Committees and Distortionary Vagueness*

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Abstract

We study a model of a generalized committee, for example a legislature or legislative subcommittee, bargaining over how precisely to transmit information to the mass public. In our model, biased committee members have an incentive to distort the public's behavior by making vague communications. We demonstrate two principal results. First, delegating decision making to a committee with an agenda-setting chair frequently reduces vagueness relative to delegating to an individual or a committee with no agenda setter. Second, when the committee chair and the median committee member are biased in opposing directions on an issue, more precise information is provided than when the chair and committee are of like bias.

Introduction

There are two ways to be misleading: one can lie or one can tell the truth in a way that gives the wrong impression. The second form of misdirection inherently employs *strategic vagueness*. The truth must be consistent with what the speaker says, but also corresponds with another interpretation, one that is preferred by the speaker. Vagueness has an advantage over lying in many political contexts. In particular, it is easier for the public to identify and punish a politician caught lying versus one who is willfully vague. Yet, there are real costs to the public when governments transmit vague information. For instance, vague information might increase public uncertainty over the future course of policy. Such vagueness can lead to a chilling effect on economic activity. For example, in September 2017, U.K. Prime Minister Theresa May held a press conference in Florence Italy, aiming to outline the government's new Brexit position. The opposition minister, Jeremy Corbyn, retorted that, "Fifteen months after the EU referendum the Government is still no clearer about what our long term relationship with the EU will look like."[1] In response, the British pound depreciating against other global currencies after the government failed to provide more details of their plan. [2]

Given the potential harmful effects of vagueness, the public has a deep interest in delegating authority to political institutions and individuals that will minimize the use of strategic vagueness. This leads to two questions. First, from an institutional design perspective, is it better to delegate decision making to a single individual, a committee with an agenda setting chair, or a committee without an agenda setting chair? Second, taking the institutional design as given, how does the committee's composition shape the strategic use of vagueness?

In order to address these questions, we study a model of a committee bargaining over how

[1] *The government is still no clearer*.

[2] *Pound choppy after Theresa May speech sets out vision for Brexit break-up*.

precisely to transmit information to the public. The notion of a committee is quite general. A legislature is a large committee while an individual decision maker is a committee of size one. Our model is an application of models in the tradition of the agenda setter model in Romer and Rosenthal (1978) and Romer and Rosenthal (1979), but with bargaining focused on the level of vagueness to include in public communications.[3] In our setting, biased committee members have an incentive to distort the public's behavior through vague transmissions. This bargaining approach differs significantly from the cheap talk approach that is usually applied to models of communication.[4] We make this choice because we are interested in the case of a public who, acting as a principal, delegates political authority to either individual agents or committees. There are at least two reasons why cheap talk models, where information receivers act strategically, are inappropriate in this context. One, political actors are capable of coordinating their speech before they transmit public information. This is unlike models where experts compete for influence (Krishna and Morgan, 2001). Two, cheap talk models require sophisticated strategies on the part of the receiver.[5] In the case of receivers of legislative speeches, we believe that this modeling assumption is particularly fitting as it is irrational for any single representative member of the public to consider themselves pivotal.

Our model makes two main contributions to the literature. First, with regards to institutional design, we find that delegating to a committee with an agenda setting chair frequently reduces strategic vagueness relative to delegating to an individual or a committee with no agenda setter. This is an important finding for legislative scholars because it suggests that transparency may be an additional rationale for opposition and co-partisan bill sponsorship (Bräuninger and Debus, 2009). Second, when the committee chair and the median member of the committee possess opposing biases, vagueness is lower than when their biases

[3]See, for instance, the models of gatekeeping in Denzau and Mackay (1983) and Crombez, Groseclose, and Krehbiel (2006).

[4]Originally developed in Crawford and Sobel (1982).

[5]See Chen (2011) for a model with naive receivers in a cheap talk setting.

are aligned. This result addresses optimal committee composition (agent selection). An additional, but perhaps more obvious composition effect is that selecting agents with less extreme biases results in less vagueness. For example, electing an unbiased President will result in precise speech. However, if bias is not perfectly observed, this may be difficult to accomplish. On the other hand, if only the direction of the President's bias is known, the public can discipline political vagueness by electing an oppositely biased legislature.

Our approach is most similar to recent papers that model how parties make strategic choices on both the position and the level of ambiguity of their platforms (Bräuninger and Giger, 2016) and how parties are constrained by coalition members (Fortunato, 2010). Fortunato (2010) in particular argues that coalition partners (rather than committee members) are constrained by collective responsibility in their ability to signal their policy preferences and that they have only two real avenues to signal dissent: speeches and amendments. Instead of examining parties, however, in this paper, we look at the the role of committee chairs and committee composition and the relationship between institutional structure and the use of strategic ambiguity. Broadly, our findings corroborate recent research that finds that legislative committee chairs leads to better scrutiny and better oversight (Fortunato, Martin, and Vanberg, 2017).

By investigating the implications of delegating to committees versus individuals, our model lies at the intersection of two literatures. The first studies the general strategic determinants of vagueness. The second studies the optimality of delegating to individuals versus committees. Our results contribute to both literatures, pointing out a new incentive for vagueness, *distorting the public response* and a new benefit of committee delegation, *an increase in public transparency.* We therefore also add to the literature on government transparency (Jensen, 2002; Hollyer, Rosendorff, and Vreeland, 2011; Berliner, 2014).

Previous Literature

The literature on the strategic determinants of vagueness has broadly identified three reasons for vagueness in a political context. One, vagueness may help in crafting consensus (Ulmer, 1971). Two, vagueness may hide defiance from view in an attempt to maintain the public's support of an institution (Staton and Vanberg, 2008). Three, in a dynamic context, vagueness increases the flexibility of future actions (Aragones and Neeman, 2000; Alesina and Cukierman, 1990; Meirowitz, 2005).

The literature on delegating to committees identifies two advantages of committees over individuals.[6] First, committees may be a forum to aggregate the private information and representative preferences of its members (Gilligan and Krehbiel, 1987; Ladha, 1992; Blinder, 2007; Ali et al., 2008; Chen and Eraslan, 2014). Second, committees, and particularly the various voting rules they employ, can tailor the trade-off between a commitment to future policy and the flexibility to react to new circumstances (Dal Bo, 2006; Riboni and Ruge-Murcia, 2010). For instance, a committee ruling that requires a future super-majority to overturn is a more committed policy than one that only requires a simple majority.

The incentive for vagueness in our model derives from the incentive to distort the actions of the public. This motivation for vagueness is distinct from those listed above. Critically, lower amount of the distortionary vagueness studied here always improves public welfare.[7] Individual agents are freely able to distort public actions through vague transmissions. The median member of a committee without an agenda setter is similarly free to distort the public response. In the chair-committee setting, the structure works to constrain vagueness, reducing distortions, and consequently improving welfare. This structure is especially effective when a positively (negatively) biased chair is paired with a negatively (positively) biased

[6] Holmstrom (1978) and Holmstrom (1982) are classic references in the delegation literature. Alonso and Matouschek (2008) provides a nice recent example.

[7] This is unlike Morris and Shin (2002) where it is possible to over supply public information.

median committee member.

Since our findings are abstract, they apply in a wide variety of contexts. However, the clearest application is to legislatures. Our model allows for a comparison of distortionary vagueness across systems. For example, in the U.S. system, one could directly compare strategic vagueness between the president as chair and the legislature and strategic vagueness in legislative committees in the US house where the median members and the chair are always of the majority party. Outside of the legislature, one could also apply our model to other institutions that disseminate public information such as central banks, courts, and international organizations (AUTHOR REDACTED).

The next section presents the model. Section 3 analyzes the model and presents our two main results. Section 4 concludes the discussion. All proofs are in the appendix.

1 Model

We study a committee made up of $N \geq 1$ members. One of these members is the committee chair, labeled C. Delegation to a single agent is covered by the $N = 1$ case. In this case, the single member, C, has total power to make policy statements. When, $N > 1$, policy statements are passed by a simple majority rule. For simplicity, we assume that N is odd. This assumption does not substantively affect our results if we incorporate an appropriate tie-breaking rule when N is even. The chair has proposer power. The other committee members can either vote to accept or reject the chair's proposal. Either the chair's proposal is accepted by a majority or it is voted down. If voted down, a default option is enacted.

The committee is assumed to have privileged access to information about an area of policy.[8] In the case of a monetary committee, this might be information regarding the true

[8] One reason for being vague is that the committee simply does not have enough information to be more precise. The vagueness studied here is vagueness that goes beyond any informational limits faced by the committee.

state of the economy or about the future intentions of the committee with regards to interest rate policy. In the case of a legislative committee, this might be privileged information over national security issues, or the government's future spending plans. Information is assumed to be verifiable. However, for simplicity, we assume that the cost of verification at the time of the announcement is prohibitive, but will become freely available at some future date. Moreover, we assume sufficient reputation costs to make lying about information prohibitively expensive.

All else being equal, we assume that the chair and committee members have a small, unmodelled aversion to vagueness. Hence, if two potential equilibria give identical utility to the chair, we assume that the chair acts to bring about the less vague equilibrium. This assumption might reflect a disutility to the public of guessing over larger ranges that is then passed on to the chair and committee members through public disapproval.

While information that the committee sends to the public must be truthful, the committee may be vague. All committee members receive the same information, represented by $\theta \in [0,1]$. They then must decide how precisely to convey θ to the public, P. A perfectly precise transmission of information would simply pass on θ to P. Vague transmissions imply a range of values, $\left[\underline{\theta}, \overline{\theta}\right]$, which are truthful and therefore contain θ. We call a statement's *degree of vagueness*, v, the size of the range implied or $v = \overline{\theta} - \underline{\theta}$.

Our key assumption is that by making vague statements, a committee is able to manipulate P's response. Whatever actions P will take in response to a committee statement, they must incorporate expectations over θ that are based on the information transmitted by the committee. We call the absolute difference between the true θ and P's expectations, θ^e, the *degree of distortion* or d. As an example, consider the following. If the true value is $\theta = 0.81$ and the committee sends a message that effectively communicates that "θ is distributed with uniform probability between 0.8 and 0.9," then the public sets expectations at $\theta^e = 0.85$. Consequently, the degree of distortion is $d = |\theta^e - \theta| = |0.85 - 0.81| = 0.04$. Meanwhile, the degree of vagueness is $v = \overline{\theta} - \underline{\theta} = 0.9 - 0.8 = 0.1$. For simplicity, we will assume throughout that statements must be of the form "θ is distributed with uniform probability between $\underline{\theta}$ and $\overline{\theta}$." However, this can be generalized considerably.[9] We say a statement is biased upwards or to the right if $\theta^e > \theta$, that it is biased downwards or to the left if $\theta^e < \theta$, and unbiased if $\theta^e = \theta$.

For a particular θ, a distortion, y, is *feasible* if $y \in \left[\frac{-\theta}{2}, \frac{1-\theta}{2}\right]$. The limitations on the feasibility of a distortion is partially a function of assuming $\theta \in [0, 1]$ and that messages must specify a range with a uniform distribution. While these assumptions have implication for feasibility, they are not critical to the substantive conclusions we draw. The *distortion*, y, is just the degree of distortion as well as the direction (positive or negative). So in the above example, $y = 0.04$. We assume a sufficient flexibility of language such that any feasible distortion is possible. Hence, the audience, P, is freely manipulated and therefore does not factor in as a strategic actor.[10]

Since the committee can transmit a statement that produces any feasible level of distortion, we allow the committee to directly bargain over the distortion, y. However, we assume that there is a default distortion x that results if the committee fails to agree on a bargain. x is feasible if $x \in \left[\frac{-\theta}{2}, \frac{1-\theta}{2}\right]$. That is, x is feasible only if it is feasible distortion for the committee.

The default distortion can be thought of in at least three ways. One, x represents a status quo message that will be implemented in the case of disagreement. Two, x is the result of an unmodelled continuation game where the degree of distortion is the result of an amendment game. The end result of this game is known at the time of initial bargaining

[9] For example, a message might imply "θ is distributed with uniform probability between 0.8 and 0.9 with a mass of 0.5 probability on 0.9." In this case, $\theta^e = 0.5\,(0.85) + 0.5\,(0.9) = 0.875$.

[10] Restricting the possible distortions either through restrictions on language and/or the degree to which P can be manipulated would be an interesting extension. In particular, a dynamic extension should allow the public to learn over time so they are not consistently fooled by the committee.

through backward induction. Three, x is the equilibrium outcomes of an umodelled cheap talk game where the chair and committee members do not coordinate their speech. Instead, the public must attempt to infer information from the committee members making separate, uncoordinated transmissions. Again, committee members can predict the end result of this game at the time of initial bargaining through backward induction.

Committee members may have an incentive to distort expectations because each member i is assumed to possess a known bias, b_i. This bias may be political or it may reflect different interpretations of the objective information θ.We assume each committee member derives utility from the degree to which the audience forms expectations in line with the committee member's bias.[11] For simplicity, we model this with a quadratic loss function:

$$u_i = -\left(\theta^e - (\theta + b_i)\right)^2 .$$

Alternatively, we can write this in terms of the distortion as

$$u_i = -\left(y - b_i\right)^2 .$$

Finally, the timing of the game is as follows:

1. The chair and committee members observe θ.
2. The chair proposes y to the committee.
3. The committee and chair vote simultaneously to accept or reject the chair's proposal.
4. If the committee accepts, y is transmitted to P and P forms expectations θ^e_y.
5. If the committee rejects, x is transmitted to P and P forms expectations θ^e_x.

[11] It is important to note that in our model, a committee member's ideal point is dependent both on the truth and on the member's bias. So member i has the ideal point $\theta + b_i$.

We assume that the committee can only make credible threats about rejecting a proposal, hence we restrict attention to subgame perfect equilibria (SPE).

2 Analysis

We are primarily interested in uncovering the degree of vagueness, v, transmitted to the public in equilibrium. To this end, we focus on finding messages that are what we call *minimally vague messages*. Minimally vague messages produce a distortion y while minimizing v. Let $\underline{v}(y, \theta)$ be the degree of vagueness associated with a minimally vague message. Since we assume, all else being equal, that the chair and committee members prefer less vagueness, any equilibrium message will be minimally vague.

2.1 Institutional Constraints on Vagueness

In this section, we focus on how a committee with an agenda setting chair provides institutional constraints on vagueness versus an individual agent or a committee without an agenda setting chair. Proposition 1 presents our main result. Without loss of generality, we assume that the chair's bias is $b_C \geq 0$. Denote the degree of vagueness and distortion that results when the chair is the sole committee member (i.e. $N = 1$) as v_C and y_C respectively. Let M be a committee member with the median amount of bias, b_M. Let v_M and y_M respectively, be the amount of vagueness and distortion that would result if M was the sole committee member.[12, 13]

Proposition 1

Let $N > 1$ and assume that x is feasible so that $\frac{\theta}{2} \leq \theta + x \leq \frac{1+\theta}{2}$. The following statements

[12] We suppress in our notation the dependence of v_C and v_M on θ for brevity.

[13] This is also the level of vagueness that would also result if a perfectly patient committee voted up or down on all possible vagueness levels (without a strategic proposer) until one passed.

characterize equilibrium message vagueness, v^*:

1. *If $b_C = b_M$, then $v^* = v_C = v_M$. We call this the "Median Chair" case.*

2. *If $b_C < |b_M|$, then $v_M \geq v^* \geq v_C$. We call this the "Constrained Committee" case.*

3. *If $b_C > |b_M|$ and either (a) $x \geq b_C$ or (b) $x \leq 2b_M - b_C$, then $v^* = v_C > v_M$. We call this the "Dominant Chair" case.*

4. *If $b_C > |b_M|$ and $b_C > x > 2b_M - b_C$, then $v_C > v^* \geq v_M$. We call this the "Constrained Chair" case.*

Proposition 1 highlights the way chair-committee structure constrains the vagueness that would result if messages were alternatively made by a single agent or a committee where the median member was unconstrained by a chair with proposer power. Ex-post the public will always prefer either the chair acting alone as a single agent or a committee without an agenda setting chair, whichever has bias closer to zero. However, ex-ante, the institutional structure of a committee with an agenda setting chair can work to reduce distortionary vagueness, acting like insurance against agents or committees with high bias levels. Intuitively, the chair and median committee members represent two distinct sources of power over message vagueness. This separation of power potentially reduces vagueness since both players must agree to coordinate their message or the default option (status quo, x) is implemented.[14]

When a separation of power between the chair and median member does not exist, the chair-committee structure fails to reduce vagueness. This is highlighted by the situation where the chair is also median. In this case, the committee provides no additional constraints. Example 1 illustrates this case.

[14] Another way to think about the committee's role in our model is that the committee functions as a collective veto player in relation to the chair's proposal. If we reverse the model and give the committee proposal power, than we would get symmetric results if the "chair" was imbued with veto power. It's also possible to imagine multiple veto players. For instance, an executive might have proposer power, but two committees (perhaps the United States Senate and House) must separately pass the proposal.

In the other cases, either the chair or median committee member prefers more vagueness. In Example 2, the median committee member has a higher bias than the chair. In this case, adding an agenda setting chair to a committee works to constrain the committee and reduce distortionary vagueness. Example 3 investigates the case where the chair is more biased than the committee. This can also be thought of as comparing delegating to a single agent to delegating to a chair that must receive approval from a committee. When the default option is very bad for the committee, the committee fails to constrain the chair leading to the Dominant Chair case. When the default option is not so bad, the committee can effectively constrain the level of vagueness preferred by the chair leading to the Constrained Chair case.

In all of our illustrative examples, we label the committee members 1 through N in order of least bias to most bias.

Example 1

(Median Chair):

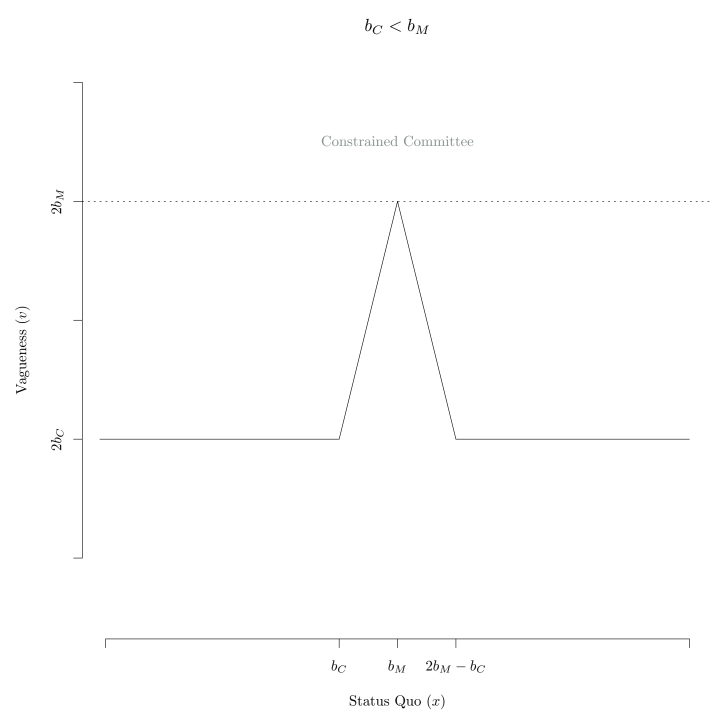
Let $N = 3$ *and assume the following vector of biases* $(-0.1, 0.1, 0.2)$ *where* $b_c = b_2 = 0.1$. *Let the truth be* $\theta = 0.5$. *C's most preferred message is* $\theta \in u\,[0.5, 0.7]$ *which induces* $\theta^e = 0.6$, $y_C = 0.1$, *and* $v = 0.2$. *Since C is also the median committee member, this is also M's most preferred message. Proposition 1 implies that this message will be proposed and accepted for all status quo distortions,* x.

To see this, first consider the committee member with $b_3 = 0.2$. *This committee member only weakly prefers the status quo distortion,* x, *if* $x \geq y_C = 0.1$. *If this is the case,* $b_1 = -0.1$ *weakly prefers* y_C *to* x *and votes for the proposal. Alternatively, if* $x < y_C$, *then* 1 *prefers the status quo while* 3 *prefers* y_C. *Either way,* y_C *passes and since it is C's most preferred distortion, it is proposed. Hence* $v^* = v_C = 0.2$.

When $b_C \neq b_M$, then C and M must contend with each other over the level of message vagueness. The two main questions of interest are: One, when $b_C < |b_M|$, to what degree can C reduce the level of vagueness preferred by M acting alone? Two, when $b_C > |b_M|$, to what degree can M reduce the level of vagueness preferred by C acting alone?

In the first case, C's proposer power allows her to constrain M's desired level of vagueness. In fact, whenever $x \notin (b_C, 2b_M - b_C)$, C is able to reduce vagueness to her most preferred level. C is able to constrain the equilibrium level of vagueness by proposing values that are at least weakly preferred by M to the status quo, x. Strikingly, even when $x > b_M$ and hence more vague than either C or M's most preferred value, C can still reduce vagueness away from M's ideal point and closer to her most preferred value. Effectively, x is sufficiently vague that C threatens M with a very unattractive, high level of vagueness if M were to reject y. So, even though the status quo may be worse for both C and M, C can leverage her proposer power to take advantage of the threat. Figure 1 illustrates this case in general, while Example 2 works it out for particular values.

Figure 1: Constrained Committee



Example 2

(Constrained Committee):

Let $N = 5$ *and assume the following vector of biases* $(-0.1, 0.1, 0.2, 0.25, 0.25)$ *where* $b_c = b_2 = 0.1$. *Let* $\theta = 0.5$. *First note that M's most preferred message is* $\theta \in u[0.5, 0.9]$ *which induces* $\theta^e = 0.7$, $y_M = 0.2$, *and* $v = 0.4$. *C's most preferred message is* $\theta \in u[0.5, 0.7]$ *which induces* $\theta^e = 0.6$, $y_C = 0.1$, *and* $v = 0.2$.

By varying x, *we can divide Example 2 into five cases:*

First, *let* $x \leq 0.1$. *In Figure 1, this corresponds to the portion of the graph to the left of* b_C.

In this case, C proposes $y^* = y_C = 0.1$ *and the proposal is accepted. To see that this is true, simply note that members* b_C, b_3, b_4, *and* b_5 *always weakly prefer* y_C *to* $x \leq 0.1$ *hence* y_C *will pass and since it is C's most preferred distortion, it is proposed. Hence* $v^* = v_C = 0.2$.

Second, *assume that* $x \in (0.1, 0.2)$. *In Figure 1, this corresponds to the portion between* b_C *and* b_M.

Consider the strategy where C proposes $y^* = x$. *All players are indifferent between* y^* *and* x, *so it is accepted. This proposal is preferred by C to* $y' > x$ *while any proposal* $y' < x$ *will be rejected. Since* $x < 0.2$, *the distortion and vagueness is less than the most preferred distortion of the median committee member and the committee is constrained from what it would pass in the absence of a designated member C with proposer power. Hence,* $v^* = 2x$.

Third, *assume that* $x = 0.2$. *In Figure 1, this corresponds to the apex of the graph at* b_M.

Now the strategy in the first case leads to $y^* = x = y_M$. *Hence, in this knife-edge case, the committee is effectively unconstrained so that the distortions and vagueness is not mitigated* *by the presence of the chair. Hence,* $v^* = v_M = 2x = 0.4$*.*

Fourth*, assume that* $x \in (0.2, 0.3)$*. In Figure 1, this corresponds to the portion of the graph between* b_M *and* $2b_M - b_C$*.*

First, note that 1 will vote for any proposal such that $y < x$*. Next note that* M *will vote for a proposal so long as* $|y^* - y_M| \leq |x - y_M|$*. Therefore,* C *proposes* $y_M - (x - y_M)$ *and* M *votes for the proposal. For instance, if* $x = 0.25$*, then* $y^* = 0.2 - (0.25 - 0.2) = 0.15$ *and* $v^* = 0.3$*. Or more generally,* $v^* = 2\,(2y_M - x) < v_M = 2y_M$ *with the inequality holding since* $x > y_M$ *by definition here.*

Fifth*, assume that* $x \geq 0.3$*. In Figure 1, this corresponds to the portion of the graph to the right of* $2b_M - b_C$*.*

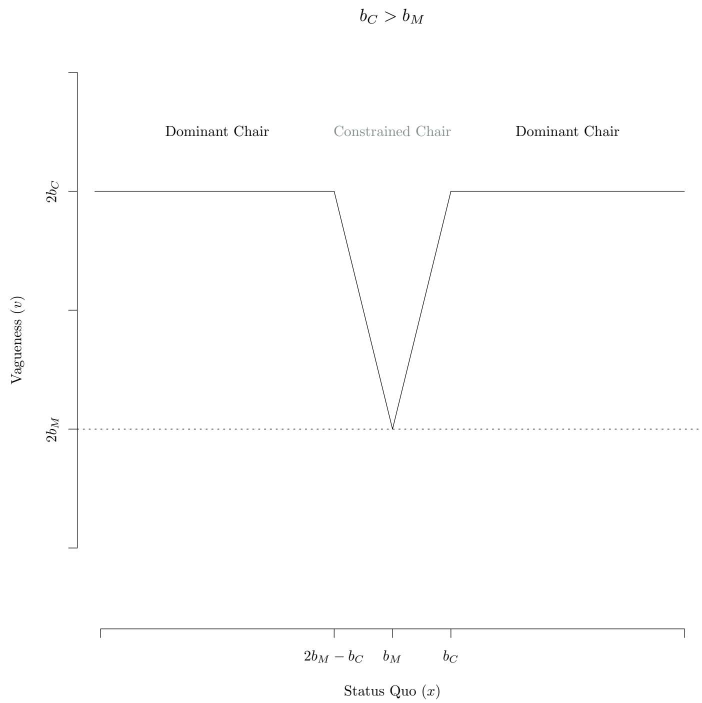
In this case C *proposes* $y^* = y_C = 0.1$ *and the proposal is accepted. Hence,* $v^* = v_C = 0.2 < v_M = 0.4$*. Note that throughout this case the committee is again constrained and vagueness is reduced from the case where the committee votes without a designated proposer.*

In the second case, C now prefers greater levels of vagueness and the committee works to constrain C. However, the committee is only able to do so when $x \in (2b_M - b_C, b_C)$. Still, this can be quite a large range if b_M and b_C are far apart. Since C has proposer power, M can only effectively threaten rejection of C's most preferred value when the status quo is relatively close to M's ideal point. This is the inverse of the logic in the first case where the committee is effectively constrained for all status quo values with the exception of a single point. Figure 2 illustrates this case in general, while Example 3 works it out for particular values.

Example 3

(Dominant Chair and Constrained Chair): Let $N = 5$ *and assume the following vector of*

Figure 2: Dominant Chair and Constrained Chair



biases $(-0.2, -0.1, 0.1, 0.2, 0.25)$ *where* $b_c = b_4 = 0.2$*. Let* $\theta = 0.5$*. C's most preferred message is* $\theta \in u\,[0.5, 0.9]$ *which induces* $\theta^e = 0.7$*,* $y_C = 0.2$*, and* $v = 0.4$*. M's most preferred message is* $\theta \in u\,[0.5, 0.7]$ *which induces* $\theta^e = 0.6$*,* $y_M = 0.1$*, and* $v = 0.2$*.*

Depending on x*, there are three cases to consider:*

First*, when* $x < 0$*, we are in a Dominant Chair case. In Figure 2, this corresponds to the portion of the graph to the left of* $2b_M - b_C$*. Here, M prefers* y_C *to* x*, therefore* y_C *is proposed and passed.*

Second*, if* $x \in (0, 0.2)$*, then M prefers* x *to* y_C *which is the Constrained Chair case. In Figure 2, this corresponds to the portion of the graph between* $2b_M - b_C$ *and* b_C*. In this case, M is indifferent between* x *and* $y_M + |y_M - x|$ *which is always greater than* y_M *and therefore* *preferred by* C *when* $y_C \geq y_M + |y_M - x|$. *Hence,* C *will propose* $y^* = \min\{y_C, y_M + |y_M - x|\}$. *For instance, if* $x = 0.05$, *then* $y^* = \min\{0.2,\ 0.1 + (0.1 - 0.05)\} = 0.15$ *and* $v^* = 0.3 < v_C = 0.4$.

Third*, if* $x \geq 0.2$, *we are once again in the Dominant Chair case. In Figure 2, this corresponds to the portion of the graph to the right of* b_C. *As in the first case,* M *prefers* y_C *to* x, *therefore* y_C *is proposed and passed.*

2.2 Committee Composition and Vagueness

The previous section focused on how a committee's structure constrains vagueness. However, vagueness also depends on the distribution of bias among the committee members. The most obvious way this happens is that, all else equal, lowering the magnitude of bias for C and M, lowers the level of vagueness. In certain cases, we can go further than this to show a less intuitive, but potentially powerful result.

In many applications, it is interesting to consider the possibility of a small status quo or default level of vagueness. For instance, in the case of a status quo statement, it might be that the status quo is simply the unvarnished truth. Or, in the case of default, if the committee cannot agree on a distortion, individual members may transmit information independently. Since all transmissions are truthful by assumption, their intersection may be quite small, especially in cases where members have opposed bias and bargaining is more likely to break down. Proposition 2 demonstrates how a small status quo (or default) impacts equilibrium vagueness and the implications for when the chair and median committee member are biased in the same or opposite direction.

Proposition 2

If $\min[|b_C|, |b_M|] > 0$ *and* x *is feasible and small in the sense that* $|x| < \min[|b_C|, |b_M|]$, *then,* *(1), if the chair and median committee member are oppositely biased, then $v^* = v_x$, and (2), if the chair and median committee member are like biased then $v^* > v_x$.*

Proposition 2 predicts that vagueness will be higher when the chair is biased in the same direction as the median committee member, than when they are oppositely biased. Strikingly, as $x \to 0$, then $v^* \to 0$ when the chair and median committee member are oppositely biased. When both have nonzero biases and they are like biased, then v^* remains bounded away from 0 as $x \to 0$. Example 4 presents an instructive case.

Example 4

(Perfectly Precise Status Quo/ Default): Assume that there are two parties labeled L and R. R and L are distinguished in that all members of R are right biased and all members of L are left biased. For simplicity, let the bias of all members of R be $b_R = 0.1$ and for all members of party L let $b_L = -0.1$. Let $x = 0$ so that the status quo or default message is undistorted and perfectly precise.

(1): Assume that the chair is from party R and the median committee member is from party L. R prefers to distort θ^e upwards, but the committee will vote down any upward bias in favor of the unbiased status quo. C never proposes downward bias since this is worse than an unbiased outcome. Hence, $v^* = 0$.

(2): Now assume that both the chair and median committee member are from party L. Then the chair proposes its most preferred distortion $y = -0.1$ which is accepted and implies $v^* = 0.2$.

Intuitively, Proposition 2 implies that divided governments may be less vague (more transparent). For instance, consider the case when an executive has the power to propose a degree of vagueness over a particular policy to the legislature.[15] An example of this might

[15] The model also applies to the case where the legislature proposes a statement to the executive to accept or veto.

be selecting the degree of obfuscation to employ in a bill. If x is small, than Proposition 2 implies that transparency will be higher when the executive and legislature are controlled by different parties than when the same party controls both branches of government. One potential illustrative example of this effect is the Affordable Care Act, which passed when both the U.S. President and the majority of both houses of the U.S. Congress were of the Democratic party. In the process of promoting the bill, then Speaker of the House, Nancy Pelosi, was famously quoted as saying, "It's going to be very, very exciting. But we have to pass the bill so that you can find out what is in it, away from the fog of the controversy" (Roff, 2010). Likewise, with both the legislature and presidency under Republican control, the failed 2017 effort to repeal the Affordable Care Act was mostly carried out in secretive closed door sessions that restricted access necessary for a detailed understanding of the proposed bills.

3 Conclusion

In this paper we have proposed distortionary vagueness as an important feature of political delegation. We have characterized the ways committee structure (institutional design) and committee composition impacts distortionary vagueness. In particular, we show that information transmitted by a single individual or a committee without an agenda setting chair is more likely to be ex-ante vague than information transmitted by a committee that possesses an agenda setting chair. Moreover, when the committee and chair have opposing biases, information will be communicated more precisely than when they possess like biases. These findings reflect the ways the separation of powers between the executive and legislature may work to minimize distortionary vagueness, especially when the executive and legislature come from different parties. Moreover, distortionary vagueness is impacted by the internal structure and the diversity of bias present in appointed bodies like courts and central banks.

This model isolates the effect of distortionary vagueness from other forms of vagueness as well as isolating bargaining over vagueness from other possible objects of bargaining. This allows for a relatively simple and clean result about distortionary vagueness. However, the simplicity of the model immediately points to two important extensions. First, a dynamic extension would allow one to consider both the effect of distortionary vagueness as well as vagueness for the sake of flexibility. In this context, different committee voting rules could also simultaneously impact flexibility as well as distortion. Additionally, a dynamic setting would allow the model to incorporate a learning process on the part of the public. Second, committee members bargain over vagueness in isolation from bargaining over policy in our model. An interesting extension would allow for both a policy and the degree of vagueness over the policy to be bargained over at the same time. This is especially important in combination with the first extension and uncertainty over the effectiveness of, as well as the political consequences of the policy under consideration.

Appendix

Proof of Proposition 1

Proof. Since θ^e can be freely distorted within the range of feasibility, when C or M are the sole committee members, they can achieve their optimal distortion if feasible, so that $y_C = b_C$ and $y_M = b_M$ respectively.

The proof proceeds in four steps. The first step establishes when a player i will vote for C's proposal. The second shows that if M votes for a proposal, then it will pass. The third step establishes that equilibrium vagueness v^* is increasing in equilibrium distortions y^*. Finally, the fourth step demonstrates the comparative static results presented in Proposition 1. This requires four cases (1-4).

The **first step** is to establish that i will only vote for a proposal y if $|b_i - y| \leq |b_i - x|$. Plugging into i's utility function, y and x gives utility $u_i(y) = -(y - b_i)^2$ and $u_i(x) = -(x - b_i)^2$ which implies that i's utility is weakly higher under y exactly when $|b_i - y| \leq |b_i - x|$ holds.

The **second step** is to note that if M votes for a proposal, which only occurs if $|b_M - y| \leq |b_M - x|$, then the proposal passes otherwise it is voted down and the status quo is enacted. This is because if b_M is the median level of bias, then one of two cases must hold. Let M be the m^{th} committee member. (a) $y \geq x$ in which case $|b_i - y| \leq |b_i - x|$ for all $i > m$ or (b) $y < x$ in which case $|b_i - y| \leq |b_i - x|$ for all $i < m$. In either case, the proposal passes. On the other hand, if $|b_M - y| > |b_M - x|$, then M will not vote for the proposal, and either (a) $|b_i - y| > |b_i - x|$ for all $i > m$ or (b) $|b_i - y| > |b_i - x|$ for all $i < m$. Since at least a majority votes against the proposal, it fails and the status quo is enacted. Finally, note that C is indifferent between proposing x and a failing proposal. In this case of indifference, we assume that C proposes x which then passes.

The **third step** is to note the relationship between a distortion, y, and the implied level of vagueness, v_y. Vague transmissions imply a range of possible values $\left[\underline{\theta}, \overline{\theta}\right]$. In order to be truthful, θ must be in the range $\left[\underline{\theta}, \overline{\theta}\right]$. For any distribution, it must also be that $\theta^e \in \left[\underline{\theta}, \overline{\theta}\right]$. This range is minimized (vagueness is minimized) when when the range is set so that $\theta = \underline{\theta}$ to achieve a distortion $y > 0$ and $\theta = \overline{\theta}$ to achieve a distortion $y < 0$. Take the case where $y > 0$. Since $\theta = \underline{\theta}$ and $\theta^e = \theta + y$, it follows that $\theta^e = \underline{\theta} + y$. Taking expectations over the uniform distribution, it is also the case that $\theta^e = \underline{\theta} + \frac{\overline{\theta} - \underline{\theta}}{2}$. Taken together, this implies that $y = \frac{\overline{\theta} - \underline{\theta}}{2}$.

Hence, vagueness is increasing in the size of distortions, $d = |y|$ when $y > 0$. A symmetric argument holds for $y < 0$.

The **fourth step** is to characterize the four cases presented in Proposition 1. Recall that we are assuming that x is restricted to be feasible throughout.

Case 1 (Median Chair):

In this case $b_M = b_C$. Since C and M label the same agent, then $y_C = y_M$. Since x is always an option for a proposal, then setting $y = y_C$ implies that $|b_M - y| = |b_M - y_M| \leq |b_M - x|$. Hence, y_C is proposed and it passes. Equilibrium vagueness is then $v^* = v_C$.

For cases 2-4, we proof the case where $b_M > 0$. The case where $b_M < 0$ is symmetric with the appropriate inequality and sign reversals.

Case 2 (Constrained Committee):

In this case $b_M > b_C$. Since $b_M > b_C$, the argument in the third step implies that $v_M > v_C$.

(a) Let $x \in (b_C, b_M)$, C can propose x, which M weakly prefers to accept. Again, by the argument in step 3, the vagueness associated with x here is such that $v_M > v_x > v_C$. C prefers $y = x$ to $y > x$ since it is closer to C's ideal point. M will reject any $y < x$ since the status quo would then be strictly preferred. Hence, in this case, equilibrium vagueness is such that $v^* = v_x$ and $v_M > v^* > v_C$.

(b) Let $x = b_M$. In this case, M rejects any proposal that is not $y = x$ since M can attain y_M through reverting to the status quo. In this case, equilibrium vagueness is such that $v^* = v_x = v_M$.

(c) Let $x \in [b_M, 2b_M - b_C]$. Consider the strategy where C proposes $y = 2b_M - x$. Since, $x \leq 2b_M - b_C$, then $y_C \leq 2b_M - x$. Since $x \geq b_M$, then $y_M \geq 2b_M - x$. Hence, for proposed distortion y, $v_M \geq v_y \geq v_C$. M accepts proposal y since $|b_M - y| = |b_M - (2b_M - x)| = |-(b_M - x)| = |b_M - x|$ and rejects all proposals $y' < y$. C prefers y to all proposals $y' > y$, therefore C proposes $y = 2b_M - x$ and it is accepted. Therefore, equilibrium vagueness is $v^* = v_y$ so that $v_M \geq v^* \geq v_C$.

(d) Let $x \notin (b_C, 2b_M - b_C)$. First, let $x < b_C$. Since $y_C = b_C$ and $x < b_C < b_M$, then $|b_M - y_C| \leq |b_M - x|$, therefore the committee will accepts y_C which is C's most preferred option. Equilibrium vagueness is then $v^* = v_C$. Now assume that $x > 2b_M - b_C$. This implies that $x > 2b_M - b_C > b_M > b_C$. Therefore, $|b_M - y_C| \leq |b_M - x|$ since $|b_M - x| \geq |b_M - (2b_M - b_C)| = |b_C - b_M| = |b_M - b_C| = |b_M - y_C|$. Therefore the committee will accepts y_C which is C's most preferred option. Equilibrium vagueness is then $v^* = v_C$.

Case 3 (Dominant Chair):

In this case it is assumed that $b_C > b_M$.

(a) In this subcase it is assumed that $x \geq b_C$. Since $y_C = b_C$ and $b_M < b_C \leq x$, then $|b_M - y_C| \leq |b_M - x|$, therefore the committee will accepts y_C which is C's most preferred option. Equilibrium vagueness is then $v^* = v_C$.

(b) In this subcase it is assumed that $x \leq 2b_M - b_C$. This implies that $b_C > b_M \geq x$. Therefore, $|b_M - y_C| \leq |b_M - x|$ since $|b_M - x| \geq |b_M - (2b_M - b_C)| = |b_C - b_M| = |b_M - b_C| = |b_M - y_C|$. Therefore the committee will accepts y_C which is C's most preferred option. Equilibrium vagueness is then $v^* = v_C$.

Case 4 (Constrained Chair):

In this case $b_C > b_M$. Since $b_C > b_M$, the argument in the third step implies that $v_C > v_M$. (Note that the $x \notin (2b_M - b_C, b_c)$ case is covered by the "Dominant Chair" case.)

(a) Let $x \in (2b_M - b_C, b_M)$. Consider the strategy where C proposes $y = 2b_M - x$. Since, $x > 2b_M - b_C$, then $y_C > 2b_M - x$. Since $x < b_M$, then $y_M < 2b_M - x$. Hence, for proposed distortion y, $v_C > v_y > v_M$. M accepts proposal y since $|b_M - y| = |b_M - (2b_M - x)| = |-(b_M - x)| = |b_M - x|$ and rejects all proposals $y' > y$. C prefers y to all proposals $y' < y$, therefore C proposes $y = 2b_M - x$ and it is accepted. Therefore, equilibrium vagueness is $v^* = v_y$ so that $v_C > v^* > v_M$.

(b) Let $x = b_M$, M rejects any proposal that is not $y = x$ since M an attain y_M through reverting to the status quo. In this case, equilibrium vagueness is such that $v^* = v_M$.

(c) Let $x \in (b_M, b_C)$. C can propose x, which M weakly prefers to accept. Again, by the argument in step 3, the vagueness associated with x here is such that $v_C > v_x > v_M$. C prefers $y = x$ to $y < x$ since it is closer to C's ideal point. M will reject any $y > x$ since the status quo would then be strictly preferred. Hence, in this case, equilibrium vagueness is such that $v^* = v_x$ and $v_C > v^* > v_M$. □

Proof of Proposition 2

Proof. First, recall that $b_C \geq 0$ without loss of generality and by assumption in Proposition 2, it must be that this inequality holds strictly. Second, note that $|x| < \min[|b_C|, |b_M|]$ can correspond to several cases in Proposition 1. We proceed through these cases systematically.

Recall that Proposition 2 is divided into two statements (categories of committee biases), in (1) C and M have opposite biases and in (2) they have like biases.

Case 1 (Median Chair):

This case inherently falls into category (2) of Proposition 2. From the results of this case in Step 4 of Proposition 1, this case implies that $y^* = b_C = b_M > x$. By Step 3 in Proposition 1, this implies that $v^* > v_x$ and not convergent to 0 as $x \to 0$.

Case 2 (Constrained Committee):

(1) $b_M < 0$: As $x \to 0$, we must be in subcase (a) since $0 \in (-b_M, b_C)$. Therefore $v^* = v_x$ and v^* converges to 0 as $x \to 0$.

(2) $b_M > 0$: As $x \to 0$, we must be in subcase (d) since $0 < b_C$. Therefore $v^* > v_C$ as $x \to 0$ and does not converge to 0 as $x \to 0$.

Case 3 (Dominant Chair):

(1) $b_M < -b_C$: This case never occurs as $x \to 0$ since either $x \geq b_C > 0$ or $x \leq 2b_M - b_C < 0$, which means that x cannot be arbitrarily close to 0.

(2) $b_M > b_C$: From the results of this case in Step 4 of Proposition 1, this case implies that $y^* = b_C > x$. By Step 3 in Proposition 1, this implies that $v^* > v_x$ and not convergent to 0 as $x \to 0$.

Case 4 (Constrained Chair)

(1) $b_M \leq 0 \leq b_C$: This only falls into constrained chair case (Case 4) the subcase (c). This is because $0 \in (b_M, b_C)$ implies $x \in (b_M, b_C)$ under the assumptions of Proposition 2. Therefore $v^* = v_x$ and v^* converges to 0 as $x \to 0$.

(2) $0 < b_M < b_C$: This only falls into Case 4 under subcase (a) since $0 < b_M$ implies

$x \in (2b_M - b_C, b_M)$ under the assumptions of Proposition 2. When $0 < 2b_M - b_C$, we cannot be in the constrained chair case. Therefore $v^* = v_y > v_M$ and v^* does not converge to 0 as $x \to 0$. $\square$

References

Alesina, Alberto and Alex Cukierman (1990). "The politics of ambiguity". In: *The Quarterly Journal of Economics* 105.4, pp. 829–850.

Ali, S Nageeb et al. (2008). "Information aggregation in standing and ad hoc committees". In: *The American economic review* 98.2, pp. 181–186.

Alonso, Ricardo and Niko Matouschek (2008). "Optimal delegation". In: *The Review of Economic Studies* 75.1, pp. 259–293.

Aragones, Enriqueta and Zvika Neeman (2000). "Strategic ambiguity in electoral competition". In: *Journal of Theoretical Politics* 12.2, pp. 183–204.

Berliner, Daniel (2014). "The political origins of transparency". In: *The Journal of Politics* 76.2, pp. 479–491.

Blinder, Alan S (2007). "Monetary policy by committee: Why and how?" In: *European Journal of Political Economy* 23.1, pp. 106–123.

Bräuninger, Thomas and Marc Debus (2009). "Legislative agenda-setting in parliamentary democracies". In: *European Journal of Political Research* 48.6, pp. 804–839.

Bräuninger, Thomas and Nathalie Giger (2016). "Strategic ambiguity of party positions in multi-party competition". In: *Political Science Research and Methods*, pp. 1–22.

Chen, Ying (2011). "Perturbed communication games with honest senders and naive receivers". In: *Journal of Economic Theory* 146.2, pp. 401–424.

Chen, Ying and Hülya Eraslan (2014). "Rhetoric in legislative bargaining with asymmetric information". In: *Theoretical Economics* 9.2, pp. 483–513.

Corbyn, Jeremy. *The government is still no clearer.*

Crawford, Vincent P and Joel Sobel (1982). "Strategic information transmission". In: *Econometrica: Journal of the Econometric Society*, pp. 1431–1451.

Crombez, Christophe, Tim Groseclose, and Keith Krehbiel (2006). "Gatekeeping". In: *Journal of Politics* 68.2, pp. 322–334.

Dal Bo, Ernesto (2006). "Committees with supermajority voting yield commitment with flexibility". In: *Journal of Public Economics* 90.4, pp. 573–599.

Denzau, Arthur T and Robert J Mackay (1983). "Gatekeeping and monopoly power of committees: An analysis of sincere and sophisticated behavior". In: *American Journal of Political Science*, pp. 740–761.

Fortunato, David (2010). "Legislative review and party differentiation in coalition governments". In:

Fortunato, David, Lanny W Martin, and Georg Vanberg (2017). "Committee Chairs and Legislative Review in Parliamentary Democracies". In: *British Journal of Political Science*, pp. 1–13.

Gilligan, Thomas W and Keith Krehbiel (1987). "Collective decisionmaking and standing committees: An informational rationale for restrictive amendment procedures". In: *Journal of Law, Economics, & Organization* 3.2, pp. 287–335.

Hollyer, James R, B Peter Rosendorff, and James Raymond Vreeland (2011). "Democracy and transparency". In: *The Journal of Politics* 73.4, pp. 1191–1205.

Holmstrom, Bengt et al. (1982). *On the theory of delegation.* Northwestern University.

Holmstrom, Bengt Robert (1978). "On Incentives and Control in Organizations." In:

Jensen, Henrik (2002). "Optimal degrees of transparency in monetary policymaking". In: *The Scandinavian Journal of Economics* 104.3, pp. 399–422.

Krishna, Vijay and John Morgan (2001). "A model of expertise". In: *The Quarterly Journal of Economics* 116.2, pp. 747–775.

Ladha, Krishna K (1992). "The Condorcet jury theorem, free speech, and correlated votes". In: *American Journal of Political Science*, pp. 617–634.

Meirowitz, Adam (2005). “Informational party primaries and strategic ambiguity”. In: *Journal of Theoretical Politics* 17.1, pp. 107–136.

Morris, Stephen and Hyun Song Shin (2002). “Social Value of Public Information”. In: *American Economic Review* 92.5, pp. 1521–1534.

Rees, Tom. *Pound choppy after Theresa May speech sets out vision for Brexit break-up*.

Riboni, Alessandro and Francisco J Ruge-Murcia (2010). “Monetary policy by committee: consensus, chairman dominance, or simple majority?” In: *The Quarterly Journal of Economics* 125.1, pp. 363–416.

Roff, Peter (2010). *Pelosi: Pass Health Reform So You Can Find Out What’s In It.*

Romer, Thomas and Howard Rosenthal (1978). “Political resource allocation, controlled agendas, and the status quo”. In: *Public choice* 33.4, pp. 27–43.

— (1979). “Bureaucrats versus voters: On the political economy of resource allocation by direct democracy”. In: *The Quarterly Journal of Economics* 93.4, pp. 563–587.

Staton, Jeffrey K and Georg Vanberg (2008). “The value of vagueness: delegation, defiance, and judicial opinions”. In: *American Journal of Political Science* 52.3, pp. 504–519.

Ulmer, S Sidney (1971). “Earl Warren and the Brown decision”. In: *The Journal of Politics* 33.3, pp. 689–702.