Slackers and Zealots: Civil Service, Policy Discretion, and Bureaucratic Expertise*

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Abstract

In this paper we investigate how “civil service” systems of public personnel management interact with bureaucratic discretion to create expert bureaucracies populated by policy-motivated agents. We build a model in which bureaucrats may invest in (relationship specific) policy expertise, and may be either policy-motivated or policy-indifferent. We argue that under specific conditions on the nature of expertise and bureaucratic discretion over policy choices, merit system protections for job tenure encourage the development of expertise and problem solving capacity in the bureaucracy. In addition, we identify conditions under which civil service rules encourage policy-motivated bureaucrats to enter and remain in public service, and policy-indifferent bureaucrats to leave it.

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1 Introduction

Civil service restrictions on public personnel management – on selection of employees, job assignment and reassignment, pay equality within job grades, and especially near guarantees of lifetime job tenure – are commonly lamented as a major source of public sector inefficiency, an outdated system created in response (or even overreaction) to a problem that no longer exists. Indeed, major provisions of the merit system in place in the U.S. and many industrialized nations, as well as states and municipal governments in the U.S., do seem to weaken public sector employees’ extrinsic incentives to be responsive and energetic in pursuing their duties. But many civil service provisions now have a sizable supporting constituency with a major, concentrated interest in their maintenance (Johnson and Libecap [1994]). Even major reform efforts, such as the federal Civil Service Reform Act of 1978, are variations around the theme, and in some ways add yet more restrictions on public personnel management. The debate over whether 170,000 (by White House estimates) federal employees moved into the Department of Homeland Security in 2002 would be subject to civil service protection only underscores that the coverage of a much larger portion of the federal workforce is beyond debate. Despite regular calls for change and reform, civil service seems to be here to stay in some form.

In this paper we analyze how civil service personnel management affects endogenous effort for development of expertise and skill, by altering incentives employees face for exerting it. Since employees evidently do not start out with all the skills they need to expand bureaucratic capacity and expertise, this is an essential, but previously missing, piece of the puzzle over the incentive effects of civil service.\footnote{Our results apply to any trait that is costly for bureaucrats to develop and useful for obtaining specific policy outcomes. Insofar as this describes aspects of both bureaucratic “capacity” and “expertise,” we are somewhat loose about the distinction because it is not crucial for our argument. However, for precision in the model, we deal with what has in previous work been referred to as expertise and not capacity.} Even granting the widely claimed in-
centive problems of a civil service system with job tenure for careerists, we argue that, in the right political context, it has notable upsides in terms of motivation and selection of bureaucratic agents.

We develop a formal model to explore these issues. Policy expertise in our model is costly for bureaucrats to develop, and is a relationship specific investment, in that it is most valuable to the bureaucrat provided her employment in public service persists. For example, mastery of the fine points of the policy process, an agency’s accounting and records system, and substantive policy details is much less valuable in alternative employment than it is in public service. Because expertise is both costly and relationship specific, early investments in it create a possible “hold up” problem for the bureaucrat: if the investment is made, but the relationship does not continue, the bureaucrat may not reap gains exceeding the cost of investment. Therefore, uncertainty about future job tenure (say because of spoils system practices) implies uncertainty about a future stream of benefits flowing from this investment, and bureaucrats may avoid investing in expertise as a result. Of course, it is possible to ensure that with very high probability the agent will be around to reap benefits (whatever they might be) as they trickle in, by making it very difficult to remove employees.\textsuperscript{2} Merit system protection of job tenure, then, removes some of the downside risk that bureaucrats face when developing their expertise.

However, this alone is not enough to induce bureaucracies to develop policy expertise. Potential bureaucrats in our model can be one of two types: policy-motivated (“zealots”) or policy-indifferent (“slackers”). Some people in the population care about public policy \emph{per se}, while others do not. Bureaucrats who do not care about policy are mercenaries; they can only be motivated to develop expertise by material rewards.\textsuperscript{3} While policy-motivated

\textsuperscript{2}It goes without saying (this footnote notwithstanding) that “standard” ownership solutions allowing the investing agent somehow to appropriate the value of the stream of benefits at the time of investment are not generally available in public bureaucracy.

\textsuperscript{3}This is useful, if they can be motivated, in that they never substitute their own
bureaucrats do care about policy, this does not automatically translate into incentives to develop policy expertise. In order for these bureaucrats to benefit directly from developing expertise, they must be able to earn some policy rent from it in equilibrium. If, on the contrary, policy-motivated bureaucrats are not able to capture enough rent from bending policy to their liking, investing in expertise will not be worthwhile.

The grant of policy discretion from the legislature, in response to expertise investment, offers these rents — but only zealots find them valuable. While expert slackers would be preferable for the legislature to expert zealots, because their lack of policy preferences implies they would happily implement the legislature’s most preferred policy with no risk of agency losses, a system with secure tenure and expertise-contingent discretion (with its resulting self-selection of policy motivated agents and agency losses) is preferable in our model. Zealots at least can be induced to acquire expertise. If the government tried to solve the hold up problem by granting job tenure and attractive working conditions to bureaucrats, it would find a bureaucracy full of slackers. If it tried to condition material incentives on the development of expertise it would find gaps in the system because of its inability to monitor or reward all expertise development it cares about. By offering secure job tenure, discretion as a “payment” for expertise, and modest wages compared to the private sector, the government can induce only policy motivated agents to select into public service, and to develop policy expertise as well. Civil service like that developed in the United States is, in a sense, a “third best” optimal solution to the problem of not only asymmetric information but “contractual” incompleteness.\footnote{We mean “contractual” only in the sense of a system of incentives created by a principal for an agent, not an explicit binding agreement between two parties in any legal sense. Thus we will occasionally dispense with the scare quotes on “contract.”}

The rest of the paper is organized as follows. In section 2 we discuss related research. We lay out the model in section 3 and the analysis in
section 4. In section 5 we discuss our results in terms of civil service reform in developed countries, and the development of state capacity in developing ones, and we conclude in section 6.

2 Theoretical Background and Related Literature

We build on much previous work exploring why civil service reform happened when and how it did in the United States. Some of the major conclusions offered in the literature are that the inadequacies of the “state of courts and parties” (Skowronek [1982]) for the policy challenges facing the changing nation, and the political costs of monitoring the spoilsmen (Johnson and Libecap [1994]),\textsuperscript{5} conspired to cause a tectonic shift in the Jacksonian system of democratic bureaucracy. In addition, Horn [1995] treats merit system protections as a way for governments to solve commitment problems with respect to future governments. In essence, civil service is a form of policy insulation (cf. Moe [1987]), because bureaucrats with relatively fixed tastes influence policy long after their appointing politicians leave office.

We explore a different question: how did the personnel system changes instituted by Congress and the President cause the development of the expert bureaucracy upon which the capacity and expansion of government are based? Like Carpenter [2001], our focus is on incentives for the endogenous development of expertise and capacity. To our knowledge, this is the first paper to explore the mechanisms of this change formally. Clearly, developing organizational expertise is more subtle than simply making an announcement or passing an edict that such expertise shall exist. Selection of people with

\textsuperscript{5}Johnson and Libecap [1994] argue that merit protection relieved politicians of the problem of monitoring the political behavior of patronage appointees, which became acute as the bureaucracy grew. Their model includes an exogenous efficiency gain of merit over patronage bureaucrats, though this is not central in the sense that their main conclusions would hold without this component.
high intrinsic ability, whatever that might mean, is only part of the story. New hires, even meritorious ones, do not immediately step into high level analysis or management positions. They must take time to learn the job and to learn the policy area and to learn the complex of government responses to it. They must, in short, develop their skill. High merit employees may have an easier time doing that, or may get more out of any given time spent in skill development, but the point is that these skills must be acquired: they are not simply imparted by osmosis to whatever employees happen to be hanging around. And to acquire them implies active effort on the part of the employee. Potential employees may start out with different talents, and merit selection may help select better ones, but that is the start and not the end of the personnel problem. Expert bureaucrats are made, through their own endogenous effort, not born. Exploring how the incentives for bureaucrats to induce that effort are tied to civil service leads to our focus in this paper.

This paper also contributes to the formal literature on bureaucratic expertise and capacity (e.g., Epstein and O’Halloran [1994, 1999]; Huber and Shipan [2002]; Huber and McCarty [2004]; Ting [2005]); we explore the underpinnings of the expertise assumed in these models. Therefore the paper is related to Carpenter [2001], who argues that the (endogenous) cultivation of high capacity is one way in which a bureaucracy can achieve autonomy from its titular principals, beyond a mere grant of discretion from principals that retain ultimate control. The large political economy literature on how political authorities can shape the policy choices of bureaucratic agencies (e.g. McCubbins et al. [1987, 1989]; Calvert et al. [1989]) has produced outstanding insights, but paid much less attention to the selection of personnel for public service, or their incentives to develop expertise. But understanding the role of the bureaucracy in policy making requires understanding, at some point, the source of the expertise and policy conflict that drives delegation and constraints on agency action. If the potential for agency losses without
clever “remote controls” in administrative law is so great, why do we retain institutions that create that potential? In this paper we explore why a political principal would create a system leading to self-selection of specific types of policy motivated bureaucrats, essentially creating its own agency problem. It creates agency losses but also the potential for expert policy making and implementation.

We also address an analytical literature on bureaucratic structure and reform with a more contemporary orientation (e.g., Bendor [1985], Knott and Miller [1988], Miller [1993], Brehm and Gates [1997]). By exploring the contractual problems addressed by civil service and the incentive effects it creates, we offer some insights on the possibility and the value of reforming these institutions.

3 A Model of Civil Service Contracts and Delegation

We model the delegation of authority, hiring of bureaucrats, acquisition of expertise, and implementation of policy as a non-cooperative game between two players: the legislature and the bureaucrat. We assume that the game lasts for two periods.\(^6\) In each period, the legislature sets the discretion offered to the bureaucrat with regard to the setting of policy. We denote the convex policy space by \(X \subseteq \mathbb{R}\) and the discretion given by the legislature to the bureaucrat in time period \(t\) by \(D_t \in \mathbb{R}_+\). We assume that higher values of \(D_t\) indicate higher levels of bureaucratic discretion in the sense that the bureaucrat can choose from a strictly large set of policies to implement. (One can think of \(D_t\) as representing the width of an interval of policies centered

\(^6\)While we consider only the 2-period case in this paper, extending the game to more than two periods is straightforward and, without additional assumptions, offers no additional intuition.
at zero\(^7\) that the bureaucrat can choose from.) The policy outcome in time \(t\) is a function of the implemented policy, \(x^t\), and the state of nature in period \(t\), denoted by \(\omega^t\). Specifically, the policy outcome in time \(t\) is \(y^t = x^t + \omega^t\). The set of all states of nature is denoted by \(\Omega\). We assume that in both time periods, \(\omega^t\) is independently drawn from \(\Omega\) according to a cumulative distribution function on \(\mathbb{R}\), denoted by \(G\), with zero mean and finite variance.

The bureaucrat is of type \(\theta \in \{0, 1\}\), with \(\theta = 1\) denoting that the bureaucrat cares about the policy outcome per se. The probability that a bureaucrat is of type \(\theta = 1\) is denoted by \(f \in [0, 1]\).

For the remainder of the analysis, we assume that the policy space and space of states of nature are each convex subsets of the real numbers including zero and that the legislature’s most preferred policy outcome is zero. The payoffs for the legislature are given by

\[
u_{L} = -|y^1| - \delta_L|y^2|,
\]

where \(\delta_L \in [0, 1]\) is a discount factor. Denoting the bureaucrat’s most preferred policy outcome by \(p_b > 0\), the bureaucrat’s period 1 payoffs are given by

\[
u_{1b} = r - \theta|p_b - y^1| - cs,
\]

where \(r\) is the remuneration for government employment (treated as an exogenous parameter of the model), \(\theta \in \{0, 1\}\) denotes the type of bureaucrat, \(p_b > 0\) reflects ideological conflict with the legislature, \(c\) is the cost of obtaining expertise (also a parameter), and \(s \in \{0, 1\}\) denotes whether expertise was obtained (a choice variable for the bureaucrat). For simplicity, let \(\pi(y^1) = |p_b - y^1|\) denote the bureaucrat’s policy utility (thus, we leave the bureaucrat’s ideal point implicit). Then, given a choice of policy equal to \(y^2\)

\(^7\)It is straightforward to show that centering the discretionary window at \(E(\omega)\) is without loss of generality as long as \(B\) must choose policy within the window. See Epstein and O’Halloran [1999] and Gailmard [2002].
in the second period, the bureaucrat’s period 2 payoffs are given by

\[ u^2_B = r - \theta |p_b - y^2| = r - \theta \pi(y^2) \]

if the bureaucrat remains in office and

\[ u^2_B = w - \theta |p_b - y^2| = w - \theta \pi(y^2) \]

if he or she decides to seek outside employment.\(^8\)

We focus on the following sequence of moves:

1. L chooses first period discretion \( D_1 \)
2. Nature chooses \( B \)’s type \( \theta \) and reveals it to \( B \).
3. \( B \) chooses to invest in expertise \( (s = 1) \) or not invest \( (s = 0) \).
4. Nature chooses \( \omega \).
5. If \( s = 1 \), \( B \) learns \( \omega \); otherwise \( B \) retains its prior beliefs about \( \omega \).
6. \( B \) chooses a policy \( x \in [-D_1/2, D_1/2] \).
7. \( B \) chooses whether to stay in government in period 2. If so, \( L \) chooses second period discretion as a function of \( s \) \( (D_2(s)) \) and play continues with step 4 ( nature chooses a new value of \( \omega \); if not, then a new bureaucrat takes the job and all steps repeat.

The game form is designed so that the legislature can offer any level of discretion it wants to a new agent, but can condition this discretion on the bureaucrat’s expertise only after the first period. This assumption is motivated by our desire to examine endogenous expertise development. Furthermore, if

\(^8\)That the bureaucrat’s utility depends on policy whether she remains in public service or not distinguishes this model from most instances of purely private employment, where the organization’s decisions are not intrinsically important to the agent. This assumption also plays a crucial role in the incentive effects of civil service that we identify.
the legislature could observe the relevant expertise prior to the first period of the game, then one might expect that no non-expert bureaucrats would be hired by the legislature in the first place. Our model allows us to understand the dynamics of individuals taking civil service employment and then sorting themselves with regard to their desire to affect policy and bearing the burden of developing job-specific human capital within the bureaucracy.

Utility in the game is simply the sum of utilities from each period, with period 2 utilities discounted by $\delta$. Sequential equilibrium is the appropriate concept to use since $L$ must choose $D$ without knowing the prior choices of Nature, but we leave off-path beliefs unspecified because they are irrelevant. The expected period $t$ policy payoff for the bureaucrat, given discretion $D$ and expertise decision $s$, is denoted by $\phi^s(D)$. Specifically, given expertise acquisition $s$, discretion set by the legislature given $s$, and policy choice by the bureaucrat following the provision of discretion $D$, this expected payoff is equal to

$$\phi^s = \begin{cases} 
\max_{x \in D} \int_\Omega \pi(x + \omega)G(d\omega) & \text{if } s = 0 \\
\max_{z \in D} \int_\Omega \pi(z(\omega) + \omega)G(d\omega) & \text{if } s = 1
\end{cases}.$$ 

Clearly, for any discretion $D$, $\phi^1(D) \geq \phi^0(D)$. For the remainder of the paper, we will assume that $\phi^1(0) = \phi^0(0)$ and that this inequality is strict for all $D > 0$.

We will denote the optimal expertise acquisition decision for a bureaucrat of type $\theta$ by $s^*_\theta$. The decision of the legislature regarding discretion in period 1 is denoted by $D_1$ and the discretion offered by the legislature in period 2, following observation of expertise acquisition $s$, is denoted by $D_2(s)$. In order to make the analysis interesting and tractable, we make the following assumptions.

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9This assumption rules out uninteresting pathological. A sufficient condition for this assumption to be satisfied is to assume that, for all $D > 0$, there exist two subsets of $\Omega$, $q,r$, each with positive $G$-measure, such that there exists $x_r \in D$ and $y_r \in D$, $x_r \neq y_r$, satisfying the following: $\omega \in q \Rightarrow \pi(x_q + \omega) > \pi(x_r + \omega)$ and $\omega \in r \Rightarrow \pi(x_r + \omega) > \pi(x_q + \omega)$.
Assumption 1 (Private compensation) $w \geq r$. To assume otherwise results in a model that is uninteresting: every bureaucrat will remain in office, regardless of his or her type or the amount of discretion offered by the legislature.

Assumption 2 (Uninformed bureaucrats) In order to assure that the model’s predictions are not driven by the behavior of otherwise indifferent actors, we assume that uninformed type-0 bureaucrats choose the same policy as that which would be chosen by an uninformed type-1 bureaucrat.\footnote{One might think of this as an assumption of benevolence or altruism. If we altered this assumption, type-1 bureaucrats would have an increased incentive to remain in office in the second period.}

Assumption 3 (Overlapping generations) A newly-hired type-1 bureaucrat will acquire information in the second period if it is in the interests of type-1 bureaucrats to acquire information in the first period. This is equivalent to an “overlapping generations” assumption.

Assumption 4 (Policy sensitivity) The type-1 bureaucrat cares about policy, but not enough in any single period to acquire expertise for that purpose alone, i.e. (taking as given that $D(1) > D(0)$, as will be shown below),

\begin{equation}
0 < \phi^1(D(1)) - \phi^0(D(0)) < c.
\end{equation}

4 Analysis

In this section we analyze the model presented above. We focus on the incentives and optimal behavior of potential agents, and the legislature’s “contractual” best response. First, we need to represent the legislature’s contract as a strategy. Given that the bureaucrat’s choice of expertise $s$ is observed once and is binary, the legislature’s strategy is denoted by a triple, $(D_1, D_2(0), D_2(1))$. The first component of the strategy is the discretionary
authority offered to a new bureaucrat. The second component is the discretionary authority given to a bureaucrat who chooses to stay in the civil service after choosing not to acquire expertise \((s = 0)\). The final component of the legislature’s strategy is the discretion given to a bureaucrat who acquired expertise in the previous period \((s = 1)\). We also assume that \(D_1 = D_2(0) \leq D_2(1)\) (i.e., the legislature offers the same discretion to all non-expert bureaucrats, regardless of how long they have been employed in the civil service)\(^{11}\) and, for simplicity, denote \(D_2(1)\) simply by \(D_2\).

### 4.1 Optimal Policy Choice and Discretion

Some initial results are straightforward and well known from previous work (especially Epstein and O’Halloran [1994, 1999]). \(B\) chooses policy \(x_t\) to solve \(
\max_{x \in D_t} -\theta E(|p_b - y'|)\). For \(\theta = 1\) and \(D_t > 0\) this results in equilibrium policy \(x^*\) in the interior of the discretionary region if the latter contains \(B\)’s expected ideal policy, and at the boundary of the region otherwise. Note that an informed \(\theta = 0\) type is happy to pursue \(L\)’s interests and achieves the progressive-era ideal of “neutral competence,” but as we will see the inducements available cannot cause such a type to invest in expertise.

The legislature chooses \(D_2\) to maximize its expected period 2 utility (with respect to \(G(\omega)\)) given \(B\)’s best response \(x^*\). Familiar results imply that \(D_2(s) = 0\) if \(s = 0\) and the bureaucrat has remained in office,\(^{12}\) since uninformed bureaucrats are no better at setting \(x = -E_G(\omega)\) than \(L\) is, and that \(D_t\) is strictly decreasing (over the relevant range) in \(p_b\). None of these results

\(^{11}\)In addition to empirical realism, this restriction turns out to be justified on “equilibrium behavior” grounds as well, as we discuss below.

\(^{12}\)I.e., this result applies to the path of play – off the equilibrium path as we emphasize below – where the bureaucrat chooses \(s = 0\) and remains in public service in period 2, so \(L\) is certain that the sitting bureaucrat does not have expertise. On the equilibrium path, assumption 3 implies that \(L\) may not be certain that \(s = 0\) since a new bureaucrat will be in office in period 2. To make a long story short, the fact that \(D_2(0) = 0\) off the equilibrium path and our earlier assumption that \(D_1 = D_2(0)\) on the path do not imply that \(D_1 = 0\) on the path.
depend on the two period structure; they are repetitions of results from one period models.

4.2 Self-Selection of Bureaucrats

For a bureaucrat of type $\theta = 0$, the payoff of remaining in office in the second period is simply $r$. The payoff from taking private employment is $w$. The assumption that $w > r$ (assumption 1) implies that type-0 bureaucrats will leave in the second period. Such bureaucrats will obviously not acquire expertise in the first period. Using assumptions 2 and 3 (the uninformed bureaucrats and overlapping generations assumptions), the expected payoff for a type-1 bureaucrat who decides to leave office in the second period is equal to

$$w + f\phi^1(D_1) + (1 - f)\phi^0(D_1)$$

if the optimal expertise acquisition decision for type 1 bureaucrats in the first period is 1 (i.e. $s^*_1 = 1$) and

$$w + \phi^0(D_1)$$

otherwise. Given our assumption that $w > r$ and since $D_1 = D_2(0)$, it follows immediately that no bureaucrats of either type will remain in office in the second period if $s^*_1 = 0$.

We also want to examine cases in which the type-1 bureaucrat remains in office after acquiring expertise. This is the case if

$$r + \phi^1(D_2(1)) \geq w + f\phi^1(D_1) + (1 - f)\phi^0(D_1).$$

(We assume throughout that a bureaucrat who is indifferent between taking outside employment and remaining in office chooses to remain in office.) Using assumption 4 (policy sensitivity), equation 2 can be reexpressed as
\[ \phi^1(D_2(1)) - \phi^0(D_1) \geq w - r - f(\phi^0(D_1) - \phi^1(D_1)) \]  
(3)
\[ > w - r + fc. \]  
(4)

**Proposition 1** Type-1 bureaucrats (zealots) who acquired expertise \((s = 1)\) will choose to remain in office if

\[ \phi^1(D_2(1)) - \phi^0(D_1) \geq w - r + fc. \]  
(5)

Proposition 1 allows us to deduce some interesting implications. To do so, suppose for simplicity (and for the moment) that at the beginning of period 2 the bureaucrat (denoted by \(i\)) observes a private sector wage, \(\tilde{w}_i\), drawn from a distribution with strictly increasing CDF and mean \(w\). Then Equation 5 becomes

\[ \phi^1(D_2(1)) - \phi^0(D_1) \geq \tilde{w}_i - r + fc. \]

This temporary statistical addendum to the model makes the statement of comparative statics in the next proposition less awkward, as it allows us to talk about the probability of retaining an expert bureaucrat in the civil service as a function of four of the parameters of the model \((w, r, f, \text{ and } c)\).

**Proposition 2** Suppose that the discretion profile \(D = (D_1, D_2(0), D_2(1))\) is fixed, with \(D_1 < D_2(1)\) and \(D_2(0) < D_2(1)\) (i.e., expert bureaucrats receive the most discretion under \(D)\), and the bureaucrat observes a private sector wage \(\tilde{w}_i\) at the beginning of the second period, as described above. Then, the probability that a bureaucrat who acquired expertise will remain in the civil service is decreasing in each of the following:

1. the probability of type-1 bureaucrats (i.e., zealots), \(f\),

\[\text{We show below that this condition is not vacuous in equilibrium.}\]
2. the difference in discretion for a retained expert bureaucrat and a new bureaucrat, $D_2(1) - D_1$,

3. the cost of acquiring expertise, $c$, and

4. the difference between the private sector and government wages, $w - r$.

Consider the first conclusion of Proposition 2. Bureaucrats with expertise have less of an incentive to stay in the civil service when future bureaucrats are more likely to care about policy, because today’s bureaucrat realizes that he or she can choose not to stay in the civil service and still obtain the policy benefits of an expert bureaucrat in the future. As we show below, this also means sitting type-1 bureaucrats have less incentive to acquire expertise in the first place as $f$ grows. When the policy motivated types are very common, a sitting zealot can essentially free ride on future zealots, who will also want expert administration. When slackers are very common, the policy-motivated type knows that s/he cannot leave the fine points of policy making to someone else. Expert administration is a sort of public good among zealots, and when there are fewer of them each is more likely to be pivotal for its provision.

The second conclusion highlights the importance of giving (policy motivated) expert bureaucrats increased control over the issue they care about. It asserts that expert bureaucrats are more likely to remain in civil service as their discretion increases beyond that available to their replacement. As this difference grows the bureaucrat finds itself better placed to implement its preferred policy than others that might take its place, so is more likely to stay in public service.

The third and fourth conclusions of Proposition 2 are no less important empirically, but the intuition behind both is obvious. If the cost of acquiring expertise increases, then the incentive for a bureaucrat to do so is directly reduced, ceteris paribus. Similarly, if the opportunity cost of staying in the civil service increases, then the incentive to do so is reduced as well.
In addition to the comparative statics of job retention, the sufficient condition stated in Proposition 1 is of interest because the policy-motivated bureaucrat must take into account his or her future employment decision (i.e., whether to remain in the civil service or leave for the private sector) when making a decision in the present about whether to acquire job-specific expertise. This decision is the focus of the next section.

4.3 Expertise Acquisition

Bureaucrats will acquire expertise if they expect to garner net benefits from this acquisition. Our model highlights the policy benefits that might be offered by the legislature as a result of becoming an expert bureaucrat. This induces the legislature to offer more discretion in equilibrium, which is valuable but only to type-1 agents.\(^{14}\)

Considering a legislative strategy \((D_1, D_2(0), D_2(1))\), the incentive for a type-1 bureaucrat to acquire expertise is based on the following comparison: he or she should acquire expertise only if

\[
\phi^1(D_1) - c + \delta [r + \phi^1(D_2(1))] \geq \phi^0(D_1) + \delta \left[ \max \left[ r + \phi^0(D_2(0)), w + f \phi^1(D_1) + (1 - f) \phi^0(D_1) \right] \right],
\]

It follows from \(\phi^0(D) \leq \phi^1(D)\) for all \(D\) and \(D_2(0) = D_1\) that this reduces

\(^{14}\)We explicitly rule out the possibility of monetary rewards as an incentive device for expertise acquisition. First, this provides a more faithful representation of the incentives at work in actual U.S. civil service, where explicit pecuniary incentives have been only recently introduced and somewhat limited in scope. Second, our key results from this and other subsections — about the incentive effect of discretion, self selection of zealots, and the value of secure tenure — apply as well to a case in which the agent’s expertise investment is actually unobservable by the legislature, so that monetary incentives for expertise are not practicable. It is straightforward to show that under these informational conditions, the only bureaucrats that actually stay in office are expert zealots. The legislature is happy to cede discretion to agents in office in period 2, and given \(w \geq r\), only zealots would find it worthwhile to remain in public service. At the time of the expertise investment decision they can forecast these conditions, and know that their investment will pay off because of the sensitivity of their preferences to the state and policy choice.
to

$$\phi^1(D_1) - c + \delta[r + \phi^1(D_2(1))] \geq \phi^0(D_1) + \delta[w + f \phi^1(D_1) + (1 - f)\phi^0(D_1)]$$

In other words, since we have assumed that $r < w$, given that all other newly-hired type-1 bureaucrats acquire expertise, a type-1 bureaucrat who did not acquire expertise in the first period will seek outside employment. Continuing, Equation 6 holds if

$$\phi^1(D_1) - \phi^0(D_1) + \delta[r - w + \phi^1(D_2(1)) - f\phi^1(D_1) - (1 - f)\phi^0(D_1)] \geq c.$$  (7)

Equation 7 reveals the effect of job tenure protections (captured in $\delta$) on the maximum cost that a type-1 bureaucrat is willing to incur to acquire expertise. Denoting by $\bar{c}(\delta)$ the “cutoff cost” of expertise acquisition, below which type-1 bureaucrats invests and above which they do not, the following claim is immediate and set off for emphasis.

**Proposition 3** Holding the contract offered by the legislature constant, the maximum cost that a zealot bureaucrat is willing to incur to acquire expertise, $\bar{c}(\delta)$, is

1. increasing in his or her valuation of future payoffs: $\frac{\partial \bar{c}(\delta)}{\partial \delta} > 0$, and
2. nonnegative: $\bar{c}(\delta) \geq 0$ for all $\delta$.

Proposition 3 implies that *ex ante*, the policy-oriented legislature wants the horizon of the relationship (as captured by the bureaucrat’s discount factor, $\delta$) to be as long as possible. This is because the relative appeal of increased discretionary authority in the future is directly proportional to the likelihood that the agent will continue to be employed in the civil service. Furthermore, while (from an *ex post* perspective) the legislature only wants to retain expert bureaucrats, the equilibrium behavior of the bureaucrats is such that only bureaucrats who have acquired expertise will choose to remain on the job. It
follows that with regard to the legislature’s induced preferences over \( \delta \), the legislature can treat every new bureaucrat as if they will acquire expertise.

Analogously, in terms of inducing expertise acquisition, the legislature is also better off with agents who are more sensitive to the final policy outcome—even though they create ideological conflict by assumption—because it is easier to induce them to invest. Viewed another way, increasing the bureaucrat’s sensitivity to policy outcomes has the same effect on expertise acquisition as decreasing its cost, \( c \). This is one way of seeing the rationality for the legislature of creating an administrative system with the agency losses we think of it as dealing with. The agency losses are the price of an expert bureaucracy, in that the bureaucrats who will develop expertise are more sensitive than the population average to getting policy “right” from their own point of view.

### 4.4 The Legislature’s Choice of Discretion Profile

For any discretion level \( D \), let

\[
\hat{z}_D = \arg \max_{x \in D} \int_\Omega \pi(x + \omega)G(d\omega)
\]

\[
z_D(\cdot) = \arg \max_{z \in D_0} \int_\Omega \pi(z(\omega) + \omega)G(d\omega)
\]

These variables are the bureaucrat’s optimal policy choices, conditional on the degree of discretion \( D \) and depending on whether expertise is acquired or not. We assume for simplicity that, for each level of discretion \( D \), both \( \hat{z}_D \) and \( z_D(\cdot) \) are uniquely defined.\(^{15}\) Using these, define the following function:

\[
\gamma^s(D) = \begin{cases} 
- \int_\Omega |\hat{z}_D + \omega|G(d\omega) & \text{if } s = 0 \\
- \int_\Omega |z_D(\omega) + \omega|G(d\omega) & \text{if } s = 1
\end{cases}
\]

\(^{15}\)We could alternatively allow for a multiplicity of optimal policies for the bureaucrat and then simply choose from that set.
This is the legislature’s policy utility as a function of discretion, given the agent’s optimal future policy selection and depending on the agent’s expertise acquisition decision. The legislature’s payoff function can now be written as a function of $D_1$ and $D_2$. Presuming that type-1 bureaucrats acquire expertise (i.e., $s_1^* = 1$) and remain in office in the second period, the legislature’s expected payoff is

$$u_L(D_1, D_2) = (1 + \delta(1 - f))[f\gamma^1(D_1) + (1 - f)\gamma^0(D_1)] + \delta f[\gamma^1(D_2)].$$

On the other hand, if type-1 bureaucrats choose not to acquire expertise (i.e., $s_1^* = 0$) and then take a job in the private sector in the second period, the legislature’s expected payoff is

$$u_L(D_1, D_2) = (1 + \delta)\gamma^0(D_1).$$

Define the following values:

$$\hat{D}_1 \equiv \arg\max_{d \in \mathbb{R}^+} \gamma^0(d) \quad (8)$$

$$\hat{D}_1^2 \equiv \arg\max_{d \in \mathbb{R}^+} f\gamma^1(d) + (1 - f)\gamma^0(d). \quad (9)$$

$$\hat{D}_2 \equiv \arg\max_{d \in \mathbb{R}^+} \gamma^1(d) \quad (10)$$

That is, $\hat{D}_1$ in (8) is the optimal level of discretion conditional on no bureaucrats acquiring expertise. The value of $\hat{D}_1^2$, as defined in (9), is the optimal level of first period discretion conditional on type-1 bureaucrats (and only type-1 bureaucrats) acquiring expertise. Finally, $\hat{D}_2^2$ is the optimal level of discretion conditional on all bureaucrats acquiring expertise. (This is the optimal level of discretion in the second period for bureaucrats who acquired expertise in the first period.) The next proposition characterizes the equilibrium discretion profile, i.e., the contract that maximizes the legislature’s payoff, conditional on sequential rationality by the bureaucrat and legisla-
Proposition 4  Given \( \lambda = (w, r, f, c, \delta) \), the legislature’s optimal discretion profile, denoted by \( D^*(\lambda) = (D^*_1(\lambda), D^*_2(0|\lambda), D^*_2(1|\lambda)) \), is given by:

1. \((\hat{D}^1, \hat{D}^1, \hat{D}^1)\) if

\[
(1 + \delta)\gamma^0(\hat{D}^1) > (1 + \delta(1 - f))[f\gamma^1(\hat{D}^2_1) + (1 - f)\gamma^0(\hat{D}^2_1)] + \delta f\gamma^1(\hat{D}^2_2),
\]

2. \((\hat{D}^2_1, \hat{D}^2_1, \hat{D}^2_1)\) if

(a) \[
(1 + \delta)\gamma^0(\hat{D}^1) \leq (1 + \delta(1 - f))[f\gamma^1(\hat{D}^2_1) + (1 - f)\gamma^0(\hat{D}^2_1)] + \delta f\gamma^1(\hat{D}^2_2).
\]

and

(b) \[
\phi^1(\hat{D}^2_1) - \phi^0(\hat{D}^2_1) + \delta[r - w + \phi^1(\hat{D}^2_2) - f\phi^1(\hat{D}^2_1) - (1 - f)\phi^0(\hat{D}^2_1)] \geq c
\]

simultaneously hold, and

3. \((\tilde{D}^1, \tilde{D}^1, \tilde{D}^2)\) (as defined in the appendix) otherwise.

Given a presumption that the legislature moves first, it sets a discretion profile and then civil servants respond to/operate within it. Proposition 4 leads to a natural definition of the equilibrium discretion profile: it is simply any optimal contract from the legislature’s point of view.

Definition 1  Given \( \lambda \in \Lambda \), the equilibrium discretion profile is \( D^*(\lambda) \).

In words, there are three broad classes of equilibria. The first type of equilibrium, \((\hat{D}^1, \hat{D}^1, \hat{D}^1)\), involves the legislature offering the bureaucrat no
incentive (at least in terms of discretion) to acquire expertise. This equilib-
rium may occur for a variety of reasons, but the basic intuition is that the
legislature does not gain enough from an expert bureaucrat to justify the cost
of making the acquisition of expertise incentive-compatible. Broadly, there
are two potential sources of these costs: (1) policy drift associated with the
informed implementation of policy by an agent with preferences that differ
from the legislature’s and (2) the direct cost of developing specific, discretion-
limiting legislation to provide the incentive for type-1 bureaucrats to acquire
expertise in the first period.

The second class of equilibrium is the most interesting. In this type
of equilibrium, the legislature offers a contract in which all (and only) the
policy-motivated bureaucrats develop expertise in the first period and volun-
tarily remain in office in the second period. The choice by the legislature to
offer discretionary authority to expert bureaucrats provides the incentive for
the type-1 bureaucrats to acquire expertise in the first period. In addition,
the use of increased discretionary authority as the “carrot” leads to only the
policy-motivated (i.e., type-1) bureaucrats acquiring the expertise. Notice
that this would not be the case if the carrot were universally appealing (e.g.,
if bureaucrat’s job security or wage level depended upon the acquisition of
expertise). The legislature offers the same contract in the second period
following no expertise acquisition as it did in the first period because, in
equilibrium, the bureaucrat employed in the second period will be a new em-
ployee – the conditions for this type of equilibrium imply that all employees
who remain in the civil service into the second period acquired expertise in
the first period.\footnote{Thus, as mentioned in footnote 12, our restriction on the type of contracts that the
legislature may offer (in particular, that $D_2(0) = D_1$) is not binding.}

The third type of equilibrium is slightly complicated – put succinctly, the
legislature may not be able to implement its ideal contract and still provide an
incentive for the type-1 bureaucrats to acquire expertise. Thus, as outlined
in the appendix, the legislature may have to choose its “constrained ideal” contract from the set of all expertise-discretion contracts under which expertise acquisition by the type-1 bureaucrats is incentive compatible. These contracts are difficult to characterize without a more fully specified model. Nevertheless, they will be similar in nature to the two types of equilibria described above.

5 Discussion: Civil Service, Job Tenure, and the Development of Expertise

In this section we discuss some implications of our model for the design of bureaucratic institutions and the development of bureaucratic expertise. Our model offers several insights into the design of civil service systems that are embedded in political systems.

First, a bureaucrat’s incentive to acquire job-specific expertise is directly related to his or her discount factor, δ. This discount factor can be thought of as the probability of not being fired randomly (or, in other words, for reasons independent of whether the bureaucrat acquires expertise), for example because of a change in the political party in power. Eliminating (or at least reducing) the role of patronage in the distribution of bureaucratic appointments therefore increases δ and, hence, the bureaucrat’s incentive to acquire job-specific expertise. This also captures an important reason for providing stable mechanisms for advancement and retention within the bureaucracy. Political upheaval (as in periodic purges of the bureaucracy) reduces δ and accordingly inhibits the development of bureaucratic expertise. Furthermore, this inhibition is not simply a result of bureaucrats being removed from power prior to acquiring expertise – expertise may not be developed even during relatively long periods of stability within the bureaucracy. The relevant variables are the beliefs of the bureaucrats themselves. If government employees do not believe that they will be employed in their jobs for an extended pe-
period of time, they will have little reason to acquire job-specific expertise. The shadow of future bureaucratic instability leads to less bureaucratic expertise.

At first glance, the role of $\delta$ in the acquisition of bureaucratic expertise is straightforward: why invest in being good at a job that you are likely to lose tomorrow? But the relationship goes beyond this first order logic. In equilibrium, the degree to which bureaucrats become experts depends on the legislature’s response to the acquisition of expertise. Expertise is more likely to be acquired if becoming an expert leads to more discretionary authority and the bureaucrat in question cares about policy. In other words, the discount factor $\delta$ determines incentives only to the extent that the future holds something of value to the bureaucrat. Our model shows that the provision of increased discretionary authority plays this role in policymaking bureaucracies with civil service job protections. The effect of tying expertise acquisition and discretionary authority to each other in a well-designed way is only so large as civil servants expect not to lose to their positions for other, non-expertise-related, reasons. In this way, the elimination of patronage, or spoils, systems for the retention of civil servants is the first order of business facing a social planner or legislature interested in developing expertise within the public sector.

Moreover, our results emphasize the retention aspects of job tenure, on top of the selection aspects of merit systems. Even if a patronage system were (somehow) to select exactly the same employees chosen under a merit selection system, the short horizon of the system inhibits the development of expertise, which lowers bureaucratic discretion, which inhibits the development of expertise still further. According to our model, even abstracting from the selection of “competent” employees, the stable, continuing employment of ones whose utility is especially sensitive to policy outcomes spurs the development of bureaucratic expertise. This implies that job tenure and “back door” restrictions on removal power – sometimes relegated to the status of mere power grabs in previous literature (e.g., Van Riper [1958], 40).
are actually crucial components of the incentive system that created the expert bureaucracy characteristic of the 20th century.

The model also offers some implications about potential bureaucratic or civil service reform in systems with established, relatively expert bureaucracies. A common theme in reform discussions in the “reinventing government” tradition is that bureaucrats should be freed from restrictions on their ability to develop and implement innovative solutions to problems governments face – or in terms of our model, that they should be granted more discretion. From the standpoint of models of delegation in which bureaucratic expertise is taken as given, these suggestions are not interesting: if the legislature in such models wanted the bureaucracy to have more discretion, it would have granted it already. Our model suggests a more subtle tradeoff of such recommendations. The greater discretion in the short run would give policy motivated agents an incentive to develop expertise, but would also change the selection of individuals into public service in the longer run. A political principal with a long term stake in a political system would internalize both the benefit and the cost, but one expecting a short tenure would be more willing to reap the short run gains of greater discretion without weighing the longer term costs of agency losses as heavily.

The model also focuses attention on an important consideration in the reform of job tenure, namely, the relationship specificity of policy expertise. We have assumed for clarity that this is constant, but the effect of variation in it on the value of job tenure is clear. If the policy expertise one develops in public service can be parlayed into a lucrative non-governmental career – as with, for example, antitrust lawyers in the Department of Justice moving to private law firms, or communications experts in the Federal Communications Commission becoming lobbyists after learning the ropes – then the importance of job tenure for expertise development is reduced. Even in these situations it is not clear that a state is better off relying on this “revolving door” to induce investment in expertise. In a system with both a revolving
door and secure tenure, bureaucrats who develop expertise and choose to remain in public service will select themselves on the basis of their relative value of money and policy utility. In a system with only a revolving door and without secure tenure, these would-be careerists have less opportunity to function as the institutional memory of the bureaucracy.

More generally, because employment in the civil service is voluntary, civil servants represent a (possibly strongly) selected sample of the general electorate. Individuals who care about affecting policy will be more willing to accept bureaucratic employment, all else constant. Our theory takes the existence of such individuals as given, and this is certainly reasonable as it applies to the U.S. in the late 19th and early 20th centuries — the period in which bureaucrats first acquired the power to make laws without asking anyone first. But it is not necessarily a given at all times, and fostering a community of committed policy intellectuals (a pool of zealots) is, in light of this model, an important precursor for developing a high capacity, expert bureaucracy.

6 Conclusion

This paper makes several basic points. It is based on the idea that the policy expertise is, at some level, endogenous. In addition, policy expertise and individually costly investments in training and information-gathering are often relationship specific. Therefore the return on these investments depends on the political environment of bureaucracies, and on the future retention and remuneration strategies of the government.¹⁷ A government can induce the development of relationship specific expertise by conditioning bureaucratic

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¹⁷ This is true of many professions and voluntary economic relationships, of course, but is perhaps more relevant for government positions than for most jobs, given their often unique nature. A few examples of markets in which the government has a quasi-monopsonistic position: air traffic controllers, soldiers, diplomats, firemen, nuclear scientists, crypto-analysts, and secret agents.
discretion on the acquisition of expertise by the bureaucrat. If such a solution exists, it comes with an extra benefit (or cost): the bureaucrats who acquire expertise in such systems are exactly those who care about policy outcomes in their own right. Neutral competence is impossible in our model not because “neutrality” is impossible, but because only those with a stake in policy can be induced (by the instruments available to governments) to become experts.\footnote{Furthermore, the overlapping generations feature of the model plays an important, though subtle, role. The carrot/stick approach could be accomplished by the legislature committing to decrease discretion after the first period if the bureaucrat did not acquire expertise. However, this solution does not work insofar as it does not lead to the retention of type-1 bureaucrats. Indeed, such a strategy by the legislature may hasten the departure of type-1 bureaucrats, as they will prefer to hand over the reins to a new bureaucrats who will not face the reduced discretion punishment for at least one period.}

Overall, we contend that bureaucratic discretion, as dictated by political imperatives faced by the bureaucracy’s political “principals,” interacts with civil service rules to generate incentives for bureaucrats to invest in expertise. Both of these conditions of the bureaucratic system are important in overcoming the holdup problem, one to reduce the downside risk of sinking the relationship specific investment, and one to enhance the upside benefit. In short, this seemingly ossified, obsolete personnel management system can have crucial effects on the capacity of the bureaucracy – because of incentives for endogenous actions and because of personnel selection based on exogenous tastes – to carry out policy formulation and implementation.

References


### A Equilibria when the IC Constraint is Binding

The set of expertise-discretion contracts under which the acquisition of expertise is incentive compatible for type-1 bureaucrats is the set of all ordered pairs of nonnegative real numbers \((\bar{d}_1, \bar{d}_2)\) satisfying the following inequality:

1. \[
\phi^1(\bar{d}_1) - \phi^0(\bar{d}_1) + \delta [r - w + \phi^1(\bar{d}_2) - f \phi^1(\bar{d}_1) - (1 - f) \phi^0(\bar{d}_1)] \geq c.
\]
Define the set of all such contracts by $ICED(r, w, f, \phi, c)$. The third case of equilibrium (as defined in Definition 4) is then given by any $(d, d') \in ICED(r, w, f, \phi, c)$ that maximizes the legislature’s payoff so long as

$$(1 + \delta)\gamma^0(\hat{D}^1) > (1 + \delta(1 - f))[f\gamma^1(\bar{d}_1) + (1 - f)\gamma^0(\bar{d}_1)] + \delta f\gamma^1(\bar{d}_2). \quad (13)$$

If this is the case, then the third case of the equilibrium, as discussed in Definition 4 is $(\hat{D}^1, \tilde{D}^1, \tilde{D}^2) = (\bar{d}_1, \bar{d}_1, \bar{d}_2)$. If Equation 13 does not hold, then the legislature would prefer to implement the optimal contract conditional on no agents acquiring expertise. In those cases, the equilibrium contract is given by $(\hat{D}^1, \hat{D}^1, \hat{D}^1) = (\hat{D}^1, \hat{D}^1, \hat{D}^1)$. 

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