Public versus Private Deliberation in a Representative Democracy[1]

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Abstract

Though transparency in government has obvious benefits, recent scholarship has devoted less attention to the possibility that openness might also have costs. I develop a game-theoretic model, using insights from democratic theory, that helps identify several propositions about the effect of having representatives deliberate in public. The cases of both elected and unelected representatives are considered. I suggest that public deliberation has the advantage of prompting representatives to be responsive to public opinion, but it can also have the disadvantage of encouraging them to ignore private information about which policies are best for society. As a consequence, transparency will be more preferable when there is a prominent fear that representatives may be biased, and it will be less preferable in areas of policy where representatives have a high level of expertise relative to the public. This does not imply, however, that "technical" issues should always be discussed in private. I also conclude that transparency and reelection constraints may best be seen as substitute mechanisms of ensuring that representatives are responsive to public opinion. Finally, I argue that, contrary to received wisdom, private deliberation will, in many cases, actually be more effective than public deliberation in reducing polarization of opinions in society.

1 Introduction

There are strong reasons to believe that openness in government is critical for the health of any representative democracy. When the public can directly observe the actions of its representatives it will find it easier to hold them accountable. When deliberation by representatives takes place in the open, this can also help build consensus in favor of chosen policies. Given these clear benefits, over the last thirty years government agencies in many different countries have taken steps to make themselves more "transparent", and outside observers have increased pressures for openness in areas where there remains a perceived "democratic deficit". One important feature of recent discussions is that they have focused to a great extent on whether unelected officials, like central bankers, judges, and regulators should be more open with their deliberations, rather than considering only the case of those officials that are directly elected. Recent discussions have also focused as much on the question of transparency in international organizations as on actions at the domestic level.

Despite this current emphasis on transparency, there has been little recent effort by political scientists to develop systematic theoretical propositions about the potential costs and benefits of openness in government. Though authors have considered the effect of transparency in individual areas of government action, the fact that discussions about openness have become prominent in so many different contexts where representatives, either elected or unelected, make decisions suggests the need for a more general approach. Likewise, though most people would probably agree that at least some venues, such as jury deliberations, should be private, while other venues, like parliamentary debates, should be public, there is no convincing general theory demonstrating when transparency should apply to discussions among representatives of society. In this paper I develop a model of collective deliberation by representatives that shows how the relative effects of transparency will depend upon the immediacy of reputational concerns for officials, on the degree to which representatives have specialist knowledge about policy, and finally on the extent to which the public fears that representatives may be biased. I also discuss how my assumptions and predictions relate to contributions by democratic theorists, both past and present.

In order to consider the costs and benefits of transparency, I develop a model that compares public and private deliberation by a body of three representatives (I use the terms 'transparency' and 'public deliberation' interchangeably). Under public deliberation, constituents observe both the final policy choice and the votes of individual representatives. Under pri-

vate deliberation, constituents observe only the final policy choice. The representatives in the model could be elected members of a legislature, unelected members of a committee, like a central bank governing board or constitutional court, or they could also be members of an international body. I assume that representatives have private information (i.e. expert knowledge) about the effect of different policies. Representatives must vote on a binary action with the knowledge that utility for the public will depend on whether this action corresponds to the realization of an unobserved "state of the world". There are two types of representative, "unbiased" representatives who share the same utility function as the public, and "biased" representatives who always prefer the same action regardless of the realization of the state variable. One prominent reason why a representative might be biased is if they are influenced by a special interest group. Representatives in the model are concerned both about choosing their preferred policy and about developing a reputation for being unbiased. In the case of an elected representative, this reputational concern may be quite strong, and it involves the desire to be reelected, or to improve future electoral prospects for one's party. In the case of unelected representatives it is often argued that such reputational concerns will be less prominent. This, after all, is one of the principal arguments why certain public officials should be selected by some method other than a popular vote. However, I argue that it is implausible to assume that reputational concerns are absent for unelected representatives. Such concerns can include the possibility of reappointment, future career possibilities outside of government, or, more generally, the desire to be held in high esteem by a particular constituency.

The setup for my model draws on several recent contributions that consider how an agent with "career concerns" may have an incentive to withhold private information about a policy choice if doing otherwise would lead a principal to draw negative inferences about an agent's type. Maskin and Tirole (2003) compare the relative advantages of having elected vs. unelected representatives choose policies when representatives have expert information about policy choices and there is a risk that representatives are biased. They suggest that elections are useful as sanctioning and selecting mechanisms, but elected representatives are also more subject to "pandering". In a related model that does not specifically address a political context, Morris (2001) shows how a "political correctness effect" may exist whereby an advisor gives a false recommendation to a principal in order to avoid having the principal draw the inference that the advisor is "biased". While both Maskin and Tirole (2003) and Morris (2001) assume that principals are able to directly observe the actions of agents, Prat (2003) has considered how

incentives are altered if a principal is not able to observe an agent's actions. He shows that non-transparency of this sort may actually be optimal if the consequences of an agent's actions are difficult to evaluate. Besley (2003) considers several scenarios where greater transparency in policymaking may reduce social welfare. These are particularly interesting insights given that existing formal models of political accountability have focused almost exclusively on the welfare-improving aspects of institutions that increase public knowledge of representatives' actions.[1]

In the model developed in this paper the key question for both biased and unbiased representatives involves their relative incentive to vote in favor of their preferred policy outcome, or alternatively, to use their vote as a signal to convince the public they are unbiased. This relative incentive will depend directly on whether deliberation occurs in public or in private. I make five propositions based on the model.

First, when deliberation takes place in public and reputational concerns are sufficiently high, both biased and unbiased representatives will always vote with public opinion, even if their private information suggests that the public is misinformed about the appropriate policy to adopt. I call this pooling equilibrium the "responsiveness" equilibrium.[2] Incentives to respond to public opinion are dramatically weakened if decision-making occurs in private. Under private deliberation it is more likely that an "independence" equilibrium will occur where both biased and unbiased representatives choose their preferred policy, independent of reputational concerns.

Second, I argue that subjecting representatives to tighter election constraints and improving the public's ability to observe their actions are actually two substitute mechanisms for disciplining representatives. As a result, rather than asking whether elected vs. unelected authorities should be subject to transparency, it may make more sense to consider how closely representatives should be bound to the public, either through direct election, through transparency, or both.

[1] See, for example, the discussion of the informational effect of the separation of powers in Persson, Roland, and Tabellini (1997) and Persson and Tabellini (2000) chapter 9, as well as Adsera, Boix, and Payne (2003). In an earlier version of their paper, Maskin and Tirole also briefly considered whether it is optimal for the public to be able to observe actions of individual representatives.

[2] I borrow this terminology from Jacobs and Shapiro (2000). A less neutral alternative would be to refer to a "pandering equilibrium", but the term pandering inevitably involves negative connotations. The *Oxford English Dictionary* defines a pander as "one who ministers to the baser passions or evil designs of others." This does not seem entirely appropriate for an equilibrium that under some conditions can be optimal for the public.

Third, I suggest that for constituents, transparency will be preferable when there is a sufficiently high risk that representatives are biased. As a result, judgements about whether transparency will be welfare enhancing will vary across societies and over time. In cases where public confidence in representatives is high it will be efficient to allow policy deliberations to occur in private, but when public confidence is weak, transparency will be preferable, even if it prompts unbiased representatives to ignore their private information.

Fourth, I argue that the greater the expertise of representatives, the more likely that deliberation should take place in private. However, this does not imply that highly technical issues should always be discussed out of the public eye. When there is a sufficiently strong prior belief that representatives are biased, it will be optimal to have them decide upon even highly technical issues in an open-door setting.

Finally, I conclude that private deliberation may, in many instances, actually do more to reduce polarization of opinions in society than will public deliberation. This runs contrary to the common suggestion that public discussions will produce greater social consensus. When members of society have divided opinions about the effects of a policy, if "responsiveness" is the unique equilibrium under public deliberation, then representatives will articulate the opinions of their constituencies, but the public will not actually learn anything from observing public deliberation, because it knows that representatives are simply mirroring the attitudes of their constituents. In contrast, when an "independence" equilibrium prevails, which is more likely to be the case under private deliberation, then even if it does not observe the actions of individual representatives, the public will know that the policy outcome has depended upon the private information held by representatives. As a consequence, members of the public will be able to draw inferences from the policy outcome, and they will revise their beliefs about which policy outcome is preferable. If beliefs are initially polarized, then they will tend to converge.

My conclusions about the advantages and disadvantages of public deliberation hold under a number of alternative assumptions. If representatives have a round of communication before voting, then the results remain similar. My predictions will also hold if one increases the number of representatives on the committee, if one considers the possibility that the public might learn the state, or if a second audience of experts is present.

In what follows, in Section 2 I first discuss the relevance of this paper to different literatures that have considered transparency in politics, as well

as to broader debates about the extent to which representatives should be closely bound to their constituents. In Section 3, I then provide the setup for my game-theoretic model, followed by consideration of public deliberation in Section 4, private deliberation in section 5, and welfare comparisons in Section 6. Section 7 considers public versus private deliberation when beliefs of constituents are polarized. Section 8 considers whether the principal results remain robust under a series of alternative assumptions. Finally, Section 9 concludes and discusses the implications of my results.

2 Transparency and representative democracy

My consideration of the costs and benefits of transparency touches on a long-standing discussion among democratic theorists about how closely representatives should be bound to their constituents. According to the classic study by Pitkin (1967), modern political representation implies that representatives should act according to the expressed interests of their constituents, but they should also have some latitude to choose alternative actions if they are convinced that the public is mistaken on a particular issue. This view can be distinguished both from theories that emphasize that representatives should act as delegates with strict instructions or mandates, as well as from "elitist" views of representative democracy, such as that provided by Schumpeter (1942), who recommended a weaker link between popular desires and choices of representatives.[3]

In her work Pitkin (1967) also emphasizes that views on representation will depend on whether one assumes that the questions with which a representative must deal are scientific in form, with objective answers, or alternatively, are based primarily on value judgements. In the former case there is a stronger argument for a weak link between representative and represented. Pitkin goes on to suggest that most questions dealt with by elected representatives in democracies lie in between these two extremes, as the perceived benefits of government policies depend on both value judgements (or underlying preferences) and technical expertise.[4] So, for example, questions about redistribution may depend upon value judgements about fairness, but they also depend on technical assessments about the general equilibrium effects of

[3] One should also include Edmund Burke as an advocate of giving representatives significant latitude with respect to public opinion, though without assimilating his thinking with that of Schumpeter (Burke 1777 [1963]). See the discussion in Manin (1997) and in Pitkin (1967) on different views of representation, and on the evolution of modern representative institutions.

[4] Dahl (1989) takes a similar view.

different redistributive measures.

Though democratic theorists have made less effort to consider how closely *unelected* representatives like judges, central bankers, and regulators, should be bound to the public, the questions they deal with also often depend on both underlying preferences and technical expertise, even if it is conventional wisdom that technical expertise plays a greater role in the decisions of unelected authorities. This was certainly the opinion of John Stuart Mill (1861) who argued that elected representatives have an advantage in terms of expertise over the general public, but appointed civil servants have an advantage in terms of expertise over elected representatives.

Transparency is relevant to this fundamental debate in democratic theory, because openness influences decisions by representatives to act according or contrary to popular opinion. When the public is able to directly observe what a representative says during deliberations and how he or she votes with regard to policy, then as long as the representative is concerned about maintaining a reputation for acting in the public interest, she is more likely to support policies preferred by the public. As one of the most unequivocal early proponents of transparency, Jeremy Bentham (1816) argued that in a parliamentary context, publicity would "constrain members of the assembly to perform their duty". Immanuel Kant (1785 [1983]) provided a general proposition in favor of publicity, suggesting that "all actions that affect the rights of other men are wrong if their maxim is not consistent with publicity." The potential problem with transparency is that it can also prompt representatives to ignore any private information they may have which indicates that the public is misinformed. Among nineteenth century observers, John Stuart Mill was a prominent critic of Bentham's political propositions, suggesting that they went too far in "riveting the yolk of public opinion closer and closer round the necks of all public functionaries" thus excluding the possibility that a representative might use his or her own reason in making a decision.[5] The idea that publicity might have a negative impact on quality of debate can in fact be found in contributions as early as Hobbes (1651, ch.19) who contrasted the sort of confidential consultations that could be undertaken by a monarch with the public consultations of a representative assembly where "long discourses" may "commonly excite men to action but not govern them in it."

[5] This is not to say of course that he was generally opposed to openness in government. For Mill's opinions on Bentham see Mill (1838, pp.87-88). See Habermas (1962) for a seminal account describing how nineteenth century observers like Mill and Tocqueville were noticeably more skeptical than Bentham about public opinion.

While it has long been suggested that transparency in government can involve costs as well as benefits, recent discussions have focused almost exclusively on the latter phenomena. One example here involves the literature on "deliberative democracy". Public deliberation, it is suggested, can help to transform individual preferences in order to increase consensus, it can improve the quality of decisions taken, and it can increase the legitimacy of those policies that are eventually adopted.[6] What has been less frequently asked by theorists of deliberative democracy is, in the case where deliberation occurs between representatives, whether publicity might prompt participants to refrain from expressing their true opinions, in which case one of the principal goals of deliberation, improving the quality of decisions, is undermined. These issues have often been ignored despite clear empirical observations of such effects.[7] So, for example, several scholars of committee politics within European Union institutions have suggested that actual deliberation is more likely to occur on EU committees that meet in private, while in EU committees that hold public sessions there is a tendency for members to present pre-prepared speeches and to engage in little real debate.[8] Likewise, a number of observers have argued that the secrecy rule which prevailed during the US Constitutional Convention of 1787 allowed for much more actual deliberation than would have otherwise been the case. This was an opinion shared by James Madison.[9] Finally, while Rawls (1997) uses the US Supreme Court as an example of "public reason", a characteristic he defines in part as being "conducted open to view" he sidesteps the fact that many Supreme Courts and Constitutional Courts have deliberations that are highly insulated from outside observers.

Two contributions that do consider the costs of public deliberation have been made by Elster (1998, 1991) and Manin (1997).[10] Elster argues that

[6] For several prominent contributions to this literature see Habermas (1996), Rawls (1997), Manin (1987), and Bohman (1996). Though much of this literature has concentrated on discussions within nation-states, Risse (2000) makes similar arguments for international relations.

[7] Other contributions, such as Schmitt (1923) and Habermas (1962) have observed that deliberation in parliaments and other public contexts has evolved away from actual deliberation, though without suggesting that this evolution is specifically tied to the establishment of transparency.

[8] See Jacobsson and Vifell (2003) as well as Checkel (2003) on this point.

[9] James Madison stated that the secrecy rule had actually been crucial to the success of the convention for precisely this reason (James Madison as reported in an interview by Jared Sparks (1830), cited in Max Farrand's *The Records of the Federal Convention of 1787*, vol.III, p.478. See also Rossiter (1966) on the effect of the Constitutional Convention's secrecy rule.

[10] See also the interesting review on deliberation by Fearon (1998), the contribution by

while public deliberation has obvious benefits, it may also prompt representatives to posture and to refrain from offering opinions out of the fear of being subsequently proven wrong. Manin (1997 p.168) suggests that the public may actually have a better ability to form opinions if deliberations of representatives initially occur in private, followed by a broader public discussion. I return to this idea in Section 7's discussion of deliberation and polarization.

In addition to emphasizing the benefits of "deliberative democracy", recent discussions about transparency have also emphasized the potential benefits of subjecting unelected representatives, like central bankers, judges, and independent regulators, to the same obligations in terms of openness that have long prevailed for elected legislators. While it has been the norm since the late 18th century for legislative debates to take place in public, it has remained much more common for unelected authorities to meet behind closed doors. Max Weber went as far as to claim that "every bureaucracy seeks to increase the superiority of the professionally informed by keeping their knowledge and intentions secret" (1946, p.233). But McCubbins, Noll, and Weingast (1987) note that in the US context, political principals have found it possible to use a variety of controls on bureaucratic agents requiring them to reveal information about their deliberations. In recent years the difference between elected and unelected authorities has begun to erode, as many bureaucratic agencies have taken steps to become more open in their procedures, either as a result of internal initiatives or outside pressure. There remains important variation though. To take just one example, the US Federal Reserve and US Supreme Court reveal a significant amount of information about their internal debates, but the European Central Bank and European Court of Justice remain much more opaque.[11] This difference between elected and unelected authorities, and the recent trend to push unelected authorities towards greater transparency raises the question whether unelected officials should be subject to the same level of outside scrutiny as their elected counterparts.

One final element of recent discussions of transparency is that they have tended to focus as much on international decisionmaking bodies as on national bodies. Scholars have observed in recent years that institutions like the European Council of Ministers, the IMF's governing board, or the WTO

Kuran (1996), as well as the artcile by Luban (1996), who presents conditions where what he calls the "publicity principle" may or may not hold.

[11] Considering central banks and supreme courts in the US, UK, and at the European level, Goodhart and Meade (2003) argue that there is more correlation in levels of transparency across countries than between different unelected bodies within each country.

often operate behind a thicker veil of secrecy than would be the case for analogous bodies at the domestic level.[12] The obvious implication in much of this work is that international organizations should be subject to increased outside scrutiny, and this is all the more necessary in an era where there are heightened concerns about the decisions they take. As with the literature on deliberative democracy, however, discussions of transparency in international institutions have often side-stepped the issue of whether increased openness might impose costs as well as benefits.

3 Setup of the model

In order to explore incentives under public and private deliberation, this and the subsequent sections present a formal model of deliberation by a representative body. Three representatives must vote by majority rule on a binary action $y \in \{0, 1\}$.[13] It is common knowledge that for each representative, with probability p they are "unbiased", and with probability $(1 - p)$ they are "biased". Utility for the public and for unbiased representatives depends upon choosing the action that will match an unobserved state variable $\omega \in \{0, 1\}$. Biased representatives always prefer the action $y = 1$, regardless of the state. Each representative receives a private signal about the state, which is accurate with probability q with $1 > q > 0.5$. The private signal might be the results of a statistical study or an economic forecast that the public would lack the means to critically evaluate. It could also involve a legal opinion that makes reference to past cases with which the public is not familiar, or a historical analogy with which the public is not familiar. I assume that the public also has knowledge about which state is more likely, although it has less accurate knowledge than do representatives. The public has a prior belief of r that the state is $\omega = 0$, with $q > r > 0.5$. This follows Maskin and Tirole (2003) and Besley (2003) by focusing on a situation where the public believes it more likely than not that biased representatives prefer a policy that conflicts with "the public interest".[14]

[12] For discussions see Nielson and Tierney (2003), Martin (2002), Held (1995), Keohane (2002a) and Stasavage (2004).

[13] The assumption of majority rule is important here. If decisions are made by unanimity, then the public can infer a representative's vote even if it only observes the final outcome.

[14] One might also consider a case where $r < 0.5$, so that the public believes it more likely than not that biased representatives actually prefer an action which is in their interest. However, under this alternative assumption there are much stronger incentives for representatives to always choose their preferred policy, even if it is $y = 1$, because doing so will result in a smaller loss of reputation. Another reason for assuming $r > 0.5$ is that

In order to make the issue of accountability relevant, I assume that representatives earn utility based on both the policy outcome and on a reputational payoff. Following several papers in the economic literature on agents with career concerns, the reputational payoff is modeled simply as the public's posterior belief that the representative is unbiased after it has observed the representative's vote x_i (in the case of public deliberation), or the policy outcome y (in the case of private deliberation) $\Pr(u|x_i, y)$.[15] For an elected representative this reputational payoff would involve the benefit from being reelected if, as seems plausible, only representatives with a reputation for being unbiased will be retained by the public. Elected representatives will be likely to give proportionately greater weight to this reputational payoff the shorter is the period between elections.[16] Unelected officials may not have electoral concerns, but there remain a number of obvious factors that might lead them to be concerned about their reputation. These can involve possibilities for dismissal, possibilities for reappointment, career concerns involving subsequent employment, or the desire to retain the esteem of a constituency.[17] Supporting this conclusion, the empirical literature on behavior by unelected officials like regulators and central bankers has provided ample evidence that unelected officials respond to changes in the composition of partisan political principals.[18]

Utility for an unbiased representative is expressed by the state contingent function in (1) below. The exogenous parameter α represents the relative weight given to the policy outcome, as opposed to the reputational payoff. In contrast, utility for a biased representative would be represented by the

democratic theory has focused above all on the tensions generated when a representative and the public prefer different policies.

[15] Holmstrom (1982) is the canonical paper for this literature. I might also have specified an explicit two-period model where representatives are retained for the second period if the public is sufficiently convinced that they are unbiased. This might make sense for elected officials who are facing re-election, or for unelected officials facing the possibility of reappointment, but given my argument that unelected officials may have reputational payoffs related to factors other than reappointment, it makes sense to use a more general specification. All of the comparative statics presented in the paper would still hold in an explicit two-period model, provided the public was not exclusively concerned about the period 2 policy outcome.

[16] This would be consistent with early arguments about the duration of parliaments made by John Stuart Mill (1861) and Edmund Burke (1780).

[17] Keohane (2002b) argues that even when unelected officials are not subject to reappointment, their actions may have important reputational implications.

[18] See Weingast and Moran (1983) and Lohmann (1998). Meade and Stasavage (2004) have recently presented empirical evidence on debating behavior of the US Federal Reserve's Federal Open Market Committee that is consistent with the assumption that the unelected members of the FOMC are influenced by reputational concerns.

second of the two equations in expression (1).

$$\begin{cases} \omega = 0, & \alpha(1-y) + (1-\alpha)\Pr(u|x_i, y) \\ \omega = 1, & \alpha y + (1-\alpha)\Pr(u|x_i, y) \end{cases} \tag{1}$$

Given the above assumptions, the policy game proceeds in the following four stages

1. Nature determines whether each representative is biased, and the state $\omega \in \{0, 1\}$ is realized but not observed.

2. Each representative receives a private signal s_i about the state .

3. Representatives vote $x_i \in \{0, 1\}$, and the policy outcome y is decided by majority. Under public deliberation outsiders can observe both individual votes and the outcome. Under private deliberation outsiders observe only the outcome y.

4. Each representative receives a payoff based on the policy outcome, as well as a reputational payoff based on the posterior probability that she is unbiased $\Pr(u|x_i, y)$.

In this game representatives face a potential trade-off between choosing the action they believe will result in the most favorable policy outcome and using their vote to signal to the public that they are unbiased. Given this trade-off, there are two potential pure strategy equilibria.[19]

In the "independence" equilibrium, representatives vote for their preferred policy, irrespective of the effect of this choice on their reputation. For the biased representative this implies always voting $x_i = 1$ while for the unbiased representative this implies voting according to her signal $x_i = s_i$. This independence equilibrium is advantageous for the public to the extent that unbiased representatives use their private information efficiently, but it is disadvantageous to the extent that biased representatives will always vote 1 regardless of their signal. The key condition for existence of this independence equilibrium is that an unbiased representative must prefer to vote $x_i = 1$ if her signal is $s_i = 1$, rather than ignoring her signal by voting $x_i = 0$,

[19] With the exception of a third equilibrium which is implausible because it is generally not coalition-proof and also not robust to alternative assumptions, and in particular the addition of a message round, these are the only pure-strategy equilibria of this game. In the third equilibrium unbiased representatives always vote 0 and biased representatives always vote 1. This equilibrium is discussed in greater detail in the appendix.

which would result in a higher reputational payoff but a poorer expected policy outcome. In what follows I show that this independence equilibrium is more likely to exist under private deliberation.

In the second equilibrium, the "responsiveness" equilibrium, both types of representative always vote 0, in order to avoid appearing biased. This equilibrium is advantageous to the public to the extent that it disciplines biased representatives, but it also involves a cost, as both biased and unbiased representatives ignore their private information when voting. The key condition for existence of the responsiveness equilibrium is that a biased representative must prefer to vote $x_i = 0$, rather than voting 1 based on the expectation that exactly one other representative might make the same decision. The next two sub-sections demonstrate that the responsiveness equilibrium is more likely to exist when deliberation occurs in public.

4 Public Deliberation

When deliberation takes place in an open-door context, the public at large is able to observe both the final outcome and the votes of individual representatives. I consider first the conditions for existence of an "independence" equilibrium. As noted above, the crucial constraint for existence of this equilibrium is that an unbiased representative must have an incentive to vote $x_i = s_i$ even if her signal suggests that the state is 1.[20] An unbiased representative who receives a signal of 1 will prefer to vote $x_i = 1$ rather than 0 as long as the following inequality is satisfied.

$$\begin{aligned} &v\alpha(\Pr(\omega = 1|s_i, v)) + (1-\alpha)\Pr(u|x_i = 1) \\ &\geq v\alpha(\Pr(\omega = 0|s_i, v)) + (1-\alpha)\Pr(u|x_i = 0) \end{aligned} \tag{2}$$

In this inequality v represents the probability that a representative's vote is pivotal, $\Pr(\omega = 1|s_i, v)$ represents her belief that the state is $\omega = 1$ given her signal and the fact that she is pivotal, and $\Pr(u|x_i = 1)$ represents the public's belief that the representative is unbiased given that she votes $x_i = 1$. As with any voting game, the unbiased representative knows that her vote will only have an effect on the policy outcome y if she is pivotal. Following Austen-Smith and Banks (1996) she also knows that she can draw inferences

[20] Under any conditions where an unbiased representative has an incentive to follow this strategy, a biased representative would have an incentive to vote $x_i = 1$. This is due to the fact that a biased representative knows her preferred policy outcome with certainty while an unbiased representative does not.

about the signals that other representatives will have received if it turns out that she has pivotal. In particular, a representative could be pivotal if both of the other representatives are unbiased, and one received a private signal of 1 while the other received a private signal of 0. In this case an unbiased representative's posterior about the state would be $\Pr(\omega = 1) = \frac{q(1-r)}{q(1-r)+(1-q)r}$. But the unbiased representative will also know that she could be pivotal if one of the other two representatives was unbiased and received a signal of 0, while the third representative was biased. In this case her belief about the state would be $\Pr(\omega = 1) = (1 - r)$. So the unbiased representative's belief about the state after observing a signal $s_i = 1$ and conditional on being pivotal will be

$$\Pr(\omega = 1|s_i = 1, v) = p\frac{q(1-r)}{q(1-r)+(1-q)r} + (1-p)(1-r) \tag{3}$$

Given this belief, as well as the expanded form for the belief $\Pr(\omega = 0|s_i = 1, v)$, we can expand and rearrange the inequality in (2) above to present the following condition for existence of the independence equilibrium under public deliberation.[21] This condition implies that under public deliberation the independence equilibrium will only exist if reputational concerns are weak (if α is high).

$$v\frac{\alpha}{1-\alpha}(p\frac{q-r}{q(1-r)+(1-q)r} + (1-p)(1-2r)) \geq 1 - \frac{(1-r)p}{(1-r)p+(1-p)} \tag{4}$$

I next consider the conditions for existence of the "responsiveness" equilibrium under public deliberation, where both types of representative always vote 0. The logic behind the responsiveness equilibrium is that the stronger are reputational concerns (the closer α is to 0), the more costly it will become for any representative to distinguish herself by voting for an outcome that would lead the public to believe she is biased. As a consequence, the only pair of strategies from which neither an unbiased nor a biased representative would deviate is for both to always vote 0. This equilibrium would normally exist for all parameter values as long as the public's belief regarding the out-of-equilibrium action $x_i = 1$ satisfies $p > \Pr(u|x_i = 1)$. No representative would have an incentive to individually deviate from this equilibrium because voting is unanimous, and each representative will know that her own vote is not pivotal. One common refinement to examine the robustness of pooling equilibria in voting games is to consider whether an equilibrium exists if one introduces a small probability that some players deviate. Following a specification adopted by Maskin and Tirole (2003), we can investigate

[21] In this equilibrium the probability of being pivotal for any representative who receives a signal $s_i = 1$ is $v = p^2(q(1-q)) + 2p(1-p)(1-q)$.

the robustness of the responsiveness equilibrium by introducing a very small probability ρ for each representative that they are completely unconcerned about their reputation ($\alpha = 1$) and that they always vote for their preferred policy, even when both biased and unbiased representatives normally vote with public opinion.[22] Under this assumption, the responsiveness equilibrium will exist as long as the inequality in (5) is satisfied. In this inequality the probability of being pivotal v will now depend upon ρ. As long as ρ is small, then the probability a representative is pivotal will also be small, and this inequality will be satisfied for all except very high values of α, or in other words, unless reputational concerns are very weak.

$$p \geq \frac{p(1-r)}{p(1-r)+(1-p)} + \frac{\alpha}{1-\alpha}v \tag{5}$$

We can conclude from the above that under public deliberation, unless reputational concerns are weak, there will be a unique pure strategy equilibrium where both biased and unbiased representatives are "responsive" to public opinion and always vote $x_i = 0$.

5 Private Deliberation

When decisions are made behind closed doors, incentives for representatives change significantly. Under private deliberation the public observes the policy outcome y, but it does not observe the individual votes of representatives. This weakens the incentive for representatives to use their vote to signal that they are unbiased. Under public deliberation representatives know that their vote will have a certain impact on their reputation, but it will only have in impact on the policy outcome if it turns out that they are pivotal. In strong contrast, under private deliberation, because the public establishes inferences about representative type based exclusively on the policy outcome y, representatives know that their vote will only make a difference for *either* the outcome or their reputation if they are pivotal. Take the example of an unbiased representative who receives a signal $s_i = 1$. She knows that if she is not pivotal then both her policy payoff and her reputational payoff will be unaffected by her vote. If we designate the payoff in the case that the representative is not pivotal by U_{nonpiv}, then we get the following constraint for a truthful vote of $x_i = 1$. This quickly simplifies as the probability of being pivotal, as well as the utilities when the representative is not pivotal,

[22] We can also use this refinement to rule out the existence of a pooling equilibrium where both biased and unbiased representatives always vote 1.

drop out of the expression.

$$\begin{aligned} &v\alpha \Pr(\omega = 1|s_i, v) + v(1-\alpha)\Pr(u|y=1) + (1-v)U_{nonpiv} \\ &> v\alpha \Pr(\omega = 0|s_i, v) + v(1-\alpha)\Pr(u|y=0) + (1-v)U_{nonpiv} \end{aligned} \tag{6}$$

When we compare the inequality in (6) with the inequality in (2), which presents the condition for existence of the independence equilibrium under public deliberation, we quickly see that there is now a much stronger incentive to act "independently" with respect to public opinion (given that v will always be less than 1). The independence equilibrium will exist under private deliberation as long as (6) is satisfied, and it can exist even if reputational concerns are sufficiently high that the independence equilibrium would not exist under public deliberation (see the appendix for the expanded form).

Under private deliberation the "responsiveness equilibrium" would again normally exist for all parameters, as long as the public's belief about the type of a representative who deviates by voting 1 satisfies $p > \Pr(u|x_i = 1)$. However, if we apply the same robustness test as above, by considering the possibility that there is a small probability ρ that a representative places zero weight on her reputational payoff ($\alpha = 1$), then we obtain a dramatically different result. Any representative that deviates from the equilibrium by voting $x_i = 1$ will know that this deviation will have no effect on either her reputational payoff or her policy payoff unless exactly one other representative is of the type for which $\alpha = 1$ and this representative votes 1. This implies that a biased representative will not deviate from the responsiveness equilibrium unless the following inequality (7) is satisfied. This inequality will in fact only be satisfied for very low values of α, implying that reputational concerns must be very strong for the equilibrium to exist. By inspection of (5) and (7) we can conclude that the responsiveness equilibrium will exist for a significantly greater range of parameters under public deliberation.

$$p \geq \frac{p(1-r)}{p(1-r)+(1-p)} + \frac{\alpha}{1-\alpha} \tag{7}$$

Based on the equilibrium outcomes under private and public deliberation, we can identify several propositions from the model. We can conclude that public deliberation will produce a unique responsiveness equilibrium unless reputational concerns are weak. This will be true as long as (5) is satisfied and (4) is not satisfied. Likewise, private deliberation is more likely to produce a unique independence equilibrium, unless reputational concerns are very strong. This will be true as long as (6) is satisfied and (7) is not satisfied. This leads to a first proposition.

Proposition 1 *Representatives will always vote with public opinion under public deliberation, but not under private deliberation, as long as reputational concerns are neither very weak nor very strong.*

Proposition 1 reflects the basic insight that representatives whose actions are observable will have a greater tendency to be responsive to public opinion. But this does not imply that representatives will only act in this manner if there is transparency. In fact, institutional reforms that increase the weight of reputational concerns (lower α) can prompt representatives to vote with public opinion even in the absence of transparency. Such reforms might include a switch from appointing representatives to electing them, or a shift towards more frequent elections. The idea that transparency and increased electoral concerns are substitute mechanisms for disciplining representatives is not new. Observing the evolution of the British House of Commons, John Stuart Mill (1861) noted that while parliamentary reformers in the early nineteenth century had demanded a move to more frequent elections to the House, by the mid-nineteenth century such concerns had been mitigated by the fact that the increased publicity of parliamentary proceedings bound representatives more closely to their constituents through other means. This leads to a second proposition.

Proposition 2 *Increasing reputational concerns (lowering α) and increasing transparency of deliberation are substitute mechanisms for prompting representatives to be responsive to public opinion.*

6 Welfare Comparisons

If public deliberation is more likely to result in representatives following public opinion, the next logical question is when this responsiveness equilibrium will provide higher expected utility for the public than would the independence equilibrium. Consider a scenario where reputational concerns are neither very high nor very low, so responsiveness is the unique equilibrium under public deliberation, and independence is the unique equilibrium under private deliberation. The public will know that its expected utility in the responsiveness equilibrium is simply r. Since the public knows both the likelihood that representatives are biased p and the degree to which representatives have expertise q, it will also know its expected utility in the independence equilibrium, which is shown on the right hand side of the inequality below. Whenever this inequality is satisfied, the public will prefer a regime of open deliberation, even if this comes at the cost of unbiased representatives ignoring their private information about which policy choice is

optimal.

$$\begin{aligned} r \;>\; & (1-r)((1-p)^3 + 3p(1-p)^2) \\ & +3p^2(1-p)(rq^2 + (1-r)(2q-2q^2)) + p^3(3q^2(1-q)+q^3) \end{aligned} \quad (8)$$

Since the above inequality is more likely to be satisfied as p goes to zero, we can make the following proposition about voters' preference for transparency.

Proposition 3 *Constituents will prefer public deliberation when there is a significant risk that representatives may be biased.*

The inequality in (8) also allows us to make a further proposition. The greater the difference between q, the quality of the representative's private information, and r, the accuracy of the public's prior information, the greater the likelihood that constituents will prefer private deliberation. This makes intuitive sense, as it will be more costly to have unbiased representatives ignore their private information when this private information is more accurate relative to public opinion. This leads us to a fourth proposition.

Proposition 4 *Constituents will prefer private deliberation when the relative expertise of representatives is high.*

Proposition 4 implies that, other things being equal, it is better to have decisions on "technical issues" made in private. It supports the contention of Pitkin (1967 p.211) that the more a policy issue resembles a scientific problem, the stronger the argument for having a weaker link between representative and represented. Proposition 4 does not imply though that technical issues should *always* be discussed in private. From the inequality in (8) we can draw the conclusion that if there is a particularly strong fear that representatives are biased, then it will be preferable to have decisions made in public, even if there is a significant gap between representatives and represented in terms of expertise. As a result, the argument that an issue is technical in nature is not sufficient to demonstrate that it should be discussed in private. Finally, we could also identify a corollary to proposition 4. When the question of holding policy discussions in public is an issue of debate, we can expect that representatives will emphasize the "technical" nature of the questions with which they deal.[23]

[23] So, for example, Jabko (2002) has shown how in conflicts regarding oversight between the European Central Bank and the European Parliament, the ECB has emphasized the "technical" nature of what it does while MEPs have argued that ECB decisions also depend upon "political" judgements, making oversight by political authorities necessary.

7 Polarization and Deliberation

So far I have assumed that the constituents to whom representatives are accountable have both homogeneous preferences over policy, and a homogeneous prior belief about the policy choice that is most likely to lead to its preferred outcome. In this section I expand the model to consider the effect of alternative institutional frameworks when the public is divided, or polarized, in terms of its prior beliefs. Advocates of public deliberation like Habermas (1996), Bohman (1998), and Bentham (1816) emphasize that it can help to achieve greater consensus, as there will be less polarization in terms of opinions after a public discussion.[24] Other observers, like Sunstein (2002) and Kuran (1996), have observed that public deliberation may actually lead to an increased polarization of beliefs, in particular if for reputational reasons participants defer to members of their group who have more extreme views. In what follows, I argue that there are many cases where private deliberation between representatives will actually be more effective than public deliberation in reducing an initial polarization of beliefs in society.

In order to make the issue of polarization relevant, I make three alterations to the model presented in the previous sections. First, the public is divided into two groups: L and R. Each group has a common utility function, which is maximized by choosing the policy y that matches the unobserved state ω, but the two groups have different prior beliefs about the state. Group L believes the prior probability the state is 0 is r (with $1 > q > r > 0.5$) and Group R believes the prior probability the state is 0 is $(1-r)$. I do not seek to explain why the two different groups hold these different prior beliefs. It might be the case that both L and R have read the same newspaper article about a policy, and thus have the same information, but they have differing prior beliefs about the article's accuracy.[25] Second, I assume that representatives A and B represent group L while C represents group R. Finally, I assume that A,B, and C share the same prior beliefs about the state as the group they represent, and a "biased" representative A or B will always prefer the policy $y = 1$ while a "biased" representative C

[24] It is worth noting that Habermas (1996) in particular also emphasizes that social polarization may undermine possibilities for actual deliberation.

[25] Aumann (1976) observed that if players have a common prior belief then it cannot be common knowledge that they disagreee. Otherwise, each player who observed another's different beliefs would be able to infer from these beliefs what information the other player held, they would use this information to update their own belief, and beliefs of different players would converge. This implies that if L and R are to hold different beliefs, then either these different beliefs are not common knowledge, or they reflect a lack of a common prior. It is the latter that I am assuming here.

will always prefer $y = 0$.

Under public deliberation we can again have two equilibrium outcomes: a responsiveness equilibrium where representatives follow the prior belief of their respective constituency, or an independence equilibrium where representatives choose their preferred policy. The conditions for the responsiveness equilibrium remain similar to those presented in the previous sections. The independence equilibrium will exist as long as the two inequalities in (9) and (10) are satisfied. The first of these presents the relative gain if an unbiased representative A or B votes 1 when receiving a signal 1. The second inequality shows the relative gain for an unbiased representative C who votes 0 if receiving a signal 0.

$$\tfrac{\alpha v}{1-\alpha} \Pr(\omega = 1|s_i, v) - \Pr(\omega = 0|s_i, v) \geq 1 - \tfrac{(1-r)p}{(1-r)p+(1-p)} \tag{9}$$

$$\tfrac{\alpha v}{1-\alpha} \Pr(\omega = 0|s_i, v) - \Pr(\omega = 1|s_i, v) \geq 1 - \tfrac{(1-r)p}{(1-r)p+(1-p)} \tag{10}$$

As before, under private deliberation the reputational cost of voting according to one's private signal is now significantly lower. As a consequence, the independence equilibrium will again exist for a broader range of parameters under private deliberation (see the appendix for a full derivation).

The next step is to consider how the polarization of beliefs held by L and R about the state variable ω at the end of the game vary with each equilibrium. At the beginning of the game, the degree of polarization between the beliefs of groups L and R is $2r - 1$. Once the policy has been chosen by representatives, if there is less distance between the posterior beliefs of L and R about the state, then we can say that deliberation has led to reduced polarization. In the responsiveness equilibrium, which is more likely to be the unique equilibrium under public deliberation, then this will never be the case. Members of the public know that A and B will always vote 0 regardless of their private information, and C will always vote 1. As a result, there is no updating of beliefs about the state ω and no change in polarization of beliefs between L and R.

In the independence equilibrium, in contrast, there will always be a convergence of beliefs between L and R, even in the case of private deliberation. If under private deliberation L and R observe that the policy outcome is y, then they know that either all three representatives have voted $x = y$ or two representatives have voted $x = y$ and one voted $x \neq y$. Based on this fact, they can establish inferences about the likely signals received by A, B,and C.

Both L and R can then use these inferences to update their prior probabilities about the state. The inequality in (11) compares polarization of beliefs before observing y (right side) and after observing y in the independence equilibrium. As shown in the appendix, we can conclude that the inequality will always be satisfied, and so in the independence equilibrium polarization will always be reduced.

$$\frac{\Pr(y|\omega)r}{\Pr(y|\omega)r+\Pr(y|1-\omega)(1-r)} - \frac{\Pr(y|\omega)(1-r)}{\Pr(y|\omega)(1-r)+\Pr(y|1-\omega))r} < 2r-1 \qquad (11)$$

The above discussion leads to the following proposition about the effect of public vs. private deliberation on polarization of beliefs.

Proposition 5 *If "responsiveness" is the equilibrium outcome under public deliberation and "independence" is the equilibrium outcome under private deliberation, then polarization of beliefs will be reduced after private deliberation and unchanged after public deliberation.*

The above proposition supports the contention of authors like Manin (1997) who argues that in some cases, if the initial stages of a decision process takes place in private, then the public may actually have a better opportunity to form opinions about a policy choice. He contrasts the polarization and posturing that followed debates of the French Constituent Assembly of 1789, which occurred in public from the outset, with the ratification debate over the US Constitution in 1787, which followed the recommendation of a Convention that had met in secret. He also suggests that deliberation over policies within many post-war European social democratic parties has taken a similar form of having constituencies delegate to representatives who hold discussions in insulated settings.

8 Alternative Assumptions

The results presented in propositions 1-5 may well be sensitive to the assumptions adopted. As a result, this section considers a number of alternative assumptions and briefly discusses the extent to which each of these alternative assumptions might alter my basic conclusions.

Adding a message round - One of the obvious features of real deliberation is that it involves a discussion of alternatives before a vote takes place. As a result, recent formal models of deliberation, such as Austen Smith and Feddersen (2002) and Meirowitz (2003) explicitly model a game where players have the opportunity to send a message to other players before they vote. One potential effect of adding a message round is to result in more efficient

outcomes than would otherwise be the case. In the game presented here, the addition of a message stage preceding the vote would expand the number of possible equilibria, in particular as one could always have equilibria where representatives send uninformative messages. However, it would not change my core predictions regarding the effect of transparency. Were one to add a message round to the game presented above, one would find that under public deliberation it would only be possible to have an independence equilibrium if reputational concerns are weak. The existence of this equilibrium would depend upon the incentive for an unbiased representative who receives a signal of 1 to send a message $m_i = 1$. This constraint for sending a truthful message under public deliberation would be represented by the following inequality, where v now represents the probability that a message is pivotal for the policy outcome and M represents the set of messages.

$$\begin{aligned} & v\alpha \Pr(\omega = 1|s_i, v, M) + (1-\alpha) \Pr(u|m_i = 1) \\ & \geq v\alpha \Pr(\omega = 0|s_i, v, M) + (1-\alpha) \Pr(u|m_i = 0) \end{aligned} \tag{12}$$

Increasing the number of representatives - A second possible modification would be to consider a representative body with n members, rather than restricting consideration to $n = 3$. As the number of representatives increases, the probability for any one representative of being pivotal rapidly declines. As a consequence, for anything but very small committees it would be impossible to have an independence equilibrium with public deliberation. Under private deliberation the existence of equilibria would not depend on the probability of being pivotal. One could also consider a model with both a larger number of representatives and a message round. In this case, in the independence equilibrium unbiased representatives could condition a vote $x_i = 1$ on having observed a certain number of messages $m_i = 1$, with the critical number of messages potentially exceeding $(n-1)/2$.

What if there is a second audience of expert observers? - One further alteration would be to allow for the possibility that in the event that deliberation takes place in public, there might be audiences other than just a representative's constituents. If a representative's action is also observed by a group of outside "experts", then this might alter incentives. Mackie (1998) makes a powerful argument that the presence of multiple audiences of this sort, which has been analyzed by Farrell and Gibbons (1990) for cheap talk games, may significantly alter political debate. In the case of my model, to the extent that a representative was concerned not only about maintaining a reputation with the public, but also about maintaining a reputation with

a group of outside experts, then this could potentially raise the cost for the representative of voting with public opinion, or of acting in a biased manner.

Is it plausible to assume that the public does not learn the state? - I have assumed that the public does not learn the state variable ω before applying the reputational payoff to representatives. This is certainly a plausible assumption in many circumstances. So, for example, in the case of an elected representative voting for a tax cut, the public might not learn with certainty before the next election whether the tax cut had been a wise decision. More generally, in cases where there is a long delay between a policy choice and observed consequences, but there is a relatively short delay between policy choice and application of a reputational payoff, then the assumption that the state variable remains unknown is reasonable. In addition, even if the public does eventually learn the state there will be uncertainty whether a representative who chose the wrong policy did so willfully or accidentally.

Possibilities for confidential communication - One common suggestion about moving from closed-door to open-door proceedings is that it simply prompts the "real" discussions to move elsewhere. As a result, representatives arrive in a public forum having already agreed upon a settlement in private. In the context of my model one could think about this problem in the following manner; what if there was a private message round that preceded a public voting round? After this round, representatives might have better quality information about the state. Though unbiased representatives might have a stronger incentive to pursue a truthful voting strategy, shifting the range of values of α for which the independence equilibrium could occur, they could still also face incentives to ignore their private information and vote with public opinion. The key point would seem to be that even if transparency prompts the "real" discussions to move elsewhere, this will not negate its disciplining effect on representatives, because individual officials will still be obliged to take a public position on the issue in question.

The assumption that messages cannot be verified - One final assumption of my model is that the accuracy of messages sent by representatives cannot be independently verified by the public. While there are clearly many contexts where this assumption would be plausible, Calvert (1998) has observed that political argument often takes the form of telling or reminding listeners something they already know, rather than providing them with truly new information. So, for example, congressional debate in the US often involves attempts to use analogies or to frame certain issues as being about broader objectives like "reducing the size of government". Druckman (2001) has provided significant evidence on this issue. Other recent papers including Hafer and Landa (2002) and Aragones et al. (2002) have taken steps to-

wards building a model of political argument where debaters frame issues and draw analogies, rather than revealing private information. Similarly, Fearon (1998) has emphasized that one of the main benefits of deliberation may be to overcome bounded rationality, rather than to exchange private information. Clearly the view of political argument as analogizing will not be relevant in some cases, say when an expert reports the results of a statistical study on global warming, but it will be relevant to others, such as when advocates of welfare policies defend them in terms of "social justice" while opponents emphasize "individual responsibility".

One obvious question raised by these more recent formal models of political argument is whether my conclusions about the incentives for representatives to be "responsive" or "independent" might vary if one considers that messages sent by representatives involve statements that can be independently verified by the public. It might be the case that when making arguments of this type, representatives have less of an ability to send false messages. Were this the case, it would imply less of a trade-off between public and private deliberation than is suggested by my model. One could then draw the conclusion that the public-private trade-off will exist for certain kinds of deliberation, i.e. those where individuals reveal private information, but not for those instances where deliberation consists of competing attempts to frame an issue. However, in order to draw any such conclusion one would first need to show convincingly that when representatives make arguments by drawing analogies, there are constraints on their ability to frame a given issue however they please. If representatives can always produce an equally convincing analogy to either support or contradict public opinion, then it would seem that the incentives for representatives under private and public deliberation would be quite close to those presented in the previous section.

9 Conclusion

As long as it is believed that representatives should be accountable, then there are clear advantages to having them deliberate in public, but as long as it is also believed that representatives should exercise a degree of independent judgement in making decisions, then transparency can also have costs. I have argued in this paper that recent discussions of transparency in government have often overlooked the fact that it can have both costs and benefits. In order to examine this issue, I have compared public versus private deliberation by a body of representatives, resulting in the following conclusions. First, public deliberation is more likely to result in "responsiveness"

where representatives vote according to public opinion. Second, electoral concerns and transparency are two alternative institutional mechanisms that can prompt representatives to respond to public opinion. I have also drawn conclusions about the welfare benefits of public deliberation, suggesting that it is more likely to be advantageous during periods of low public confidence in representatives, and that in situations where representatives have a high degree of expertise then private deliberation is likely to be more preferable. This does not imply that technical issues should always be debated in private. Finally, I have also argued that when deliberation initially takes place in private, there are firm reasons to believe that in many circumstances the public may actually become better informed about policies, and polarization of beliefs will be lower than when discussion between representatives takes place in an open-door context from the outset.

My conclusions have direct implications for arguments about transparency of unelected authorities and for recent discussions of deliberative democracy. With regard to the former issue, rather than asking whether unelected representatives should be held to the same standards of transparency as elected representatives, it may make more sense to ask the more basic question of how directly a representative, either elected or unelected, should be bound to constituents. Casual observation suggests that unelected authorities like central banks, courts, or independent commissions often tend to make decisions on issues where a certain level of technical skill is required, and this provides a potential reason why, in many cases, it may be preferable to have unelected authorities deliberate in private. However, in cases where there are increased fears that unelected representatives may be biased, a complaint that is often heard in the EU context today, it may be preferable to subject their deliberations to greater publicity, even if they involve "technical" issues. In doing so, though, it should be recognized that such institutional reforms will ultimately prompt unelected authorities to act more like elected representatives, meaning they may ignore private information about optimal policy choices.

My conclusions also have implications for recent discussions of deliberative democracy. These have often overlooked the fact that much actual deliberation occurs between representatives, rather than directly between citizens, and representatives may face conflicting incentives between advocating their preferred policies versus responding to public opinion. There is empirical evidence from European Union committees, from eighteenth century deliberative bodies, and from other contexts which suggests that representatives are much more likely to engage in the sort of free exchange of opinions characteristic of "deliberative democracy" if they express these opinions in private.

Londregan (1999) refers to this as the "anaerobic" quality of deliberation. While these conclusions do not contradict the idea that the free exchange of opinions in democracies is a worthwhile goal, they do point to a potential problem for advocates of "deliberative democracy", precisely because this literature emphasizes that the benefits of deliberation in terms of legitimacy and consensus depend upon broad participation in the deliberative process. One way out of this conundrum might be to follow the suggestion by Manin (1997) that deliberation could initially occur in private, followed by a broader public discussion.

While my conclusions may point to an inevitable trade-off regarding public deliberation, it is also possible that these conclusions will not apply to all types of political argument. Rather than involving the exchange of unverifiable information, as in the model I have presented here, much political debate actually involves attempts to persuade by using analogies and appeals to precedent, in other words trying to convince people with claims that they can verify independently. While it remains to be examined more completely, it may be the case that with this type of political argument, incentives for representatives to be "responsive" or to be "independent" may be less affected by whether discussions take place in public or in private. However, as long as representatives are able to produce equally convincing analogies to support or contradict public opinion, it would seem that there would remain a clear trade-off between public and private deliberation.

A Appendix

A.1 Proposition 1

Proposition 1 is proved by demonstrating the conditions for existence of a unique independence equilibrium under private deliberation and a unique responsiveness equilibrium under public deliberation. Given that representatives are restricted to pure strategies, their voting strategy must come from $\{0, 1, t\}$ where t indicates a "truthful" strategy of conditioning one's vote on the private signal. We can quickly rule out the following strategy pairs as equilibria under either private or public deliberation, because a biased representative could deviate by voting 1 and gain in terms of policy while either achieving the same reputational payoff or an improved reputational payoff: $(x_{unbiased}, x_{biased}) \in \{(t, 0), (1, 0), (t, t), (1, t)\}$. For reasons presented in the text, we can also rule out a pooling equilibrium $(1, 1)$. We can also rule out the existence of an equilibrium $(0, t)$ where unbiased types always vote 0 and biased types play the truthful strategy. Under public deliberation a biased representative would not deviate by voting 0 when receiving a signal 1 if $\alpha > \frac{1}{v+1}$ and she would not deviate by voting 1 when receiving a signal 0 if $(1 - \alpha) \Pr(u|0) > \alpha v$ which can be expressed as $\alpha < \frac{\Pr(u|0)}{\Pr(u|0)+v}$, implying that the equilibrium can only exist if $\frac{\Pr(u|0)}{\Pr(u|0)+v} > \frac{1}{v+1}$ which cannot be satisfied. Under closed-door deliberation the equilibrium could only be satisfied if $1 < \frac{\alpha}{1-\alpha} < \frac{\Pr(u|0)}{\Pr(u|0)+1}$ which can never be true.

This leaves three possible equilibrium strategy pairs $(0, 0)$, $(t, 1)$, and $(0, 1)$. All three of these equilibria exist for certain ranges of parameters. However, the third equilibrium, where unbiased representatives always vote 0 and biased representatives always vote 1, is not robust to alternative assumptions and for many combinations of parameters is not coalition-proof in the sense of Bernheim, Peleg, and Whinston (1987). In these cases all representatives could agree to recoordinate on the $(t, 1)$ equilibrium which would be pareto improving. In those cases where the $(0, 1)$ equilibrium is in fact coalition-proof, it remains highly implausible in that once they revealed themselves as being unbiased, all representatives who voted 0 would have a strong incentive to call for a second vote. For precisely this reason, the $(0, 1)$ equilibrium cannot exist if there is a message round before the voting stage. Both of the other equilibria exist under this alternative assumption.

The conditions for existence of the responsiveness equilibrium $(0, 0)$ under both public and private deliberation have already been presented in the text. The conditions for existence of the independence equilibrium $(t, 1)$ have also

been presented in the text; the equilibrium will exist under public deliberation whenever (4) is satisfied and under private deliberation whenever (6) is satisfied. Here I provide the expanded form for (6). The condition for existence of this equilibrium is that an unbiased representative who receives a signal $s_i = 1$ must have an incentive to vote 1. Under private deliberation, if she is pivotal, the reputational payoff from voting 1 depends upon the public's inference about her type given that the outcome is 1.

$$\Pr(u|y=1) = \frac{\Pr(y=1|u)p}{\Pr(y=1|u)p+\Pr(y=1|b)(1-p)} \tag{13}$$

This expression can be presented in expanded form using the two following probabilities.

$$\Pr(y=1|u) = (p^2((1-r)^3+3(1-r)^2r)+(2p-2p^2)((1-r)^2+2r(1-r))+(1-p)^2) \tag{14}$$

$$\Pr(y=1|b) = (p^2((1-r)^2+2r(1-r))+(1-p)^2+2p-2p^2) \tag{15}$$

The expanded form for $\Pr(u|y=1)$ then simplifies to the following.

$$\Pr(u|y=1) = p\frac{2pr^2-pr-1}{2p^2r^2-pr-1} \tag{16}$$

The public's inference about a representative's type given that the outcome is 0 is shown in expanded form as follows.

$$\Pr(u|y=0) = \frac{(p^2(r^3+3(2r^2(1-r)))+(2p-2p^2)r^2)p}{(p^2(r^3+3(2r^2(1-r)))+(2p-2p^2)r^2)p+(1-p)p^2r^2} \tag{17}$$

This expression can also be simplified.

$$\Pr(u|y=0) = \frac{5pr-4p-2}{5pr-3p-3} \tag{18}$$

As a result, the following inequality presents the condition for existence of the independence equilibrium in expanded form.

$$\begin{aligned} & \frac{\alpha}{1-\alpha}(p(\frac{q(1-r)}{q(1-r)+(1-q)r} - \frac{(1-q)r}{(1-q)r+q(1-r)}) + (1-p)(1-2r)) \\ \geq\ & \frac{5pr-4p-2}{5pr-3p-3} - p\frac{2pr^2-pr-1}{2p^2r^2-pr-1} \end{aligned} \tag{19}$$

A.2 Proposition 2

This proposition stipulates that a decrease in α and a shift from private deliberation to public deliberation are substitute means of ensuring that the responsiveness $(0, 0)$ is the unique equilibrium. The independence equilibrium $(t, 1)$ will be the unique equilibrium under private deliberation when (4) is satisfied and (5) is not satisfied, and it will be unique under public deliberation when (6) is satisfied and (7) is not satisfied . Under both private and public deliberation it is clear that is always possible to decrease α sufficiently that responsiveness becomes the unique equilibrium.

A.3 Proposition 3

This is proved by demonstrating that whenever responsiveness $(0, 0)$ is the unique equilibrium under public deliberation while the independence equilibrium $(t, 1)$ is unique under private deliberation, then there is a critical value of p below which the public will earn higher expected utility in the responsiveness equilibrium than in the independence equilibrium. The public will earn higher utility in the responsiveness equilibrium whenever the inequality in (8) is satisfied, and this inequality is easier to satisfy as $p \to 0$.

A.4 Proposition 4

This is proved by demonstrating that whenever responsiveness $(0, 0)$ is the unique equilibrium under public deliberation while the separating equilibrium $(t, 1)$ is unique under private deliberation, then the closer the difference $q - r$ is to 0, the greater the likelihood that public deliberation will be preferred. This is seen by inspection of (8).

A.5 Proposition 5

This proposition is proved by first demonstrating the conditions for existence of the independence equilibrium under private deliberation and public deliberation. Under public deliberation the responsive equilibrium will exist whenever either (9) or (10) is satisfied. Under private deliberation the independence equilibrium will exist as long as (20) and (21) are satisfied.

$$\tfrac{\alpha}{1-\alpha} \Pr(\omega = 1 | s_i, v) - \Pr(\omega = 0 | s_i, v) \geq \Pr(u | y = 0) - \Pr(u | y = 1) \qquad (20)$$

$$\tfrac{\alpha}{1-\alpha} \Pr(\omega = 0 | s_i, v) - \Pr(\omega = 1 | s_i, v) \geq \Pr(u | y = 1) - \Pr(u | y = 0) \qquad (21)$$

The expanded forms for the probabilities $\Pr(u|y=1)$ and $\Pr(u|y=0)$ in these two expressions can be written out in the same manner as under proposition 1 above. For representative C the expression in (22) presents the expanded form for the reputational payoff $\Pr(u|y=1)$ and (23) presents the expanded form for the reputational payoff $\Pr(u|y=0)$.

$$\frac{((p^2(r^3+3r^2(1-r))+2p(1-p)(r^2+2r(1-r))+(1-p)^2))p}{((p^2(r^3+3r^2(1-r))+2p(1-p)(r^2+2r(1-r))+(1-p)^2))p+(1-p)((pr)^2+(1-p)^2+2p(1-p)r)} \tag{22}$$

$$\frac{(p^2((1-r)^3+3r(1-r)^2)+2p(1-p)(1-r)^2)p}{(p^2((1-r)^3+3r(1-r)^2)+2p(1-p)(1-r)^2)p+(1-p)(p^2(2r(1-r))+2p(1-p)(1-r))} \tag{23}$$

The relevant reputational payoffs $\Pr(u|y=1)$ and $\Pr(u|y=0)$ for A and B are shown in expressions (24) and (25), respectively.

$$\frac{(p^2((1-r)^3+3r(1-r)^2)+(1-p)^2(1-r)+(p-p^2)(1-r)^2+(p-p^2)((1-r)^2+2r-2r^2))p}{(p^2((1-r)^3+3r(1-r)^2)+(1-p)^2(1-r)+(p-p^2)(1-r)^2+(p-p^2)((1-r)^2+2r-2r^2)))p+(1-p)(p^2((1-r)^2+(p-p^2)(2-r))} \tag{24}$$

$$\frac{(p^2(r^3+3r^2(1-r)+(1-p)^2r+p(1-p)(r^2+2r(1-r))+(1-p)pr^2)p}{(p^2(r^3+3r^2(1-r)+(1-p)^2r+p(1-p)(r^2+2r(1-r))+(1-p)pr^2)p+(1-p)((pr)^2+p(1-p)r)} \tag{25}$$

Using these reputational payoffs one can write expressions (20) and (21) in expanded form, though for reasons of space I have not done so here.

Given the above, polarization will be lower under private deliberation as long as the inequality below is satisfied. It can be simplified in the following steps to show that polarization will be reduced as long as representatives believe it more likely to observe y given that the state is ω than to observe y given that the state is $(1-\omega)$.

$$\underset{L}{\Pr}(\omega|y) - \underset{R}{\Pr}(\omega|y) < r - (1-r) \tag{26}$$

$$\frac{\Pr(y|\omega)r}{\Pr(y|\omega)r+\Pr(y|1-\omega)(1-r)} - \frac{\Pr(y|\omega)(1-r)}{\Pr(y|\omega)(1-r)+\Pr(y|1-\omega))r} < r - (1-r) \tag{27}$$

$$\Pr(y|\omega)(1-2r) < \Pr(y|1-\omega)(1-2r) \tag{28}$$

$$\Pr(y|\omega) > \Pr(y|1-\omega) \tag{29}$$

Though L and R have different prior beliefs about the state, because q and p are common knowledge they will have the same probabilities for $\Pr(y|\omega)$ and $\Pr(y|1-\omega)$. Since, in expected terms, more representatives will vote $x=y$ than voted $x \neq y$, we can also conclude that $\Pr(y|\omega) > \Pr(y|1-\omega)$.

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