Expertise, Subversion, and Bureaucratic Discretion

Sean Gailmard
University of Chicago

This article examines a legislature's delegation of policy-making authority to an imperfectly controlled, expert bureaucrat. The legislature can reduce the bureaucrat's expertise advantage through costly investigations of its own before delegating. Further, the bureaucrat is granted discretionary bounds by the legislature, but can subvert legislative dictates by stepping beyond them at some cost. I analyze the interaction of preference divergence, investigation cost to the legislature, and subversion cost to the bureaucrat on the decision to delegate. The model shows that, because of the equilibrium effect of subversion on discretion, bureaucrats will want subversion of legislative dictates to be difficult, while legislators want it to be relatively easy. It also highlights an indirect effect between preference divergence and discretion: preference divergence leads the legislature to become more expert on policy matters, which leads it to delegate less.

1. Introduction

Delegation of policy-making authority from legislatures to bureaucrats poses fundamental questions about policy making in an administrative state. Some of these questions, such as why legislatures would ever delegate and how they can cope with the control problem delegation creates, have been extensively studied by economists and political scientists. An issue that has until recently received less attention is what explains the variation in delegation patterns across policy areas. This article is an effort to contribute to that part of the study of legislative-bureaucratic interaction.

Delegation is often a concession to expertise; thus the cost of alternative forms of expertise is important in understanding this control problem. The extent of the bureaucracy's technical superiority does not arise exogenously. A legislature has a number of other institutional choices available to it, such as creating its own experts in the legislative branch, or acquiring expertise itself. The costs of other sources of expertise will vary with the technicalities

The financial support of a John Randolph Haynes and Dora Haynes Foundation and the Caltech Division of the Humanities and Social Sciences is gratefully acknowledged. Thanks to Mike Alvarez, Jeff Banks, Frank Baumgartner, David Epstein, Matt Jackson, Rod Kiewiet, Richard McKelvey, Tom Palfrey, Carl Rhodes, the editor, and two anonymous referees for valuable suggestions. I am also thankful to workshop participants at Caltech and panel participants at the 2000 Midwest Political Science Association annual meetings. I thank all these people without implicating them.

of a policy issue; when delegating, strategic legislators should account for other sources of expertise with more sympathetic policy preferences.

Another approach to this control problem is to restrict an agent's ability to choose unauthorized policies. However, legislative dictates are often inherently vague, even with substantial effort by Congress to spell out the bounds on the agency's authority (Mashaw, 1990; Schick, 1983).[1] Even carefully designed administrative procedures are not perfect instruments of control, and leave some residual discretion or room for "bureaucratic drift" (Bawn, 1995; Hill and Brazier, 1991; McCubbins, Noll, and Weingast 1987, 1989, 1999). For example, if agencies award grants using different factors or different weighting of factors than a legislature intended, this will be difficult to detect—even though it amounts to choosing a policy the legislature did not authorize. Thus a bureaucrat must retain some residual discretion to choose unauthorized policies, even if they subvert legislative wishes. The costs of this subversion will vary by policy area,[2] and strategic legislators should account for subversion in making delegation decisions.

In this article I model delegation from a legislature to an expert bureaucrat that is imperfectly controlled by legislative dictates, and how that delegation varies by policy area. The legislature decides whether to purchase a signal about a random shock affecting outcomes from a given policy choice. Then it decides on the discretionary bounds to place on a bureaucrat with a different ideal outcome, but perfect information about the random shock; the bureaucrat then chooses a policy.

Subversion is represented by allowing the agent to "buy" policies that are outside of its discretionary bounds. Agencies can choose policies legislatures did not authorize, but as they get further from the constraints, this is harder to hide ex ante, and subject to greater costs (loss of status or budgets [but see Ting, 2001], lawsuits, depleted "political capital") ex post.

One interpretation of the subversion cost is as a "reduced form" legal costs model. Lawsuits by interest groups are a common way to stop bureaucrats from subverting "legislative intent." Since that concept is itself vague, a court's perception of it can be malleable, and resources spent on legal action (or committed to legal action through human resource choices) can help a court to see things from an agency's point of view, or prevent a lawsuit entirely. However, the further agency policy is from its discretionary bounds, the more difficult and presumably costly it would be to connect that policy to a defensible standard of legislative intent. Alternatively, bureaucrats can influence the desire a legislature has to mete out punishments by rallying interest group or legislative support to get constraints overturned, or agency subversion ignored. This also comes at some opportunity cost to the agency.

1. Or more generally with some sort of "equilibrium" (from an unmodeled game) vagueness.

2. Subversion costs will be affected by tort liability of agency officials, grants of standing to challenge agency decisions, Freedom of Information Act requirements, ideologies and the level of activism of courts granted review powers, technical factors limiting specificity, committees with oversight jurisdiction, etc. While some of these factors are endogenous to the political process as a whole, they are not all practically endogenous to every instance of delegation.

The model shows that in addition to the direct effect of preference divergence on delegation (Epstein and O'Halloran, 1994, 1996, 1999), an indirect effect of this difference also exists: agencies with more extreme policy preferences lead the legislature to gather more costly information itself, which reduces the value added by delegation and causes less of it. Subversion introduces selection bias in the agencies that receive policy-making authority (c.f. Banks, 1989; Banks and Weingast, 1992): they are the ones for which subverting legislative dictates is not "too easy." In addition, subversion changes the equilibrium effect of preference divergence on discretionary grants. The model also suggests that legislatures may actually want to build some limited subversion ability into the administrative policy process. Agencies, by contrast, may want to prevent any subversion ability (and would, by implication, resist discretion if subversion were too easy), because legislatures will account for it when granting discretionary authority.

The general modeling apparatus is related to the work of Epstein and O'Halloran (1994, 1995, 1996, 1999). Indeed their delegation game (1999: chap. 4) is essentially a special case of this model, when investigations by the legislature are free and subversion is infinitely costly.[3] The legislative choice of discretion is also related to the work of a number of authors. In particular, Bawn (1995) models this with legislative choice of agency "independence" and the mean and variance of the agent's ideal point. McCubbins (1985) captures this with "effective discretion" afforded by varying regulatory forms. Ting (2001, 2002) analyzes budgetary slack as a way to enhance bureaucratic discretion ex ante.

Several authors note avenues open to bureaucrats attempting to circumvent specific legislative constraints (e.g., Brehm and Gates, 1997; Hill and Brazier, 1991; Kiewiet and McCubbins 1991; McCubbins, Noll, and Weingast, 1987, 1989, 1999; Wood and Waterman, 1994)—these ideas are related to the notion of subversion. Ting (2002) discusses ex post costs legislatures can mete out in response to bureaucratic noncompliance. Similar possibilities are captured here in the cost of subversion.

The rest of the article is organized as follows. In Section 2 I describe the formal model and notation. Section 3 contains results and discussion. Section 4 contains results on preferences over the possibility of subversion. Section 5 discusses some examples and illustrations of the model. Section 6 concludes.

2. A Model of Delegation Patterns

The game has two players: a legislature (L) and an agency (A). The players have single-peaked utility in outcomes and different ideal outcomes (see

3. The game below can just as easily be considered a different political perspective, in which the committee, not the floor of the legislature, is in charge of the delegation decision. The model in this article does not include the president. Strictly speaking, to make the models fully nested the president's choice of agency ideal could be included without changing any results.

below), where the set of outcomes is $X = \Re$. L and A denote both the players and their commonly known ideal points. I assume that $L = 0$ and $A \in (0, 1)$. Outcomes, over which preferences are defined, are represented as $x = p + \omega$. p is the enacted policy and ω is a random error that A knows with certainty ex ante, but L does not. For example, given an ideal outcome, the optimal reduction of polychlorinated biphenyls (PCBs) depends in part on their effects on human health, about which there is considerable uncertainty.

The game proceeds as follows:

1. Nature selects ω from $U[0, 1]$ and reveals it to the agency.[4]
2. L chooses $v \in \{0, 1\}$, where 0 means no investigation/signal and 1 means the legislature investigates (for which it pays a cost depending on an exogenous parameter) and updates beliefs as specified below.
3. L chooses a level of discretion $d \geqslant 0$ for the agent and a status quo policy $q \in \Re$.
4. If L delegates (i.e., $d > 0$), A names a policy $p \in \Re$ and the outcome is $x = p + \omega$. If L chooses no delegation ($d = 0$), the final outcome is $x = q + \omega$.[5] The game ends and payoffs are distributed.

The model yields equilibrium values of v, d, q, and p as functions of each other and exogenous parameters. The equilibrium concept is sequential equilibrium.

The sequence of moves in the model roughly follows the stages of policy making on some given issue (see Figure 1). In particular, it does not exogenously fix the extent of the agent's information advantage with respect to the legislature. At the same time, ω is not costlessly revealed to L after the delegation decision is made. Moreover, the broad outlines of Congress' institutional choice are present, if in a stylized form. The legislature can delegate extensively, a bit, or not at all. L faces a genuine trade-off among possible locations of policy expertise. Finally, statutory control over agencies is imperfect.

Denoting by x the outcome, utilities are represented as follows. For the legislature,[6]

$$U_L = \begin{cases} -x^2 & \text{if } v = 0 \\ -(x^2 + b) & \text{if } v = 1, \end{cases}$$

4. It might be objected that in fact A does not know the state variable with certainty. Surely this is often true, but the important point for this analysis is that A knows ω better than L knows it. Making A uncertain about ω—provided the uncertainty is less than that faced by L—would not change the intuition, but would complicate the exposition.

5. Because of subversion ability, in equilibrium this will cause a discontinuity in outcomes at $d = 0$.

6. Quadratic utilities are convenient for obtaining first-order conditions, but the intuition for results does not depend specifically on this.

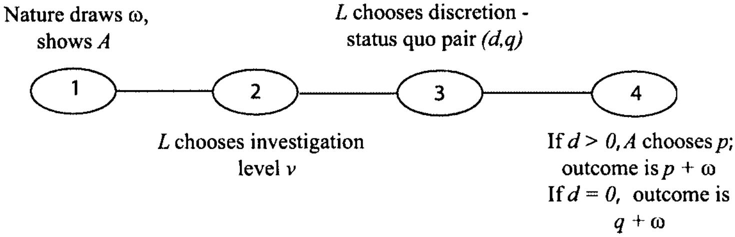

Figure 1. Timing of the game.

where b is an exogenous cost L must pay for investigation. L's prior on the state is $\omega \sim U[0, 1]$. L is endowed with an "investigation technology," by which it chooses whether to obtain a costly, noisy signal about ω. If it does not investigate ($v = 0$), L simply "learns" that $\omega \sim U[0, 1]$. If it investigates ($v = 1$), L pays a cost b and learns which half of $[0, 1]$ contains the true state, that is, whether $\omega \sim U[0, \frac{1}{2}]$ or $\omega \sim U[\frac{1}{2}, 1]$. It will be convenient to let z denote the posterior mean and let t denote half the posterior range.

For the agent,

$$U_A = -((x - A)^2 + s(p; q, d)),$$

where $s(p; q, d)$, the "subversion cost function" facing the agency, takes the form[7]

$$s(p; q, d) = \begin{cases} c(|p-q| - d)^2 & \text{if } |p-q| > d \\ 0 & \text{otherwise,} \end{cases}$$

where the parameter $c > 0$ varies by policy area. L chooses a discretionary window of size $2d$ centered at q, which is the set from which A may choose policy at no cost. However, A can subvert L's dictates by choosing $|p - q| > d$. A may step outside its discretionary bounds, but pays a higher cost the further it steps.[8]

7. The specific functional form is useful for explicit solutions but not necessary for comparative statics. A strictly increasing, continuous, strictly convex subversion cost function would have similar implications, as long as the agent's utility is strictly concave. Then the first-order condition in the agent's subversion problem (see Section 3.1) would guarantee an interior optimum unless the agent's ideal outcome could be obtained with a policy p in the discretionary window. This is the key feature of the agent's policy choice that L accounts for when investigating and granting discretion.

8. An important interpretive issue is why the legislature cannot observe that its dictates were subverted and infer information about ω from that fact. It is as if policy choices are made "today," but payoffs will not be distributed (and therefore the outcome known) until some point in the future—say an election—when it is too late for the legislature to do anything about what is discovered.

3. Results

3.1 Agency Policy Making with Subversion

For given values of subversion cost c, status quo q, and the discretionary window d, A's equilibrium policy with the possibility of subversion is[9]

$$p^* = \begin{cases} q+d+\left(\frac{A-q-d-\omega}{c+1}\right) & \text{if } \omega < A-q-d \\ A-\omega & \text{if } A-d-q < \omega < A-q+d \\ q-d+\left(\frac{A-q+d-\omega}{c+1}\right) & \text{if } A-q+d < \omega. \end{cases}$$

So in different regions of the state space, A chooses different policies. In the intermediate region in the above expression, A can secure its ideal point without using all of its discretion so clearly it will not subvert. In the other two regions, A would like to choose a more extreme policy and must subvert to do so. A's optimal policy choice given d, q, and c is depicted in Figure 2. Note that for $\omega > A-q+d$, A's policy choice cannot possibly make L better off.

Thus unless the agent achieves its ideal point with a policy inside the discretionary window $q \pm d$, it will subvert the legislature's dictates at least to some extent (and L is aware of this), but never enough to achieve its ideal outcome. This is because subversion cost is a continuous, convex function of the distance between the actual policy choice and the edge of the discretionary window.

In the limit as $c \longrightarrow \infty$ the results collapse to the Epstein–O'Halloran ones. A is constrained to choose $p \in [q-d, q+d]$. It is straightforward to show that in this case,

$$p^* = \begin{cases} q+d & \text{if } \omega < A-q-d \\ A-\omega & \text{if } A-q-d < \omega < A-q+d \\ q-d & \text{if } A-q+d < \omega. \end{cases}$$

When (for example) ω is relatively small, the agent would like to choose p relatively large. Now, however, it is not permitted to choose $p > q+d$, so it chooses the largest policy in its feasible set.

9. Suppose that ω is relatively small, so A wants to choose a policy larger than any in the discretionary bound set by L. Then A will choose a policy $p = q+d+s$, where d and q are taken as given and s is the amount of subversion. A solves

$$\max_s U_A(s) = -(q+d+s+\omega-A)^2 - cs^2,$$

which implies that $s^* = \frac{A-d-q-\omega}{c+1}$. The second-order condition is $c > -1$, true by assumption. The analysis is similar if ω is relatively large.

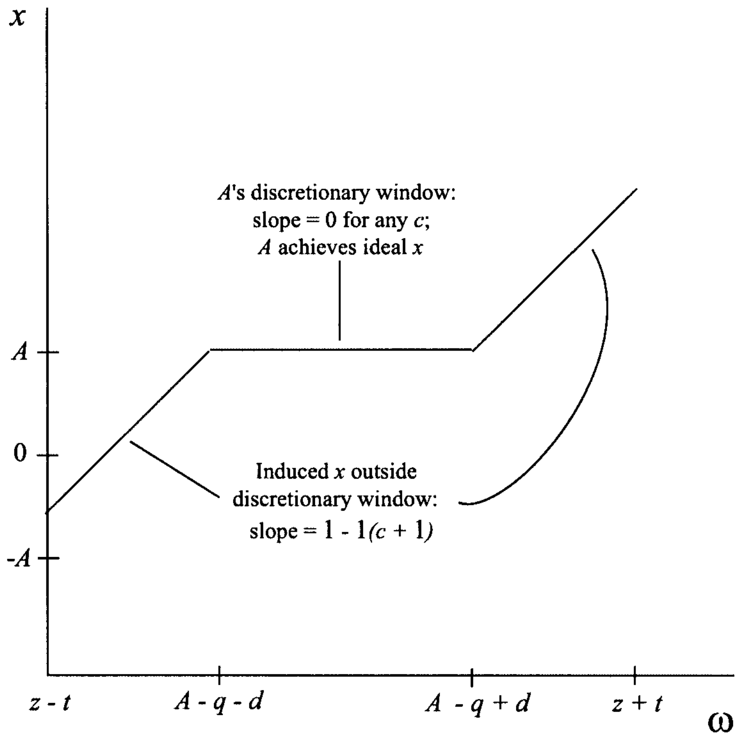

Figure 2. Agency policy choices and induced outcomes.

3.2 Legislative Choice of Status Quo and Discretion

Working backwards up the tree, L's first problem is to find a status quo choice and a level of discretion that maximize its expected utility, given how the agent will respond later in the policy process. Simultaneous solution of first-order conditions[10] yields

$$d^* = \max\left\{t - A - \frac{A}{c}, 0\right\}$$

$$q^* = \begin{cases} -z - \frac{A}{c} & \text{if } d > 0 \\ -z & \text{if } d = 0. \end{cases}$$

10. The first-order conditions are from

$$\max_{d,q} EU_L(d,q) = \int_{z-t}^{A-q-d} -\left(\omega + q + d + \left(\frac{A-q-d-\omega}{c+1}\right)\right)^2 dF(\omega)$$
$$+ \int_{A-q+d}^{z+t} -\left(\omega + q - d - \left(\frac{A-q+d-\omega}{c+1}\right)\right)^2 dF(\omega)$$
$$+ \int_{A-q-d}^{A-q+d} -A^2 dF(\omega),$$

which is L's problem with a given posterior $\omega \sim U[z-t, z+t]$ with agency subversion accounted for. The second-order conditions are also satisfied.

(Recall that z is the posterior mean and t is half the posterior range.) Notice that $\frac{\partial d^*}{\partial c} = \frac{A}{c^2}$, which is positive since $c > 0$. Thus a larger c implies more costly subversion which implies more discretion. Moreover, choosing $\hat{d} \pm \hat{q}$ such that $\{\omega \in [z-t, z+t] : \omega \in [A - \hat{q} + \hat{d}, z+t]\}$ has positive measure is dominated for L. Suppose $A - \hat{q} + \hat{d} \neq z + t$ and let L increase $\hat{d}$ by an appropriate $\Delta\hat{d}$ and lower $\hat{q}$ by the same amount, so that $\{\omega \in [A - \hat{q} + \hat{d}, z+t]\}$ has measure 0 and $A - \hat{q} - \hat{d}$ does not change. After this change, for $\omega > A - \hat{q} + \hat{d}$ the realized outcome x is constant at A, rather than variable in ω around points larger than A (see Figure 2); for $\omega \leq A - \hat{q} + \hat{d}$ the realized outcome is unaffected by the change.

Examining the limiting case of $c = \infty$ helps to reveal the effect of subversion at this stage. In this case the discretionary window has size $d^* = \max\{t - A, 0\}$ and is centered at $q^* = -z = -E\omega$. Thus the status quo choice is simply the one that in expectation leads to the legislature's ideal outcome (after the random shock). This is the case covered in Epstein and O'Halloran (1999), where $\frac{\partial d^*}{\partial A} = -1$ whenever $A \in (0, t)$. The more distant is A's ideal point from L's, the less authority L delegates.

The optimal choices of the legislature at this stage therefore contain an intuitive subversion correction, relative to the no subversion results. Again the status quo is based in part on the negative of the posterior mean, but now is even lower in inverse proportion to the subversion cost. As subversion cost falls, then provided some discretion is still granted, the status quo becomes more negative to account not only for L's information about ω, but also A's subversion ability.

Proposition 1. If $c < \infty$ and $d > 0$, $q^* = -z - \frac{A}{c}$: L's policy choice is biased relative to that leading to L in without the possibility of subversion by the agent.

That is, the legislature must bias *policy choices* away from those that lead to its ideal outcome without subversion, if it wants *outcomes* to be closer to its ideal. This is because the legislature must count on some possibility of subversion by the agent. Suppose in particular that the ideal outcome of the median member of the electorate is L. Then, in the presence of an agent who can subvert legislative dictates, policy bias (relative to the electorate) cannot be taken as evidence that the legislature is unrepresentative. Even if its ideal outcome was identical to the median voter's in the electorate, it would still need to bias its status quo policy choice to account for subversion.

Subversion not only causes bias in legislative policy choices, but in which agencies will exist as well.

Proposition 2. Provided $t > A$, $\frac{\partial d^*}{\partial c} > 0$: as c decreases, L will reduce discretion d when it does give A some control. If $c \leq \frac{A}{t-A}$, $d^* = 0$: when subversion is easy enough, L will grant A no policy-making authority.

In other words, the possibility of subversion means that $d^* = 0$ for more A's, and that this effect is stronger the smaller c is. Thus the model predicts a selection bias in the agencies that exist and/or receive any policy authority: those agencies in policy areas where subversion would be easy enough simply receive no delegated authority. This result may be considered a parallel to the one obtained in Banks (1989) and Banks and Weingast (1992), in a model of bureaucratic service production. Rather than taking policy out of its own hands and putting it in the hands of those who "know best," the legislature retains control over policy that it is not as well suited to make as some other actors. The reason is that in these cases, the control problem introduced by delegation is too costly relative to the expertise gains for the legislature to tolerate.

3.3 Legislative Investigations

Finally, L must decide whether to gather expertise of its own on the policy issue—that is, whether to purchase the signal $(v = 1)$ or not $(v = 0)$. L's optimal choice of investigation depends on whether any discretion is granted later on, because this influences decisions later in the game for which L must now account.

First consider the case where $A \in \left(0, \frac{1}{4}\left(\frac{c}{c+1}\right)\right)$. For these A values, nonzero discretionary authority is granted whether the legislature investigates or not, which happens if and only if b is small enough relative to A and c: $b \leq \frac{4}{3}A^3(1+\frac{1}{c}) = \underline{b}$.[11] There is enough commonality of interest between the parties here that L always wants A to have some authority. This can be seen from the earlier result that $d^* = \max\{t - A - \frac{A}{c}, 0\}$. Since $t = \frac{1}{4}$ is the lowest t can be, and in this case $A - \frac{A}{c}$ is even lower, some discretion is always granted.

In the second case, where $A \in \left[\frac{1}{4}\left(\frac{c}{c+1}\right), \frac{1}{2}\left(\frac{c}{c+1}\right)\right)$, nonzero discretion is granted only in case $v = 0$ and L is uncertain enough to tolerate A's preference difference and subversion capability. However, investigation can still be useful to L in setting policy itself when $d^* = 0$. The investigation is worth purchasing if and only if $b \leq A^2 - \frac{4}{3}A^3(1+\frac{1}{c}) - \frac{1}{48} = \bar{b}$.[12]

Finally, if $A \in \left[\frac{1}{2}\left(\frac{c}{c+1}\right), 1\right)$, no discretion is ever granted $(d = 0)$, regardless of the investigation decision. Policy is made outside the administrative realm.

11. In this case L's decision problem reduces to

$$\max_{v} EU_L = -\frac{1}{3}A^3\frac{(c+1)}{t(v)c} - A^2\frac{t(v)c - A - cA}{t(v)c} - b(v),$$

where $b(v) = b$ if $v = 1$ and 0 otherwise, and $t(v) = \frac{1}{4}$ if $v = 1$, and $\frac{1}{2}$ if $v = 0$. This utility is independent of z, the realized posterior mean. The reason is, whatever signal is observed, the status quo choice will adjust the location of A's discretionary window so that the actual posterior mean is not relevant. What matters for utility is the precision of the posterior belief. The optimal investigation decision results from comparing this utility when $v = 1$ and $v = 0$.

12. The expected utility with investigation and no discretion is

$$EU_L = \frac{1}{2}\int_0^{\frac{1}{2}} -\left(\omega - \frac{1}{4}\right)^2 dF(\omega) - \frac{1}{2}\int_{\frac{1}{2}}^{1} -\left(\omega - \frac{3}{4}\right)^2 dF(\omega) - b.$$

The optimal investigation decision results from comparing this with the expected utility in note 11 for $v = 0$.

The investigation can again be purchased, however, and will be useful to L, as it completely determines policy itself. L will investigate if and only if $b \leq \frac{1}{16}$.[13] The investigation decision here is unrelated to A's ideal point.

Consider what happens to these cutoff b values as subversion cost decreases. In the second case, as subversion becomes more costly, L is actually willing to investigate for *more* possible b values—and by implication delegate less.

This seems like an unintuitive result—why investigate more and delegate less if subversion is more costly for the agent?—until one accounts for the fact that the set of A's for which each of these cases holds is itself influenced by c. Since $d^* = t - A - \frac{A}{c}$, as c decreases and subversion becomes easier, the relevant range of A values shrinks and moves closer to 0. So in order for any delegation to occur, the agent must be closer to L as c decreases. What is actually being picked up in the second case is that the legislature knows it might investigate into oblivion an agent whose ideal point is very close to its own, not the backward result that the legislature feels it must put tighter constraints on the agent as subversion becomes more difficult. As subversion becomes very easy, L knows that it will delegate only to agents who are so close to L that investigation—which will cause discretion to fall to 0 by construction in that case—becomes less useful. Thus, as c decreases, investigation has to actually become cheaper for the legislature to do it in this case.

In the first case, on the other hand, by construction L will delegate whether or not it investigates. Therefore, unlike the second case, it must focus on conflict of interest with A and possible agency losses. Thus as c decreases, the range of allowable values of investigation cost b that lead L to investigate is larger.

In spite of the complications in the above cases, the comparative static is that, for each given A value in this game, higher values of b make the conditions leading to investigation harder to satisfy. The legislature will be less informed about the policy area, and will delegate more often to bureaucratic agents who are informed, the higher the investigation cost b (for this last statement, of course, A must be sufficiently small, given c, for L to grant some discretion). This implies that tolerance of agency losses (the concession to A implied by grants of wide latitude) from delegation will be higher the more costly it is to obtain information through other avenues.

Proposition 3. For a given subversion cost c, a sufficiently large increase in investigation cost b results in (a) more delegation (change in $d^* = 0$

13. The expected utility with no investigation and no discretion is

$$EU_L = \int_0^1 -\left(\omega - \frac{1}{2}\right)^2 dF(\omega).$$

Comparing this with the investigation-no discretion utility in note 12 yields the optimal investigation decision.

to $d^* > 0$) if $A \in \left[\frac{1}{4}\left(\frac{c}{c+1}\right), \frac{1}{2}\left(\frac{c}{c+1}\right)\right)$; and (b) more discretionary authority (increase in d^*) if $A \leq \frac{1}{4}\left(\frac{c}{c+1}\right)$.[14]

Thus, in policy areas with a high cost of creating expertise in the legislature, the legislature will rely more on delegation and discretion to make policy. In other words, when studying variation in delegation patterns by policy area, the cost of information acquisition in a policy area matters as well as divergence in ideal points.

Moreover, expertise of the agent is a substitute for expertise of the legislature: investigation both limits the set of A ideal points that will receive any discretion at all, and lessens the discretion granted in those cases where at least some is given. Thus, all else constant, the presence of an expert agency causes the legislature to investigate less, and to be less informed about policy, than it would without the expert. In case $A \in \left[\frac{1}{4}\left(\frac{c}{c+1}\right), \frac{1}{2}\left(\frac{c}{c+1}\right)\right)$, this "substitution effect" is especially clear: the legislature *either* investigates *or* it delegates.[15]

A robust result in the legislative-bureaucratic interaction literature is that as preferences of the legislature and the agency diverge, the legislature will delegate less (at least weakly) (c.f. Bendor, Glazer, and Hammond, 2001). When the extent of the agent's expertise is endogenous, there is another effect of preference divergence as well, based on the interaction of preference divergence, investigation, and discretion.

Proposition 4. $\frac{\partial \underline{b}}{\partial A} > 0$ for all A and $\frac{\partial \bar{b}}{\partial A} > 0$ for $A \in \left[\frac{1}{4}\left(\frac{c}{c+1}\right), \frac{1}{2}\left(\frac{c}{c+1}\right)\right)$: as the agent's ideal outcome diverges from the legislature's, the legislature will investigate for (weakly) more possible b's.[16]

Considering Propositions 3 and 4, then, an increase in A therefore has two effects on discretion. The first is the one well known in the literature: as the bureaucrat gets more extreme relative to the legislature, it receives less policy-making authority. The second, indirect effect is that more extreme agents induce the legislature to investigate for more possible b values, which leads it to delegate less.

Figure 3 depicts the regions in b, c space where a general A receives nonzero discretionary authority. Since investigation and delegation are substitutes for each other, for any value of c, the area of the shaded region grows as b grows. Furthermore, there are b values such that as c increases, and subversion is more costly, L is actually less likely to delegate any authority.[17]

---

14. The result is immediate from a combination of the facts that $A \in (\frac{1}{4}(\frac{c}{c+1}), \frac{1}{2}(\frac{c}{c+1}))$ receive nonzero discretion if and only if $v = 0$, $A \in (0, \frac{1}{4}(\frac{c}{c+1}))$ receives more discretion when $v = 0$, and the comparative static that higher values of b result in less investigation.

15. Again the special case of $c = \infty$ is instructive. If $A \in (0, \frac{1}{4})$, discretion is always granted, and the legislature will investigate if and only if the signal cost $b \leq \frac{4}{3}A^3$. If $A \in [\frac{1}{4}, \frac{1}{2})$, nonzero discretion occurs only in case the signal is not purchased. The signal is worth purchasing if and only if $b \leq A^2 - \frac{4}{3}A^3 - \frac{1}{48}$. If $A \in [\frac{1}{2}, 1)$, no discretion is ever granted. L investigates if and only if $b \leq \frac{1}{16}$.

16. This follows from $\frac{\partial \underline{b}}{dA} = 4A^2(1 + \frac{1}{c}) > 0$ and $\frac{\partial \bar{b}}{dA} = 2A - 4A^2(1 + \frac{1}{c}) > 0$ for $A \in (\frac{1}{4}(\frac{c}{c+1}), \frac{1}{2}(\frac{c}{c+1}))$.

17. The results for $c = \infty$ follow from $\lim_{c \to \infty} \frac{c}{c+1} = 1$.

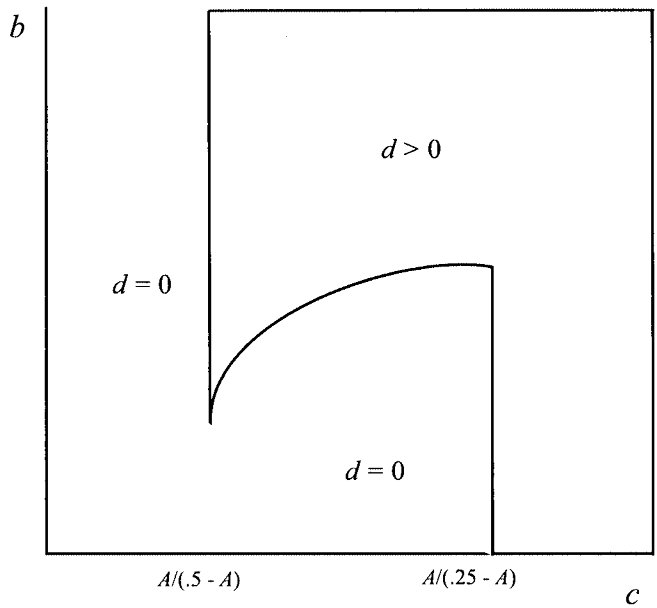

Figure 3. Legislative delegation as a function of agent preferences, investigation and subversion costs.

4. Preferences Over Subversion Cost

Subversion cost c is exogenous in the previous sections because the institutional backdrop against which delegation decisions are made, which will affect the subversion cost, is in some sense more enduring than those decisions themselves. It is nevertheless interesting to examine the preferences the players have over c, a question that sheds some light on the prior issue of institutional design. For simplicity and to focus attention on subversion, in this section it is useful to examine the special case of $b = \infty$,[18] so $v = 0$ and investigation is not a concern.

Fixing some $A \in (0, 1)$, one might expect that the legislature prefers subversion to be very costly, and the agency prefers it to be very cheap (at least conditional on it being expensive enough to induce $d^* > 0$). Ceteris paribus this is true, but in equilibrium it is not—because of the equilibrium response of q^* and d^* to changes in c.

Proposition 5. If $c > \frac{A}{.5-A}$ so that $d^* > 0$, L's equilibrium utility is decreasing in c. If $c \leq \frac{A}{.5-A}$ so that $d^* = 0$, L's equilibrium utility is constant

18. $b = \infty$ is actually stronger than necessary. For any A and any strictly positive c, there will exist a finite b above which the legislature will not investigate, so that investigation can be ignored.

in c.[19] Further, L's equilibrium utility for any $c > \frac{A}{.5-A}$ is higher than for any $c \leq \frac{A}{.5-A}$.[20]

Moreover, as the agent becomes more extreme, L suffers greater utility loss from a given increase in c. As c declines, L responds by granting a smaller discretionary window and strategically adjusting its location. Given A's best response, the outcome x is closer to 0 in expectation as c declines. It is also more variable, but this second-order cost to L is outweighed by the first-order benefit of a better expected outcome.

Thus not only does the legislature lack complete control over the agent in this model, it does not want complete control. When subversion is relatively cheap, the legislature knows that the bureaucrat is unable to attain its own ideal point as often as when subversion is costly (because discretion is smaller the smaller c is), but the bureaucrat will still put its superior information to use in deciding to subvert. On the other hand, L does not want subversion to be too easy, because then L best responds by bypassing the agency. This is L's best response when c is "too low," but L is better off when c is high enough to warrant some delegation.

Administrative scholars have long noted that political control of bureaucracy is imperfect (e.g., Goodnow, 1900; Schick 1983; McCubbins, Noll, and Weingast, 1987, 1989, 1999; Mashaw 1990; Hill and Brazier 1991)—even with conscious effort, American institutions allow some agency "slippage" or "wiggle room." Proposition 5 is suggestive in light of these observations. While legislatures obviously do not prefer all subversive decisions, in this model they are better off if subversion is relatively cheap. It would then be less surprising to see imperfect control as a necessary by-product of administrative procedures designed by legislatures.

As for the agent's preferences, it is fairly intuitive that A does not want c to be too low. Low values of c may cause the legislature to bypass agency policy making altogether, and its perfect knowledge about the random shock may then never be used in policy making. If A could credibly commit to use its superior knowledge in certain ways beneficial to both parties, this problem would not arise. However, the possibility of subversion combined with the fact that A moves last in the game means that such commitment is not possible—by sequential rationality A will use any subversion ability

19. Thus L's ideal c is not well defined: L wants it as low as possible, as long as $c > \frac{A}{.5-A}$. This defines an open set, on which a monotonic function (which equilibrium utility is on $c \in (\frac{A}{.5-A}, \infty)$) cannot attain a maximum. Since c is not a choice variable in this model, and the purpose here is simply to examine the institutional pressures this model reveals, this is not a problem.

20. If $c > \frac{A}{.5-A}$, L's equilibrium expected utility is

$$EU_L = -\frac{2}{3}A^3\frac{(c+1)}{c} - 2A^2\frac{.5c - A - cA}{c}.$$

Then $\frac{\partial EU_L}{\partial c} = -\frac{4A^3}{3c^2} < 0$, and $\frac{\partial^2 EU_L}{\partial c \partial A} < 0$. That L prefers $c > \frac{A}{.5-A}$ to $c \leq \frac{A}{.5-A}$ follows from revealed preference: if the utility from not delegating $(-\frac{1}{12})$ were better for L, it would have taken it.

to its own advantage (which will be to L's advantage too only for certain values of ω)—and Pareto inferior outcomes may result. Higher values of c mean that the agent is bypassed less often in policy making, and this Pareto inefficiency arises less often. In short, if c is such that $d^* = 0$, then A would prefer that its subversion ability be constrained.

Moreover, even conditional on $c > \frac{A}{.5-A}$, A is always better off if subversion is more costly. For a given d and q, A is obviously better off when subversion is cheaper. But this reasoning does not take into account the equilibrium effect of a lower c on d^* and q^*.

Proposition 6. A's equilibrium utility is increasing in c.[21]

Again, given A's best response, higher c's move x closer to 0 on average and increases its variance. Both of these effects make the agent worse off. The legislature makes up for more costly subversion by granting more discretion in equilibrium: the agent then gets wider latitude "for free," rather than having to "pay" for it. Nevertheless, faced with the possibility of subversion, A does best by engaging in it when its ideal outcome is not attained given d^* and q^*. The legislature, in turn, does best by so adjusting these variables for subversion, because the agent cannot commit to forego subversion if such adjustments are not made.

Proposition 6 implies there may be cases when agents resist expansion of their discretion. If subversion is easy enough, discretion will be so tightly constrained that the agent would be better off with no discretion at all. This is in contrast to the implication where subversion is infinitely costly—then agents are always better off when their discretion is expanded (c.f. Epstein and O'Halloran 1999).

Figures 4 and 5 illustrate these propositions. In Figure 4, a nonequilibrium figure, q and d are held constant and c declines. This clearly benefits A, as the expected outcome is closer to its ideal and the variance in outcomes decreases. While the lower variance in outcome benefits L, it is of second order, and is swamped by the first-order effect of a less attractive expected

21. When $c > \frac{A}{.5-A}$, A's equilibrium expected utility is

$$EU_A = \int_0^{2A+\frac{2A}{c}} \left\{ -\left(\omega + \left(-\frac{1}{2} - \frac{A}{c}\right) + \left(\frac{1}{2} - A - \frac{A}{c}\right) + \left(\frac{A + \frac{A}{c} + A + \frac{A}{c} - \omega}{c+1}\right) - A\right)^2 - c\left(\frac{A + \frac{A}{c} + A + \frac{A}{c} - \omega}{c+1}\right)^2 \right\} d\omega.$$

Conditional on $d > 0$, $\frac{\partial EU_A}{\partial c} = \frac{16}{3} A^3 \frac{c+1}{c^3} > 0$, and $\frac{\partial^2 EU_A}{\partial c \partial A} > 0$. Moreover, A prefers c sufficiently large to induce discretion; focusing on $c \to \infty$ is sufficient to show this. When $c \leq \frac{A}{.5-A}$, A's expected utility is

$$EU_A = \int_0^1 -\left(\omega - \frac{1}{2} - A\right)^2 d\omega = -\frac{1}{12} - A^2.$$

But $\lim_{c\to\infty} EU_A = -\frac{8}{3}A^3$, and $-\frac{8}{3}A^3 > -\frac{1}{12} - A^2$ for any relevant A (i.e., $A \in (0, \frac{1}{2})$).

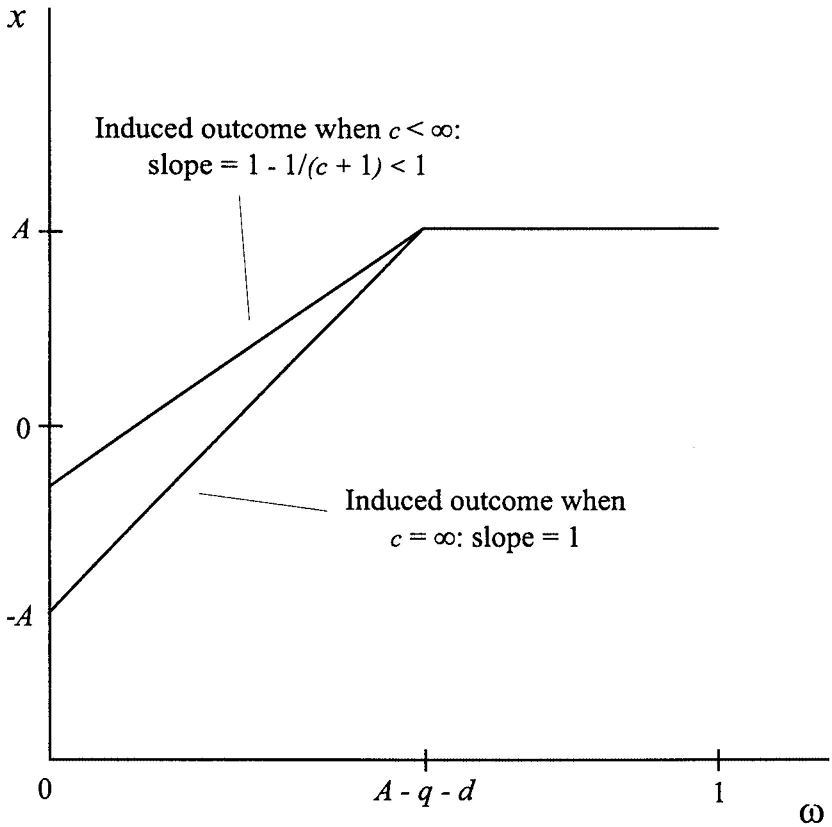

Figure 4. Nonequilibrium effect of change in subversion cost.

outcome. In Figure 5, on the other hand, the equilibrium effect of lowering c is represented. Now A faces both higher variance and a less attractive expectation as c falls. L is worse off in the second order because of the higher variance, but is better off in the first order because of the more attractive mean.

Figure 5 shows that when subversion is possible, $q \pm d$ does double duty for L. For any c, it serves to rule out policy choices that could never benefit L in any state of the world; for finite c, it allows L to force A to "buy" what it used to get for free. This ensures that A's policy choices are more in line with L's interests.

5. Empirical Implications

Proposition 1, on the bias in legislative policy under subversion, and the assumption that $c > 0$ imply that ceteris paribus, as a legislature grants less discretionary authority, the enacted policy is closer to the median ideal point in the legislature. Of importance is that the converse is not true. When enacted policy is closer to the median of the legislature, it may be because for a

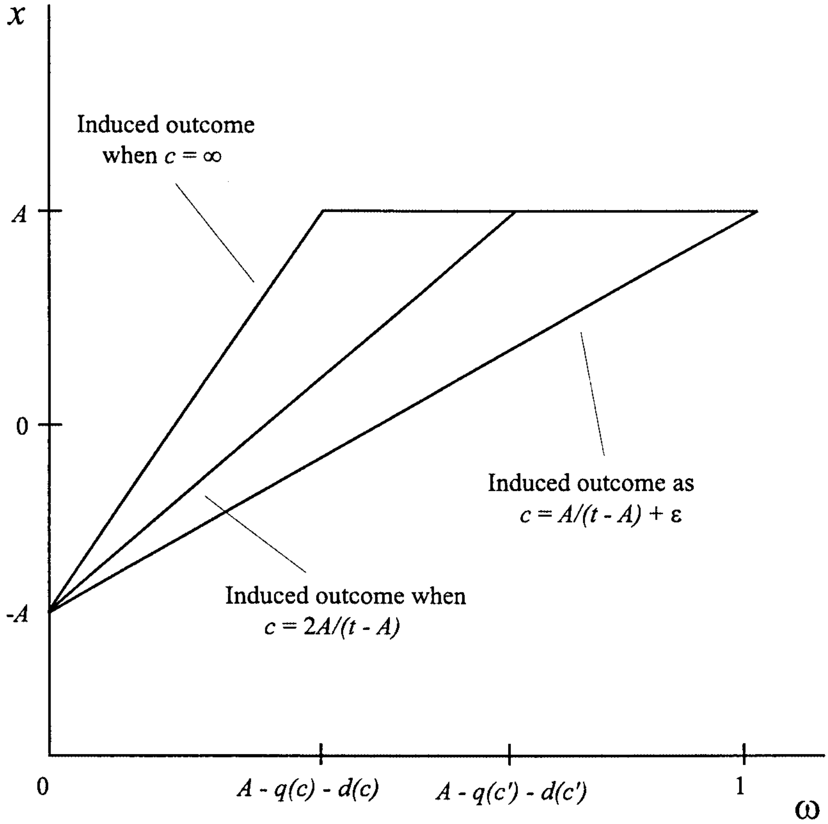

Figure 5. Equilibrium effect of change in subversion cost, $c > c'$.

given subversion cost less discretion has been granted, but it may also be that subversion cost is higher. The latter implies both more discretion for agents and enacted policy closer to the legislature's median.

Proposition 2 on selection bias in extant agencies may help illuminate phenomena such as the direction of environmental policy in the early 1970s. Before the EPA came into its own, there was some concern that delegating authority to agencies heavily influenced by antienvironmental constituencies would cause them to steer policy outcomes in their own favor, despite congressional directives not to. A solution was to use citizen suits to enforce pollution standards rather than use traditional bureaucratic channels. Judge Skelly Wright, involved in one such 1971 suit, said that the goal of the new pollution suits was to ensure that important congressional intentions to reduce pollution not be "lost or misdirected in the vast hallways of the federal bureaucracy" (Glaberson 1999). From the perspective of this model, in other words, subversion would have been too easy for existing agencies, so Congress opted not to entrust policy to them.

Subversion cost was motivated in part by the possibility of legal challenges to agency policy choices. If courts with jurisdiction over agency policy are closely aligned with them ideologically, it will be easier for agencies to legitimize their preferred policy choices. One direct implication of Proposition 2, then, is that as preferences of an agency and judges with jurisdiction over that agency diverge, discretion should increase. This is reminiscent of the McCubbins and Schwartz (1984) fire alarm oversight logic: legislatures economize on oversight by "farming it out" to third parties. Proposition 2 takes this logic to the issue of when delegation will occur.

Court cases on administrative law can change legislative grants of discretion in ways that are difficult to understand without some notion of subversion. Some decisions affect the ability of a legislature to rely on third-party control of bureaucrats. *Chevron v. Natural Resource Defense Council* (1984), for example, established the "two part test" of judicial review of agency decisions, ostensibly making it easier for agencies to adopt policies closer to their own ideals. Other decisions, such as *Immigration and Naturalization Service v. Chadha* (1984), affect the legislature's own ability to restrain subversion. Understanding these cases as reducing subversion costs, Proposition 2 provides a straightforward implication for their effect on discretion.

Throughout careers on certain committees and work on certain issues, legislators themselves and their staffs, while they may not necessarily match executive branch experts, can acquire a considerable body of policy expertise. Therefore, under the ancillary hypothesis that this expertise tends to increase with a legislator's tenure on a given committee, one can operationalize the cost of expertise as the average number of years committee members have spent on the committee.[22] An implication of Proposition 3 on the relationship between b and d^* therefore is that as committee tenure increases, less discretion is granted to agencies.[23]

Another implication of Proposition 3 comes from a different way of viewing the legislature's costs of expertise. Ceteris paribus, an increase in the technical education required in a field increases the amount of discretion to bureaucratic policy makers in that field. However, this must be separated from the hypothesis that Congress is fully in control of the bureaucracy, and thus gets more utility from delegating to these experts without any loss. A finer prediction that discriminates between these two hypotheses is that in areas where the education level of bureaucratic policy makers is very high, discretion is greater when the field of education is very different from the fields of most legislators. Thus scientists, engineers, and possibly statisticians and economists should get more discretionary authority than lawyers and liberally educated policy makers, all else being constant.

22. An alternative measure would be the number of years the chair or longest serving member has spent on the committee.

23. It is important to control for selection bias here, so as not to pick up variation across policy areas in the ability of committee chairs and members to maintain their status. Controlling for committee type, or examining time series for a given committee, would help here.

Propositions 3 and 4 (on the relationship between v and A) suggest that agency policy output should be less responsive to changes in congressional preferences the greater is the cost of expertise. This is an operationalization of the argument that greater agency losses are tolerated when expertise is more expensive. Thus as the tenure of a committee chair or the average committee member increases, agency policy should be more responsive to changes in committee preferences.

6. Conclusion

The product of this model is a simple theory of delegation, and why it varies by policy area. The theory points to three important parameters: the distance in ideal points between the agency and the legislature; the cost to the legislature of acquiring expertise through other means; and the cost to the agency of subverting the legislature's dictates.

The model highlights a new, indirect effect of a change in the agent's preferences on discretionary authority: its effect on the desire to investigate. It also implies that expertise in the bureaucracy is a substitute for expertise elsewhere, not a complement. Subversion introduces the intuition that there is selection bias in the agencies that receive policy-making authority: they are the ones for which subverting legislative dictates is not "too easy." Subversion also implies that even a perfectly representative legislature will bias policy choices away from the median member of the electorate. The equilibrium effect on discretionary grants of lowering subversion cost implies that legislatures are actually better off when subversion is relatively (but not extremely) cheap. Subversion of a legislature's policy dictates is not the same as subversion of a legislature's interests, because even though those dictates are ex ante optimal, ex post they may be wrong (from the legislature's point of view), and the expert bureaucrat knows when they are. Agents, by contrast, are better off when subversion is more expensive, because the legislature accounts for easy subversion by tightly constraining discretion or not delegating at all.

There are several possible directions for future research. One direction to investigate is corruption. Delegation of decision making or administrative authority carries the danger that different decisions will be made, or will be made on different bases, than those desired by the delegator. The representation of subversion in this article is one way of capturing that.

Such a direction requires reckoning with other actors besides the legislature and the agent, which raises another point about this model. Other actors can at best be interpreted as represented through the preferences of L and A, or the parameters b and c. It would be interesting to include some of these other actors, like the president or courts, in a nontrivial way.

Since legislatures can take an active role in designing institutions, the problem is really one of mechanism design, and this may be a fruitful direction to take this research. deFigueiredo, Spiller, and Urbiztondo (1999) and Gailmard (2001) apply this approach in a model of bureaucratic service production. In informational environments like this one, identifying the agent's private knowledge of ω as the type would allow for analysis of optimal incentive schemes to extract that information, and how these schemes change with investigation and with the incentive instruments (like limited side payments) available to the principal.

References

Banks, Jeffrey. 1989. "Agency Budgets, Cost Information, and Auditing," 33 *American Journal of Political Science* 670–99.

Banks, Jeffrey, and Barry Weingast. 1992. "The Political Control of Bureaucracies under Asymmetric Information," 36 *American Journal of Political Science* 509–24.

Bawn, Kathleen. 1995. "Political Control versus Expertise: Congressional Choices About Administrative Procedures," 89 *American Political Science Review* 62–73.

Bendor, Jonathan, Amihai Glazer, and Thomas Hammond. 2001. "Theories of Delegation," 4 *Annual Reviews of Political Science* 235–69.

Brehm, John, and Scott Gates. 1997. *Working, Shirking, and Sabotage: Bureaucratic Response to a Democratic Public.* Ann Arbor: University of Michigan Press.

deFigueiredo, Rui P., Pablo T. Spiller, and Santiago Urbiztondo. 1999. "An Informational Perspective on Administrative Procedures," 15 *Journal of Law, Economics, & Organization* 283–305.

Epstein, David, and Sharyn O'Halloran. 1994. "Administrative Procedures, Information, and Agency Discretion," 38 *American Journal of Political Science* 697–722.

———. 1995. "A Theory of Strategic Oversight: Congress, Lobbyists, and the Bureaucracy," 11 *Journal of Law, Economics, & Organization* 227–55.

———. 1996. "Divided Government and the Design of Administrative Procedures: A Formal Model and Empirical Test," 58 *Journal of Politics* 373–97.

———. 1999. *Delegating Powers: A Transaction Cost Politics Approach to Policy Making Under Separate Powers.* Cambridge: Cambridge University Press.

Gailmard, Sean. 2001. "Multiple Principals, Outside Information, and Bureaucratic Policy Making," working paper, University of Chicago.

Glaberson, William. 1999. "Novel Antipollution Tool is Being Upset by Courts," *New York Times,* June 5, Al.

Goodnow, Frank J. 1900. *Politics and Administration: A Study in Government.* New York: Russell and Russell.

Hill, Jeffrey, and James Brazier. 1991. "Constraining Administrative Decisions: A Critical Examination of the Structure and Process Hypothesis," 7 *Journal of Law, Economics, & Organization* 373–400.

Kiewiet, D. Roderick, and Mathew D. McCubbins. 1991. *The Logic of Delegation: Congressional Parties and the Appropriations Process.* Chicago: University of Chicago Press.

Mashaw, Jerry L. 1990. "Explaining Administrative Process: Normative, Positive, and Critical Stories of Legal Development," 6 *Journal of Law, Economics, & Organization* 267–98.

McCubbins, Mathew D. 1985. "The Legislative Design of Regulatory Procedure," 29 *American Journal of Political Science* 721–48.

McCubbins, Mathew D., Roger G. Noll, and Barry R. Weingast. 1987. "Administrative Procedures as Instruments of Political Control," 3 *Journal of Law, Economics, & Organization* 243–77.

———. 1989. "Structure and Process, Politics and Policy," 75 *Virginia Law Review* 431–82.

———. 1999. "The Political Origins of the Administrative Procedure Act," 15 *Journal of Law, Economics, & Organization* 180–217.

McCubbins, Mathew D., and Thomas Schwartz. 1984. "Congressional Oversight Overlooked: Police Patrols and Fire Alarms," 28 *American Journal of Political Science* 165–79.

Schick, Allen. 1983. "Politics Through Law: Congressional Limitations on Executive Discretion," in Anthony King, ed., *Both Ends of the Avenue: The Presidency, the Executive Branch, and Congress in the 1980s*. Washington, D.C.: American Enterprise Institute for Public Policy Research; 154–84.

Ting, Michael M. 2001. "The 'Power of the Purse' and its Implications for Bureaucratic Policy-Making," 106 *Public Choice* 243–74.

———. 2002. "A Theory of Jurisdictional Assignments in Bureaucracies," 46 *American Journal of Political Science* 364–78.

Wood, B. Dan, and Richard Waterman. 1994. *Bureaucratic Dynamics: The Role of Bureaucracy in a Democracy.* Boulder, CO: Westview Press.