literature has shown that judges engage in signaling (Baird, 2004; Morriss et al., 2005; Daughety and Reinganum, 2006; Baird, 2007; Baird and Jacobi, 2009), which raises the possibility of false signaling (Jacobi, 2008).

[7] Increasingly, the nomination process is characterized as a "move the median game" (*e.g.* Krehbiel, 2007), since it is extremely difficult to form a majority without the judicial median (see Epstein and Jacobi, 2008), and thus difficult to affect the Court without influencing the median, and thus such nominations are more critical (Ruckman, 1993). Nevertheless both presidents and Senators may care about other factors, such as diversity or presidential standing (Cameron et al., 1990), but this model focuses only on ideological outcomes.

[8] For a broader discussion of Cheap Talk, see Farrell and Rabin (1996).

[9] In Bustos and Jacobi (2015), we model the judicial decision of whether and when to retire.

[10] Everybody knows which justice is the potentially retiring justice—for instance, the public knows the age and to some extent the health of the justices.

[11] In Section 5 we consider that p can be any value—and that more than one justice may be considering retirement at the same time.

[12] In which $\bar{p} = E(p|m) = \mu(m|p) / \left(\int \mu(m|p) g(p|m) dm \right)$.

[13] That is, the justice may want to communicate that he is less likely to retire than existing perceptions, for example, by convincing observers that his health has improved.

3.2. Players' preferences, cases and votes

Each period t the Court faces a case $\theta_t \sim U[0, 1]$ which is decided by the justices through simple majority vote, resulting in a conservative or a liberal decision. Parameter θ_t has a simple interpretation: the larger θ_t is, the more evidence is required for that case to be decided with a conservative outcome. We denote the ideology of justice J_g with $g \in \{1, 2, 3\}$ as α_g and his vote as $v_g(\theta_t) \in \{L, C\}$. Parameter α_g corresponds to the probability with which the justice (truthfully) votes conservative instead of liberal, in which a truthful voting function is defined as

$$v^*(\theta_t) = \begin{cases} C & \text{if} \quad \theta_t < \alpha_g \\ L & \text{if} \quad \theta_t > \alpha_g \end{cases}$$

To better understand these definitions, take for example the situation in which θ_t is very close to 1. Then all the justices with ideologies α_g smaller than θ_t will vote liberal, which implies that a priori it is very likely that the Court will resolve this case with a liberal decision.

We say that justice g votes insincerely when $v * (\theta_t)$ is violated. In addition, we consider that $0 < \alpha_1 < \alpha_2 < \alpha_3 < 1$ and the President has ideology α_P which is more conservative than the Senate, which has ideology $\alpha_S \in [0, \alpha_P]$ [14]. We separately analyze cases in which the new appointee is liberal or moderate [15].

3.3. Players' knowledge

The ideologies of the original justices are known but the true ideology of the new justice, although known to herself, is unknown to the other agents. To simplify the exposition, we keep the notation used in BJ and denote the "perceived ideology" of the new justice when she just joined the Court as α_0 and her perceived ideology after she votes in case 1 as $A = E[\alpha_f |$ knowledge at the end of period 1]. The original justices, P, and S only know that the ideology of J_f is uniformly distributed in $[\alpha_0 - \Delta, \alpha_0 + \Delta]$. Parameter $\Delta \geq 0$ captures the accuracy with which other agents know the new justice's true ideology. We assume that Δ is small [16].

3.4. Payoffs

The President and Senate are myopic agents, such that their utilities decrease with the distance between their own ideologies and the expected median of the Court [17]. In contrast, the payoff for justice g at period $t \in \{1, 2\}$ is the addition of two components: J_g gets utility $u > 0$ if the Court's decision matches her truthful vote, and J_g gets disutility $l > 0$ when she votes insincerely. As both the original and new justices live two periods, they want to maximize the net present value of the addition of the expected utilities obtained in both periods. In the case of a retirement, the retiring justice gets a net present value that is proportional to the distance between his own ideology and the ideology of the Court at the moment he leaves it (represented by α_m). That is, in case of a retirement, the net present value of J_r is proportional to $1 - (\alpha_m - \alpha_r)^2$

As usual, we use $\delta \in [0, 1]$ to denote the discount factor [18].

3.5. Timing of actions

Fig. 1 summarizes the sequence of events and decisions described above.

3.6. Nomination games

We describe the three possible nomination games played by P and S when a Court vacancy arises *at the beginning of the second period*. Without loss of generality we suppose that the retiring justice is the conservative justice (there is certainty that he is retiring) and the new justice is the liberal justice, whose perceived ideology at the beginning of the second period is A.

When the ideologies of P and S are extreme ($\alpha_S < (A + \alpha_2)/2 < \alpha_P$) the President would like to nominate a candidate as conservative as possible, so that J_3 becomes the new median of the Court, but the Senate rejects any nominee with ideology farther left than $(A + \alpha_2)/2$. So the best that the President can do is to nominate a new candidate with that ideology and she is confirmed by the Senate. MS call this scenario "fully constrained" (FC). In contrast, when the ideologies of the President and the Senate are aligned ($(A + 3\alpha_2)/4 < \alpha_S < \alpha_P$ or $\alpha_S < \alpha_P < (A + \alpha_2)/2$) then the Senate does not oppose the first best of the President, which is to nominate a candidate with ideology α_P. MS call this scenario "unconstrained" (UC). In the intermediate case that P and S are neither aligned nor opposed ($(A + \alpha_2)/2 < \alpha_S < (A + 3\alpha_2)/4$ and $\alpha_S < \alpha_P$), the President nominates a new justice with ideology $2\alpha_S - (A + \alpha_2)/2$ and she is confirmed by the Senate. Any nominee whose ideology lies at a distance from the Senate's ideology that is larger than the distance of the Senate's ideology from the default median will be rejected by the Senate. It follows that $2\alpha_S - (A + \alpha_2)/2$ is the most conservative new member of the Court that the Senate accepts. MS call this scenario "semi-constrained" (SC).

4. Expected perceived ideologies and median of the court

Before presenting our main results, here we show at a more intuitive level the incentives faced by the retiring justice at the moment of deciding his communication strategy.

As the utility function of the retiring justice is proportional to $1 - (\alpha_m - \alpha_r)^2$, all his incentives converge into the objective of minimizing the distance between the future ideology of the median of the Court and his own ideology ($|\alpha_m - \alpha_r|$). Then, we will show that the future ideology of the median of the Court is

$$\alpha_m = \text{Constant} - \frac{\Delta(1 - 2\Delta)}{2} \frac{(\delta u \bar{p} \Delta/2l - 1)}{(\delta u \bar{p} \Delta/2l)^2} \tag{1}$$

in which "Constant" is equal to $(\alpha_0 + \alpha_{r^-})/2$ when the nomination game is FC and $2\alpha_S - (\alpha_0 + \alpha_{r^-})/2$ when it is SC [19] (the sub-index "r" refers to the non-retiring justice). It follows that, through the

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[14] That is: J_1 is the liberal justice, J_2 is the moderate justice and J_3 is the conservative justice.

[15] Results when the new justice is conservative are symmetrical to the results when the new justice is liberal.

[16] To keep the analysis as simple as possible, we assume that the ideologies of the justices cannot overlap. That is, $\Delta < \min\{\alpha_2 - \alpha_{10}, \alpha_{20} - \alpha_1, \alpha_3 - \alpha_{20}\}$.

[17] As is ordinarily assumed in the literature—see for example Hagle (1993), Moraski and Shipan (1999).

[18] To avoid overloading the paper with mathematical expressions we do not write

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the utility functions of the justices explicitly. That said, a formal definition of the utility function for justice g would be as follows:

$u S_g\left(\theta_1\right) - l \kappa_g\left(\theta_1\right) + \delta\left[(1 - p_g) E_{\theta_2}\left[u S_g\left(\theta_2\right) - l \kappa_g\left(\theta_2\right)\right] + p_g U\left(1 - (\alpha_m - \alpha_g)^2\right)\right]$

in which $S_g(\theta) \in \{1, 0\}$ takes the value 1 if the Supreme Court decides θ in the way in which the justice g wants, and 0 otherwise; and $\kappa_g(\theta) \in \{1, 0\}$ takes the value 1 if the justice votes insincerely when deciding θ, and 0 otherwise. Also $U > 0$ is a constant that measures the present value of the utility obtained by the retiring justice for each point of proximity of his ideology to the median of the remaining Court. In our basic framework, p_g is 0 for the non-retiring justices (the new justice and the other original justice) and $p_g = p$ for the retiring justice. The solution will not depend on $S_g(\theta)$, $k_g(\theta)$ or U.

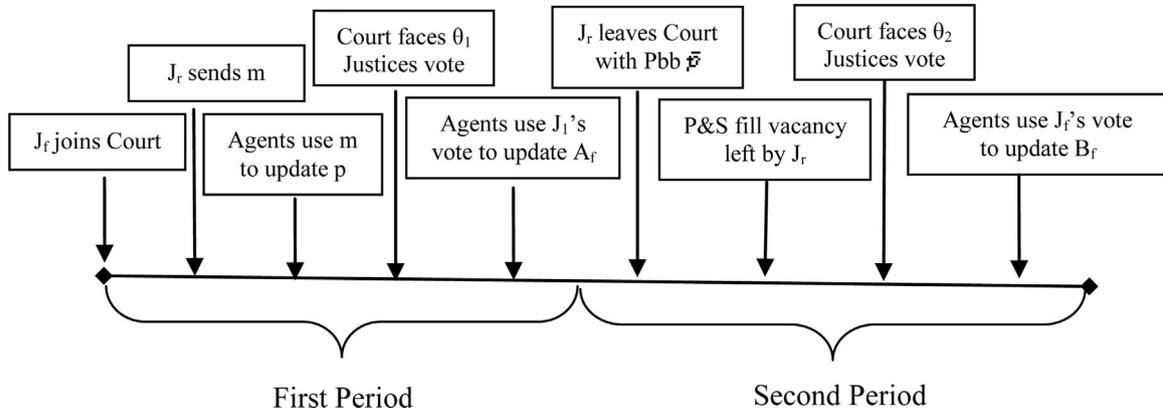[19] We do not mention the UC nomination game because it is a particular case of FC or SC (voting is always sincere).

Fig. 1. Timing of actions.

manipulation of $\bar{p}$, the retiring justice can move α_m closer to his own ideology[20].

First, we examine why the future ideology of the Court is (1); then we see that that expression establishes a fundamental link between the incentives of the new and the retiring justices. We end by using this understanding to discuss the movements of $\bar{p}$ that are in the best interest of the retiring justice.

If J_r does retire then (see Section 3.6), α_m becomes

$$\alpha_m = \frac{\left(E_{\theta_1}\left[A\left(\theta_1\right)\right] + \alpha_{r-}\right)}{2} \tag{2a}$$

when P and S play a FC nomination game but, becomes

$$\alpha_m = \frac{2\alpha_S - \left(E_{\theta_1}\left[A\left(\theta_1\right)\right] + \alpha_{r-}\right)}{2} \tag{2b}$$

when P and S play a SC nomination game[21].

BJ derived the optimal voting strategies[22] followed by a new liberal member of the Court and showed that her expected perceived ideologies at the end of the first period were[23]:

$$E_{\theta_1}\left[A^{FC}\left(\theta_1\right)\right] = \alpha_0 - \Delta(1 - 2\Delta)\frac{\Psi - 1}{\Psi^2}$$
$$E_{\theta_1}\left[A^{SC}\left(\theta_1\right)\right] = \alpha_0 + \Delta(1 - 2\Delta)\frac{\Psi - 1}{\Psi^2} \tag{3}$$

in which $\Psi = \delta \bar{p} u \Delta / 2l$ [24]. Parameter Ψ corresponds to the ratio of maximum benefits ($\delta \bar{p} u \Delta / 2$) over the certain losses (l) that the new justice would face if she votes insincerely[25]. Evidently, the larger Ψ is, the greater the incentives of the new justice to vote insincerely. Hence, after we plug (3) in (2a) and (2b), we are able to retrieve (1).

The intuition behind (3) is clear: the new liberal justice wants P and S to replace the retiring justice with a candidate that, ideologically, is farther to the left. And she can achieve that if she is perceived as more liberal (that is, a smaller $E_{\theta_1}[A(\theta_1)]$) if she anticipates that a FC nomination game will take place in the case of a

retirement[26]. A central point is that the movement in the perceived ideology of the new justice, which we call bias and we define as

$$\text{Bias} \equiv \left|E_{\theta_1}\left[A\left(\theta_1\right)\right] - \alpha_0\right| = \Delta(1 - 2\Delta)\frac{\Psi - 1}{\Psi^2}$$

is achieved through insincere voting (captured by parameter Ψ). While the direction in the bias of the expected ideology of the justice changes with the nomination game its size does not.

Hence, if the retiring justice is rather conservative, for example his ideology is larger than the "Constant" in (1), then his incentives are to reduce the Bias as much as possible; but if the retiring justice is rather liberal, for example his ideology is smaller than "Constant $- \Delta(1 - 2\Delta)/4$", then his incentives are to increase the Bias in the perceived ideology of the new justice. The only remaining question is: how exactly does $\bar{p}$ affect the Bias?

Fig. 2 shows the evolution of α_m as a function of Ψ (or equivalently of $\bar{p}$)[27].

The figure shows the existence of two regions. The Bias in the expected ideology of the new justice increases with Ψ when $\Psi \in [1,2]$, but the Bias decreases with the same parameter when $\Psi > 2$. Then, if the retiring justice is interested in moving the future median of the Court farther left (large Bias) he will send strong messages on retirement (push $\bar{p}$ up) when the new justice has low incentives to vote insincerely (low Ψ) but will send weak messages on retirement (push $\bar{p}$ down) when she has strong incentives to vote insincerely (high Ψ).

The reason for this difference is that the information about the first period new justice's ideology provided by her insincere vote is different when the new justice votes insincerely occasionally (Ψ is small) than when she votes insincerely frequently (Ψ is large). In the first case, insincere votes dilute the information associated with a truthful vote, with the effect of increasing the Bias in the perceived ideology of the new justice; but in the second case, insincere voting happens so frequently that the informational content of the vote itself is partially lost.

5. Main results

Here we build on the intuition developed in the previous section and formally derive the optimal communication strategy followed by a justice who has decided to retire. From Crawford and Sobel (1982) we know that when initial beliefs are uniformly distributed

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[20] All the other parameters are constants.

[21] Notice that in the first case α_m moves to the right when $E_{\theta_1}\left[A\left(\theta_1\right)\right]$ goes up but in the second case α_m moves to the left also when $E_{\theta_1}\left[A\left(\theta_1\right)\right]$ goes up.

[22] In Appendix A, we rewrite these expressions.

[23] In Appendix A we show the derivation in detail.

[24] $E_{\theta_1}\left[A^{FC}\left(\theta_1\right)\right] = E_{\theta_1}\left[A^{SC}\left(\theta_1\right)\right] = \alpha_0$ when $\Psi \leq 1$.

[25] In contrast to the model of BJ, here we are not assuming that retirement takes place with certainty.

[26] In the case that she anticipates a SC nomination game she wants to be perceived as more conservative (that is, a larger $E_{\theta_1}\left[A\left(\theta_1\right)\right]$).

[27] Notice that α_m is a bounded and convex function on Ψ such that $\alpha_m \in [\text{Constant} - \Delta(1 - 2\Delta)/8, \text{Constant}]$.
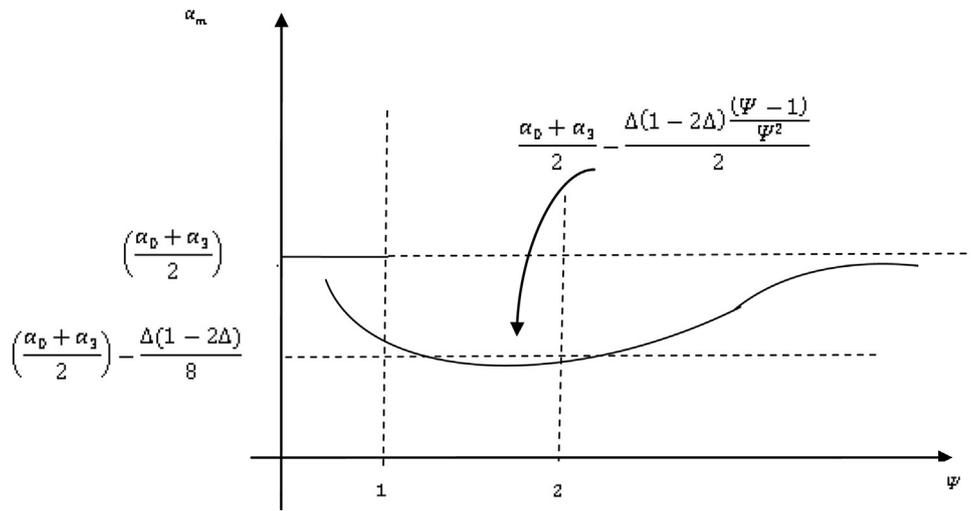
Fig. 2. (FC) Expected ideology second-period median.

and the utility functions satisfy certain properties[28], the retiring justice sends messages that do not exactly match his probability of retirement but instead define an interval in which the true retirement probability is contained[29]. As the updated probability will still be uniformly distributed, it follows that if $m = [p_i, p_{i+1}]$, the other agents use that information to set $\bar{p} = (p_i + p_{i+1})/2$.

Beyond the technicalities of the communication equilibrium, our model uncovers three main results. First, the communication strategies followed by retiring justices do not change with the ideologies of the President and the Senate. Second, the more aligned the ideologies of the new and the retiring justices are, the stronger (weaker) the incentives of the retiring justice to signal retirement when the new justice votes insincerely with a low (high) frequency. Third, although the retiring justice has clear preferences in which direction to bias his perceived probability of retirement, he will be able to credibly communicate that only when his ideology is moderate (not too liberal, not too conservative). We summarize the details of the first two results in Proposition 1, and summarize the third result in Proposition 2.

5.1. Optimal retirement probabilities

To better understand the incentives of the retiring justice when choosing his communication strategy, we first determine the perceived retirement probability that maximizes his utility.

There exist a number of situations in which the retiring justice does not have incentives to modify his perceived retirement probability. Clearly, the parameter $\bar{p}$ plays no role when the new justice votes truthfully. That occurs in three situations: first, when the new justice is moderate[30]; second, when the new justice is liberal but P and S play a UC nomination game; and third, when the new justice is liberal, and the value of parameter Ψ is smaller than 1.

However, the optimal voting strategy of the new liberal justice depends on the parameter $\bar{p}$ where P and S have opposed or semi-opposed ideologies and $\delta u \Delta / 2l > 1$. The retiring justice must determine: what is the perceived retirement probability $\bar{p}$ that minimizes the distance between the second period Court median and his own ideology α_r[31]? Proposition 1, stated next, provides the answer to this question. In order to keep the presentation of results as simple as possible, here we only cover the case in which the new justice votes insincerely with a low frequency ($\delta u \Delta / 2l \leq 2$). In the next section we discuss the differences when insincere voting happens with high frequency.

Proposition 1 (: Optimal probability of retirement). Regardless whether P and S play a FC or a SC nomination game, when the new justice is the liberal justice: (i) if the retiring justice is the conservative justice, then he follows a weak communication strategy ($\bar{p} \leq 0.5$); (ii) if the retiring justice is the moderate justice, then the more conservative the ideology of the retiring justice is, the weaker is his communication strategy ($\bar{p}$ weakly decreases with α_2).

Proof: See Appendix A.

If the conservative justice is the retiring justice then he always follows a weak communication strategy because, given that his ideology is farther right than any possible ideology of the median of the Court, he is always interested in moving the Court as far right as possible. That is achieved if the new liberal justice always votes sincerely, since in that case the bias in her perceived ideology becomes 0[32].

The incentives faced by the moderate justice to communicate retirement are a little more elaborate than the incentives faced by the conservative justice. In order to see that, next we summarize the moderate justice's optimal retirement probabilities conditional on his ideology. At this point we consider that the nomination game

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[28] The utility function of the retiring justice has to have a negative second derivative with respect to the decision made by the receiver of the message (in this case either P or S) and it has to have a positive cross derivative with respect to the decision first and the message later. To see that this is true, notice that in our model the decision is the ideology of the justice who replaces the retiring justice and the message determines the bias. Hence, regardless of whether the nomination game is FC or SC, the second derivative with respect to the ideology of the new justice is $-pU < 0$ and the cross derivative is $pU > 0$.

[29] Information is lost.

[30] This is conditional on Δ being small enough.

[31] That is, what is the retirement probability that minimizes $\left| \left(E\left[A_1\left(\theta_1\right)\right] + \alpha_o \right)/2 - \alpha_r \right|$ if the expected nomination game is FC, and the retirement probability that minimizes $\left| 2\alpha_S - \left(E\left[A_1\left(\theta_1\right)\right] + \alpha_o \right)/2 - \alpha_r \right|$ if the expected nomination game is SC (where α_o refers to the ideology of the original justice who does not retire)?

[32] In mathematical terms, that means that the retiring justice wants $\Psi\left(\bar{p}\right) = \delta u \bar{p} \Delta / 4l \leq 1$. Furthermore, given that $\delta u p \Delta / 2l \leq 2$ then $\Psi(p) = \delta u \Delta / 4l \leq 1$, which implies that the retiring justice does not need to change his initially perceived probability of retirement and it is optimal to set $\bar{p} = p = 0.5$. Notice that the distinction between FC and SC scenarios does not make a difference because even when the direction (liberal or conservative) in the bias of the perceived ideology of the new justice is different under both nomination games, the direction in the bias of the median of the Court is the same.

is FC, but had we considered SC, results would have been analogous. Then,

$$
\bar{p} = \begin{cases} 0.5 & \text{if} & \alpha_2 > (\alpha_0 + \alpha_3)/2 \\ \min\{1, 2l\Psi^-/\delta u \Delta\} & \text{if} & \alpha_2 \in \left[(\alpha_0 + \alpha_3)/2 - \Delta(1 - 2\Delta)/8, \quad (\alpha_0 + \alpha_3)/2 \right] \\ 1 & \text{if} & \alpha_2 < \left((\alpha_0 + \alpha_3)/2 - \Delta(1 - 2\Delta)/8 \right) \end{cases} \tag{4}
$$

In which Ψ^- is defined as follows:

$$
\Psi^- = \frac{\Delta(1 - 2\Delta) - \sqrt{\Delta^2(1 - 2\Delta)^2 - 4\Delta(1 - 2\Delta)(\alpha_0 + \alpha_3 - 2\alpha_2)}}{2(\alpha_0 + \alpha_3 - 2\alpha_2)}
$$

A moderate retiring justice who is rather conservative ($\alpha_2 > (\alpha_0 + \alpha_3)/2$) wants to move the expected median of the Court as far right as possible. Given that, he does not want to change his perceived ideology of retirement from $p = 0.5$ because that perceived probability is already inducing the new justice to vote truthfully and, through that, eliminating the bias in her perceived ideology. Whereas a moderate retiring justice who is rather liberal ($\alpha_2 < (\alpha_0 + \alpha_3)/2 - \Delta(1 - 2\Delta)/8$) wants to move the expected median of the Court as far left as possible, which is equivalent to setting $\Psi(\bar{p}) = 2$. However, that is only possible if $\delta u \Delta/2l = 2$. In the case that $\delta u \Delta/2l \leq 2$ (which is our case), the best that he can hope for is to set $\bar{p} = 1$, and in that way minimize the distance of his ideology from the expected ideology of the Court. That is, a liberal moderate justice wants to convince others that his retirement is certain.

As might be expected, the moderate justice with an intermediate ideology also follows a strong communication strategy but its intensity increases with how liberal he is. In order to see that, notice that the retiring justice's optimal perceived probability of retirement leaves the Court, after replacing the retired justice, with an ideology identical to his own. The value of $\bar{p}$ that achieves that is given by

$$
\frac{\alpha_0 + \alpha_3}{2} - \frac{\Delta(1 - 2\Delta)}{2} \frac{\delta u \bar{p} \Delta/2l - 1}{\left(\delta u \bar{p} \Delta/2l \right)^2} = \alpha_2
$$

This quadratic identity defines two values of $\bar{p}$, but only the smaller, $(2l\Psi^-/\delta u \Delta)$, is feasible under the assumption that $\delta u p \Delta/2l \leq 2$ (insincere voting takes place with low frequency)[33]. In other words, if the ideology of the retiring justice is an intermediate value, he will aim to set the expected Court ideology, after retirement, equal to his own. More specifically, if $\alpha_2 < \alpha_m$, he wants to be replaced with a justice that will move the median of the Court to the left, but the opposite if $\alpha_2 > \alpha_m$[34].

Overall, Proposition 1 tells us that the more aligned the ideology of the retiring justice is with the ideology of the new justice, the stronger are his incentives to signal retirement, because in that way the new justice can be perceived as an even more liberal justice when he faces a FC game or even more conservative when he faces a SC game. That said, in both scenarios his objective is the same: to increase the size of the bias of his perceived ideology.

5.2. Optimal communication strategy

The previous discussion identified the value of $\bar{p}$ that the retiring justice would like other agents to perceive as his retirement

probability. However, the retiring justice cannot directly affect $\bar{p}$; instead he chooses his communication strategy $\mu(m|p)$ so that other agents, using Bayes rule, update their expectations of his retirement probability from $E[p] = 0.5$ to $E[p] = \bar{p}$, as explained in Section 3.1. The retiring justice now must determine what the *communication strategy* is that minimizes the distance between the second period Court median and his true ideology.

We identify the Perfect Bayesian communication equilibria (PBE) a la Crawford and Sobel (1982) when a priori beliefs follow a uniform distribution. That is, the message space [0,1] is split into intervals $\{[0, p_1] \ldots [p_{N-1}, 1]\}$ and the retiring justice of type p only reports his truthful interval. Given the initial uniform distribution of p, the density $g(p|m)$ will also be a uniform distribution such that if $m = [p_i, p_{i+1}]$ then $\bar{p} = (p_i + p_{i+1})/2$. It follows that the PBE communication strategies have to make the retiring justice indifferent in each of the intervals such that

$$
p \left(1 - (\alpha_m(\bar{p}_i) - \alpha_2)^2 \right) = p \left(1 - (\alpha_m(\bar{p}_{i+1}) - \alpha_2)^2 \right)
$$

or simply

$$
(\alpha_m(\bar{p}_i) - \alpha_2)^2 = (\alpha_m(\bar{p}_{i+1}) - \alpha_2)^2 \tag{5}
$$

As in Section 5.1, here we only discuss the solution for infrequent insincere voting ($\delta u \Delta/2l \leq 2$). Consider the basic case in which the moderate justice is the retiring justice and the nomination game is FC. In addition, the ideology of the new justice is $\alpha_2 \in \left[(\alpha_0 + \alpha_3)/2 - \Delta(1 - 2\Delta)/8, (\alpha_0 + \alpha_3)/2 \right]$ [35]. Then, the only informative communication equilibrium (the only solution of (3) which is not $p_0 = 0$ and $p_1 = 1$) is the two-interval equilibrium in which

$$
p_0 = 0
$$
$$
p_1 = \frac{1 - \sqrt{16\alpha/\Delta(1 - 2\Delta)}}{2\alpha\delta u/(1 - 2\Delta)l} - 1 \tag{6}
$$
$$
p_2 = 1
$$

where we have denoted $\alpha = (\alpha_0 + \alpha_3)/2 - \alpha_2$. What (6) tells us is that a justice who has already decided to retire ($p = 1$) will send the message that his retiring intentions lie within the $[p_1, 1]$ interval, from which other agents will infer that

$$
\bar{p} = \frac{1 - \sqrt{16\alpha/\Delta(1 - 2\Delta)}}{4\alpha\delta u/(1 - 2\Delta)l}
$$

An important implication of this last expression is that, as we found in Proposition 1, $\bar{p}$ is decreasing in α_2 [36]. That is, *the more aligned are the ideologies of the new and the retiring justice, the stronger the communication strategy is*. To understand why (6) is the solution of (5), notice that (5) is equivalent to

$$
\frac{4\alpha}{\Delta(1 - 2\Delta)} = \left(\frac{\Psi(\bar{p}_i) - 1}{\Psi^2(\bar{p}_i)} + \frac{\Psi(\bar{p}_{i+1}) - 1}{\Psi^2(\bar{p}_{i+1})} \right) \tag{7}
$$

---

[33] In Appendix A (proof of Proposition 1) we formally show that $\bar{p}$ is decreasing in α_2.

[34] The previous analysis was carried out considering a FC nomination game. But it follows directly that (2) is exactly the same when P and S play a SC nomination game instead. The only difference is that the constant $(\alpha_0 + \alpha_3)/2$ in (2) is replaced by $2\alpha_S - (\alpha_0 + \alpha_3)/2$. As we said before, even when the direction in the bias of the perceived ideology of the new justice is different under both games, the direction in the bias of the median of the Court is the same.

[35] The situations in which the ideology of the retiring justice is skewed to the right ($\alpha_2 > (\alpha_0 + \alpha_3)/2$) or to the left ($\alpha_2 < (\alpha_0 + \alpha_3)/2 - \Delta(1 - 2\Delta)/8$) are extreme cases of our analysis.

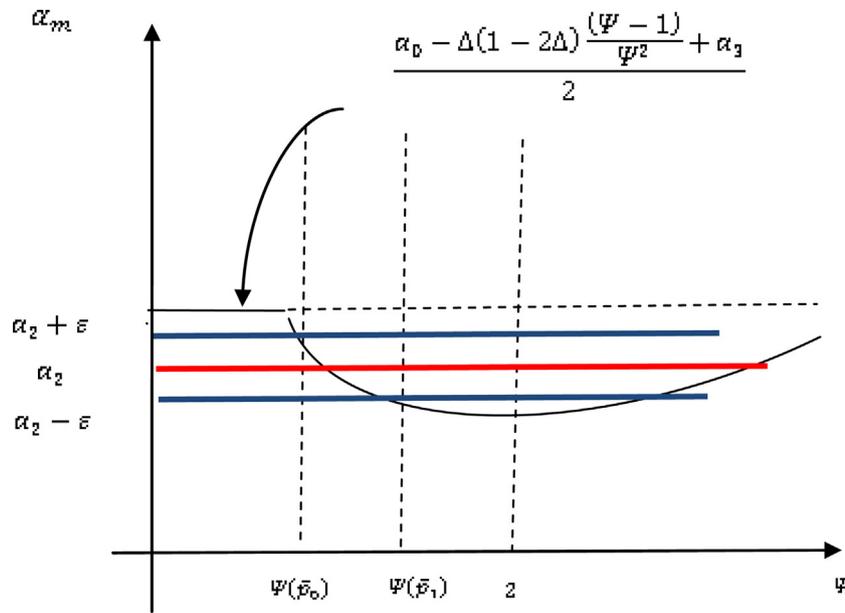[36] See the proof of Proposition 2 in Appendix A for details.

Fig. 3. Signaling strategy when insincere voting is infrequent.

which in the case of infrequent insincere voting scenario creates a unique solution $\left\{ \bar{p}_0, \bar{p}_1 \right\}$, identified in Fig. 3.

In general terms, the only solution of (5) is the one that identifies parameter ε such that[37]

$$\alpha_2 + \varepsilon = \alpha_m \left(\bar{p}_0\right) = \frac{\alpha_0 + \alpha_3}{2} - \frac{\Delta \left(1 - 2\Delta\right)}{2} \frac{\Psi \left(\bar{p}_0\right) - 1}{\Psi^2 \left(\bar{p}_0\right)}$$

$$\alpha_2 - \varepsilon = \alpha_m \left(\bar{p}_1\right) = \frac{\alpha_0 + \alpha_3}{2} - \frac{\Delta \left(1 - 2\Delta\right)}{2} \frac{\Psi \left(\bar{p}_1\right) - 1}{\Psi^2 \left(\bar{p}_1\right)}$$

but in the particular case of $\delta u \Delta/2l \leq 2$ we find that $\Psi(\bar{p}_0) = 1$ [38]. Hence (7) becomes

$$\frac{4\alpha}{\Delta \left(1 - 2\Delta\right)} = \left(\frac{\delta u p_1 \Delta/4l - 1}{\left(\delta u p_1 \Delta/4l\right)^2} \right)$$

from which we are able to retrieve (6).

Notice that *not all the values of α_2 define a solution in (7)*. If α_2 is greater than $(\alpha_0 + \alpha_3)/2$, then the left hand side in (7) becomes negative, but the right hand side in (7) is always positive. Hence, no effective communication exists when the retiring justice is too conservative. In the same way, the right hand side of (7) is strictly smaller than $2(\alpha_0 + \alpha_3)/\Delta(1 - 2\Delta)$, hence if $\alpha_2 = 0$, again (7) never holds. It follows that no effective communication exists when the retiring justice is too conservative or too liberal[39].

The intuition of the last result connects to the fundaments of cheap talk equilibria. Only interval equilibria exist because justices whose types are close enough cannot differentiate themselves from others through costless signaling. In addition, the indifference condition between intervals (in (5)) prevents justices from sending different messages. More specifically, moderate justices whose

true retirement intentions are rather low can credibly say that their retirement intentions lie within an interval with low values. The same is true for moderate justices whose true retirement intentions are rather high: they can credibly say that their retirement intentions lie within an interval with high values[40].

However, when the ideology of the retiring justice becomes too extreme, for example $\alpha_2 > (\alpha_0 + \alpha_3)/2$, there will be no message interval leading agents to expect that the median of the Court will be more conservative than $(\alpha_0 + \alpha_3)/2$ [41,42].

We summarize our results in the following proposition which we prove in Appendix A.

Proposition 2 (: (Optimal Communication Strategy)). *Regardless whether P and S play a FC or SC nomination game, when the new justice is the liberal justice: (i) if the retiring justice is the conservative justice, then he cannot use a communication strategy to alter other agents' perceptions about his probability of retirement ($\bar{p} = 0.5$); (ii) if the retiring justice is the moderate justice but his ideology is rather conservative or liberal, then he cannot use a communication strategy to alter other agents' perceptions about his probability of retirement ($\bar{p} = 0.5$); (iii) if the retiring justice is the moderate justice and his ideology is not too extreme, then the justice reveals his retirement intentions such that the more conservative he is, the weaker is his communication strategy $\left(\partial \bar{p}/\partial \alpha_2 < 0\right)$.*

Proof: See Appendix A.

---

[37] Notice that the addition of these two equations allows us to retrieve (7).

[38] The reason is that, if the interval [0,1] is split in two subintervals, it must be true that the mean of the first interval is smaller than 0.5 and the mean of the second interval is larger than 0.5. Since $\delta u \Delta/4l \leq 1$, we know that an expected probability of retirement of 0.5 belongs to the area in which the new justice never votes insincerely, that is $\Psi(\bar{p}_0) = 1$.

[39] Although we provide more details in the solution of Proposition 2, intuitively it can be seen that α_2 cannot be too small or too large, otherwise $\bar{p}$ does not belong to the interval [0, 1], which means that the only feasible communication strategy is the non-informative option, i.e., $\bar{p} = 0.5$, as at the beginning of the first period.

[40] These two results coexist because the first interval of messages defines an expected median of the Court equal to $\alpha_m(\bar{p}_0)$ and the second interval of messages defines an expected median equal to $\alpha_m(\bar{p}_1)$. As these two expressions are equally distant from α_2, no justice has incentives to change their messaging strategy.

[41] All messages that define expected medians of the Court $\left\{ \alpha_m(\bar{p}_0), \alpha_m(\bar{p}_1) \right\}$ such that $\alpha_2 > (\alpha_0 + \alpha_3)/2 > \alpha_m(\bar{p}_0) > \alpha_m(\bar{p}_1)$ cannot be an equilibrium, as all the justices who send messages defining median $\alpha_m(\bar{p}_1)$ would prefer to send a message that defines median $\alpha_m(\bar{p}_0)$, as that is closer to α_2.

[42] The previous analysis also holds when the expected nomination game is SC and not FC. Again the optimal strategy is determined by the incentives of the retiring justice to maximize or minimize the bias in the expected perceived ideology of the new justice, which is achieved with the strategy identified under a FC nomination game. Finally, a conservative retiring justice can only use a non-informative communication strategy because when α_3 is larger than $(\alpha_0 + \alpha_2)/2$ —which is true here —the system defined by (6) only supports the case in which $p_1 = 1$.

6. Extensions

Our results suggest that strong communication strategies tend to be more likely when the ideologies of the retiring justice and the new justice are aligned. However, if the new justice votes insincerely frequently, the previous result is reversed. In our model, frequent insincere voting happens only if the utility that the new justice obtains from the Court deciding a case as she would like is at least twelve times the cost she faces due to an insincere vote[43]. In fact, that is a lower bound: sometimes that number will be much higher. It follows that, in practical terms, (ii) from Proposition 1 and (iii) from Proposition 2 are likely to be better predictors of reality than the same results derived under the assumption of frequent insincere voting. That is, alignment between the retiring and freshman justices should lead to strong retirement signals.

We end by discussing the robustness of our results in five dimensions.

6.1. Insincere voting takes place frequently

To assess the validity of the results derived in Propositions 1 and 2, we consider that the new justice is in a scenario in which she might vote insincerely frequently[44] ($\delta u \Delta / 2l > 2$). That is, additional insincere voting dilutes the informational content of a vote and leads the new justice to reduce the size in the bias of her perceived ideology.

6.1.1. Optimal probabilities of retirement

Although it is clear that (i) of Proposition 1 still is true when $\delta u \Delta / 2l > 2$, now (ii) is different and needs to be stated as follows: (ii′) *if the retiring justice is the moderate justice, then the more conservative the ideology of the retiring justice, the stronger his communication strategy ($\bar{p}$ weakly increases with α_2).* We formally prove this in Appendix A (Proposition 1).

As we showed in the previous section, the more conservative the retiring justice is, the more interested he is in moving the median of the Court to the right, and that is achieved by decreasing the Bias of the perceived ideology of the new justice. However, because now insincere voting takes place frequently, a decrease in the Bias requires the new liberal justice to vote insincerely more frequently, because that will dilute the informative content of her vote even more[45].

6.1.2. Optimal communication strategy

It is easy to see that (i) and (ii) from Proposition 2 are still valid when $\delta u \Delta / 2l > 2$. But (iii) has to be restated in the following terms: if the retiring justice is a moderate justice whose ideology is neither too liberal or too conservative and the new justice frequently votes insincerely ($\delta u \Delta / 2l > 2$), then the justice can use a communication strategy such that the more conservative he is, the stronger is his signaling strategy ($\partial \bar{p} / \partial \alpha_2 > 0$).

To understand the new (iii′) notice that when $\delta u \Delta / 2l > 2$, there are four informative equilibria that satisfy (5). The reason is that there exist two values of Ψ, which we call $\{\Psi_1, \Psi_2\}$, that satisfy the identity $\alpha_2 - \varepsilon = \alpha_m(\Psi)$, and there exists other two values of Ψ, which we call $\{\Psi_3, \Psi_4\}$, that satisfy the identity $\alpha_2 + \varepsilon = \alpha_m(\Psi)$. However only the communication equilibria defined by points $\{\Psi_1, \Psi_3\}$, $\{\Psi_2, \Psi_4\}$, $\{\Psi_1, \Psi_2, \Psi_4\}$ and $\{\Psi_1, \Psi_3, \Psi_4\}$ are feasible solutions[46].

These four solutions share a central property. The interval than contains $p = 1$ (retirement probability of the justice who has decided to retire) has an expected probability of retirement defined either by Ψ_3 or Ψ_4 (in addition to 1). That is, the value of $\bar{p}$ defines an equilibrium in which the new justice frequently votes insincerely. It follows then that the more conservative the retiring justice (the larger is α_2), the more incentive he has to reduce the Bias in the perceived ideology of the new justice, which can be achieved through an increment of $\bar{p}$.

6.2. Initial probability of retirement

An initially perceived probability of retirement of 0.5 is more of an exceptional case than a general rule. After making a small adjustment, our model is flexible enough to predict the communication strategies for any value of the initially perceived probability of retirement.

The procedure is simple: if p is the value of the initially perceived probability of retirement and $p < 0.5$, then we can assume that initially agents believe that the probability of the justice retiring is uniformly distributed in the interval $[0, 2p]$. On the other hand, if $p \geq 0.5$, then we can assume that initially agents believe that the probability of the justice retiring is uniformly distributed in the interval $[2p − 1, 1]$. Under these conditions, our main results hold.

Figs 2 and 3 are the same except for when $p \neq 0.5$, the range of possible values of $\Psi(\bar{p})$ becomes smaller because the range of possible values of $\bar{p}$ becomes smaller[47]. This implies that the range of ideologies of the retiring justice which incentivize him to modify his perceived probability of retirement will be reduced relative to the case of $p = 0.5$. This in turn implies that the set of retiring justices who are able to send informative retirement messages will be much smaller as well[48].

6.3. More than one justice is considering retirement

Occasionally more than one justice may consider retirement at the same time. Suppose that both the conservative and the moderate justices are considering retirement, such that their true intentions are summarized by p_2 and p_3, respectively[49]. Retirement

---

[43] The boundary that separates infrequent from frequent insincere voting is the one in which $(u/l) > 2/\delta\Delta$, in which $\Delta < 1/6$ for (A1) to hold.

[44] We cannot say with certainty that the equilibrium will be frequent insincere voting because even when the initial perceptions of the new justice could be that type of equilibrium ($\delta u \Delta / 4l > 2$), after the communication strategy $\bar{p}$ they could be set at a level in which $\delta u \bar{p} \Delta / 2l < 2$.

[45] Notice that there are two values of Ψ that generate any value of $\alpha_2 \in \left[(\alpha_0 + \alpha_3)/2 - \Delta(1 - 2\Delta)/8, (\alpha_0 + \alpha_3)/2 \right]$ when $\delta u \Delta / 2l > 2$: the ones that in Appendix A we denote Ψ^- and Ψ^+. Our analysis is performed under the assumption that in the presence of multiple solutions, the retiring justice prefers the updated perceived probability of retirement that is closer to the initial value (0.5). That seems logical in terms of the existence of any possible indirect cost to a justice changing of his perceived intentions of retirement too much. Also, the results generated in (ii′) will be in line with the predictions derived from the optimal communication strategy that we deduce in Section 6.1.2.

[46] For example $\{\Psi_1, \Psi_4\}$ *cannot be a solution* because they define the system
$$\alpha_2 + \varepsilon = \alpha_m(\bar{p}_0) = \frac{\alpha_0 + \alpha_3}{2} - \frac{\Delta(1 - 2\Delta)}{2} \frac{\Psi(\bar{p}_0) - 1}{\Psi^2(\bar{p}_0)}$$
$$\alpha_2 + \varepsilon = \alpha_m(\bar{p}_1) = \frac{\alpha_0 + \alpha_3}{2} - \frac{\Delta(1 - 2\Delta)}{2} \frac{\Psi(\bar{p}_1) - 1}{\Psi^2(\bar{p}_1)}$$
which evidently does not satisfy (5). $\{\Psi_1, \Psi_2\}$ cannot be a solution either because they define the system in which $\bar{p}_0$ and $\bar{p}_1$ are both smaller than 0.5, and there is no partition of the interval $[0, 1]$ such that the average of both sections is smaller than 0.5.

[47] While in our basic model $\Psi(\bar{p})$ can have any value in $\left[0, \delta u \Delta / 2l \right]$, in the modified model $\Psi(\bar{p})$ is bounded by one of the two extremes. For example when $p \geq 0.5$, then $\Psi(\bar{p})$ can only have values in $\left[\delta u \Delta (2p - 1)/2l, \delta u \Delta / 2l \right]$.

[48] Or using the terminology of Proposition 2, the set of moderate justices who are neither too liberal nor too conservative will be smaller.

[49] It may seem that the really interesting case is when J_2 is the new justice and J_1 together with J_3 are considering retirement. However, that situation is actually trivial, as neither of the retiring justices has an incentive to send a message, since the moderate new justice always votes truthfully (See derivation of expected perceived ideologies in Appendix A).

means that only one justice retires (the other justice might retire shortly after but strict simultaneous retirement does not happen).

Then, whereas J_3 always wants to move the expected second period median of the Court to the right (if J_3 retires), J_2 might want to move it to the right or to the left (if J_2 retires)[50]. Moreover, if the justices could agree on the direction of their preferences to move the Court, the intentions of J_3 will be more extreme[51].

6.4. Reputational costs

Some justices, such as the Chief Justice or the justice who ideologically sits at the median of the Court, might be concerned with the effect that an insincere message (or perceived as such) regarding retirement will have over their reputation and future legacy.

In the context of our model, the inclusion of a reputational cost implies that a message might not be costless anymore. In particular, if we assume that the retiring justice faces a cost c whenever he sends a message that is not $m = p$. Then the results from Proposition 1 still hold but the results from Proposition 2 only continue to hold if c is small enough. To see why, notice that all types of retiring justices (any value of p) with the same ideology have the same optimal $\bar{p}$. Hence (5) still defines the (semi-pooling) communication equilibrium. Then, if the cost for not declaring exactly $m = p$ is small enough, it will be smaller than the benefits of inducing a better median of the Court. But if that cost is large enough, then each retiring justice will prefer either not to communicate (in which case $\bar{p} = 1/2$) or communicate his true intentions of retirement.

6.5. Other institutional considerations

Because we have assumed that Δ is small (footnote 16), even when messaging can affect the expected median of the Court, it does not change the "type" of nomination game played by P and S (it will be UC, SC or FC for any value of $\bar{p}$). This changes when we relax the assumption that Δ is restricted in size. In order to see that, suppose that $(\alpha_0 + 3\alpha_3)/4 < \alpha_S < \alpha_P$ such that without signaling P and S play a UC nomination game. However, if signaling is such that $\alpha_S < (\alpha_0 + \alpha_2)/2 - \Delta(1 - 2\Delta)(\Psi(\bar{p}) - 1)/2\Psi^2(\bar{p})$ then P and S play a FC nomination. With a similar logic, J_3 could induce the SC nomination game.

Another limitation to consider relaxing in our formulation is that we have considered that justices cannot form coalitions to craft a compact of a credible commitment to align votes. Such compacts would reduce the relevance of the true median of the Court. For example, consider that there exists a compact in which the moderate justice is committed to vote as the new liberal justice will do. Hence, even when the true median of the Court is still $(A + \alpha_3)/2$, the operating median will be just A. That has interesting implications for the J_3 optimal communication strategy: it will change (shift and resize) the set of ideologies of the retiring justices who can send informative messages. For example, if the nomination game is FC, then the set of ideologies of the retiring J_3 who can effectively communicate

will change from $\left[(\alpha_0 + \alpha_3)/2 - \Delta(1 - 2\Delta)/8, (\alpha_0 + \alpha_3)/2\right]$ to $\left[\alpha_0 - \Delta(1 - 2\Delta)/4, \alpha_0\right]$. The latter is a larger set and more skewed to the left.

7. Conclusion

We used the framework developed in Bustos and Jacobi (2014) to explore the incentives of retiring justices to follow communication strategies aimed at influencing the voting decisions of relatively new members of the Court, and in this way to shape the expected ideology of their potential replacements. Even a justice who has definitively decided to retire at a given time can nonetheless influence the ideology of the future Court, by strongly or weakly signaling that decision, and thus influencing the behavior of new justices on the Court. We show that the political configuration is not central. Rather, the decision of the retiring justice to engage in strong or weak communication is determined by the ideological alignment between the new and the retiring justices and the likelihood with which the new justice engages in insincere voting herself. But the retiring justice is not unconstrained: his communications are only effective if he is neither too conservative nor too liberal. This analysis contributes to the judicial behavior literature by illustrating the factors that shape strategic judicial communication and how those messages are interpreted in assessing judicial retirement probabilities and how this in turn shapes the future configuration of the Court.

Appendix A. Mathematical proofs

Expected perceived ideologies: Proposition 1 of Bustos and Jacobi (2014), characterizes the new justice's optimal voting strategies. In the second period, all justices vote sincerely because there are no future benefits associated with an insincere vote. Also, a new moderate justice always votes truthfully in the first period.

However a new liberal justice may vote insincerely during the first period and that will depend on the ideologies of P and S (whether they have ideologies that are opposed FC or semi-opposed SC) but also on the case faced by the Court. The exact expressions for the optimal voting strategies are given by

$$v_1^{FC}\left(\theta_1 \,\middle|\, \Psi > 1\right)$$
$$= \begin{cases} C & \text{if} & \theta_1 < \alpha_0 - \Delta \\ C & \text{with probability } p^{FC}\left(\theta_1\right) & \text{if} & \theta_1 \in \left[\alpha_0 - \Delta, \min\{\theta^{FC}, \alpha_1\}\right] \\ L & \text{if} & \theta_1 > \min\{\theta^{FC}, \alpha_1\} \end{cases}$$

in which $p^{FC}(\theta_1) = 1 - [\Psi - 1]\left(\theta_1 - (\alpha_0 - \Delta)\right) / \left(\alpha_0 + \left(\Delta - \theta_1\right)\right)$ and

$$v_1^{SC}\left(\theta_1 \,\middle|\, \Psi > 1\right)$$
$$= \begin{cases} C & \text{if} & \theta_1 < \max\left\{\theta^{SC}, \alpha_1\right\} \\ L & \text{with probability } p^{SC}\left(\theta_1\right) & \text{if} & \theta_1 \in \left[\max\{\theta^{SC}, \alpha_1\}, \alpha_0 + \Delta\right] \\ L & \text{if} & \theta_1 > \alpha_0 + \Delta \end{cases}$$

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[50] While the retiring conservative justice always wants to move the new expected median of the Court to the right, because the new expected median is $(\alpha_0 - \text{bias} + \alpha_2)/2 < \alpha_3$, the retiring moderate justice might want to move the new median to the right or to the left, because $(\alpha_0 - \text{bias} + \alpha_3)/2$ can be smaller or larger than α_2.

[51] To see this last point more clearly, notice that the optimal probability of retirement for the conservative justice is $\bar{p}_3 = 0$, which implies that $\bar{p} = \bar{p}_2$. That is, while the conservative justice would like to change the expected bias in the ideology of the new justice from $\Delta(1 - 2\Delta)(\Psi(0.5) - 1)/2\Psi(0.5)^2$ to 0, the moderate justice would like to change it from the same initial value to $\Delta(1 - 2\Delta)(\Psi(\bar{p}_2) - 1)/2\Psi(\bar{p}_2)^2$, a less dramatic variation.

in which $p^{SC}(\theta_1) = 1 - [\Psi - 1](\alpha_0 + \Delta - \theta_1)/(\theta_1 - (\alpha_0 - \Delta))$. Also $\theta^{FC} = \alpha_0 - \Delta + 4l/\delta u$ and $\theta^{SC} = \alpha_0 + \Delta - 4l/\delta u$. When $\Psi \leq 1$, the new justice always votes truthfully, since the ratio of expected benefits over certain costs is not large enough to warrant an insincere vote.

Using the optimal voting strategies, we can calculate the expected ideology conditional on the case heard by the Court. We separate the scenarios in which $\Psi \leq 1$ and $\Psi > 1$ such that

$$A(\theta_1 \mid \Psi \leq 1) = \begin{cases} \dfrac{\theta_1 + \alpha_0 + \Delta}{2} & \text{if } \nu(\theta_1) = C \text{ for all } \theta_1 \\[2mm] \dfrac{\theta_1 + \alpha_0 - \Delta}{2} & \text{if } \nu(\theta_1) = L \text{ for all } \theta_1 \end{cases}$$

and

$$A^{FC}(\theta_1 \mid \Psi > 1) = \begin{cases} \dfrac{\theta_1 + \alpha_0 + \Delta}{2} & \text{if } \nu_1^{FC}(\theta_1) = C \text{ for all } \theta_1 \\[2mm] \alpha_0 & \text{if } \nu_1^{FC}(\theta_1) = L \text{ and } \theta_1 > \theta^{FC} \\[2mm] \dfrac{\theta_1 + \alpha_0 + \Delta(1 - 2/\Psi)}{2} & \text{if } \nu_1^{FC}(\theta_1) = L \text{ and } \theta_1 < \theta^{FC} \end{cases}$$

$$A^{SC}(\theta_1 \mid \Psi > 1) = \begin{cases} \dfrac{\theta_1 + \alpha_0 - \Delta}{2} & \text{if } \nu_1^{SC}(\theta_1) = L \text{ for all } \theta_1 \\[2mm] \alpha_0 & \text{if } \nu_1^{SC}(\theta_1) = L \text{ and } \theta_1 < \theta^{SC} \\[2mm] \dfrac{\theta_1 + \alpha_0 - \Delta(1 - 2/\Psi)}{2} & \text{if } \nu_1^{SC}(\theta_1) = C \text{ and } \theta_1 > \theta^{SC} \end{cases}$$

The super index denotes the FC and SC scenarios, respectively. Finally, the expressions summarized in (1) of the main text follow after we integrate over all the possible values of θ_1 and α_1. In order to do that, first we calculate $E_{\theta_1}[A(\theta_1) \mid \alpha_1]$. Tedious but straightforward algebra tells us that

$$E_{\theta_1}\left[A^{FC}(\theta_1) \mid \alpha_1\right] = \begin{cases} \alpha_0 + \dfrac{\Delta^2}{\Psi}\left(2 - \dfrac{1}{\Psi}\right) + \dfrac{2(\Psi - 1)\Delta^2}{\Psi}\ln\left(\dfrac{\Psi - 1}{\Psi}\right) & \text{if } \alpha_1 > \theta^{FC} \\[3mm] \alpha_0 + (\alpha_1 - \alpha_0)\Delta + \Delta^2\left(1 - \dfrac{1}{\Psi^2}\right) + \dfrac{2(\Psi - 1)\Delta^2}{\Psi}\ln\left(\dfrac{\alpha_0 + \Delta - \alpha_1}{2\Delta}\right) & \text{if } \alpha_1 \leq \theta^{FC} \end{cases}$$

when the justice follows a $\nu_1^{FC}(\theta_1)$ voting strategy. This implies

$$E[A^{FC}] = \frac{\displaystyle\int_{\alpha_0 - \Delta}^{\theta^{FC}} E_{\theta_1}\left[A^{FC}(\theta_1) \mid x\right] dx + \int_{\theta^{FC}}^{\alpha_0 + \Delta} E_{\theta_1}\left[A^{FC}(\theta_1) \mid x\right] dx}{2\Delta}$$

$$= \alpha_0 - \Delta(1 - 2\Delta)(\Psi - 1)/\Psi^2$$

Analogously, when the justice follows a $\nu_1^{SC}(\theta_1)$ voting strategy we have

$$E_{\theta_1}\left[A^{SC}(\theta_1) \mid \alpha_1\right] = \begin{cases} \alpha_0 - \dfrac{\Delta^2}{\Psi}\left(2 - \dfrac{1}{\Psi}\right) - \dfrac{2(\Psi - 1)\Delta^2}{\Psi}\ln\left(\dfrac{\Psi - 1}{\Psi}\right) & \text{if } \alpha_1 < \theta^{SC} \\[3mm] \alpha_0 + (\alpha_1 - \alpha_0)\Delta - \Delta^2\left(1 - \dfrac{1}{\Psi^2}\right) - \dfrac{2(\Psi - 1)\Delta^2}{\Psi}\ln\left(\dfrac{\alpha_1 - (\alpha_0 - \Delta)}{2\Delta}\right) & \text{if } \alpha_1 \geq \theta^{SC} \end{cases}$$

which implies that

$$E[A^{SC}] = \frac{\displaystyle\int_{\alpha_0 - \Delta}^{\theta^{SC}} E_{\theta_1}\left[A^{SC}(\theta_1) \mid x\right] dx + \int_{\theta^{SC}}^{\alpha_0 + \Delta} E_{\theta_1}\left[A^{SC}(\theta_1) \mid x\right] dx}{2\Delta}$$

$$= \alpha_0 + \Delta(1 - 2\Delta)(\Psi - 1)/\Psi^2$$

Proof of Proposition 1: In order to verify that (i) is true, notice that regardless whether the nomination game is FC or SC, $\alpha_3 > \max\left\{(\alpha_0 + \alpha_2)/2, 2\alpha_S - (\alpha_0 + \alpha_2)/2\right\}$. Then it is optimal for the retiring justice to set $\bar{p}$ such that $\Psi(\bar{p}) = \delta u \bar{p} \Delta/2l \leq 1$. The solution is given by

$$\bar{p} = \begin{cases} 0.5 & \text{if } \delta u \Delta/2l \leq 2 \\ \text{Any value in } [0, 2l/\delta u \Delta] & \text{if } \delta u \Delta/2l > 2 \end{cases}$$

because in the case that $\delta u \Delta/2l \leq 2$, which implies that $\delta u \Delta/4l \leq 1$, the new justice is already voting truthfully and the retiring justice cannot improve that outcome. It follows that the retiring justice prefers not to change his perceived probability of retirement, $\bar{p} = 0.5$. But if the new justice is voting insincerely, $\delta u p \Delta/4l > 1$, then the retiring justice would prefer a smaller probability of retirement such that $\delta u \Delta/4l > 1 \geq \delta u \bar{p} \Delta/2l$ or equivalently $\bar{p} < 0.5$. In order to verify ii), it is enough to prove that for all values of $\delta u \Delta/2l \in [1, 4]$, the value of $\bar{p}$ defined by (4) is decreasing in α_2. To see that, we define $\Psi(0.5) = \delta u \Delta/4l$ such that

$$\alpha' = \frac{\alpha_0 - \Delta(1 - 2\Delta)\left(\Psi(0.5) - 1/(\Psi(0.5))^2\right) + \alpha_3}{2}$$

In addition, let us denote by $\bar{\Psi}$ the value that satisfies

$$\alpha_2 = \frac{\alpha_0 - \Delta(1 - 2\Delta)\left(\bar{\Psi} - 1/(\bar{\Psi})^2\right) + \alpha_3}{2}$$

This last expression defines the value of $\bar{p}$ If $\alpha_2 > \alpha'$, then $\bar{\Psi} = \Psi^- < \Psi(0.5)$, and then $\bar{p} < 0.5$, because $\delta u \Delta/4l \in [0.5, 2]$. Furthermore, the larger is α_2 the smaller is $\bar{\Psi}$ and the smaller is $\bar{p}$ When $\alpha_2 = (\alpha_0 + \alpha_3)/2$, the ratio $\bar{\Psi}$ reaches its minimum value of 1 and defines the minimum value of $\bar{p} = 2l/\delta u \Delta$. In addition, from inspection of (4), $\bar{p} \leq 2l/\delta u \Delta$ when $\alpha_2 < (\alpha_0 + \alpha_3)/2$. On the other hand, when $\alpha_2 = \alpha'$, the optimal probability of retirement becomes 0.5. Then, for all values of $(\alpha_0 + \alpha_3)/2 - '\Delta(1 - 2\Delta)/8 < \alpha_2 < \alpha'$ we have that $\bar{\Psi} > \Psi(0.5)$ and then $\bar{p} > 0.5$. Furthermore, the smaller

is α_2, the larger is $\bar{\Psi}$ and the larger is $\bar{p}$ When $\alpha_2 = (\alpha_0 + \alpha_3)/2$, the ratio $\bar{\Psi}$ becomes 2, which is the maximum ratio that the retiring justice would like to impose. At that point $\bar{p} = 4l/\delta u \Delta \in [0.5, 1]$, which is the same optimal value for all $\alpha_2 < (\alpha_0 + \alpha_3)/2$. The steps of the proof when P and S play the SC nomination game are the same.

We also take the opportunity here to prove (ii') from Section 6.1. With the possibility of frequent insincere voting, the optimal

perceived probability of retirement becomes

$$\bar{p} = \begin{cases} 0.5 & \text{if } \alpha_2 > (\alpha_0 + \alpha_3)/2 \\ \begin{cases} \min\left\{1, 2l\Psi^-/\delta u\Delta\right\} & \text{if } \delta u\Delta/2l \le 4 \\ \min\left\{1, 2l\Psi^+/\delta u\Delta\right\} & \text{if } \delta u\Delta/2l > 4 \end{cases} & \text{if } \alpha_2 \in \left[(\alpha_0 + \alpha_3)/2 - \Delta(1-2\Delta)/8, (\alpha_0 + \alpha_3)/2\right] \\ 4l/\delta u\Delta & \text{if } \alpha_2 < \left((\alpha_0 + \alpha_3)/2 - \Delta(1-2\Delta)\Delta/8\right) \end{cases} \tag{8}$$

In which Ψ^- is as before and Ψ^+ corresponds to

$$\Psi^+ = \frac{\Delta(1-2\Delta) + \sqrt{\Delta^2(1-2\Delta)^2 - 4\Delta(1-2\Delta)(\alpha_0 + \alpha_3 - 2\alpha_2)}}{2(\alpha_0 + \alpha_3 - 2\alpha_2)}$$

We need to prove that for all values of $\delta u\Delta/2l > 4$, the value of $\bar{p}$ is increasing in α_2. The proof follows analogous steps as those provided in ii). That is, we define a value of $\delta u\Delta/4l$ and call it $\Psi(0.5)$ such that

$$\alpha' = \frac{\alpha_0 - \Delta(1-2\Delta)\frac{\Psi(0.5)-1}{(\Psi(0.5))^2} + \alpha_3}{2}$$

Then, if $\alpha_2 < \alpha'$, we have that $\bar{\Psi} = \Psi'^+ < \Psi(0.5)$ and $\bar{p} < 0.5$. Ergo this time the larger is α_2, the larger is $\bar{\Psi}$ and the larger is $\bar{p}$. When $\alpha_2 \le \left((\alpha_0 + \alpha_3)/2 - \Delta(1-2\Delta)/8\right)$, the updated probability reaches its minimum value $\bar{p} = 4l/\delta u\Delta < 0.5$ and when $\alpha_2 = \alpha'$, the optimal probability of retirement becomes 0.5. For all values of $\alpha_2 > \alpha'$, the best that the retiring justice can do is set $\bar{p}$ such that $\bar{\Psi} = \Psi'^+ > \Psi(0.5)$ and $\bar{p} > 0.5$, with $\bar{p}$ increasing in α_2.

Proof of Proposition 2: (i) follows directly, since for a conservative justice it is always true that $\alpha_3 > (\alpha_0 + \alpha_2)/2$ and $\alpha_3 > 2\alpha_S - (\alpha_0 + \alpha_2)/2$, then we know that (7) cannot hold because in the case of a FC game $\alpha = (\alpha_0 + \alpha_2)/2 - \alpha_3 < 0$, and in the case of SC game $\alpha = 2\alpha_S - (\alpha_0 + \alpha_2)/2 - \alpha_3 < 0$. Hence the only communication equilibrium is the non-informative one in which $\bar{p}_0 = 0$ and $\bar{p}_0 = 1$, which implies that $\bar{p} = 0.5$; (ii) We prove it only for FC, as for SC the steps are the same. First, for the case in which $\delta up\Delta/2l \le 2$: we know that $\bar{p}$ defined in page 20 has to be within the interval $[0,1]$. That implies that it must be true that

$$\bar{p} = \frac{1 - \sqrt{1 - 16\alpha/\Delta(1-2\Delta)}}{4\alpha\delta u/(1 - 2\Delta l)} > 0$$

or

$$\alpha_2 < (\alpha_0 + \alpha_3)/2$$

On the other side, it must also be true that

$$\bar{p} = \frac{1 - \sqrt{1 - 16\alpha/\Delta(1-2\Delta)}}{4\alpha\delta u/(1 - 2\Delta)l} < 1$$

which implies that

$$1 - 4\alpha\delta u/(1 - 2\Delta)l < \sqrt{1 - 16\alpha/\Delta(1-2\Delta)}$$

$$\frac{2}{\Delta} - \frac{\delta u}{l} + \frac{2\alpha}{1-2\Delta}\left(\frac{\delta u}{l}\right)^2 < 0$$

Hence it must be true that $\alpha_2 > \frac{\alpha_0 + \alpha_3}{2} - \frac{(1-2\Delta)\Delta}{4}\frac{\Psi(1)-1}{\Psi^2(1)}$. In other words, if the retiring justice is too conservative or too liberal, then he follows a non-informative communication strategy. (iii) It is enough to prove that $\bar{p}$ is decreasing in α_2. We calculate the derivative

$$\frac{\partial \bar{p}}{\partial \alpha_2} = \frac{1 - \sqrt{1 - \frac{16\alpha}{\Delta(1-2\Delta)}}}{4\alpha\delta u/(1 - 2\Delta)l}$$

$$= \frac{(1-2\Delta)l}{4\delta u\alpha}\left(\sqrt{1 - \frac{16\alpha}{\Delta(1-2\Delta)}} - \left(2 - \frac{16\alpha}{\Delta(1-2\Delta)}\right)\right)$$

and this last expression is negative because

$$\left(1 + 1 - \frac{16\alpha}{\Delta(1-2\Delta)}\right) > 1 > \sqrt{1 - \frac{16\alpha}{\Delta(1-2\Delta)}} > 1 - \frac{16\alpha}{\Delta(1-2\Delta)}$$

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