

ARTICLES

LABORATORIES OF DEMOCRACY? POLICY INNOVATION IN DECENTRALIZED GOVERNMENTS

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ABSTRACT

Innovations in government produce positive externalities for other jurisdictions. Theory therefore predicts that local government will tend to produce a lower than optimal amount of innovation, as officials will prefer to free ride on innovation by others. As Susan Rose-Ackerman observed in 1980, these predictions, if true, tend to undermine arguments by proponents of federated government that decentralization will lead to many competing “laboratories of democracy.” In this Article, we review and critically assess nearly three decades of responses to Rose-Ackerman’s arguments, none of which have been discussed in depth in the legal literature. In addition, we

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sketch and evaluate other possible grounds for believing that local officials may have incentives to innovate in the face of the temptation of free-riding.

We conclude that there are no demonstrably overwhelming replies to Rose-Ackerman's skepticism, and analyze the policy implications that follow. For instance, we suggest that one implication may be that certain regulatory regimes, such as corporate governance regulation, might best be centered at the national level, where collective action problems affecting public officials are lessened. However, we also caution that this result would depend on the likely effectiveness of industry itself propagating "good" regulation, or the effectiveness of contracting regulatory functions out to intermediaries, such as private consulting firms or nonprofit organizations, who might use property rights to more fully capture the gains of policy innovation.

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INTRODUCTION

The American vision of federalism likens decentralized government to a host of civic Marie Curies, each tirelessly in pursuit of discoveries to better mankind. Justice Louis Brandeis famously praised state and local governments as the “laboratories” of democracy.¹ Justice Anthony Kennedy writes that the invention of federalism “split the atom of sovereignty.”² The very Founders Kennedy hails, though, recognized that even scientists need incentives to innovate; knowing even then the familiar economic point that there is often little invention without property rights, the Founders provided authority for federal patent protection in the Constitution.³ State and local governments can be thought of as inventors without patents: because anyone can steal their new ideas, what incentive have they ever had to invent? In this Article, the first of a two-part series, we begin to draw out in detail the consequences of this dilemma for federalism, and the question of centralized versus decentralized government more generally.

There are, of course, other factors that weigh in favor of decentralized government, but all of them are controversial or limited in scope. For example, according to the spatial competition model first suggested by Charles Tiebout, policy is developed simultaneously in many parallel jurisdictions, and citizens can choose which unit delivers services most efficaciously, leading to more efficient government.⁴ Yet it is unclear whether this efficiency gain is outweighed by the costs involved in the constant uprooting and relocation that would accompany competition, not to mention the sacrifice of potential economies of scale from locating services in one large, central unit.⁵ Similarly,

¹ *New State Ice Co. v. Liebmann*, 285 U.S. 262, 311 (1932) (Brandeis, J., dissenting).

² *U.S. Term Limits, Inc. v. Thornton*, 514 U.S. 779, 838 (1995) (Kennedy, J., concurring).

³ Kenneth W. Dam, *The Economic Underpinnings of Patent Law*, 23 J. LEGAL STUD. 247, 248 (1994). For modern discussions of the economics of incentives to invent, see *id.* at 247–71; Richard J. Gilbert, *Competition and Innovation*, J. INDUS. ORG. EDUC., Oct 2006, at 1, 12, <http://www.bepress.com/jioe/voll/iss1/8>.

⁴ PAUL E. PETERSON, *THE PRICE OF FEDERALISM* 17–18, 25–26 (1995); Robert P. Inman & Daniel L. Rubinfeld, *The Political Economy of Federalism*, in PERSPECTIVES ON PUBLIC CHOICE 73, 83–85 (Dennis C. Mueller ed., 1997); Wallace E. Oates, *On Local Finance and the Tiebout Model*, 71 AM. ECON. REV. 93, 93, 95–97 (1981); Erin A. O’Hara & Larry E. Ribstein, *From Politics to Efficiency in Choice of Law*, 67 U. CHI. L. REV. 1151, 1161–62 (2000). The theory originates with Charles M. Tiebout, *A Pure Theory of Local Expenditures*, 64 J. POL. ECON. 416 (1956), and there is a voluminous literature criticizing, defending, and applying it.

⁵ See generally Robert P. Inman & Daniel Rubinfeld, *Rethinking Federalism*, 11 J. ECON. PERSP. 43, 45–46 (1997); Mark V. Pauly, *Income Redistribution as a Local Public Good*, 2 J. PUB. ECON. 35, 35 (1973); Kirk J. Stark, *Fiscal Federalism and Tax Progressivity: Should the Federal Income Tax Encourage State and*

while decentralizing government might allow citizens to sort themselves according to their preferences for the kind and amount of government services,⁶ this divided government also leads to inefficiencies, as local governments may not internalize the positive or negative spillovers generated by their choices.⁷ Government that is smaller, divided, and closer to the population is said to enhance democracy and better protect rights,⁸ but multiple tiers of government also reduce transparency and make it harder to hold officials at all levels to account for their decisions.⁹

In contrast, the opportunity for greater experimentation in decentralized government has generally been presented in the legal literature as an unalloyed point in favor of federalism.¹⁰ For courts, too, a key argument in favor of decentralized provision of government services, such as in the U.S. system of

Local Redistribution?, 51 UCLA L. REV. 1389, 1408 (2004). For surveys of the tradeoff between mobility and the deadweight losses of mobility, see Wallace E. Oates, *Fiscal Competition and European Union: Contrasting Perspectives*, 31 REGIONAL SCI. & URB. ECON. 133, 133–42 (2001) (addressing the results of inter-jurisdictional competition and other competing programs); John Douglas Wilson & David E. Wildasin, *Capital Tax Competition: Bane or Boon*, 88 J. PUB. ECON. 1065, 1065, 1067–88 (2004) (detailing the effect of tax competition).

⁶ *Gregory v. Ashcroft*, 501 U.S. 452, 457–58 (1991); Michael W. McConnell, *Federalism: Evaluating the Founders' Design*, 54 U. CHI. L. REV. 1484, 1498–99 (1987) (reviewing RAOUL BERGER, *FEDERALISM: THE FOUNDERS' DESIGN* (1987)); Wallace E. Oates, *An Essay on Fiscal Federalism*, 37 J. ECON. LITERATURE 1120, 1122–23 (1999).

⁷ Barry Friedman, *Valuing Federalism*, 82 MINN. L. REV. 317, 405–09 (1997); Oates, *supra* note 6, at 1121; Richard B. Stewart, *Pyramids of Sacrifice? Problems of Federalism in Mandating State Implementation of National Environmental Policy*, 86 YALE L.J. 1196, 1215–16 (1977). Spillovers, and their close cousins, externalities, both describe benefits or burdens that affect a party other than the immediate actor, and whose consequences would not be taken into account by an actor motivated strictly by self-servingly maximizing the actor's own well-being. JONATHAN GRUBER, *PUBLIC FINANCE AND PUBLIC POLICY* 120–27 (2d ed. 2007).

⁸ *Gregory*, 501 U.S. at 457–59; Randy E. Barnett, *The Ninth Amendment: It Means What It Says*, 85 TEX. L. REV. 1, 21 (2006); Erwin Chemerinsky, *The Assumptions of Federalism*, 58 STAN. L. REV. 1763, 1768 (2006); Roderick M. Hills, Jr., *Against Preemption: How Federalism Can Improve the National Legislative Process*, 82 N.Y.U. L. REV. 1, 4–5, 25 (2007); Mariano Tommasi & Frederico Weinschelbaum, *Centralization vs. Decentralization: A Principal-Agent Analysis*, 9 J. PUB. ECON. THEORY 369, 378, 380 (2007); Ernest A. Young, *The Rehnquist Court's Two Federalisms*, 83 TEX. L. REV. 1, 63 (2004).

⁹ *New York v. United States*, 505 U.S. 144, 168–69 (1992); Matthew D. Adler & Seth F. Kreimer, *The New Etiquette of Federalism*: New York, Printz, and Yeskey, 1998 SUP. CT. REV. 71, 110.

¹⁰ *E.g.*, PETERSON, *supra* note 4, at 18–19; ALICE RIVLIN, *REVIVING THE AMERICAN DREAM: THE ECONOMY, THE STATES, & THE FEDERAL GOVERNMENT* 10, 126 (1992); DAVID L. SHAPIRO, *FEDERALISM: A DIALOGUE* 85–88 (1995); William W. Bratton & Joseph A. McCahery, *The New Economics of Jurisdictional Competition: Devolutionary Federalism in a Second-Best World*, 86 GEO. L.J. 201, 208–09 (1997); Larry Kramer, *Understanding Federalism*, 47 VAND. L. REV. 1485, 1499 (1994); McConnell, *supra* note 6, at 1498–1500.

federalism, is that an array of local governments is more innovative than a single monolithic central authority.¹¹

These claims persist despite what would seem a devastating critique, first raised by Susan Rose-Ackerman in 1980.¹² Professor Rose-Ackerman (hereinafter RA) pointed out not one but two serious flaws in the claim that local governments can be relied upon as engines of invention. First, as we noted at the outset, in the absence of property rights local innovation belongs to the world.¹³ If innovation is at all costly, this suggests that each jurisdiction may (absent some countervailing factor) prefer to free ride on the experimental efforts of others—that is, to wait for someone else to invent a new government policy or method, and simply copy it. Unless some other government intervenes to resolve this collective action dilemma, the incentive of every jurisdiction is to wait. Second, even if a jurisdiction as a whole is well-served by experimentation, its public officials might not be. Incumbents, safe in their offices, have little reason to engage in risky new policies for which they might be punished if things go wrong.¹⁴

With one or two exceptions, the American legal academy has minimized RA's arguments. As we noted, any number of scholars of federalism routinely argue that experimentation is a reason to favor decentralized government, generally acknowledging RA with a "but see" footnote and at most a few sentences of explanation.¹⁵ A notable departure is the work of the corporate

¹¹ *Arizona v. Evans*, 514 U.S. 1, 8 (1995); *Gregory*, 501 U.S. at 458; *Garcia v. San Antonio Metro. Transit Auth.*, 469 U.S. 528, 546 (1985).

¹² Susan Rose-Ackerman, *Risk Taking and Reelection: Does Federalism Promote Innovation?*, 9 J. LEGAL STUD. 593, 594 (1980).

¹³ *Id.* at 604.

¹⁴ *Id.* at 605.

¹⁵ Adler & Kreimer, *supra* note 9, at 78, 79 & n.34; Michael C. Dorf, *The Supreme Court, 1997 Term—Foreword: The Limits of Socratic Deliberation*, 112 HARV. L. REV. 4, 60, 61 & n.322 (1998); Vicki C. Jackson, *Federalism and the Uses and Limits of Power: Printz and Principle?*, 111 HARV. L. REV. 2180, 2214 n.157 (1988); Jacques LeBoeuf, *The Economics of Federalism and the Proper Scope of the Federal Commerce Power*, 31 SAN DIEGO L. REV. 555, 561, 562 & n.26 (1994); Deborah Jones Merritt, *The Guarantee Clause and State Autonomy: Federalism for a Third Century*, 88 COLUM. L. REV. 1, 9–10 n.47 (1988); McConnell, *supra* note 6, at 1498 n.58; Daniel B. Rodriguez, *Turning Federalism Inside Out: Intrastate Aspects of Interstate Regulatory Competition*, 14 YALE J. ON REG. 149, 157 n.32 (1996); Richard B. Stewart, *Regulation in a Liberal State: The Role of Non-Commodity Values*, 92 YALE L.J. 1537, 1573, 1574 & n.132 (1983). Several other scholars have expressed their agreement with the Rose-Ackerman thesis, but again these discussions have been mere passing mentions or a few sentences in a footnote. Richard Briffault, "What About the 'Ism'?" *Normative and Formal Concerns in Contemporary Federalism*, 47 VAND. L. REV. 1303, 1326 n.80 (1994); Sheryll D. Cashin, *Federalism, Welfare Reform, and the Minority Poor: Accounting for the Tyranny of State Majorities*, 99 COLUM. L. REV. 552, 579 n.114 (1999); Andrzej Rapaczynski, *From Sovereignty to Process: The Jurisprudence of Federalism After Garcia*, 1985 SUP. CT. REV. 341, 412 n.176;

scholar Larry Ribstein, who has accepted RA's claims but offered a detailed analysis of at least one tool, lawyer licensing, with which the dynamic RA sketches might be overcome.¹⁶ Ian Ayres has also applied RA's arguments to the debate over state regulation of corporate governance.¹⁷ While these are both important contributions, the significance of the RA thesis is much broader.

In contrast, academics from other disciplines have spilled much ink debating the accuracy and implications of her thesis. In particular, there is a long tradition in both political science and economics that attempts to explain how policy diffuses from one jurisdiction to another.¹⁸ Because RA's argument depends in part on how easily innovations may be transferred from one government to another, that scholarship has an obvious bearing on her conclusions. There have also been other, more direct efforts to analyze or measure aspects of RA's hypothesis, generally by economists.¹⁹ As far as we

Joshua Sarnoff, *Cooperative Federalism, the Delegation of Federal Power, and the Constitution*, 39 ARIZ. L. REV. 205, 215 n.53 (1997). Rubín and Feeley, in their classic assault on federalism, briefly employ RA's arguments, but as we will show their discussion omits a great deal of nuance. Edward L. Rubín & Malcolm Feeley, *Federalism: Some Notes on a National Neurosis*, 41 UCLA L. REV. 903, 924–26, 925 n.79 (1994). The most comprehensive negative discussion is by Barry Friedman, who devotes several paragraphs to RA's argument, most of which simply recite a handful of policies invented by states. Friedman, *supra* note 7, at 397–400. We discuss Friedman's substantive arguments in depth *infra* text accompanying notes 69–70 and *infra* note 303.

¹⁶ Larry E. Ribstein, *Lawyers as Lawmakers: A Theory of Lawyer Licensing*, 69 MO. L. REV. 299, 327–62 (2004); Larry E. Ribstein & Bruce H. Kobayashi, *State Regulation of Electronic Commerce*, 51 EMORY L.J. 1, 60–62 (2002).

¹⁷ Ian Ayres, *Supply-Side Inefficiencies in Corporate Charter Competition: Lessons from Patents, Yachting and Bluebooks*, 43 U. KAN. L. REV. 541, 545 (1995).

¹⁸ For reviews, see Frances Stokes Berry & William D. Berry, *State Lottery Adoptions as Policy Innovations: An Event History Analysis*, 84 AM. POL. SCI. REV. 395, 399–400 (1990); David P. Dolowitz & David Marsh, *Learning from Abroad: The Role of Policy Transfer in Contemporary Policy-Making*, 13 GOVERNANCE 5, 6–21 (2000); Oliver James & Martin Lodge, *The Limitations of 'Policy Transfer' and 'Lesson Drawing' for Public Policy Research*, 1 POL. STUD. REV. 179 (2003); Christoph Knill, *Introduction: Cross-National Policy Convergence: Concepts, Approaches and Explanatory Factors*, 12 J. EUR. PUB. POL'Y 764, 764–72 (2005); David Lazer, *Regulatory Capitalism as a Networked Order: The International System as an Informational Network*, 598 ANNALS AM. ACAD. POL. & SOC. SCI. 52, 53–60 (2005); Barbara Wejnert, *Integrating Models of Diffusion of Innovations: A Conceptual Framework*, 28 ANN. REV. SOC. 297, 297–320 (2002).

¹⁹ Ronald J. Daniels, *Should Provinces Compete? The Case for a Competitive Corporate Law Market*, 36 MCGILL L.J. 130, 149 (1991); Christos Kotsogiannis & Robert Schwager, *On the Incentives to Experiment in Federations*, 60 J. URB. ECON. 484, 485 (2006); Kolemán S. Strumpf, *Does Government Decentralization Increase Policy Innovation?*, 4 J. PUB. ECON. THEORY 207, 209 (2002); Hongbin Cai & Daniel Treisman, *Political Decentralization and Policy Experimentation* 3–4 (Lab. for Macroeconomic Analysis, Working Paper No. WP13_2007_05, 2007), http://www.cas.hse.ru/Repec/pdf/WP13_2007_05.pdf; Amihai Glazer & Hiroki Kondo, *Innovation and Imitation Across Jurisdictions* 4 (Univ. of Cal.-Irvine Dept. of Econ., Working Paper No. 070807, 2007), <http://www.economics.uci.edu/docs/2007-08/glazer-07.pdf>.

are aware, however, there has never been any comprehensive effort to bring together all the disparate bits and pieces of evidence and analysis.

Accordingly, our aim in this Article is to synthesize RA's arguments with all that has come after her, and to offer a global assessment about the true extent of innovation among decentralized governments. At each step we attempt not only to summarize the work of others but also to subject it to careful scrutiny. At many points we supplement gaps in the literature with our own conjecture. We hope this synthesis will be of interest to lawyers, economists, and political scientists alike. In addition, we note a number of points on which the available empirical data are thin, and suggest new research aimed at those uncertainties.

Our central conclusion is that, while much remains unknown, there is at least a large grain of truth to RA's assessment. State and local governments do innovate. But they are unlikely to innovate in all instances at the optimal social level, or in a way that captures the true benefits of experimentation. Accordingly, there is a case for federal intervention, either to correct some of the dysfunction of the market for state government, or to displace it with a top-down federal model. In a follow-up article, we will examine potential shortcomings in the top-down models, as well as the viability of cooperative efforts between local and national governments in which the key role of the national government is to provide local governments with the correct set of incentives.

The path to this end result is long. One secondary point we hope to make, even to those who would reject our ultimate conclusions, is that the question whether innovation adds to the allure of decentralized government is a highly nuanced one, not to be resolved in a footnote or an aside. For instance, we show that in order to assess the likelihood that states will free ride on the innovation of others, one first must answer a host of other questions, such as what kinds of information about the innovation are valuable to other jurisdictions, whether other jurisdictions are similar enough to make use of that information, who has access to the relevant information, and what the incentives of those individuals are for sharing it with outsiders. Even if there is a free-rider dynamic at play, it might be overcome by potential benefits from being a first mover. There would be many subsidiary factors that go into that problem, such as whether jurisdictions are competing for outside capital, whether that capital is mobile and rationally allocated, whether there are risks

attached to the innovation, and whether the jurisdiction's residents are averse to risks of the magnitude offered by the potential new policy or method.

The possibility of agency costs adds an additional layer of complication to our analysis. As RA points out, even if the inhabitants of a local jurisdiction are not risk averse, their public officials may be.²⁰ Again, then, we must be closely attuned to the likely incentives of officials. Critics of RA have argued that she underestimates the significance of officials' desire to win higher office, which might motivate them to innovate beyond the preferences of their constituents.²¹ As we will show, these critics miss much important detail—for instance, whether voters in fact reward innovation per se or, if so, whether it is easy to mimic innovation, either of which could greatly reduce the incentive to take on the additional risks and costs of innovating. And unelected bureaucrats likely lack any high-powered incentive to risk losing their jobs. Yet other factors in play include possible psychological biases in favor of maintaining the status quo and avoiding uncertainty, agenda-setting by rivals for office, and pressure from political parties. Most of these factors, we argue, tend to make true experiments less likely.

Finally, we note by way of preview of our follow-up work that the literature has largely overlooked the possibility that local jurisdictions can overcome the absence of property rights by contracting out government services to private firms or nongovernmental organizations (NGOs). Firms and NGOs also may offer a solution for other problems, such as the fact that it may be difficult for citizens to relocate to a jurisdiction that matches both their ideological and risk-seeking preferences. However, in many cases these solutions are something of a pyrrhic victory. Because the firm retains property rights in its innovation, only the firm, and those to whom it licenses its rights, can take advantage of the innovation. Firms with property rights typically exact monopoly rents for their protected property, so the amount of innovation that the firm provides to the nation as a whole will again be below the socially optimal amount.

The remainder of this Article proceeds in three Parts. Part I introduces RA's arguments, noting that later commentators have sometimes overlooked the fact that she raises two analytically distinct points. Part II undertakes a detailed assessment of the likelihood of free-rider effects, assuming no agency

²⁰ Rose-Ackerman, *supra* note 12, at 603, 605.

²¹ Hills, *supra* note 8, at 23, 24 & n.76; Kotsogiannis & Schwager, *supra* note 19, at 486; Strumpf, *supra* note 19, at 227–28; *see also* Lazer, *supra* note 18, at 61 (noting this argument in passing).

costs. Part III relaxes the assumption of perfect agency, examining the incentives of local officials to innovate or not. The last segment is our conclusion.

I. SPILLOVERS AND THE ROSE-ACKERMAN THESIS

In this Part, we lay out the argument advanced by Susan Rose-Ackerman in her seminal article on federalism and policy innovation. RA's thesis, in a nutshell, is that states may not be "laboratories" of democracy, as Brandeis pithily suggested, because state-level politicians (although perhaps ambitious for higher office) will act in a risk-averse manner, and therefore, will promote little innovation.²²

Importantly, RA identifies two analytically separate effects which contribute to her conclusion (each of which we address in turn): (1) information about innovative policies diffuses to other jurisdictions, where policymakers will free ride on the innovations of the first-mover jurisdictions; and (2) policymakers are not perfect agents of the voters, and instead of focusing on maximizing the welfare of the electorate, they focus on maximizing their own welfare by winning reelection.

RA begins by assuming that any government is run by a single, risk-neutral policymaker who is concerned solely with being reelected—and who must take some risks in order to win reelection.²³ In any event, the policymaker faces uncertainty regarding whether the projects will succeed and the extent to which the public will support her based on her successes.²⁴

²² Rose-Ackerman, *supra* note 12, at 594. RA does not define the term "innovation," but we take her to mean—and, when we use the term, we mean—*any* policy innovation, whether large or small. As a result, when we write of one jurisdiction "copying" another jurisdiction's policy innovation, we mean copying it *exactly*, without *any* modification. As we see it, when one jurisdiction copies another jurisdiction's policy innovation, but also modifies the prior innovation (whether to improve on it or customize it or whatever), the modification (no matter how small) is itself a policy innovation. As a result, all of the same incentives to innovate or copy that we discuss herein also apply to the modification of policy innovations—although perhaps to a lesser degree, because *modifying* an innovation is presumably less costly than *wholesale* innovation. That is to say, to the extent that modifying is less expensive than wholesale innovation (but more expensive than slavish copying), the incentive to free ride is reduced and the incentive to "innovate" is increased.

²³ *See id.* at 596. RA's model also assumes elections occurring at preordained times some years apart, constant voter turnout levels, a single opponent for the incumbent in the upcoming election, and a requirement that the winner of the election receive greater than 50% of the vote. *See id.* Obviously, one could easily question whether any or all of these assumptions are realistic.

²⁴ *See id.* at 597; *see also* Jack L. Walker, *The Diffusion of Innovations Among the American States*, 63 AM. POL. SCI. REV. 880, 890 (1969). RA's model also assumes, *inter alia*, that the policymaker cannot

RA first discusses a unitary government and then a system of multiple, competing local governments (i.e., as if they were states without any federal system). With respect to the unitary-government policymaker, RA concludes that though she is *risk neutral*, the model's operation will cause the policymaker to act as though she is *risk averse*.²⁵ In brief, the idea is that innovations have a risk of failure, which will hurt the incumbent's chances of reelection. Safe incumbents have relatively little reason to take that chance. Hence, in a unitary government where projects end prior to the next election, an incumbent who faces a tight race for reelection "may have a greater incentive to carry out risky projects" than an incumbent who expects to win the next election handily.²⁶ Thus, government officials will be reluctant to embark on unproven policy, even when there are no other states from whom to borrow.

RA then turns to a multi-jurisdictional system.²⁷ Focusing on a local public good (i.e., one that, when produced in one state, has no spillover effects into any other state) that is valued in all states (i.e., so that innovative new ways of producing the good are valued in all states), RA posits a world in which there is no cost for policymakers to import innovations from other states.²⁸ RA also assumes that voters (presumably knowing that innovation can easily be imported from other states) reward an incumbent only if she does well compared to other jurisdictions—and penalize an incumbent "for wasting money on innovation" if she is not successful as compared to other jurisdictions.²⁹ That is, in addition to being risky, innovation is also costly.³⁰

In the multi-jurisdictional model, officials are considerably more averse to risky innovation than in the single-government model.³¹ Officials in multiple-jurisdiction systems have two powerful reasons for eschewing innovation. Crucial to both is the assumption that each state can easily copy its own

compensate voters by other means after having made risky choices that do not result in a public benefit and that the policymaker chooses from a range of preexisting projects rather than designing them herself. See Rose-Ackerman, *supra* note 12, at 597.

²⁵ Rose-Ackerman, *supra* note 12, at 601. For general discussions of risk aversion, see George A. Quattrone & Amos Tversky, *Contrasting Rational and Psychological Analyses of Political Choice*, 82 AM. POL. SCI. REV. 719, 721 (1988); Kenneth A. Shepsle, *The Strategy of Ambiguity: Uncertainty and Electoral Competition*, 66 AM. POL. SCI. REV. 555, 560–61 (1972).

²⁶ See Rose-Ackerman, *supra* note 12, at 603.

²⁷ *Id.*

²⁸ See *id.* at 604.

²⁹ See *id.*

³⁰ Ayres, *supra* note 17, at 546; Berry & Berry, *supra* note 18, at 400.

³¹ Rose-Ackerman, *supra* note 12, at 605–14.

policies from others.³² Thus, each official knows she can get good policy results without incurring any risk herself.³³ Further, the general public wishes to avoid both the risks and costs of innovation if they can get identical results at lower risk and cost by copying. They will be angry with an official who unnecessarily innovates, rather than free-riding on the efforts of others. As a result, “The better other governments are expected to do, the less incentive any politician has to initiate projects [in the search for innovation].”³⁴

Thus, RA concludes that “a secure incumbent may value [such innovation] less highly than the citizenry and so be unwilling to take chances that most people would support.”³⁵ Put another way, RA’s model implies that where there are benefits to other states from innovation, the total amount of innovation will fall below the socially optimal level.³⁶ A central planner, who could not free ride on others’ efforts, and who internalized the benefits to all of society from new policies, would innovate to a degree much closer to the level that would maximize social welfare.³⁷ This consequence of positive spillovers is a familiar point in the vast literature on innovation among industrial organizations.³⁸

Innovation is also slowed by the option value of delay.³⁹ Second movers can wait to observe whether an innovation has value, and then exercise the option to copy. Moving first entails sacrificing the economic value of this option.⁴⁰ As Sarah Brooks points out, this effect will tend to be smaller as the initial costs of innovating diminish, because in that case there is little value in avoiding the costs of moving first.⁴¹

Subsequent economic literature has further developed the contours of the losses to society when local jurisdictions can free ride on one another. The

³² *Id.* at 604, 610.

³³ *Id.* at 604–05, 610.

³⁴ *Id.* at 605.

³⁵ *Id.*

³⁶ *Id.* This is the formulation emphasized by other economists. *E.g.*, Oates, *supra* note 6, at 1133.

³⁷ See Michael Abramowicz, *Speeding Up the Crawl to the Top*, 20 YALE J. ON REG. 139, 148–49 (2003); Oates, *supra* note 6, at 1133.

³⁸ René Belderbos et al., *Cooperative R&D and Firm Performance*, 33 RES. POL’Y 1477, 1479 (2004); Dam, *supra* note 3, at 248–51; see ERIC VON HIPPEL, *THE SOURCES OF INNOVATION* 46 (1988).

³⁹ Sarah M. Brooks, *When Does Diffusion Matter? Explaining the Spread of Structural Pension Reforms Across Nations*, 69 J. POL. 701, 705 (2007); Lars P. Feld et al., *Federalism, Decentralization, and Economic Growth*, in *PUBLIC ECONOMICS AND PUBLIC CHOICE: CONTRIBUTIONS IN HONOR OF CHARLES B. BLANKART* 103, 110 (Pio Baake & Rainald Borck eds., 2007).

⁴⁰ Brooks, *supra* note 39, at 704–05; see Wejnert, *supra* note 18, at 304.

⁴¹ Brooks, *supra* note 39, at 705–06.

basic notion, again, is that there is a positive spillover from attempting to enact new policies. Because each jurisdiction realizes only a fraction of the total gains that society as a whole could reap from a given new policy, each individual jurisdiction underinvests in efforts to develop that policy.⁴² In addition, failures and alternatives also produce informational spillovers.⁴³ If State A has tried policy X and failed, State B now knows that it need not try too.⁴⁴ However, the process of attempting to implement X may produce valuable information that could lead to several different new possibilities.⁴⁵ The same is true of B's efforts with a parallel policy, Y. If State A never attempts X, or if B never attempts Y, both lose. But, because neither realizes any benefit from the gains this information can produce elsewhere, neither will have incentives to produce it at the level that would maximize social welfare. Thus, the free-rider problem is not just a lack of innovation; it is also a lack of experimentation—of different jurisdictions all trying, and sometimes failing, along different routes, and learning from one another's efforts.⁴⁶

An example may be helpful here. Suppose that policy theorists have recently developed a strategy for enhancing social welfare by regulating the color of widgets. Also suppose that, for each state that mandates that all widgets be red, there is a 50% chance of either increasing or decreasing total state welfare by the equivalent of \$1 billion. Alternatively, states could mandate that all widgets be green, but policy analysts predict this will have a 60% chance of losing \$1 billion and only a 40% chance of gaining \$1 billion. If widget-color policy is chosen at the state level, no state will regulate the

⁴² Abramowicz, *supra* note 37, at 149–50; Cai & Treisman, *supra* note 19, at 3.

⁴³ Abramowicz, *supra* note 37, at 150–51; Wolfgang Kerber & Martina Eckardt, *Policy Learning in Europe: The Open Method of Co-Ordination and Laboratory Federalism*, 14 J. EUR. PUB. POL'Y 227, 229 (2007); Strumpf, *supra* note 19, at 208.

Information that benefits other jurisdictions is not purely an externality for most individuals. For instance, improving policy elsewhere is appealing if we might consider moving there, *see* Cai & Treisman, *supra* note 19, at 21, or if we wish to threaten our local officials with the credible possibility that we will do so, *see* Brian Galle, *A Republic of the Mind: Cognitive Biases, Fiscal Federalism, and Section 164 of the Tax Code*, 82 IND. L.J. 673, 679, 682, 700 (2007). Similarly, for diversified investors, policy that benefits firms in other jurisdictions likely increases the value of the investor's overall portfolio. Abramowicz, *supra* note 37, at 149–50. But all of these effects only diminish the size of externality; they do not eliminate it.

⁴⁴ *See* Strumpf, *supra* note 19, at 226; Cai & Treisman, *supra* note 19, at 17.

⁴⁵ *See* Abramowicz, *supra* note 37, at 150–51; Wolfgang Kerber & Oliver Budzinski, *Towards a Differentiated Analysis of Competition of Competition Laws*, 1 J. COMPETITION L. 411, 420 (2003); Ken Kollman et al., *Decentralization and the Search for Policy Solutions*, 16 J.L. ECON. & ORG. 102, 115 (2000).

⁴⁶ *See* Cai & Treisman, *supra* note 19, at 18–19; Lazer, *supra* note 18, at 61; Strumpf, *supra* note 19, at 226; *cf.* Craig Volden et al., *A Formal Model of Learning and Policy Diffusion* 102 AM. POL. SCI. REV. 319, 327–28 (stating that states can free ride not only on first movers but also intermediate actors).

color of widgets.⁴⁷ Assuming implementation will cost more than zero, there is no expected value to any state in regulating.

But what if widget policy is set nationally? The federal government may launch a pilot project, under which red-widget law is rolled out in a single state. If the policy fails, the nation loses \$1 billion. But if it succeeds, red-widget mandates can be implemented nationwide, at a gain of \$50 billion. That is a fifty-to-one bet at 50% odds—a no-brainer that, under decentralized experimentation, no state will undertake. Plus, the federal experimenter can diversify its risk by also implementing the green-widget mandate in a single state. Again, a fifty-to-one bet with a 40% chance of payoff is a great wager, and it is possible green will succeed where red fails. Yet, even if states were willing to try widget regulation, it is likely none would consider trying green mandates, because green is obviously only the second-best strategy.

RA concludes her article by asking briefly whether things might be different for states *within* a federal system—states supervised by a federal government.⁴⁸ She touches on several reasons why cooperative federalism may be better—or somewhat better. First, she points out that state officials can run for federal—i.e., *higher*—office, thereby lessening their conservative bent.⁴⁹ What's more, the simple fact that federal offices exist might make the lower offices more attractive (as stepping stones), giving rise to more challengers.⁵⁰ Third, RA posits that a politician in state office may, due to the existence of a federal system, have more incentive to develop projects that are useful outside of the jurisdiction.⁵¹ Or, fourth, she suggests that federal policymakers might engage in an innovation policy to reward state-level policymakers who develop innovations.⁵²

We will reserve comparisons between centralized innovation and decentralized, state-level innovation for the second installment in this series. In this Article, our focus instead is on the assumptions that drive RA's results. For example, what if information in fact is not costless to acquire? And is it correct that desire for higher office or other incentives might lead officials to be more, rather than less, interested in innovation than their constituents?

⁴⁷ See Gilbert, *supra* note 3, at 10 (stating that if inventor of a copyable good cannot sell or license the right to produce, it will only innovate when there is positive expected value irrespective of copying).

⁴⁸ Rose-Ackerman, *supra* note 12, at 614–16.

⁴⁹ See *id.*

⁵⁰ See *id.*

⁵¹ See *id.* at 615.

⁵² See *id.*

II. INFORMATION EXTERNALITIES

In this Part, we begin our assessment of RA's analysis by examining her claim that local governments will prefer to free ride on the innovation of others. In our view this argument decomposes into three subparts. First, of course, there is the question whether it is true that localities may easily copy the new policies and methods of others. Second, even if it is true that copying is feasible, we must ask whether jurisdictions might prefer to innovate in order to capture first-mover advantages. Finally, even if there are incentives to move first, it is unclear whether these incentives translate into true experimentation—that is, whether they produce innovation, or only a race to be first to snatch the lowest hanging policy fruits. Throughout this Part, we assume perfect agency between voters and their representatives. That is, we presume that public officials, whether elected or appointed, will act to maximize the interests of their constituents, rather than themselves. We then relax that assumption in the next Part.

A. *Opportunities for Free-Riding*

As we have mentioned, the central assumption of RA's free-rider prediction is that it is relatively easy for one jurisdiction to copy and adopt the innovations of another.⁵³ If it is very costly to implement domestically someone else's experiment, if it is hard to acquire information about that experiment, or if it is dubious whether the experiment is relevant to anyone else, then the incentives for free-riding are obviously much lessened. Relatedly, the degree to which jurisdictions underproduce innovation, from a societal standpoint, is tied to the usefulness of that information elsewhere. If the information generated by an experiment in State A is of low value to other states, then there is not much of an externality, and there would correspondingly be little reason to adopt policies to encourage states to generate more such information.⁵⁴ Thus, in this section we attempt to appraise the accuracy of the assumption that copying is easy. As we just said, we see three key factors that largely dictate whether copying can occur: relevancy, information, and costs. We consider them here in turn, and conclude with a brief synthesis.

⁵³ *Id.* at 604, 610.

⁵⁴ See Kollman et al., *supra* note 45, at 122–23; cf. Lazer, *supra* note 18, at 61 (observing that when jurisdictions have unique policy needs, there is little benefit to sharing information).

1. *Relevancy*

Some policies cannot easily be transplanted elsewhere.⁵⁵ Obviously, not all innovations are useful in all jurisdictions. Rules for controlling access to oil resources may be of limited use to states that are not oil producers. Using direct-deposit payroll technology as a tool for curtailing government corruption is unlikely to succeed in nations without widespread use of computerized banking. For some innovations, at least, it may be predictable that the new form of governance would not be relevant elsewhere, and thus will not be developed by another jurisdiction. There then will be little or no opportunities to free ride. These points are intuitive. What is more difficult is identifying all the potential ways in which these sorts of dissimilarities may arise, and measuring where they in fact would reduce the size of the externality from innovation.

The literature suggests several ways in which the question of relevance may affect innovation. First, a wide chorus of commentators agrees that states must be relatively similar to one another in their institutional structures, physical resources, and demographics in order for policy easily to spread from one to another.⁵⁶ Regulations can be tailored to the unique characteristics of a region,⁵⁷ as with our example of direct-deposit payroll. Such tailored policies may offer little benefit to others.

Second, whatever the overall level of relevance of policy from one jurisdiction to another, it is possible that extreme outliers will tend to innovate.⁵⁸ As with the oil extraction example, regions that have some especially unique characteristics, and rules specially adapted to them, cannot likely expect to free ride. Jurisdictions can be outliers in more abstract ways, as well. Scholars who study industrial organizations have long noted that for a firm successfully to absorb technological innovations by others, it must have a

⁵⁵ Dolowitz & Marsh, *supra* note 18, at 17; Kerber & Eckardt, *supra* note 43, at 234; Wejnert, *supra* note 18, at 310.

⁵⁶ See Craig Volden, *States as Policy Laboratories: Emulating Success in the Children's Health Insurance Program*, 50 AM. J. POL. SCI. 294, 295 (2006); Sharun W. Mukand & Dani Rodrik, *In Search of the Holy Grail: Policy Convergence, Experimentation and Economic Performance* 34 (Ctr. for Econ. Pol'y Res. Discussion Paper No. 3525, 2002), http://papers.ssm.com/sol3/papers.cfm?abstract_id=336800.

⁵⁷ See James A. Gardner, *The "States-as-Laboratories" Metaphor in State Constitutional Law*, 30 VAL. U. L. REV. 475, 481 (1996); Mukand & Rodrik, *supra* note 56, at 3–4; Wejnert, *supra* note 18, at 310.

⁵⁸ See Kollman et al., *supra* note 45, at 123; Lazer, *supra* note 18, at 61; Mukand & Rodrik, *supra* note 56, at 7.

strong knowledge base of its own in the area.⁵⁹ A firm that is far behind its rivals cannot easily copy from them, because the rivals' achievements are beyond its own capacity to absorb.⁶⁰ The reverse is also true: a firm that is far in the lead has a larger incentive to innovate, because it cannot hope to copy from lagging rivals.⁶¹ These dynamics may describe some international state competition, as with our example about electronic payroll. But it is unlikely that there are such dramatic disparities in technology or business methods between U.S. states. We are unaware of any previous efforts to extend this point to governments, so this seems a fruitful area for future empirical work.⁶²

Another area where jurisdictions may be extreme outliers, and also another candidate for further study, is in states' ideological preferences. The intuition here, too, is straightforward: an experiment may be of limited use if the originators had clearly different goals than those who might wish to copy it.⁶³ In theory, some subprocesses or components of a plan with very different ideological goals might be usable by others. But that is unlikely because it is probably difficult to evaluate the individual success or failure of a step in the policy process apart from its overall results.⁶⁴ The policy-diffusion literature seems to bear these intuitions out, reporting that the most "controversial" policies—that is, policies whose goals diverge widely from the average preferences of residents of other jurisdictions—spread most slowly.⁶⁵

A possible test of the free-rider hypothesis would attempt to turn this result upside down. If it is right that where jurisdictions are highly divergent

⁵⁹ Morten T. Hansen, *The Search-Transfer Problem: The Role of Weak Ties in Sharing Knowledge Across Organization Subunits*, 44 ADMIN. SCI. Q. 82, 87 (1999); Eric von Hippel, "Sticky Information" and the Locus of Problem Solving: Implications for Innovation, 40 MGMT. SCI. 429, 431 (1994).

⁶⁰ See Hansen, *supra* note 59, at 87; von Hippel, *supra* note 59, at 431.

⁶¹ See Werner Bönte & Max Keilbach, *Concubinage or Marriage? Informal and Formal Cooperations for Innovation*, 23 INT'L J. INDUS. ORG. 279, 297 (2005). But see Abramowicz, *supra* note 37, at 164, 168–69 (arguing that, once they capture the lead, leader states may no longer have incentives for further innovation); Gilbert, *supra* note 3, at 8 (noting that technological leaders who already can command large profits from existing technology have less incentive to innovate further).

⁶² There is, however, a literature on "failed" policy transplants. E.g., Dolowitz & Marsh, *supra* note 18, at 17–18; Wejnert, *supra* note 18, at 318 (summarizing other studies).

⁶³ Kollman et al., *supra* note 45, at 109, 122; Lazer, *supra* note 18, at 62.

⁶⁴ See EVERT VEDUNG, PUBLIC POLICY AND PROGRAM EVALUATION 209–46 (1997) (discussing tools and challenges for evaluating processes independent of the process outcome).

⁶⁵ Per-Olof Busch et al., *The Global Diffusion of Regulatory Instruments: The Making of a New International Environmental Regime*, 598 ANNALS AM. ACAD. POL. & SOC. SCI. 146, 164 (2005); Volden, *supra* note 56, at 307, 310. We note that this is an area where agency costs are likely to be important. An experiment is useful to the extent it provides information about goals that overlap with those of the relevant decision maker. If policymaking officials in a jurisdiction do not perfectly represent the interests of their constituency, then the important variable is the ideology of the public official, rather than the public.

free-riding is less likely, then we should expect to see that ideological outlier states are more innovative than one would otherwise predict for a state of that size and wealth. If small ideological outlier states, such as Utah or Vermont, are more innovative across several measures (say, the number of waivers requested from uniform federal programs), controlling for size, then that would greatly strengthen support for this aspect of RA's theory.

An additional way in which states can be outliers is in their available resources. Some innovations can be extremely costly to implement.⁶⁶ A rich jurisdiction surrounded by relatively poor states should be more likely to take on such costly innovation, because it cannot plausibly expect its neighbors to lead.⁶⁷ Relatedly, poorer jurisdictions may tend to be more averse to risk, on the standard assumption that there is a declining marginal utility of wealth.⁶⁸ Thus, the wealthy state may know that its neighbors will be unlikely to take on a risky new project.

Finally, there is one other aspect of similarity between jurisdictions that is raised somewhat indirectly by one legal scholar, Barry Friedman. Professor Friedman argues that the incentives of jurisdictions (or their officials) to innovate are somewhat beside the point, because officials must innovate in response to the problems that inevitably crop up before them.⁶⁹ This point is well-taken only to the extent that different jurisdictions face newly arising "problems" that genuinely are unique. If a jurisdiction faces a new problem, but knows that same challenge confronts many others, it likely has the same opportunities to free ride as would be present with the more entrepreneurial model envisaged by RA. We see nothing unique about the "problem" model:

⁶⁶ See Brooks, *supra* note 39, at 705 (discussing the costs of innovation to initial and subsequent innovators).

⁶⁷ Cf. *id.* at 706 (arguing that resource constraints prevent poor states from adopting policies); Wejnert, *supra* note 18, at 302, 305 (noting that low-resource nations could not emulate some policies put in place by wealthier countries).

⁶⁸ ANDREW KARCH, DEMOCRATIC LABORATORIES: POLICY DIFFUSION AMONG THE AMERICAN STATES 42, 47 (2007). On the basic theory of diminishing marginal utility, see GRUBER, *supra* note 7, at 29–30. For those unfamiliar with the concept, the diminishing marginal utility of money means that earning the one millionth dollar is worth much less, in terms of personal welfare, than the thousandth dollar. If a person experienced a loss that left her with less than \$1,000, she would starve; if she experienced a loss that left her with less than \$1,000,000, she would be mildly put out. This means that she will tend to reject coin flip bets with equal money on each side, because the pleasure of the upside gain is worth less to her, in utility terms, than the pain of the downside loss. If she has only a single source of income, her paycheck, then every risk she takes in her job is a kind of massive all-or-nothing coin flip.

⁶⁹ Friedman, *supra* note 7, at 397–98; see also Scott P. Hays & Henry R. Glick, *The Role of Agenda Setting in Policy Innovation: An Event History Analysis of Living-Will Laws*, 25 AM. POL. RES. 497, 498 (1997) (noting this argument).

Just as there are costs from delaying a confrontation with the new “problem,” there also are opportunity costs from withholding an entrepreneurial innovation. Thus, Professor Friedman’s critique has bite, as we said, only if the “problems” he envisions are unlikely soon to be confronted by any other jurisdiction.⁷⁰

While there have been no direct efforts to quantify these various influences, the literature on the patterns of policy “diffusion” may offer some empirical data on whether, for any given policy, different jurisdictions are typically alike enough to copy from one another. A key piece of evidence is the pattern of diffusion. Innovations spread most readily to neighboring jurisdictions.⁷¹ Neighbors, of course, are more likely to be alike in many respects, and therefore more likely to be alike on the important grounds for any particular policy.⁷² This is a significant point, if true, because it implies that there is a fair amount of heterogeneity among jurisdictions—that is, if neighbors can adopt faster because they are similar to an innovator, it may follow that those who are farther away are different enough that it is harder for them to copy the first policy. Thus, policy that displays a strong pattern of spreading through neighbor states may be policy that offers little benefit to far-removed and dissimilar jurisdictions.

The evidence on geographical diffusion is far from conclusive, though. The diffusion literature also reports that policy is often spread through informal informational networks, such as professional associations, migrants, and the like.⁷³ These ties are typically stronger between nations that are geographically proximate to one another, and also to those that are culturally similar, which again is related to proximity.⁷⁴ So the two factors, proximity

⁷⁰ Moreover, if a problem is genuinely unique to a particular jurisdiction, then innovative solutions to the problem are unlikely to be useful elsewhere.

⁷¹ Berry & Berry, *supra* note 18, at 400; Frederick J. Boehmke & Richard Witmer, *Disentangling Diffusion: The Effects of Social Learning and Economic Competition on State Policy Innovation and Expansion*, 57 POL. RES. Q. 39, 40 (2004); Note, *When Do Policy Innovations Spread? Lessons for Advocates of Lesson-Drawing*, 119 HARV. L. REV. 1467, 1477 (2006).

⁷² Frances Stokes Berry, *Sizing Up State Policy Innovation Research*, 22 POL’Y STUD. J. 442, 448 (1994); William D. Berry & Brady Baybeck, *Using Geographic Information Systems to Study Interstate Competition*, 99 AM. POL. SCI. REV. 505, 505 (2005).

⁷³ KARCH, *supra* note 68, at 106–09, 121–24; Busch et al., *supra* note 65, at 150; Diane Stone, *Transfer Agents and Global Networks in the ‘Transnationalization’ of Policy*, 11 J. EUR. PUB. POL’Y 545, 547–50 (2004).

⁷⁴ See Berry & Berry, *supra* note 18, at 396; Jean-Robert Tyran & Robert Sausgruber, *The Diffusion of Policy Innovations—An Experimental Investigation*, 15 J. EVOLUTIONARY ECON. 423, 424 (2005); Craig Volden, *Experimenting with Welfare Reform: Emulating Success, Cutting Costs, or Racing to the Bottom?*, 87 SOC. SCI. Q. 791, 796 (2006); Wejnert, *supra* note 18, at 308, 311–12.

and information networks, may be covariant. As a result, it is hard to say whether innovations spread slowly to distant neighbors because they are too dissimilar, or because they lack close cultural ties. In addition, studies have found that policy tends to diffuse most effectively to nearby jurisdictions, even when controlling for similarities between neighbors.⁷⁵ So while it is likely that there are some policies that are so unique as to forestall free-riding, there is little data to suggest that this phenomenon is widespread.

In sum, based on existing data, there are some policies in certain jurisdictions where free-riding incentives will be low. Leaders will tend to continue to lead on the most expensive, knowledge-intensive policies. Ideological and geographic outliers will have to go their own way. In most other instances, though, there seems not to be a strong reason to doubt that policy can be spread from one place to another.

2. Information

Another critical component to the free-riding argument is the assumption that jurisdictions can easily obtain information about the experiments of others.⁷⁶ Secrecy can be a substitute for property rights—a state cannot copy what it cannot discover.⁷⁷ Thus, where information is hard to obtain, there is little opportunity to free ride, and therefore a greater incentive to innovate. We argue in this section that good information may often prove elusive. Innovators rarely have incentives to generate their own information, other actors may have limited knowledge about the most useful aspects of an experiment, and innovating jurisdictions may actually actively conceal information about their activities from outsiders.

As RA points out, information about an experiment that might prove useful to others is typically an externality for the experimenter.⁷⁸ Therefore, we should expect that the experimenter will have no incentive to make that information available.⁷⁹ Furthermore, because other jurisdictions should be

⁷⁵ Charles R. Shipan & Craig Volden, *The Mechanisms of Policy Diffusion*, 52 AM. J. POL. SCI. 840, 849, 851 (2008); Wejnert, *supra* note 18, at 319; Note, *supra* note 71, at 1478.

⁷⁶ Rose-Ackerman, *supra* note 12, at 611; *see also* Lazer, *supra* note 18, at 53, 60 (noting that as access to information increases, innovation will decrease).

⁷⁷ Mark Fenster, *The Opacity of Transparency*, 91 IOWA L. REV. 885, 909–10 (2006) (arguing that allowing governments to conceal information will increase the quality of their deliberation, by acting as a second-best to protection of property rights).

⁷⁸ Rose-Ackerman, *supra* note 12, at 610.

⁷⁹ *Id.* at 610–11; *see also* Rubin & Feeley, *supra* note 15, at 926.

aware of this incentive, they have no reason to trust any information the experimenting jurisdiction does produce.

In theory, other jurisdictions could pay the innovator to share its knowledge accurately.⁸⁰ But here, again, there is a free-rider effect. If the knowledge is at all costly to acquire, and there exist multiple other jurisdictions where it would be useful, each should prefer to free ride on the efforts by others to acquire the information.⁸¹

As a result, the pertinent question here is whether it is costly to acquire information about the experiments of other jurisdictions. There are a number of factors that affect the cost of acquisition. Costs may vary depending on the nature of the information, the technology for sharing it, and the incentives of the actors who have access to it.

a. Nature of Information

Different forms of information may have different costs, depending on how the information is used and conveyed.⁸² We see three basic possibilities, each of which might be true to a greater or lesser extent for a particular kind of experiment.

First, it might be possible that information is very cheap, because the most important data is the basic idea of the experiment itself. In this scenario, just

⁸⁰ Cf. Inman & Rubinfeld, *supra* note 5, at 48–49 (noting that standard solution to inter-jurisdictional externalities, in absence of transaction costs, is to bargain around them).

⁸¹ Cf. *id.* at 49 (noting the likelihood of free-riding on efforts of other states in attempts to negotiate for collective good). On the other hand, if purchasing states can enter into some kind of exclusive use agreements with the selling states, then opportunities for free-riding here would diminish. We question, though, whether information that is traded from state to state can easily be kept secret, and, knowing that, whether any state would pay a premium for the information's exclusive use.

The empirical observation that marginal innovation appears to diminish as the number of jurisdictions increases could be a challenge for our theory here. Kollman et al., *supra* note 45, at 110. Our prediction is that incentives to innovate would increase with a large number of jurisdictions because higher free riding in information collection would make it less likely that any one jurisdiction would invest in learning about others. But Kollman's result may be explained by an opposite and more powerful effect. If there is an infinite number of experiments, each of potentially equal value, we should expect adding new jurisdictions to increase experimentation, since we now can attempt more experiments. However, if some experiments are better than others, and this is discernible before the experiment is undertaken, there should be diminishing returns to adding new experiments, and therefore to adding new jurisdictions. Thus, each additional new jurisdiction adds slightly less innovation than the one added previously.

⁸² See Hays & Glick, *supra* note 69, at 500 ("Patterns of innovation leadership vary across historical eras, and institutional differences between courts and legislatures affect patterns of policy diffusion."); Lazer, *supra* note 18, at 53–54 (stating that some state policies will be kept private).

about any version of the basic idea tends to produce good returns, regardless of program details. For instance, the notion of implementing cap-and-trade regimes for certain kinds of environmental pollution turns mostly on the simple economic insight that some polluters have lower marginal costs of pollution reduction than others.⁸³

A second alternative is that the processes underlying the experiment are what produce the majority of its value. In this case, other jurisdictions will be unable to implement the experiment successfully unless they know how it was done at a fairly close level of detail.⁸⁴ For example, different iterations of “community policing” have found greater or lesser success depending on the way in which relationships between police and community are structured.⁸⁵ Knowledge of processes can be difficult to transmit, because some important information may be solely inside the heads of those who carried out the processes, and not easily codified.⁸⁶

A third set of information that may sometimes be important is outcome measurement. Other governments may be reluctant to attempt a project unless they know how it turns out.⁸⁷ Conveying outcomes is straightforward, but measuring them may be costly.⁸⁸ The originator of a project may also be interested in different outcomes than would-be copiers, so that data important to the emulators may never even be compiled.

While these three components are fairly obvious, we think it is significant to break them out into a taxonomy, as we have done here, because various actors may or may not have access to, or incentives to share, all three. That in turn will affect the costs of acquisition. Consider, for example, the possibility that a locality may have reasons to conceal some of the data its experiments

⁸³ DENNY A. ELLERMAN ET AL., *MARKETS FOR CLEAN AIR: THE U.S. ACID RAIN PROGRAM* 4 (2000). Another significant example here would be Ian Ayres’s story of state efforts to write antitakeover provisions that would survive Supreme Court scrutiny. Once one such statute passed the gauntlet, others states could simply copy it. Ayres, *supra* note 17, at 545.

⁸⁴ Cf. von Hippel, *supra* note 59, at 431 (making this point about some industrial advances).

⁸⁵ See James Forman Jr., *Community Policing and Youth as Assets*, 95 J. CRIM. L. & CRIMINOLOGY 1, 17–19 (2004) (contrasting results in Chicago with other communities). Some might argue that Delaware’s corporate law constitutes such an innovation, because the fine details about not only the law but also how it is administered and enforced are large contributors to its success or failure. Roberta Romano, *Law as a Product: Some Pieces of the Incorporation Puzzle*, 1 J.L. ECON. & ORG. 225, 276–78 (1985). We expect to address the question in our next article.

⁸⁶ VON HIPPEL, *supra* note 38, at 54; Hansen, *supra* note 59, at 87.

⁸⁷ See KARCH, *supra* note 68, at 109–10; Note, *supra* note 71, at 1475.

⁸⁸ E.g., Mary L. Heen, *Reinventing Tax Expenditure Reform: Improving Program Oversight Under the Government Performance and Results Act*, 35 WAKE FOREST L. REV. 751, 766–77, 817–24 (2000).

generate. One leading commentator on policy diffusion claims that states will have no such incentives,⁸⁹ but we think he is mistaken. Even putting aside the self-interest of officials to outperform other officials, jurisdictions compete with one another. It is a familiar point that states have a fiscal incentive to attract capital, jobs, and high-wealth individuals, while excluding those who will be a net drain on their economic resources, such as the unhealthy and unemployed.⁹⁰ As others have also noted, one logical implication is that states will prefer to advertise the results of successful policy experiments, while concealing the negative effects of failures.⁹¹ However, as these commentators note, this advertising may be self-defeating, since it also transmits information to competitors, who can easily adopt the same policy and nullify any competitive gains.⁹² As a result, jurisdictions might not even bother to experiment, because they would be unable to publicize any gains they could produce.⁹³

Our simple taxonomy suggests that this analysis of “advertising” in turn overlooks the possibility that different forms of information may be valuable in different projects. For instance, a jurisdiction could conceal its processes while announcing its experiment and results.⁹⁴ If the processes are what generate value, then this is a successful competitive strategy: it both creates, and permits publicity of, competitive gains.⁹⁵

In other situations, there will likely be different combinations of state incentives to reveal or conceal. In the case of redistributive benefits, states may wish to highlight their processes and conceal their outcomes. In this way, the state could discourage in-migration in response to generous benefits—hiding from potential beneficiaries the quality of the benefit, while raising the

⁸⁹ Lazer, *supra* note 18, at 55.

⁹⁰ See Daphne A. Kenyon, *Theories of Interjurisdictional Competition*, NEW ENG. ECON. REV., Mar.–Apr. 1997, at 13, 14; Romano, *supra* note 85, at 228–29.

⁹¹ See Ehud Kamar, *A Regulatory Competition Theory of Indeterminacy in Corporate Law*, 98 COLUM. L. REV. 1908, 1927–39 (1998); see also Christopher Hood, *The Risk Game and the Blame Game*, 37 GOV'T & OPPOSITION 15, 33 (2002); Lazer, *supra* note 18, at 63 (acknowledging that there are incentives to suppress negative information).

⁹² See Kamar, *supra* note 91, at 1927–39; see also Cai & Treisman, *supra* note 19, at 28 (arguing that innovations may be shared in a centralized system more readily due to the lack of concern for adoption of policies by competitors).

⁹³ Cf. Kamar, *supra* note 91, at 1932 (claiming that experimentation is ineffectual because publicizing new law may result in no net gains for the state).

⁹⁴ Cf. von Hippel, *supra* note 59, at 437–38 (describing how innovative firms with imperfect property rights devise systems for disclosing only limited portions of valuable innovations).

⁹⁵ We will detail the significance of this possibility for the debate over the market for corporate charters in more depth in future work.

saliency of the many bureaucratic hurdles that must be surmounted to acquire it.⁹⁶ Local consumers of the good may still be able to appraise its quality, either because they directly consume it and have good measures for evaluating it, or because the state is able to disclose to them selectively the information it gathers about quality. This allows voters to monitor the performance of their representatives without attracting unwanted outsiders.

Still another combination of incentives might arise where a policy is enacted partially in response to rent-seeking by portions of the state constituency.⁹⁷ In that scenario, the jurisdiction's officials may prefer to conceal everything about its project, or, at most, to announce selectively only some results, such as an increase in jobs or tax revenues. The jurisdiction likely prefers to conceal from those who are disadvantaged by its experiment the fact that the experiment exists at all.

b. Ease of Distribution

Technological change can also strongly influence the costs of information, and therefore the incentives to innovate. With the advent of the wired world, information and information networks have spread more widely than ever, which has reportedly greatly facilitated policy transfer.⁹⁸ This implies that, while existing policies now will be shared more widely, there may well be fewer new policies in the first instance. It is possible, though, that states still can refuse to compile information that would be valuable to outsiders, or take active steps to conceal information.⁹⁹

c. Access and Individual Incentives to Share

To take one last example of where different forms of information may have different costs, consider the possibility that various channels for spreading

⁹⁶ A standard assumption in public finance is that states prefer to set welfare benefits low in order to avoid attracting new beneficiaries. Volden, *supra* note 74, at 792. Empirical studies on whether changes in welfare policy affect in-migration are rather mixed. See *infra* text accompanying note 134. The dynamic we offer here could explain the failure of the data to support theory: when states are more generous to their own indigent population, they hide that fact from outsiders.

⁹⁷ This would, of course, be a departure from the perfect agency relationship we assumed at the beginning of this Part. But we could imagine a very similar analysis in the case of rent-seeking by a domestic firm at the expense of out-of-state individuals or firms.

⁹⁸ E.g., KARCH, *supra* note 68, at 106–09, 121–24; Dolowitz & Marsh, *supra* note 18, at 7. Indeed, Professor Karch claims that information is now so readily available that there is a danger that the glut of information could itself be a barrier to policy diffusion. KARCH, *supra* note 68, at 7–8.

⁹⁹ See Fenster, *supra* note 77, at 920–24.

information may have varying access to information and reasons for sharing it. Policies typically spread through one or more of a handful of avenues, including contacts among or movement by citizens, academics, firms, bureaucrats, and elected officials.¹⁰⁰

The differential incentives of public and private actors are particularly important to any thorough analysis because private actors lack access to a variety of information. Unless they have worked in close partnership with government, private actors are unlikely to have information about internal processes. If processes are what create the value of a particular innovation, then the incentives of private actors to share information may be largely irrelevant.

So, for example, firms are likely to have different goals than academics or citizens. All else being equal, a firm that does business across many jurisdictions is likely to want a fair degree of policy uniformity in order to control compliance costs.¹⁰¹ Thus, firms tend to favor uniformity, sometimes at the cost of achieving the “best” outcome by whatever measure. Citizens and academics seem likely to want to obtain their subjectively most-preferred policy, and will want to bring such a policy developed elsewhere to their own abode. And academics, we feel well-qualified to suggest, are prone to “evangelize”—they would like to see others outside their own home adopt their view of the best policies. In all of these cases, information will spread fairly readily, perhaps depressing innovation in the long run.

In contrast, officials may prefer to keep policy information close to the vest. First, it is well-known that public officials are likely to have self-selected their profession on the basis of their ideological commitments.¹⁰² That is, one of the primary rewards of government service is the opportunity to obtain policy outcomes,¹⁰³ so public officials are more likely to evangelize—to want to see their own ideas of the “best” outcome enacted not only for themselves, but everywhere. At the same time, there may be either complementary or conflicting self-interest narratives. If bureaucrats are rewarded by their

¹⁰⁰ See KARCH, *supra* note 68, at 106–09, 121–24; VON HIPPEL, *supra* note 38, at 18, 77, 90; Stone, *supra* note 73, at 545–61 (discussing the diffusion of policies).

¹⁰¹ Busch et al., *supra* note 65, at 152.

¹⁰² See, e.g., Elizabeth Garrett, *Term Limits and the Myth of the Citizen-Legislator*, 81 CORNELL L. REV. 623, 694–96 (1996) (noting that structural features of political processes may attract those who find the opportunities those processes offer appealing).

¹⁰³ See Steven Kelman, *Why Public Ideas Matter*, in *THE POWER OF PUBLIC IDEAS* 31, 46 (Robert B. Reich ed., 1988) (reporting surveys of officials).

legislatures for good performances relative to the performance of bureaucracies in other places, and the bureaucrats are motivated by those rewards, they may prefer to conceal information. On the other hand, if the main self-interested motivator for bureaucrats is status among their peers, they may well prefer to go to conferences and boast in detail about their own accomplishments.

In short, the flow of information needed to copy an innovation will be highly contingent, to a degree that likely defies generalization. Still, we have identified preliminarily some factors that would ease or congest information flows, and in turn reduce or encourage innovation.

3. *Costs of Adopting*

Fortunately, the analysis of the last important free-riding factor, the costs of adopting new policies, is somewhat simpler, although data are scanty. The basic idea is that it is not costless for localities to copy the innovations of others.¹⁰⁴ If the costs of copying are comparable to, or even higher than, the costs of experiment, the jurisdiction might as well experiment. In a competitive scenario, in which governments will not initiate new policies unless it gives them a competitive advantage, high copying costs also can promote innovation.¹⁰⁵ Because a potential innovator knows that others cannot easily copy it, the innovator is likely to reap some competitive reward from its invention.¹⁰⁶ It therefore has an incentive to do so. These factors suggest that copying costs may be an important part of the innovation story.

To add some nuance to this story, consider how rational states would determine whether to innovate. Assume that a given policy has value and that there is an extra premium for being among the first to adopt that policy. If the cost of copying is zero, a state should be willing to innovate only where the premium for innovating exceeds the entire cost of innovation.¹⁰⁷ As the costs of copying increase and approach the costs of innovation, the size of the premium for moving first needed to prompt innovation should decline to

¹⁰⁴ Kerber & Eckhardt, *supra* note 43, at 234.

¹⁰⁵ Romano, *supra* note 85, at 235–36.

¹⁰⁶ *Id.*

¹⁰⁷ See Ayres, *supra* note 17, at 547. That is, if we can obtain the exact same value by copying as by innovating, we should only be willing to incur the additional costs of copying where the value of moving first exceeds those additional costs. A bit more formally (and with apologies to our economist readers for our refusal to use unnecessary Greek letters), let V_p = value of a policy, V_f = value of implementing that policy first, C_i = cost of innovating, and C_c = cost of copying. A state should innovate where $V_f + V_p - C_i > V_p - C_c$. If we set $C_c = 0$, and cancel the identical V_p term on either side, then the state innovates if and only if $V_f - C_i > 0$.

zero.¹⁰⁸ For instance, in the extreme case, if a state faces the same costs whether it moves first or second, and moving first has any premium at all, it should move first. These predictions imply that we will see more innovation as copying costs rise; it is very easy to overcome the first-mover premium hurdle when copying costs are high relative to innovation costs.

In addition, suppose that the size of the first-mover premium depends on how many other states copy. If the costs of copying generally are high, and the value of a project varies from state to state, some other states may elect not to copy. In that instance, the first-mover premium should rise.¹⁰⁹ Thus, higher copying costs both lower the size of the first-mover premium needed to trigger innovation and also increase the size of that premium.¹¹⁰

What, then, do we know about copying costs? Commentators have identified a variety of costs, some rather subtle, that could accompany copying a policy, and we would like to point out a few others, as well. Obviously, there may be training and infrastructure expenses.¹¹¹ A more refined version of that point is the possibility that the new project depends on successful copying of various internal government processes, which may be expensive to transition into.¹¹²

¹⁰⁸ Glazer & Kondo, *supra* note 19, at 10. Mathematically, where $C_i = C_c$, those terms cancel, so there would be innovation if and only if $V_f > 0$. In intermediate cases, we have $V_f - C_i > -C_c$. For instance, let $C_i = 100$ and $C_c = 50$. In that case, we have: $(V_f - 100 > -50) = (V_f > 50)$. If $C_c = 25$, then we have: $(V_f - 100 > -25) = (V_f > 75)$. Again, the point is that, as the costs of copying decline, with all else being equal, the premium for moving first must get larger and larger to make innovation attractive.

¹⁰⁹ We think this is a plausible assumption. Oligopolists typically command smaller rents when they must divide the pie more ways and defend against more defectors. Marcel Kahan & Ehud Kamar, *The Myth of State Competition in Corporate Law*, 55 STAN. L. REV. 679, 742 (2002).

¹¹⁰ At the risk of making the reader's head explode, we note that there is yet a further complication here: low copying costs may increase not only the first-mover premium but also the premium to the second mover for being ahead of the third mover. If that is true, then the first-mover premium diminishes. This whole sequence is iterative, as third-mover premia diminish second-mover premia, which then increase the first-mover advantage, and so on.

¹¹¹ Douglas J. Cumming & Jeffrey G. MacIntosh, *The Role of Interjurisdictional Competition in Shaping Canadian Corporate Law*, 20 INT'L REV. L. & ECON. 141, 149 (2000); Wejnert, *supra* note 18, at 301.

¹¹² That is the essence of corporate scholars' argument, we think, about the costs of competing with Delaware in the administration of corporate law. Cumming & MacIntosh, *supra* note 111, at 149; Jonathan R. Macey & Geoffrey Miller, *Toward an Interest-Group Theory of Delaware Corporate Law*, 65 TEX. L. REV. 469, 500 (1987); Oren Bar-Gill et al., *The Market for Corporate Law*, 162 J. INSTITUTIONAL & THEORETICAL ECON. 134, 150 (2006). For now, we remain on the sidelines of this debate, except to say that the question of what constitutes an innovation in Delaware corporate law—and, as such, what must be replicated for a second mover to copy such an innovation—warrants further explication.

One other implication of the competition for outside capital is that disuniformity is costly. We noted before that firms often prefer uniform rules across jurisdictions. Being the second or third state to move to a new rule, when there are forty-seven or so with a different, uniform rule, may drive away or prevent the influx of multi-jurisdictional firms.

Similarly, failed experiments may have lasting effects on a locality's ability to compete for capital. There is some risk that an experiment, even if successful elsewhere, will prove a bad fit in a different jurisdiction.¹¹³ In addition to the direct welfare consequences of this bad fit, a jurisdiction can also pay an additional price by driving out mobile firms. Because there are inevitable relocation costs, once a firm has departed it may not be possible to lure it back simply by restoring the jurisdiction to its old state. The jurisdiction must offer amenities or other enticements of sufficient value to overcome the moving costs. There could also be enduring negative reputational effects.

Still, it should be possible to minimize many of these risks simply by waiting longer.¹¹⁴ If the first jurisdiction to invent a policy is not particularly similar to a prospective copier, the copier can just wait for a third, more similar state to copy, and observe the effects there as well. Waiting for other adopters also obviously diminishes the impact of disuniformity. Thus, disuniformity and the risks of failure are less significant in the long term than other copying costs.

In short, as a matter of theory it appears the most important copying costs are the most basic ones: the costs of obtaining information about, and putting into place, a policy developed elsewhere. That is a happy outcome, because unlike some of the other costs we mention—say, the cost of offering credible commitments not to extract rents—these basic costs seem to us most susceptible to empirical measurement. Accordingly, it should be possible to test our hypothesis by examining whether states are more likely to innovate in policy areas where these costs are high. Similarly, if our theory is right, then we should be able to predict those policy areas where federalism is least productive: when copying costs are low, states will be less innovative. For now there is a need for more data before we can accurately assess the extent to which decentralized innovation is underprovided.

¹¹³ Dolowitz & Marsh, *supra* note 18, at 17–18; *see also* Tyran & Sausgruber, *supra* note 74, at 427–28 (“[E]mulating a policy which has proven to be successful in some other state is risky, too.”).

¹¹⁴ Brooks, *supra* note 39, at 704. This is another version of the “option value” of moving second we mentioned earlier. *See supra* text accompanying note 39.

4. *Summing Up*

Given the many factors at work here, and the paucity of real-world studies of many of them, it is difficult to generalize about the existence of free-rider effects. One thing that seems clear is that those who assert that in all cases there obviously is or obviously is not a free-rider problem are likely mistaken. There are also at least a few strong trends.

First, innovation is most likely to occur where it will be least useful to others. Free-riding is less appealing where jurisdictions are highly dissimilar and would be unable to utilize the information generated by observing others. Similarly, if copying costs are high, or information scarce, jurisdictions will know they must strike out on their own if they want to improve on their existing methods.¹¹⁵ Moreover, in a competitive environment in which copying is difficult, each locality will be able to reap more rewards from innovation because there will be few competitors able to offer the new policy.

Although there may be more innovation in this environment, the overall societal gains from innovation will be small. Instead of diffusing throughout the country, or throughout the world or region, each new policy or method will benefit only those in the innovating state. That could suggest that, from the standpoint of overall welfare, it might be preferable to locate most government authority centrally, because experimentation seems not to add much to the good of the country at large.

The possibility that centralization might be superior leads us to the second important lesson we take from our survey thus far: some, but not all, innovation depends on the absence of spillovers. In the case of highly dissimilar jurisdictions, there is innovation because, contrary to the assumptions of the free-rider scenario, there is little or no information externality. Information generated in one place is just not that useful in others. That is not the case with the situation in which there is innovation because information is scarce or costly, or is costly to employ. In those instances, potential spillovers may still be quite high if the other barriers to diffusion could be overcome.

¹¹⁵ Thus, we disagree strongly with Karch, who in a brief passage at the end of his thorough survey of policy diffusion claims that the fact of effective diffusion and readily available information supports the notion of states as laboratories of democracy. KARCH, *supra* note 68, at 205. The proper inference is exactly the opposite: very good information and easy diffusion of policies should produce less innovation, not more.

This difference suggests a policy prescription we have not seen elsewhere in the literature. RA notes that a centralized planner can prompt innovation by offering grants or prizes to local innovators, presumably in amounts tied to the approximate size of the externality they produce.¹¹⁶ In this way, the federated government will produce something like an efficient amount of experimentation. Others, such as Dorf and Sabel, have built on this suggestion, offering elaborate mechanisms for eliciting and rewarding local experiments.¹¹⁷ Our work here implies that these efforts are of interest only in the case where there in fact is a significant externality—that is, in the information-deficit or high-cost scenarios. When local jurisdictions are highly heterogeneous, and externalities are small, there is minimal inefficiency, and therefore no real case for centralized intervention.

Finally, we can confirm RA's general observation about the conditions in which free-riding occurs, and that these conditions are likely to arise in the real world with some frequency. Through the many loops of our analysis, we were unable to undermine the possibility that there will be republics in which states are at least somewhat similar, copying is at least somewhat affordable, and information is at least somewhat available. That is, and remains, the prescription for free-riding.

B. Is There a First-Mover Advantage?

The fact that states have an incentive to free ride does not necessarily mean that states will not innovate. If there are substantial advantages to being the first to implement a new policy, and those advantages outweigh any accompanying costs, then the excess represents value that cannot be obtained merely by free-riding.¹¹⁸ In this section, we sketch the likely tradeoffs. We find that for most jurisdictions it is a gamble whether any first-mover premium will exceed the risks of innovation. That tends to confirm RA's prediction that the appeal of innovation will depend on local preferences for risk.¹¹⁹

In our view, the most obvious benefit of moving first, although one we have not seen discussed in any depth in the literature, is time discounting: All other things being equal, it is better to have the benefits of a successful

¹¹⁶ Rose-Ackerman, *supra* note 12, at 615–16.

¹¹⁷ Abramowicz, *supra* note 37, at 191–205; Michael C. Dorf & Charles F. Sabel, *A Constitution of Democratic Experimentalism*, 98 COLUM. L. REV. 267, 314–23 (1998); Giampaolo Garzarelli, *Cognition, Incentives, and Public Governance*, 34 PUB. FIN. REV. 235, 236–52 (2006).

¹¹⁸ Ayres, *supra* note 17, at 548.

¹¹⁹ Rose-Ackerman, *supra* note 12, at 606.

experiment sooner than later. Some of these time benefits are concrete. A jurisdiction that is more efficient with its funds can invest the savings and produce more public goods or impose lower taxes in future years.¹²⁰

In some instances, time discounting and the incentive to move first may increase innovation but reduce nationwide welfare. Some innovative policies may be new strategies for producing negative externalities, which can lead to the notorious “race to the bottom.”¹²¹ For instance, a state might discover a new way to impose higher taxes on outside businesses.¹²² Neighboring states may retaliate, but if there is a limit on the degree to which states can impose retaliatory costs, then moving first, and investing the gains, may leave the first-moving discriminator ahead overall.¹²³

Other benefits from acting first will be more ineffable. For instance, studies suggest that individuals have highly varying future discount rates.¹²⁴ Some people strongly prefer immediate consumption over savings, even if the market-rate present-discounted value of the savings substantially exceeds present consumption.¹²⁵ In jurisdictions where this “excessive” future discounting is prevalent, moving first will be correspondingly more attractive. There is a tradeoff between moving first and waiting to acquire valuable information from others; future discounters will tend to view the gains from waiting as smaller. Of course, the size of the discount also depends on the time it takes to acquire and implement a copied policy; discounting may not be significant, even if citizens are heavy future discounters, if copying takes only a few months. On the other hand, even modest future discounting might

¹²⁰ That is, there is a time value of money. *E.g.*, Calvin H. Johnson, *Accounting in Favor of Investors*, 19 CARDOZO L. REV. 637, 657–63 (1997).

¹²¹ Busch et al., *supra* note 65, at 152; E. Donald Elliott et al., *Toward a Theory of Statutory Evolution: The Federalization of Environmental Law*, 1 J.L. ECON. & ORG. 313, 329 (1985).

¹²² Daniel Shaviro, *An Economic and Political Look at Federalism in Taxation*, 90 MICH. L. REV. 895, 908, 962–63 (1992); *see also id.* at 973–74 (noting that to the extent that states experiment, they may be attempting to perfect methods of discriminating in favor of their own residents).

¹²³ One form of limit may be judicial intervention. The Commerce Clause prohibits most forms of state discrimination against interstate commerce. *United Haulers Ass’n v. Oneida-Herkimer Solid Waste Mgmt. Auth.*, 550 U.S. 330, 336–40 (2007). However, the penalty for discriminating is usually modest, so a state can typically keep most of the gains it won by being the first to discriminate. Maxwell L. Stearns, *A Beautiful Mend: A Game Theoretical Analysis of the Dormant Commerce Clause Doctrine*, 45 WM. & MARY L. REV. 1, 134 (2003).

¹²⁴ Christopher Chabris et al., *Intertemporal Choice*, in *THE NEW PALGRAVE DICTIONARY OF ECONOMICS ONLINE* (Steven N. Durlauf & Lawrence E. Blume eds., 2d ed. 2008), http://www.dictionaryofeconomics.com/article?id=pde2008_P000365&q.

¹²⁵ *E.g.*, Gregory S. Berns et al., *Intertemporal Choice—Toward an Integrative Framework*, 11 TRENDS COGNITIVE SCI. 482, 483–84 (2007); Chabris et al., *supra* note 124, at 1–4.

greatly diminish the appeal of waiting ten years to gather information about the outcomes of an experiment elsewhere.

Next, as Professor Ribstein has pointed out, first-mover jurisdictions can create an opportunity for their citizens to obtain special expertise.¹²⁶ In the corporate charter example Ribstein describes, Delaware's attorneys and courts develop familiarity with Delaware corporate law before their competitors in other states.¹²⁷ If these other states then adopt Delaware law, the Delaware actors will be more familiar with the second-mover states' laws than the attorneys in those states, giving Delaware's citizens at least a temporary advantage.¹²⁸ To the extent that reputational effects are persistent, this advantage may last longer than the actual period in which Delaware attorneys' expertise really is superior.¹²⁹ The same could as easily be true of automotive engineers or pharmacists. While this represents a fairly small welfare gain in the context of the state as a whole, political dynamics, in particular those described by public choice theory, might magnify the likelihood that the small welfare effect translates into a large incentive for the state's officials to act.¹³⁰

A third possibility, as we mentioned briefly in the last section, is that jurisdictions may be motivated by policy evangelism.¹³¹ That is, they want to innovate because they believe their innovation makes the world a better place, and they want to see it spread as widely as practicable.¹³² Thus, the spillover is likely not an externality at all, as the benevolent or ideological voters feel some emotional or spiritual reward whenever another jurisdiction learns about their invention. It is unclear, however, to what extent it will ever be the case that a majority of voters in a jurisdiction will take such a view. Thus, the opportunity to share the good word about new policy will generate only small benefits to each state, and, depending on one's view about what comprises perfect agency,

¹²⁶ Ribstein, *supra* note 16, at 331.

¹²⁷ *Id.* at 332–35.

¹²⁸ See Ayres, *supra* note 17, at 554–55; Romano, *supra* note 85, at 240–41.

¹²⁹ Ayres, *supra* note 17, at 548.

¹³⁰ KARCH, *supra* note 68, at 106–09, 121–24. In brief, the theory is that there is a free-rider effect among voters, which diminishes as the affected group shrinks, information becomes more readily available, and the size of the effect of a given policy on the relevant group increases. MANCUR OLSON, *THE LOGIC OF COLLECTIVE ACTION: PUBLIC GOODS AND THE THEORY OF GROUPS* 21–22, 31, 35 (1971). Thus, voters who stand to gain a large benefit at the expense of a small, hidden, widely dispersed cost to other voters are likely to prevail, as they will be very active lobbyists while the victims of the policy will be indifferent. *Id.* Obviously, then, we set aside here for a moment our assumption in this Part that there is a perfect agency relationship between officials and their constituents.

¹³¹ See *supra* Part II.A.2.c.

¹³² See Cai & Treisman, *supra* note 19, at 21.

representative officials might set aside this view altogether. Again, though, there may be a possible public choice story one could tell here about such voters.

There is another set of potential first-mover advantages that arises in a world in which firms and individuals are mobile across jurisdictions. There is strong evidence that firms move in response to packages of taxes and amenities.¹³³ Evidence on individuals is more mixed, but generally suggests that at the margins most people are sensitive to government-offered amenities.¹³⁴

Assuming, then, that mobility is a relevant consideration, moving first may offer the opportunity to attract and retain desirable firms or migrants.¹³⁵ Corporate law scholars have argued that first movers can lock in some gains from their innovation, although only at the cost of offering a bond that they will not confiscate from newcomers the rewards of the policy.¹³⁶ We would add that the need to offer a bond is small when the newcomer faces very small moving costs. If the firm can relocate cheaply in response to efforts to confiscate locational rents, it will not fear those efforts and needs little guarantee. While this makes bonding cheaper for the locality, it also diminishes the first-mover advantage because the jurisdiction cannot effectively impose taxes on the rents it creates for the firm.¹³⁷ On the other hand, by alternative metrics there are still first-mover gains. For instance, the

¹³³ Kerber & Eckhardt, *supra* note 43, at 232; Romano, *supra* note 85, at 255.

¹³⁴ KARCH, *supra* note 68, at 6; Berry & Baybeck, *supra* note 72, at 509, 519.

¹³⁵ Bar-Gill et al., *supra* note 112, at 137, 154; Romano, *supra* note 85, at 276–78. *But cf.* Gilbert, *supra* note 3, at 11 (explaining that the existence of rivals who can themselves innovate reduces returns from innovation, because each must share the available market for the competing products); Raaj Kumar Sah & Joseph E. Stiglitz, *The Invariance of Market Innovation to the Number of Firms*, 18 RAND J. ECON. 98, 107 (1987) (arguing the same occurs under most market conditions).

¹³⁶ Romano, *supra* note 85, at 235–50. For later elaboration, see Bar-Gill et al., *supra* note 112, at 134–37; Cumming & MacIntosh, *supra* note 111, at 147–48. In a competitive market, a jurisdiction seeks to attract valuable outsiders by offering a desirable new policy. However, the outsiders, if rational, know that once they have relocated they may be held up by their new jurisdiction (through taxation or similar transfers) for an amount up to the added value, or at least their costs of escaping. Therefore, the jurisdiction, for its offer to have value, must guarantee to newcomers that it will not extract from them all the gains it appears to be offering. Delaware does this, in Professor Romano's story, by being poor, and so dependent on corporate charter fees that it will not risk driving them away. Romano, *supra* note 85, at 235–36. To compete with Delaware, a copying jurisdiction would have to offer some comparable bonding mechanism. This could be an opportunity cost, as with Delaware's implicit pledge not to extract the full value of its innovation. Or it might be a more explicit bond of some kind, such as a contract.

¹³⁷ See Daniels, *supra* note 19, at 182 (arguing that rapid and inexpensive migration stifles policy changes due to the fear of movement out of the jurisdiction).

firm may employ local residents, attract other less mobile firms, and otherwise improve the community in places other than its budget.¹³⁸

Against these potential gains, whether from mobility or otherwise, states must balance the costs of being the first to put in place a new policy or process. Some of the costs are predictable. There are inevitable start-up costs, such as research, training, technical advice for the private sector, and construction of any needed infrastructure.¹³⁹ If resources are relatively fixed, or there are diminishing returns from increased taxation, then any investment in the new venture will bear opportunity costs. Similarly, on the reasonable assumption that a state's citizens and public officials do not have unlimited time and effort to debate their policy choices, choosing to embark on an experiment may mean giving up an opportunity to enact other, possibly more beneficial, policies.¹⁴⁰ Experiments seem likely to take more decisional effort than copying, so the opportunity cost of one experiment may be the chance to copy two or three others. As we explained earlier, these costs contribute to the option value of waiting—an opportunity cost first movers must sacrifice to innovate.¹⁴¹

Moreover, as we have already seen, innovation represents a break from the status quo; if the status quo is held widely in common among jurisdictions, the innovator must bear the cost of disuniformity. Firms may exit in response to higher compliance costs, although conceivably this exit could also be a boon for remaining local competitors.¹⁴² Exit may have pyramiding costs, especially if some of the value of doing business in the jurisdiction derives from network effects—that is, from the fact that geographic proximity to partners or rivals creates value, as in the classic Silicon Valley example.¹⁴³

Most problematically, many experiments fail.¹⁴⁴ One cost of innovation is thus the chance that the new policy will produce results even worse than the

¹³⁸ See Brooks, *supra* note 39, at 704 (discussing improved status in international community, including grants of aid); Daniels, *supra* note 19, at 149 (discussing reputation for innovation); Glazer & Kondo, *supra* note 19, at 5 (discussing locational rents for real property); Romano, *supra* note 85, at 240–41 (discussing customers for local lawyers).

¹³⁹ Romano, *supra* note 85, at 276.

¹⁴⁰ Cf. Brooks, *supra* note 39, at 704 (noting that governments face time and resource constraints in their efforts to analyze policy choices).

¹⁴¹ See *supra* text accompanying notes 39–41.

¹⁴² E.g., Severin Borenstein, *The Evolution of U.S. Airline Competition*, 6 J. ECON. PERSP. 45, 53 (1992) (finding a significant increase in the profits of remaining airlines after a rival leaves the market).

¹⁴³ See MICHAEL STORPER, *THE REGIONAL WORLD: TERRITORIAL DEVELOPMENT IN A GLOBAL ECONOMY* 10–13, 40–41 (1997); Bar-Gill et al., *supra* note 112, at 143.

¹⁴⁴ Abramowicz, *supra* note 37, at 158–59.

old policy. Here, the time-discounting question is flipped on its head. If new policies, even new policies copied from others, sometimes go wrong, then it is better to wait to implement them and put off the cost of failure. Furthermore, failure may also trigger exit, with the potential pyramiding of losses that exit may entail.¹⁴⁵

Given the high degree of uncertainty that evidently attaches to moving first, the ultimate effect of first-mover premia will likely depend on how jurisdictions view risk. According to RA, the prospect of a risk of large losses, from whatever source, should tend to dissuade states from experimenting.¹⁴⁶ Different citizens within the jurisdiction, she claims, will have different preferences for risk-taking.¹⁴⁷ She suggests that only relatively risk-seeking jurisdictions will experiment, and that voters are unlikely to sort by risk preference.¹⁴⁸ We are unaware of any studies on this last point, but it seems plausible. Moving is costly and the choice of jurisdiction turns on many factors in addition to risk preference.¹⁴⁹ Indeed, we have seen in this section alone at least two other sets of preferences—time-discounting and policy “evangelism”—that citizens might sort by. It is also probably costly to obtain information about the risk preferences of other jurisdictions, and thus costly even to know where to move to satisfy one’s preference. According to RA, the implication that follows from these facts is that jurisdictions will not tend to experiment, regardless of first-mover premia, because risk preferrers will be a minority in each jurisdiction.¹⁵⁰

We disagree with RA that it is necessarily the case that risk preferrers will not form majorities. Although citizens may not sort based on their preferences for risk, they may well sort along other characteristics that correlate with risk preference. For instance, there is evidence that risk preference is tied to wealth,¹⁵¹ and strong evidence that people are sorted by wealth.¹⁵² It follows

¹⁴⁵ See Daniels, *supra* note 19, at 149 n.41. For a discussion of the similar effects of exit on residential neighborhoods, see OSCAR NEWMAN, COMMUNITY OF INTEREST 82–83 (1980).

¹⁴⁶ Rose-Ackerman, *supra* note 12, at 601.

¹⁴⁷ *Id.* at 608; see also Shepsle, *supra* note 25, at 560–61.

¹⁴⁸ Rose-Ackerman, *supra* note 12, at 608.

¹⁴⁹ *Id.* For information on the costs of relocation, see Gerald E. Frug, *City Services*, 73 N.Y.U. L. REV. 23, 31 n.31 (1998).

¹⁵⁰ Rose-Ackerman, *supra* note 12, at 608–10.

¹⁵¹ Lawrence Blume & Daniel L. Rubinfeld, *Compensation for Takings: An Economic Analysis*, 72 CAL. L. REV. 569, 603–04 (1984).

¹⁵² CHARLES M. HAAR, SUBURBS UNDER SIEGE: RACE, SPACE AND AUDACIOUS JUDGES 5 (1996); U.S. CENSUS BUREAU, RACIAL AND ETHNIC RESIDENTIAL SEGREGATION IN THE UNITED STATES: 1980–2000, at 59 (2002).

that simply by random sorting there will be some jurisdictions with a majority of voters with a strong preference for risk. Thus, while the riskiness of being a first mover may reduce the number of jurisdictions that will do so, we think RA somewhat overstates the size of that diminution.

As a result, the presence of a first-mover premium may at times encourage innovation. Moreover, as a given innovation becomes less risky for a given jurisdiction, or as it becomes more difficult for citizens to exit in response to unwanted risk, it is increasingly likely that the jurisdiction's populace will achieve a critical mass of those willing to take on the risk of that new policy. Correspondingly, low innovation costs, high costs of exit, and the ability to hedge risk all should contribute to innovation.

These predictions about first-mover advantages are supported by the observation, reported in several studies, that large states are the primary sources of innovation.¹⁵³ Size tends to cure many of the downsides of being a first mover. More populous states with ample resources are better able to absorb the cost of experiment in one or two budget areas, and can more easily diversify against the risk of failure.¹⁵⁴ Some commentators report that policy innovation, because it is so dependent on government expertise, rewards economies of scale in developing skilled bureaucrats and monitoring their progress.¹⁵⁵ More populous states may have a wider range of policy benefits to offer residents, making it less likely that residents will leave due to any single policy decision. Economically thriving states are costly to exit because departing entails giving up the advantages of living in the successful area.¹⁵⁶ Thus, while there are a variety of costs that undercut the first-mover advantage, it appears to remain the case that the benefits exceed costs for at least some large, well-off states.

¹⁵³ Frances Stokes Berry & William D. Berry, *Innovation and Diffusion Models in Policy Research*, in THEORIES OF THE POLICY PROCESS 169, 170, 176–77 (Paul A. Sabatier ed., 1999); Volden, *supra* note 56, at 301, 304 (summarizing studies and offering new data); *see also* Shipan & Volden, *supra* note 75, at 24 (finding that large cities are primary innovators among municipalities).

¹⁵⁴ *See* Kollman et al., *supra* note 45, at 102; *cf.* Strumpf, *supra* note 19, at 231 (claiming that local governments cannot diversify their experiments but that national government can).

¹⁵⁵ Kollman et al., *supra* note 45, at 102; Alessandra Arcuri & Giuseppe Dari-Mattiacci, *Centralization Versus Decentralization as a Risk-Return Trade-Off* 9 (Amsterdam Ctr. for Law & Econ., Working Paper No. 2007-06, 2007), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1013329. There is some dispute, though, whether returns to scale diminish, at least in private firms. *See* Gamal Atallah, *Vertical R&D Spillovers, Cooperation, Market Structure, and Innovation*, 11 ECON. INNOVATION & NEW TECH. 179, 183 (2002).

¹⁵⁶ *See generally* David Schleicher, *The City as a Law and Economic Subject* (2009) (unpublished manuscript, on file with authors).

C. *Will States Really Experiment?*

We have established that in some conditions it is likely that localities will initiate new policies. This is still a step short of demonstrating that states achieve Brandeis's "laboratories" of democracy. For reasons we explore in a moment, it is possible that instead of experiments, states all simply pluck what seem to them to be the lowest hanging new fruits, rather than sorting among all of the available alternatives to select the most appealing. Further, there appears to be no incentive for jurisdictions to report experiments gone wrong, leaving open the possibility that there will be wasteful duplication of both successes and failures.

As Koleman Strumpf has observed, in theory the ideal way to structure a series of policy experiments would be to carry out a different project in each of several experimenting jurisdictions.¹⁵⁷ In this way, each state can benefit from the information about alternative approaches generated by its neighbors, and then all can switch to the most successful. Strumpf therefore predicts that where information flows freely, we should see a wide diversity of state experiments, as each successive experimenting state chooses a different option from its neighbors in order to maximize the amount of information available to it.¹⁵⁸

The flaw in this theory is that not all experimental policies are of equal expected value.¹⁵⁹ Some experiments may be more likely to succeed, have a higher expected return, or both. As Cai and Treisman argue, the additional information generated by choosing the experiment with the second-best expected value is in large measure a positive externality.¹⁶⁰ They claim that one should therefore expect that jurisdictions will choose that path rather less often than would a planner who could optimize social welfare—say, a central planner capable of directing experiments in various controlled experimental subdivisions.¹⁶¹

We find Cai and Treisman more persuasive. In particular, we think states will be reluctant to select an experiment that could result in lower returns than the status quo—that is, they are risk averse. Cai and Treisman argue that risk

¹⁵⁷ Strumpf, *supra* note 19, at 225–26; *see also* Sebastian Heilmann, *Policy Experimentation in China's Economic Rise*, 43 *STUD. COMP. INT'L DEV.* 1, 3 (2008) (making same point).

¹⁵⁸ Strumpf, *supra* note 19, at 227.

¹⁵⁹ *See* Cai & Treisman, *supra* note 19, at 18–19; Kollman et al., *supra* note 45, at 116.

¹⁶⁰ Cai & Treisman, *supra* note 19, at 19.

¹⁶¹ *Id.*

aversion arises because localities cannot easily diversify against the lost opportunity of selecting the highest-expected-value experiment.¹⁶² As we have just seen, it appears that at least larger states in fact can do so. More significant, to our minds, is the fact that failed experiments can carry heavy costs. The first-best experiment is attractive not only because of its potential gains, but also because of the lower likelihood it will produce damaging losses.¹⁶³ Both halves of the risk/reward equation are relevant to determining the appeal of a prospective new policy. In addition, due to the diminishing marginal utility of wealth, states will avoid wagers that offer modest positive expected value even after accounting for these dangers.

In short, the expected value of the added information a state itself gains by choosing the second-best experiment is likely to be greatly outweighed by the expected costs of giving up the first-best choice. Unless the states are able to internalize the benefits the new information provides to all other states, they are likely all to choose the same, first-best experiment. Rather than a laboratory with many different experiments, we would have the same experiment repeated many times.

Of course, this analysis assumes that all jurisdictions perceive the expected value of the potential options similarly. As a number of commentators have observed, that is not necessarily the case.¹⁶⁴ We have seen that different states might have different tastes for risk, different policy goals, different degrees of time-discounting, and different degrees to which they internalize the benefits of spillovers through evangelism effects. Some localities might simply not be aware of some of the available options. Thus, the literature predicts that, as the number of jurisdictions increases, there should be, by random chance, a greater diversity of policy experiments.¹⁶⁵ Particular communities will happen to have clusters of risk-lovers, heavy-discounters, or the like.

We would add that diversity should also increase as the ease of individual sorting on any of these characteristics increases. That is, as it becomes easier for voters to choose to live in a place with other citizens who share their preference for risk, evangelism, or other attitudes toward innovation, it should

¹⁶² *Id.* at 25–26.

¹⁶³ Even if a state can later switch from a failed policy to a successful policy, *cf.* Yair Jason Listokin, *Learning Through Policy Variation*, 118 *YALE L.J.* 480, 484–86 (2008) (noting that some failed policy experiments can be reversed), there is a time value of delaying adoption of the more successful approach.

¹⁶⁴ See Cai & Treisman, *supra* note 19, at 29; Gardner, *supra* note 57, at 481; Kollman et al., *supra* note 45, at 122.

¹⁶⁵ Rapaczynski, *supra* note 15, at 410.

be more likely that we will see communities in which the majority or median voters evaluate experiments differently than their neighbors.

However, even in a nation with many states, or in which sorting were very easy, there might still be less information about policy alternatives than optimal because of disincentives to report failures. For a central planner, the fact that a given alternative is unsuccessful is valuable, because it prevents needless duplication of that experiment, may serve as a helpful control for other experiments, and might offer lessons for new generations of experiments.¹⁶⁶ As we set out in our summary of incentives to share and acquire information about successful experiments, states are likely to make it costly for others to acquire information about their own failures, and other states are likely to suffer collective action problems in incurring the expense needed to gather any data from each other. That is likely doubly true of information about failures, particularly if jurisdictions are competitive.

D. Free-Riding Summary

Thus, to this point our picture, although certainly very complex, looks rather like RA's sketch. Localities are likely to innovate at a level below the social optimum when it is relatively inexpensive for others to acquire information about, and to adopt, others' experiments. Empirical data on the prevalence of those conditions is presently thin, but we offered good theoretical reasons to believe both might arise with some frequency. Further, the possibility of gains from being the first mover, irrespective of copying by others, seems to us unlikely to balance fully the free-rider effect. Innovating carries potential losses as well as gains, and anecdotally, at least, it appears that it is the jurisdictions most capable of bearing those costs that are willing to innovate. At a minimum, then, there is social underprovision of experimentation by small jurisdictions. Finally, we observed that the quality of the information generated, even in a regime with a high degree of experimentation, is likely below the theoretical ideal. There is a tendency, which diminishes as the number of jurisdictions and the ease of voter Tiebout sorting increases, for localities all to choose the same experiment when they decide to deviate from the status quo. Even in a world with many open

¹⁶⁶ Cai & Treisman, *supra* note 19, at 18; Strumpf, *supra* note 19, at 221. Of course, this assumes a rational political process. See Shaviro, *supra* note 122, at 973 (doubting the experimentalist rationale for federalism on grounds that political process often fails to heed information generated).

jurisdictions, we do not see much prospect that states will voluntarily disclose to outsiders information about unsuccessful policies.

III. AGENCY COSTS AND OFFICIAL RISK AVERSION

In this Part, we relax our assumption that elected officials are perfect agents of the public. Instead, adopting a lens of public choice theory, we assume that officials act primarily to further their own ends. Typically, imperfect agents are said to reduce social welfare, because they fail to deliver services the public prefers.¹⁶⁷ RA's critics have maintained, though, that self-serving officials can actually increase national well-being, by disregarding the risk-avoiding preferences of their local constituents in favor of recognition from outside their present voting base. Supposedly, the urge to win a reputation as an innovator spurs politicians to take risks their constituents would not.¹⁶⁸ This Part is aimed primarily at scrutinizing that claim, as well as other related ones. In sections A and B, we argue that, as a general matter, we should expect rational, self-serving officials to be more averse to innovation than their constituents, not less. In section C, we weigh the various possible ways in which outside influences, such as the chance of earning a strong reputation with outsiders, might motivate officials. In the later sections, we add some variations, accounting for the possibility of irrational incumbent officials, agenda-setting by challengers, and the influence of political parties.

A. *The Base Case of Risk-Averse Officials*

RA's basic account is that even risk-neutral public servants may behave as though risk averse because of the way that popular preferences are translated into electoral success.¹⁶⁹ Although her support of this point is fairly technical, the underlying intuition is straightforward. The decision to innovate in one policy area is only a small aspect of a given candidate's reelection chances. If we assume that candidates are motivated primarily by the likelihood of reelection, for a candidate who is already likely to win, there are diminishing

¹⁶⁷ A definitive early statement of the principal-agent problem is ADOLF A. BERLE, JR. & GARDINER C. MEANS, *THE MODERN CORPORATION AND PRIVATE PROPERTY* 119–25 (1932). For a thorough survey of modern applications of agency problems to bureaucratic theory, see Steven P. Croley, *Theories of Regulation: Incorporating the Administrative Process*, 98 COLUM. L. REV. 1, 31–85 (1998).

¹⁶⁸ See sources cited *supra* note 21.

¹⁶⁹ Rose-Ackerman, *supra* note 12, at 596–603.

returns to taking added risks.¹⁷⁰ For instance, a candidate with a 99% chance of victory is unlikely to want to take a gamble that would offer equal chances of a 10% positive or negative change in her victory odds, because she benefits relatively little from the added upside but is still vulnerable to the downside. She should prefer to protect her current position, just as a manager with “in the money” options will avoid taking risks that might diminish the value of her investments.¹⁷¹ However, a candidate who is “out of the money”—highly unlikely to win reelection—has a lot to gain from taking large risks, because she will get nothing unless her risk pays off.¹⁷²

If RA’s analysis is correct, the fact that most incumbents in the United States are secure should result in social underprovision of innovation.¹⁷³ Most candidates with the power to set policy—the incumbents—will be in a position where they will be reluctant to take even good bets. Thus, whatever their personal proclivity for risk, incumbents will refuse to pursue new policies whose particular outcomes are not fully certain, but whose average expected value on the whole would be a net positive.

To this we would add that one should expect that, on average, politicians, like other undiversified managers, will tend to be risk averse whatever their odds of reelection. This point is almost a truism in the field of executive compensation, but it seems not to have often been applied to public officials.¹⁷⁴ Assuming a diminishing marginal utility of money, individuals will be risk averse with their own wealth.¹⁷⁵ If salary is a significant portion of individual wealth, or being fired or demoted would negatively impact opportunities for

¹⁷⁰ See Gary Biglaiser & Claudio Mezzetti, *Politicians’ Decision Making with Re-Election Concerns*, 66 J. PUB. ECON. 425, 427 (1997).

¹⁷¹ See *id.* at 434; Marcus Kreuzer, *Money, Votes, and Political Leverage: Explaining the Electoral Performance of Liberals in Interwar France and Germany*, 23 SOC. SCI. HIST. 211, 226 (1999).

¹⁷² Amihai Glazer, *Strategies of the Political Opposition* 3 (May 18, 2007) (unpublished manuscript), <http://www.economics.uci.edu/docs/2006-07/Glazer-18.pdf>.

¹⁷³ Cf. Gary W. Cox & Matthew D. McCubbins, *Electoral Politics as a Redistributive Game*, 48 J. POL. 370, 379 (1986) (noting “the proverbial risk-averseness of incumbents”). On the security of incumbents generally, see, for example, Stephen Ansolabehere & James M. Snyder, Jr., *The Incumbency Advantage in U.S. Elections: An Analysis of State and Federal Offices, 1942–2000*, 1 ELECTION L.J. 315 (2002); Gary W. Cox & Scott Morgenstern, *The Increasing Advantage of Incumbency in the U.S. States*, 18 LEGIS. STUD. Q. 495 (1993).

¹⁷⁴ See John C. Coffee, Jr., *Shareholders Versus Managers: The Strain in the Corporate Web*, 85 MICH. L. REV. 1, 22–24 (1986). See generally Michael C. Jensen & William H. Meckling, *Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure*, 3 J. FIN. ECON. 305 (1976). An exception to the general dearth of studies of risk-aversion in public officials is Daron Acemoglu et al., *Incentives in Markets, Firms, and Governments*, 24 J.L. ECON. & ORG. 273 (2008).

¹⁷⁵ Blume & Rubinfeld, *supra* note 151, at 601–02.

future wealth, then the agent will be risk averse relative to the principal's preferences.¹⁷⁶ Similarly, undiversified investors will be risk averse with their stakes.¹⁷⁷ A traditional solution to these problems is to design contracts that will encourage the agent to be more risk-seeking.¹⁷⁸ For whatever reasons, governments in the United States do not pursue this strategy.¹⁷⁹ Thus, because public servants are undiversified and subject only to fairly low-powered incentives, they should tend to avoid risk.¹⁸⁰ Moreover, an individual who chooses government over other professions, knowing of the compensation structure, may well make that choice precisely because she prefers the security of government work over the pressure of highly incentivized compensation schemes elsewhere.¹⁸¹

These tendencies toward risk aversion may be somewhat tempered by the fact that officials can enact more than one policy. Thus, while an official cannot easily diversify her investment in her job, she can diversify her risk in any given project by seeking to enact many projects.¹⁸² As we have already shown, though, that diversification strategy is difficult for officials in jurisdictions without enough resources and policy autonomy to pursue multiple avenues at once. Additionally, if an official must expend some kind of political effort or capital in order to push forward each project, there is likely a limit on the number of projects she can pursue seriously in any given term in office.¹⁸³ If the number is fairly low, the diversification benefits will be relatively small.

Another offsetting factor potentially weighing against risk aversion is the possibility that an official will serve more than one term in office. A safe incumbent has relatively little to gain in her next election from enacting risky

¹⁷⁶ Coffee, *supra* note 174, at 22.

¹⁷⁷ THOMAS E. COPELAND & J. FRED WESTON, FINANCIAL THEORY AND CORPORATE POLICY 184–86 (3d ed. 1988). For a cogent explanation of the benefits of diversification, see Richard A. Booth, *The Uncertain Case for Regulating Program Trading*, 1994 COLUM. BUS. L. REV. 1, 25–28.

¹⁷⁸ Coffee, *supra* note 174, at 23–24; Daniel R. Fischel, *The “Race to the Bottom” Revisited: Reflections on Recent Developments in Delaware’s Corporation Law*, 76 NW. U. L. REV. 913, 919 (1982).

¹⁷⁹ See Biglaiser & Mezzetti, *supra* note 170, at 428.

¹⁸⁰ See Pankaj Tandon, *Hierarchical Structures and Attitudes Towards Risk in State-Owned Enterprises*, in PUBLIC ENTERPRISE IN LESS-DEVELOPED COUNTRIES 245, 246 (Leroy P. Jones et al. eds., 1982); cf. Acemoglu et al., *supra* note 174, at 288–89 (arguing that government officials are subject only to low-powered incentives).

¹⁸¹ See Tandon, *supra* note 180, at 246.

¹⁸² See Biglaiser & Mezzetti, *supra* note 170, at 440.

¹⁸³ For information on the opportunity costs of legislation, see William M. Landes & Richard A. Posner, *The Independent Judiciary in an Interest-Group Perspective*, 18 J.L. & ECON. 875, 879 (1975).

policies. However, at the time she must decide on the policy, she is unlikely to know whether she would be secure in any subsequent elections—say, a reelection campaign four years down the road, or a campaign next year for higher office. If a successful policy can create lasting goodwill with the electorate, increasing the odds of victory in those subsequent contests, then risky innovations may have more upside than RA's basic risk-aversion story suggests.¹⁸⁴

Nonetheless, we expect that the size of this added upside will be small. Any future gains must be discounted for both time and uncertainty.¹⁸⁵ Both the psychic and material rewards of office have a time value.¹⁸⁶ Uncertainty is also pervasive in almost all aspects of the decision. The candidate may change her mind about running in another election, voter preferences may change in a way that would alter the expected payoffs of the innovation, and the candidate may be unable to project how enduring the rewards from success would prove.¹⁸⁷

Whatever the outcome of these crosscurrents, if elected officials are sometimes risk averse, bureaucrats, too, may tend to be risk averse in this story.¹⁸⁸ Obviously, bureaucrats are not directly motivated by the need for reelection, and civil service protections will tend to remove any fear of downside risk from taking professional risks.¹⁸⁹ However, elected officials may be judged by the electorate in part on the performance of the government as a whole,¹⁹⁰ and, knowing this, have developed a variety of tools for

¹⁸⁴ Rose-Ackerman, *supra* note 12, at 601–05.

¹⁸⁵ See Abramowicz, *supra* note 37, at 158–59; Alberto Alesina & Alex Cukierman, *The Politics of Ambiguity*, 105 Q. J. ECON. 829, 838–39 (1990).

¹⁸⁶ That is, taking on a 10% chance of losing a \$100,000 salary now in exchange for an extra 10% chance of gaining an additional four years of salary four years from now is a bad bet.

¹⁸⁷ However, future discounting could lead to risk-taking in the (probably rare) instance that a policy risk will not pay off until far in the future. Heavy discounting of those future risks might lead officials to enact policy even where the short-term benefits are fairly small.

¹⁸⁸ We limit our analysis here to elected officials and appointed bureaucrats. Arguably, judges, too, make policy, and for some, the incentives to innovate or not may be similar to those that motivate other officials. We postpone more extensive discussion of the judiciary to later work and thank Rob Mikos for raising this issue.

¹⁸⁹ RONALD N. JOHNSON & GARY D. LIBECAP, *THE FEDERAL CIVIL SERVICE SYSTEM AND THE PROBLEM OF BUREAUCRACY: THE ECONOMICS AND POLITICS OF INSTITUTIONAL CHANGE* 2–8 (1994); see also Cumming & MacIntosh, *supra* note 111, at 145 (observing that team-production structure of bureaucracy reduces the power of individual incentives).

¹⁹⁰ See Timothy Besley & Anne Case, *Political Institutions and Policy Choices: Evidence from the United States*, 41 J. ECON. LITERATURE 7, 50–52 (2003).

encouraging the bureaucracy to share the officials' goals.¹⁹¹ For instance, both the legislature and the chief executive can expand or constrict an agency's budget or policy authority.¹⁹² That can be an effective lever for moving bureaucrats, who may be motivated largely by a desire to carry out their perceived governmental mission, to be sensitive to the officials' own reluctance to undertake risky policy.¹⁹³ To be sure, there is "slack"—elected officials cannot perfectly monitor and incentivize their unelected agents.¹⁹⁴ But it is unclear whether agency officials will use this freedom to pursue new policies that effectuate their perceived mission, or simply use it to enjoy more leisure time.¹⁹⁵ Moreover, civil service positions, even more than other government jobs, tend to draw individuals who prefer to eschew professional risk.¹⁹⁶

Overall, the basic prediction is that, when we begin to account for the possibility that public officials are imperfect agents, the trend will be toward less innovation than the general public should prefer. Innovation is risky, and officials, at this point, look likely to be risk averse. These claims are testable. If these predictions are true, we should find that insecure politicians are more innovative, and that those who enact major projects tend to lose their next election.¹⁹⁷

B. Risk Aversion and Innovation Under Public Choice Theory

A significant problem with the analysis so far is that it assumes a highly simplified version of official incentives and public preferences. We assumed that officials are motivated only by the desire to obtain reelection, and that they do so entirely by securing votes. Moreover, we assumed (following RA) in our discussion of the returns from innovation that voters reward officials simply on the basis of whether a policy succeeded or failed, without regard to whether some voters might have more intense opinions about the success or failure of a

¹⁹¹ Cox & McCubbins, *supra* note 173, at 385; Arthur Lupia & Mathew McCubbins, *Designing Bureaucratic Accountability*, LAW & CONTEMP. PROBS., Winter 1994, at 91, 91–92.

¹⁹² Cotton M. Lindsay, *A Theory of Government Enterprise*, 84 J. POL. ECON. 1061, 1065–67, 1070–71 (1976); Mathew D. McCubbins et al., *Structure and Process, Politics and Policy: Administrative Arrangements and the Political Control of Agencies*, 75 VA. L. REV. 431, 434, 440–44 (1989).

¹⁹³ GORDON TULLOCK, *THE POLITICS OF BUREAUCRACY* 134–36, 167–70 (1965); Peter H. Aranson et al., *A Theory of Legislative Delegation*, 68 CORNELL L. REV. 1, 38, 47–48 (1982).

¹⁹⁴ Terry Moe, *The Politics of Bureaucratic Structure*, in *CAN THE GOVERNMENT GOVERN?* 271 (John E. Chubb & Paul E. Peterson eds., 1989).

¹⁹⁵ See Cumming & MacIntosh, *supra* note 111, at 150.

¹⁹⁶ *Id.* at 145.

¹⁹⁷ Biglaiser & Mezzetti, *supra* note 170, at 442–43.

given project. All of these assumptions are inaccurate, as public choice theory has recognized for many years.¹⁹⁸ Voters can be more or less intensely interested in a program, and this intensity is important in light of the fact that the average voter is rationally ignorant of political outcomes, preferring to free ride on the efforts of others in monitoring government.¹⁹⁹ Intensely motivated actors can organize to contribute effort, information, and money to candidates, who can use these tools to shape the opinions of less motivated sectors of the electorate, lending these organized groups disproportionate political influence.²⁰⁰ In addition, officials may be motivated by more than reelection—for instance, they can obtain private side payments from interested actors.²⁰¹

Including these features in our analysis adds a lot of complexity but not much in the way of new conclusions. For instance, the possibility of side payments from interest groups could theoretically either increase or decrease risk aversion, and it is hard to predict which effect would dominate. On the one hand, unlike the manager of a firm, an elected official who loses her job might actually improve her financial prospects. The possibility of a soft landing—a cushy consulting job with a favored industry, say—after an electoral loss should soften candidates' fears of losing.²⁰² On the other hand, if some payments can be collected during a term in office (for instance, through a spouse employed as a lobbyist), or if future benefits can be piled up higher and higher, then the stakes for an incumbent in remaining in office to continue collecting her rents are even higher.²⁰³

Even sticking purely to electoral concerns, the influence of intensely motivated actors is still hard to predict. The opportunity to please a particularly influential group with a successful experiment might lead candidates to give increased weight to the potential upside of innovations.²⁰⁴

¹⁹⁸ RA acknowledges that her assumptions are inaccurate but simplifying. Rose-Ackerman, *supra* note 12, at 597–98, 612–13.

¹⁹⁹ See Bernard Caillaud & Jean Tirole, *Parties as Political Intermediaries*, 117 Q. J. ECON. 1453, 1453 (2002).

²⁰⁰ OLSON, *supra* note 130, at 21–22, 31, 35. Dedicated political participants are also more valuable clients for public officials because officials can obtain better information about the preferences of the dedicated. Cox & McCubbins, *supra* note 173, at 379.

²⁰¹ Sam Peltzman, *Toward a More General Theory of Regulation*, 19 J.L. & ECON. 211, 213–14 (1976).

²⁰² Thomas D. Morgan, *Appropriate Limits on Participation by a Former Agency Official in Matters Before an Agency*, 1980 DUKE L.J. 1, 53–54.

²⁰³ Cf. Biglaiser & Mezzetti, *supra* note 170, at 435 (positing that an increase in reelection stakes for an incumbent may make the incumbent even more risk-averse).

²⁰⁴ Lucian Arye Bebchuk, *Federalism and the Corporation: The Desirable Limits on State Competition in Corporate Law*, 105 HARV. L. REV. 1435, 1477, 1485 (1992); Macey & Miller, *supra* note 112, at 471–72.

The same group or another influential one, however, may also be equally displeased with a failed experiment, yielding a larger weighting of the downside, as well. Even if interest groups encourage some experiments, those experiments may not necessarily be welfare-enhancing.²⁰⁵ If the interest group has preferences at odds with the general public's, learning how to achieve those preferences more effectively would lower, not increase, overall welfare.²⁰⁶ When lobbying produces new projects, they may be pure rents—transfers of resources, with little experimental component. For instance, as RA points out, so-called “demonstration” projects may be a veil for selectively allocating resources to a favored region or coalition.²⁰⁷

More generally, while rent-seeking may produce new programs, the direction of interest-group influence seems to be somewhat toward preserving the status quo. First, those who hold influence already will tend to be happy with the status quo.²⁰⁸ Second, interest groups are more likely to form around an existing entitlement, rather than the effort to create a new one.²⁰⁹ Recipients of the extant entitlement are easier for would-be organizers to identify; entitlements often come with technical assistance funding, which facilitates organizing; and the presence of the entitlement enriches the coalition, giving it more political power.²¹⁰ Lastly, for a variety of other reasons, it appears to be easier to wield influence to block new initiatives than to enact new ones over opposition from other groups.²¹¹

It is possible, though, that there could be an interest group comprised of individuals who want more experimentation generally. The benefits of experiments are public goods, which would usually imply that voters who

²⁰⁵ See Bratton & McCahery, *supra* note 10, at 261, 268.

²⁰⁶ Cf. Gary S. Becker & Casey B. Mulligan, *Deadweight Costs and the Size of Government*, 46 J.L. & ECON. 293, 295 (2003) (arguing that opponents of large government should want government to employ tax instruments that are inefficient, because efficient taxes lower political resistance to taxation among the rest of the population).

²⁰⁷ Rose-Ackerman, *supra* note 12, at 613.

²⁰⁸ Daron Acemoglu & James A. Robinson, *Political Losers as a Barrier to Economic Development*, 90 AM. ECON. REV. 126, 126–27 (2000).

²⁰⁹ See Jonathan R. Macey, *Federal Deference to Local Regulators and the Economic Theory of Regulation: Toward a Public-Choice Explanation of Federalism*, 76 VA. L. REV. 265, 278–79 (1990); Barbara Vis & Kees van Kersbergen, *Why and How Do Political Actors Pursue Risky Reforms?*, 19 J. THEORETICAL POL. 153, 154–55 (2007) (discussing the failure of welfare-state reform efforts due to entrenched “pro-status quo forces”); R. Kent Weaver, *The Politics of Blame Avoidance*, 6 J. PUB. POL’Y 371, 394 (1986).

²¹⁰ See Vis & van Kersbergen, *supra* note 209, at 155 (observing that welfare expansion correspondingly strengthens the political sponsor of the program).

²¹¹ See Hills, *supra* note 8, at 11–13 (noting that “it is much easier to prevent policymaking in Washington, D.C., than to successfully enact new policies”).

favor it would free ride, rather than lobby.²¹² As we explained in Part II.B, however, there may be occasions where voters with a strong preference for risky legislation will form a small block within a larger polity. In those cases, it may be that there will be a group of risk seekers who lobby for more innovative government, on the theory that they have few others on whose efforts they could usefully free ride. That story is especially plausible if these risk seekers have more to gain from successful experiments than most other voters, because again that would reduce the usefulness of a free-riding strategy. At the same time, it is possible there would also be coalitions of unusually risk-averse actors, who would work to counter the labors of the risk seekers. If, as we suggested, there is a political bias in favor of the status quo, the risk-averse will often win these battles.

One way in which interest groups clearly can boost innovation is by their opposition to reform in neighboring jurisdictions. Some innovations, such as new forms of redistributive taxation, will predictably draw fire from small, concentrated groups.²¹³ This creates a situation in which a jurisdiction contemplating the new, controversial policy is a sort of ideological outlier: it knows that its neighbors are highly unlikely to embark on the policy, so its voters should have no reason to prefer free-riding. The irony here is that the factors that make the policy unlikely to succeed will often bear in all jurisdictions. Opposition groups, knowing that adoption in one state makes adoption in neighboring states more likely,²¹⁴ may lobby everywhere in order to prevent domino effects.²¹⁵

Overall, public choice theory does little to change the base assessment that officials are risk averse. Where experiments do happen, public choice theory suggests that they may often be welfare-reducing.

²¹² Jan Schnellenbach, *Learning from Decentralised Policy: The Demand Side 2*, 4 (JEPS Working Paper No. 05-001, 2005), <http://jeps.repec.org/papers/05-001.pdf>. This is somewhat less true if voters can acquire private benefit from acquiring information. *Id.* at 2, 11; see also Kerber & Eckhardt, *supra* note 43, at 237 (noting voters' lack of incentive to become fully engaged in the political process when their individual impact is minor).

²¹³ Elizabeth Garrett, *Harnessing Politics: The Dynamics of Offset Requirements in the Tax Legislative Process*, 65 U. CHI. L. REV. 501, 518–19 (1998).

²¹⁴ See sources cited *supra* note 71.

²¹⁵ It might be argued that interest groups cannot realistically expect to monitor and lobby every jurisdiction that might adopt policies inimical to them. One solution to this dilemma may be preemptive federal legislation. Macey, *supra* note 209, at 271–72. Either way, where it is predictable that lobbying by opposition groups will sometimes fail, there will be incentives for states to free ride on innovations by others.

It should be said that the factors we identify both here and in the previous section are not necessarily unique to state and local government. Risk-averse elected officials may be as endemic in a centralized system as in one that is decentralized.²¹⁶ We largely reserve analysis of centralized performance for the sequel to this Article. For now, we will simply say that one role of central government may be to cure the absence of incentives to innovate found in local politicians; it isn't easy (although, as we hope to show, not impossible) for a single government to offer itself the same cures. At the same time, it is possible that there are features of decentralized government that may offset the disincentives to innovate that we have sketched so far. We turn there now.

C. Extra-Jurisdictional Effects

The possibility that public officials are imperfect agents of their voting constituents is not necessarily bad news for overall national welfare. Self-interested officials may have reasons to please not only their own constituents, but also outsiders. If that is the case, it may be that officials will internalize any spillovers generated by their policies, even if local voters would not. In this section we consider three such internalization stories: fundraising, ambitions for higher office, and policy evangelism.

1. Fundraising

Where the act of voting itself is only a small part of the electoral process, outsiders (i.e., non-voters) have significant opportunities for influencing elections. As many commentators have pointed out, policies that please out-of-state constituencies can bring in campaign dollars or other political rents, leading local politicians to take account of the extra-jurisdictional effects of their policies.²¹⁷ Although this story is rather more difficult to tell for unelected bureaucrats, the unelected official is still subject to many carrots and sticks offered by the elected officials who directly benefit from outside contributions. Moreover, outsiders can offer agency officials allies in their

²¹⁶ Cf. Biglaiser & Mezzetti, *supra* note 170, at 428 n.1 (observing that their analysis of risk aversion may be as true of presidents as of governors).

²¹⁷ Bruce E. Cain, *Moralism and Realism in Campaign Finance Reform*, 1995 U. CHI. LEGAL F. 111, 132–33; Lori Fisler Damrosch, *Politics Across Borders: Nonintervention and Nonforcible Influence over Domestic Affairs*, 83 AM. J. INT'L L. 1, 21 (1989). Dollars, of course, are hardly the only form of support that can cross borders. Bradley A. Smith, *Money Talks: Speech, Corruption, Equality, and Campaign Finance*, 86 GEO. L.J. 45, 91–92 (1997).

efforts to obtain more resources and policy authority from their political superiors.²¹⁸

It is unlikely, though, that there would be much in the way of rents from outsiders in support of a policy of innovation generally. Outside contributors, just like local voters, perceive innovation as a public good, for whose provision they should prefer to free ride on the efforts of others. That is, innovation in general benefits the entire nation so that there are no constituents, either inside the jurisdiction or out, who have any incentive to lobby for it. Even if there were a group of, say, particularly risk-seeking citizens scattered across the country, transaction costs would likely inhibit their efforts to encourage innovation.²¹⁹ The group would have to identify one another and coalesce, and would constantly have to battle incentives among its own members to free ride on one another's contributions. It would also be prohibitively difficult for such a group to monitor the behavior of every local jurisdiction, although regional innovation coalitions are more plausible.²²⁰

Free-rider effects can also be countered with targeted incentives. For instance, the United States offers tax exemption and other benefits for nonprofit organizations, business leagues, and the like, which can help to overcome the problems of pro-innovation group formation.²²¹ While many of these organizations cannot intervene in campaigns for public office, most are permitted a fair amount of non-electoral lobbying activity, which could presumably be used to support efforts to enact innovative policies.²²² So, depending on the effectiveness of these incentives, it is possible that local officials may have some self-serving incentives to innovate, as a way of garnering at least indirect support from outside organizations. In a sense, though, this story cuts against the pure case for state and local innovation, because the implication is that absent some targeted fiscal transfer from a

²¹⁸ JAMES Q. WILSON, *BUREAUCRACY: WHAT GOVERNMENT AGENCIES DO AND WHY THEY DO IT* 88 (1989).

²¹⁹ See Caillaud & Tirole, *supra* note 199, at 1453 (discussing the willingness of voters to undertake the effort to understand key policies); Ribstein, *supra* note 16, at 351 (discussing the obstacles to accomplishing the overall lobbying goals of lawyers).

²²⁰ Cf. Nina A. Mendelson, *Chevron and Preemption*, 102 MICH. L. REV. 737, 768 (2004) (arguing that free-rider obstacles to lobbying in favor of general state perquisites can be overcome when benefits would accrue only to one region).

²²¹ Cf. Schnellenbach, *supra* note 212, at 21 (observing that "supporting institutions" can provide "incentives for the electorate to gather more information").

²²² JAMES J. FISHMAN & STEPHEN SCHWARZ, *NONPROFIT ORGANIZATIONS: CASES AND MATERIALS* 500–02 (3d ed. 2006).

central authority, incentives for innovation will not arise spontaneously on their own.

Outside contributions in support of innovative candidates can arise without central incentives in cases where the innovative policy appeals to a particular interest group.²²³ For example, if the innovation is tied to an existing spillover affecting a discrete set of outsiders, such that the outsiders have little expectation that they can free ride, they will likely be closely involved in the policy. Oyster harvesters in Florida, dependent on groundwater flowing from Georgia, are highly attuned to Georgia's efforts at water conservation.²²⁴ Alternatively, a given innovation could garner outside rewards if it falls in an area of interest to a group of what we call policy evangelists—people who derive personal utility from seeing their beliefs adopted widely. The American Cancer Society, for example, supports candidates willing to prohibit indoor smoking in public places.²²⁵

Once again, though, interest groups may arise on both sides of an issue. Innovations could anger outside groups enough to lead them to contribute to an official's political opponents. Still, there may be an instance where contributions by irate outsiders will be low but outside support high, as where those who oppose a policy are spread widely throughout the country.²²⁶ Taken together, these factors lend some modest support for a second-best internalization story. Where admirers of an innovator do not free ride, but opponents do, the official may realize some of the extra-jurisdictional benefits of her experiment.

²²³ OLSON, *supra* note 130, at 21–22, 31, 35; Carol M. Rose, *Takings, Federalism, and Norms*, 105 YALE L.J. 1121, 1037 (1996).

²²⁴ Melissa Nelson, The Associated Press, *Fla. Oystermen Lose as Atlanta's Water Needs Grow*, INT'L BUS. TIMES, May 23, 2008, http://www.ibtimes.com/articles/20080523/fla-oystermen-lose-as-atlantas-water-needs-grow_all.htm.

²²⁵ See Am. Cancer Soc'y Cancer Action Network, State Advocacy, http://action.acscan.org/site/PageServer?pagename=state_advocacy_campaigns (last visited July 19, 2008) (supporting campaigns to ban smoking in the workplace and other venues).

²²⁶ Cf. Brian Galle & Mark Seidenfeld, *Administrative Law's Federalism: Preemption, Delegation, and Agencies at the Edge of Federal Power*, 57 DUKE L.J. 1933, 1965–66 (2008) (arguing that free-rider dynamics will prevent states from intervening to prevent negative spillovers generated by other states, when spillovers are small and widespread).

2. *Ambitions for Higher Office*

As RA noted, the desire to earn a reputation as an innovator might spur local officials to experiment.²²⁷ More recently, others, such as Hills, Kotsogiannis, and Schwager, have extended that argument.²²⁸ A safe incumbent may value a risky experiment, not because it improves her odds of immediate reelection, but rather because it offers her an opportunity to appeal to future voters, some of whom may reside outside her current jurisdiction.²²⁹ A governor might lay the groundwork for a presidential or cabinet bid by demonstrating that she is an innovator, or at least that she has the savvy to pick good projects from bad—what Kotsogiannis and Schwager call a signal of “high ability.”²³⁰ There are two separate stories here. One strand is the signaling effect of successful innovation: Assuming voters have imperfect information about the candidates for office, innovating is a tool for a candidate to differentiate herself from future opponents. The second thread is an internalization story: The candidate supports experimentation because innovation benefits the whole nation, including possible future constituents.²³¹

The internalization half of the story is implausible, largely for reasons we have already set out. Individual voters do not value innovation per se at nearly its worth to society as a whole, because it is a public good. Innovation might break ties between two otherwise identical candidates. But, because each voter assigns little value to a politician’s willingness to experiment, she is highly unlikely to select a candidate whom she otherwise would not have chosen solely on the grounds of the candidate’s innovations. Put another way, the voter will not trade her most preferred policies and candidate qualities for one that she ranks very low on her list of priorities. Further, even if some voters were willing to value innovation highly, we again must take into account discounts for time and uncertainty. It is unlikely that a candidate will be willing to risk losing a current election for dubious benefits in some future race.²³²

²²⁷ Rose-Ackerman, *supra* note 12, at 614.

²²⁸ See sources cited *supra* note 21.

²²⁹ Kotsogiannis & Schwager, *supra* note 19, at 486; cf. David W. Rohde, *Risk-Bearing and Progressive Ambition: The Case of the Members of the United States House of Representatives*, 23 AM. J. POL. SCI. 1, 2 (1979) (hypothesizing that officials may have ambitions to achieve higher office).

²³⁰ Kotsogiannis & Schwager, *supra* note 19, at 487, 489; see also Strumpf, *supra* note 19, at 227 (noting the significance of a politician’s performance compared to his colleagues or neighbor politicians).

²³¹ Kotsogiannis & Schwager, *supra* note 19, at 486.

²³² See MARCUS KREUZER, INSTITUTIONS AND INNOVATION: VOTERS, PARTIES, AND INTEREST GROUPS IN THE CONSOLIDATION OF DEMOCRACY—FRANCE AND GERMANY, 1870–1939, at 57–58 (2001) (arguing that

The reputation-as-signal-of-quality hypothesis is more persuasive, but it rests on several large assumptions. First, the signaling theory assumes that innovating is a better tool for signaling quality than successful copying. Recall that for the set of innovations we care about, innovation is riskier and costlier than copying.²³³ The payoffs from innovation must exceed copying payoffs by enough to offset these negatives.²³⁴ Experiments that miss this threshold are actually signals of poor judgment.

Next, we doubt that there is any political premium for innovation over and above the rewards for enacting a successful policy that could be obtained by copying. Both innovating and copying can be employed in federal office to increase constituent welfare. As we just argued, it is unlikely voters will prioritize the ability to innovate over achievement of their other preferences. Moreover, if a reputation for being a judicious experimenter were more valuable than being known as someone who enacted good policies, we should expect that a candidate could also succeed politically by choosing experiments with positive *ex ante* expected value that happen to fail—taking good bets. However, there is no evidence that voters reward politicians who take wise but unsuccessful risks.²³⁵

acquiring a good reputation is generally less valuable than holding onto a safe seat). On the other hand, if the future office is highly desirable even accounting for time discounts, and the candidate views her odds of winning that office as remote, she should become highly risk-seeking in her efforts to win. *But cf.* Rohde, *supra* note 229, at 5 (arguing that decision to run for new office is tradeoff between security and value of current seat and odds of success and value in new seat, and that secure incumbents should therefore rarely be interested in attempting improbable victories for new office).

²³³ While there may be some instances where copying is costlier than innovating, in those cases there is no positive externality from experimentation, so that low levels of innovation do not reduce social welfare.

²³⁴ Of course, copying would not be a viable strategy if every official were to conclude that innovation is not worthwhile. But remember our claim is that local officials experiment at below socially optimal levels—not that they fail to experiment at all. For instance, incumbents in hotly contested races who do not have time to wait for someone else to invent must take on the task themselves. Thus, there will generally be a pool of policies to copy, even if that pool is shallower than the ideal.

²³⁵ See Alesina & Cukierman, *supra* note 185, at 842 (observing that voters respond to policy outcomes); Howard Raiffa, *Decision Making in the State-Owned Enterprise*, in STATE-OWNED ENTERPRISE IN THE WESTERN ECONOMIES 54, 55 (Raymond Vernon & Yair Aharoni eds., 1981) (observing that managers in state-owned enterprises are judged by the outcome of their decisions rather than the soundness of their decision making); Strumpf, *supra* note 19, at 229–30 (noting policymakers’ “strong aversion to negative outcomes,” not policies); Guido Suurmond et al., *On the Bad Reputation of Reputational Concerns*, 88 J. PUB. ECON. 2817, 2830 (2004) (noting that “the full consequences of policy decisions are not easy to identify even in [the] case of implemented projects”); *cf.* Abramowicz, *supra* note 37, at 154 (noting that managers may often be punished for *ex ante* valuable but failed innovations). To the contrary, many political scientists assume that the bulk of voters act by “retrospective voting”—that is, rather than spending the time and resources to gather in-depth information about whether policies were *ex ante* wise, voters simply reward or punish politicians *ex post* for good or bad outcomes. See generally R. MICHAEL ALVAREZ, INFORMATION AND ELECTIONS (1998); MORRIS P. FIORINA, RETROSPECTIVE VOTING IN AMERICAN NATIONAL ELECTIONS (1981).

The key problem for politicians who might seek credit for these wise failures is voters' lack of information. It is rare that there is any objective source of information about the *ex ante* expected risks and payoffs of a given policy.²³⁶ If a politician is taking risks that her constituents would rather avoid (because they prefer to free ride), she cannot easily disclose that fact in advance. And any claims she or her allies make *ex post* are not credible. Thus, voters cannot easily discern when a candidate has taken "good" risks. Even when good data are available, individuals often perceive the same set of risks and rewards differently, so that it is uncertain that there would be a uniform positive signal from taking any particular risk.

More problematic is that in the base case secure incumbents do not take large risks. If a politician takes risks, she may be signaling to voters that she has reason to think she will not be reelected—perhaps on the basis of information the voters themselves do not yet know. In this case, taking even "good" policy risks could be a signal of low quality.

What is more, apart from whether information about policy innovations flows freely to policymakers in various jurisdictions, it may be that information about who developed the innovations may not flow as freely to the voting public in other jurisdictions. This is particularly true if it is easy to mimic successful innovation.²³⁷ A less able policymaker may adopt policies that are similar to prior innovations, but with enough cosmetic changes that the second policymaker can take credit for innovating on her own. In a world with many mimics, it becomes easier for rivals to diminish the accomplishments of true innovators by accusing them of being mimics. Hence, state policymakers who steal innovations may be viewed as successful "innovators" by their adoring public just as much as those policymakers who actually innovate.²³⁸ If innovating is costlier or riskier, it will often be wiser to mimic.

While there has been no direct empirical investigation of the higher-office thesis, available data on the behavior of officials subject to term limits

²³⁶ See Suurmond et al., *supra* note 235, at 2819, 2830.

²³⁷ *Cf. id.* at 2832 (predicting that low-quality officials will mimic reputation-building behavior of high-quality officials successfully when voter awareness is low).

²³⁸ *Cf. Caillaud & Tirole, supra* note 199, at 1453 (explaining that voters are typically not attentive enough to discern quality of political choices). Similarly, when voters cannot identify good innovation at the time of their vote, acting differently from other legislators—that is, innovating—may be a signal of poor judgment by the legislator. See David S. Scharfstein & Jeremy C. Stein, *Herd Behavior and Investment*, 80 AM. ECON. REV. 465, 466 (1990) (noting that "a manager who takes a contrarian position is perceived as more likely to be dumb, all else being equal").

undercut the theory. Besley and Case, summarizing their own work as well as several studies by others, find that “a variety of policy measures are affected by term limits.”²³⁹ For example, they report that, on average, state spending rises during the final term of a term-limited governor.²⁴⁰ The intuition here is that officials no longer subject to electoral constraints will spend in furtherance of their own policy aims (or the aims of those who will provide rents after the governor leaves office), without regard to voter preferences for lower taxes or debt.²⁴¹ That account is hard to reconcile with the claim that officials who are seeking a new office will be attuned to the interests of the electorate for that position. Unless voter preferences in the two electorates are radically different, ambitions for higher office should make term-limited officials behave as though they were not limited. But that is not the case.²⁴²

Assuming that there nonetheless are some officials with a propensity to take risk in an effort to win reputational rewards, this incentive may lead them all to race for the highest value innovation, rather than true experimentation. Recall that one aspect of the positive spillover benefit that experiments produce is that they generate information about alternatives.²⁴³ The highest-expected-value-innovation may still fail, or produce less positive results than the second- or third-ranked policy might have yielded. In short, if what we have is a race, not a set of experiments, then society loses out on the opportunity to observe these alternative experiments. In this sort of race, then, there is little comparative advantage of decentralization over centralization; either way, we’re running only one experiment at a time.

Reputational concerns seem likely to produce this sort of race-to-the-first-best. Where officials need to succeed in order to realize their reputational gains, we should expect officials all to strive for the highest-expected-value

²³⁹ Besley & Case, *supra* note 190, at 54–56.

²⁴⁰ *Id.* at 55.

²⁴¹ *Id.*; Emmanuelle Reulier & Yvon Rocaboy, *Finite-Lived Politicians and Yardstick Competition*, 24 J. PUB. FIN. & PUB. CHOICE 23, 24 (2006).

²⁴² There are some scenarios that would make sense of both the term-limit findings and the higher-office thesis. First, the national electorate may prefer more tax and spending than the state. The term-limit studies do not report the tax preferences of the governor’s jurisdiction relative to the nation as a whole. If governors are motivated by presidential ambitions, and the governor hails from a state with unusually low tax preferences, it would be understandable that the term-limited governor would begin taxing and spending to better fit the preferences of national voters. Second, term-limited governors might be rather older than most officials, so that they are more likely to retire or enter the private sector (to cash out deferred rents before death) than others. That would make the governors in the term-limit studies less sensitive to electoral considerations, including higher-office ambitions, than on average.

²⁴³ See *supra* text accompanying notes 42–47.

innovation, rather than diversifying their efforts in a way that would maximize social welfare. Alternatively, if there were good information about ex ante probabilities, and voters rewarded good bets for their own sake, the electorate would still be highly unlikely to reward candidates for choosing the second- or third-best of their available options. Choosing the second-best option would greatly muddy the signal of the candidate's quality, particularly in a world with mimics who each could offer the "I wasn't making a bad choice, I was generating an information spillover" excuse.

Thus, notwithstanding the suggestions by some that RA's failure to account carefully for ambitions for higher office completely undermines her thesis, it appears that ambition plays little role in generating fruitful local experimentation.

3. *Policy Evangelism*

Officials may also internalize the benefits of new policy for outsiders because the officials are motivated by a desire to see that policy spread, whether out of love for humanity, ideology, social status, or simple hubris.²⁴⁴ Self-image is an important driver of individual behavior.²⁴⁵ However, it is a familiar point that, to the extent that these goals can best be fulfilled by remaining in office, the official is obliged to balance personal satisfaction with electoral success.²⁴⁶ Thus, we think that for the most part policy evangelism, in whatever form, will offer only weak incentives to officials to embark on riskier policies than their electorate would prefer. Still, this story might be persuasive for the very safest of incumbents.

Bureaucrats, like the safest incumbents, are insulated from electoral jeopardy, and so may be more sensitive to personal motives. As we have noted, bureaucrats may derive increased social status among their peers from achieving expertise in new policy areas—they are invited to appear on panels at industry conferences, and to opine in trade journals and technical assistance training calls.²⁴⁷ Indirect electoral constraints, as we have also noted, will limit

²⁴⁴ Lazer, *supra* note 18, at 55, 61.

²⁴⁵ JON ELSTER, *THE CEMENT OF SOCIETY: A STUDY OF SOCIAL ORDER* 131 (1989); Richard H. McAdams, *The Origin, Development, and Regulation of Norms*, 96 MICH. L. REV. 338, 355, 365–66 (1997).

²⁴⁶ See DAVID MAYHEW, *CONGRESS: THE ELECTORAL CONNECTION* 5, 15–17 (1974) (discussing the importance of reelection to a political actor's behavior); Alesina & Cukierman, *supra* note 185, at 829 (noting the desire of politicians to pursue policies that "maximize their chances of reelection").

²⁴⁷ See *supra* text accompanying notes 103–04.

bureaucratic capacity to innovate against the will of political leadership.²⁴⁸ And many policies likely need legislative or chief executive leadership to succeed. But the bureaucratic innovation theory is a more compelling one than the politician account.

One limit that most bureaucrats face that does not confront legislators is process-based judicial review. Most states mirror the federal system in allowing affected private parties (and, in some cases, even those who are not directly affected) to challenge administrative decisions on procedural grounds.²⁴⁹ In order to survive these challenges, the agency must show that its deliberations were open to the public, that it carefully considered the available policy alternatives, and that the choice it made was grounded in fact and reasonable conclusions from the known facts.²⁵⁰ Even policies that pass all these hurdles can be struck down by courts if found to be unreasonable applications of the underlying statutory authority.²⁵¹

Judicial review has the potential somewhat to stifle innovation. Some scholars have worried that intensive process review “ossifies” agencies, binding them hopelessly in red tape.²⁵² The claim that review will completely paralyze agencies has proven to be somewhat overblown, but in a world of limited resources an agency that must carefully research and justify all its decisions obviously will move slower and accomplish less than one that need not.²⁵³ Novel policies are likely more resource intensive, as they require more research and groundwork, and require the agency to answer more questions.²⁵⁴ Further, policies that break dramatically from past practices are difficult for agencies to justify to courts, because the agency cannot easily point to a track record of success with similar efforts to allay court concerns.²⁵⁵ That implies

²⁴⁸ See *supra* text accompanying notes 188–97.

²⁴⁹ See William Funk, *Rationality Review of State Administrative Rulemaking*, 43 ADMIN. L. REV. 147, 153–55 (1991) (discussing state models and their relationship to federal or uniform models).

²⁵⁰ *Motor Vehicle Mfrs. Ass’n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983).

²⁵¹ *Chevron, U.S.A., Inc. v. Natural Res. Def. Council, Inc.*, 467 U.S. 837, 840 (1984).

²⁵² See generally Thomas O. McGarity, *Some Thoughts on “Deossifying” the Rulemaking Process*, 41 DUKE L.J. 1385, 1385–1436 (1992); see also Richard J. Pierce, Jr., *Seven Ways to Deossify Agency Rulemaking*, 47 ADMIN. L. REV. 59, 60–66 (1995) (discussing the problem and sources of ossification).

²⁵³ Cf. Jon Connolly, *Alaska Hunters and the D.C. Circuit: A Defense of Flexible Interpretive Rulemaking*, 101 COLUM. L. REV. 155, 167–72, 180 (2001) (describing legal techniques agencies have used to reduce strictures of judicial review, albeit at some costs along other dimensions).

²⁵⁴ Cf. McGarity, *supra* note 252, at 1415–17 (describing the Environmental Protection Agency’s experiences in attempting to mandate a new method of filtration not previously used in industry).

²⁵⁵ See JERRY L. MASHAW, GREED, CHAOS, & GOVERNANCE: USING PUBLIC CHOICE TO IMPROVE PUBLIC LAW 164–89 (1997).

that the agency will likely want to pile up additional data before it faces judgment.²⁵⁶

On the other hand, agencies seem to have adapted to the world of heightened judicial review in ways that may increase their capacity for innovation. One consequence of the need to justify policy decisions with technical information is that agencies now have hired a variety of experts, such as scientists, statisticians, and the like.²⁵⁷ Many of these experts bring with them a network of connections with outside peers.²⁵⁸ As part of the rulemaking process, agency staff are also contacted by, or reach out to, private and academic researchers.²⁵⁹ There is strong evidence that these kinds of informal ties are important sources of both policy diffusion and innovation.²⁶⁰ Agency experts learn the seeds of ideas from their contacts, seeds which they can graft together and cultivate.

As a result, although electoral politics constrains much of the personal motivation that might otherwise inspire individual officials to attempt new policy, there can be significant innovation within the space left by “slack” for local agency personnel. While not all policies can fruitfully germinate within an agency, at least some might. It is unclear, though, whether there is any personal motivation for bureaucrats to coordinate their experiments across jurisdictions, or whether again we will simply see a race to the highest-expected-value innovation. And bureaucrats in various jurisdictions may be less likely than elected officials to have differing opinions about the “best” of the innovation options, because the bureaucrats tend to share more information with one another, rely on similar sources of authority, and take a less

²⁵⁶ McGarity, *supra* note 252, at 1400, 1412; Mark Seidenfeld, *Hard Look Review in a World of Techno-Bureaucratic Decisionmaking: A Reply to Professor McGarity*, 75 TEX. L. REV. 559, 564–65 (1997).

²⁵⁷ See Thomas O. McGarity, *The Internal Structure of EPA Rulemaking*, LAW & CONTEMP. PROBS., Autumn 1991, at 57, 90–91 (noting that a “team model” in internal decision-making processes provides the advantage of the ability to “bring multiple professional perspectives” to complex problems); Mark Seidenfeld, *Cognitive Loafing, Social Conformity, and Judicial Review of Agency Rulemaking*, 87 CORNELL L. REV. 486, 527–28 (2002) (noting the significance of having experienced members of various professional disciplines in a team).

²⁵⁸ For overviews of the professional networks to which career bureaucrats belong, see A. Grant Jordan, *Iron Triangles, Woolly Corporatism and Elastic Nets: Images of the Policy Process*, 1 J. PUB. POL’Y 95, 99–103 (1981); James A. Thurber, *Dynamics of Policy Subsystems in American Politics*, in INTEREST GROUP POLITICS 319, 323–24 (Allan J. Cigler & Burdett A. Loomis eds., 3d ed. 1991).

²⁵⁹ See Dolowitz & Marsh, *supra* note 18, at 10 (“[I]t is becoming increasingly clear that policymakers . . . are relying on the advice of consultants . . . who act as policy experts in the development of new programs, policies, and institutional structures.”); Galle & Seidenfeld, *supra* note 226, at 1957 (noting how professionals working on a rulemaking team often contact external colleagues).

²⁶⁰ Hansen, *supra* note 59, at 83–84; Stone, *supra* note 73, at 556–61.

ideological attitude toward policymaking.²⁶¹ Thus, their race to the top will be a race to the same summit.

D. Challengers, Not Incumbents?

Thus far we have analyzed the incentives of officials who already hold office. Incumbents tend to be averse to risk because they are typically safely guaranteed a return to office without any risk-taking. This implies that, reciprocally, challengers should be risk-seeking.²⁶² Is it possible that challengers could be a source of innovative policy?

First, it is unlikely that challengers themselves will implement innovation. For one thing, challengers usually lose.²⁶³ Additionally, once a challenger succeeds in winning a seat in office, she becomes an incumbent, with an eye on the next election. She no longer is highly motivated to take large risks. To be sure, there may be some pressure on the new incumbent to implement her grand campaign promises. Social science suggests, though, that the penalties for failing to implement all of a candidate's policy proposals are relatively small.²⁶⁴ Memories are short, voters are rationally ignorant, and even attentive interest groups seem to understand that few politicians have the power single-handedly to implement their full agenda.²⁶⁵

In any event, the challenger-innovation hypothesis assumes that there are electoral rewards for suggesting innovations without demonstrating good results. We have argued that that premise is an unlikely one. It may be true

²⁶¹ See Matthew Diller, *The Revolution in Welfare Administration: Rules, Discretion, and Entrepreneurial Government*, 75 N.Y.U. L. REV. 1121, 1209–10 & n.450 (2000) (finding homogenization of views of interconnected bureaucracies); Richard A. Posner, *The Future of the Law and Economics Movement in Europe*, 17 INT'L REV. L. & ECON. 3, 7–8 (1997) (arguing that bureaucratic norms such as obedience and diligence tend to homogenize bureaucratized workforces).

²⁶² Cox & McCubbins, *supra* note 173, at 381.

²⁶³ See sources cited *supra* note 173.

²⁶⁴ WARREN E. MILLER & J. MERRILL SHANKS, *THE NEW AMERICAN VOTER* 326–413 (1996).

²⁶⁵ Cf. KARCH, *supra* note 73, at 11 (noting that, while voters may want action in response to a particular crisis, they may be indifferent between the forms that officials choose); Elizabeth Garrett, *Voting with Cues*, 37 U. RICH. L. REV. 1011, 1022–23, 1032–33 (2003) (discussing voters' rational ignorance on policy issues, and concluding that "[m]ost voters will not spend a great deal of time verifying information or obtaining more information beyond that which they learn as a byproduct of everyday activities"). General failure to enact every policy on a candidate's to-do list should be distinguished from promises to defend existing entitlements, where there is good reason to think that voters in fact may be fairly zealous in defending what has been promised them. E.g., Paul M. Romer, *Preferences, Promises, and the Politics of Entitlement*, in *INDIVIDUAL AND SOCIAL RESPONSIBILITY: CHILD CARE, EDUCATION, MEDICAL CARE, AND LONG-TERM CARE IN AMERICA* 195, 204–19 (Victor R. Fuchs ed., 1995).

that voters will want candidates to have a “plan” for dealing with important challenges. There is no obvious reason, though, why this plan must strike the public as innovative. Again, innovative but untested proposals are likely to harm, not help, most candidates.²⁶⁶

This analysis also largely forecloses another possibility, which is that incumbents might be driven to innovate in response to agenda-setting by challengers. If risk-seeking incumbents can set the terms of debate for an election, this argument would go, then perhaps incumbents must be reactive rather than strategic in choosing what policy to implement. This produces innovation by incumbents, however, only to the extent that challengers succeed in placing on the political agenda issues or social problems that the incumbent cannot address by borrowing—or by borrowing, tweaking, and claiming to innovate. Again, because these are lower cost and lower risk techniques than true innovation, an incumbent should prefer them. Unless voters demand real innovation, and have the capacity to discern it from tweaked borrowing—both possibilities we have argued are implausible—there is no reason that challengers will drive incumbents to implement risky new policies.²⁶⁷

E. Other Psychological Factors

To this point we have largely assumed that politicians are rational maximizers: they behave in conformance with whatever will maximize their subjective welfare, including preferences for serving others. It is now well-documented that humans do not consistently behave in this way. We make mistakes, we doubt ourselves, and we procrastinate or are otherwise mentally lazy.²⁶⁸ Several of these factors might tend to diminish the extent to which policymakers, if subject to them, would innovate. It is, however, an open question whether in competitive political markets these kinds of behaviors persist or if instead they are competed away.

²⁶⁶ See *supra* text accompanying notes 235–38.

²⁶⁷ See James M. Snyder, Jr. & Michael M. Ting, *An Informational Rationale for Political Parties*, 46 AM. J. POL. SCI. 90, 94 n.18 (2002) (“Challengers’ positions also appear to have little or no effect on the vote.”).

²⁶⁸ See Jon D. Hanson & Douglas A. Kysar, *Taking Behavioralism Seriously: The Problem of Market Manipulation*, 74 N.Y.U. L. REV. 630, 643–86 (1999); Quattrone & Tversky, *supra* note 25, at 719–20; Amos Tversky & Daniel Kahneman, *Judgment Under Uncertainty: Heuristics and Biases*, 185 SCIENCE 1124, 1124 (1974). But see Charles R. Plott & Kathryn Zeiler, *Exchange Asymmetries Incorrectly Interpreted as Evidence of Endowment Effect Theory and Prospect Theory?*, 97 AM. ECON. REV. 1449, 1452 (2007) (arguing that prior studies finding existence of endowment effect can be explained by flaws in experimental procedures).

We can begin with what is probably the best-known cognitive effect in the legal literature, the endowment effect.²⁶⁹ Generally speaking, individuals attach higher value to rights or property they already hold than to those they do not, even where the two are considered equivalent by neutral third parties.²⁷⁰ Obviously, if officials experience the endowment effect when considering whether to implement new policies, they will be less likely to take worthwhile gambles, as they will not value the upside from risk highly enough.²⁷¹ And if voters must judge politicians on the wisdom of the risks they take before being able to observe the outcomes, voters subject to endowment effects will give too little credit to politicians who took positive expected-value gambles. Relatedly, individuals prefer to avoid losses more than they favor equivalent gains, which should again result in a bias in favor of the status quo.²⁷²

Similarly, individuals tend to be averse to uncertainty.²⁷³ Again, if this phenomenon is prevalent among policymakers, or relevant to the decisions of voters who judge them, we should expect less innovation, which by definition entails uncertainty.

²⁶⁹ See Hanson & Kysar, *supra* note 268, at 674–76; Daniel Kahneman et al., *Experimental Tests of the Endowment Effect and the Coase Theorem*, 98 J. POL. ECON. 1325 (1990).

²⁷⁰ Cass R. Sunstein, *Endogenous Preferences*, *Environmental Law*, 22 J. LEGAL STUD. 217, 225–27 (1993) (summarizing studies).

²⁷¹ Indeed, some commentators describe this phenomenon as a “status quo bias.” See, e.g., Russell Korobkin, *The Status Quo Bias and Contract Default Rules*, 83 CORNELL L. REV. 608, 625–30 (1998).

²⁷² Quattrone & Tversky, *supra* note 25, at 724–25; Lennart Sjöberg, *Policy Implications of Risk Perception Research: A Case of the Emperor’s New Clothes?*, 4 RISK MGMT. 11, 13 (2002); Vis & van Kersbergen, *supra* note 209, at 162.

²⁷³ See Daniel Ellsberg, *Risk, Ambiguity, and the Savage Axioms*, 75 Q. J. ECON. 643, 650–56 (1961); Craig R. Fox & Amos Tversky, *Ambiguity Aversion and Comparative Ignorance*, 110 Q. J. ECON. 585, 585–88 (1995); Daniel Kahneman & Amos Tversky, *Prospect Theory: An Analysis of Decision Under Risk*, 47 ECONOMETRICA 263, 265 (1979). For example, given a choice between the equivalent of a certain \$1.00 payment and a 50% chance at a \$2.00 payment, many people seem to prefer the certain payment, notwithstanding the fact that the expected value of the uncertain wager is identical.

In technical parlance, there is a difference between “risk” and “uncertainty.” R. DUNCAN LUCE & HOWARD RAIFFA, *GAMES AND DECISIONS: INTRODUCTION AND CRITICAL SURVEY* 13–14 (1957). Risk describes a situation where the odds of various outcomes occurring are known but unresolved—for example, the results of a fair coin flip. Uncertainty denotes an event with undetermined resolutions—for example, selection of a stone from a bin with an uncounted mix of white and black stones. Still, the *ex ante* chances of a particular outcome resulting from either risky or uncertain events can sometimes be described with percentages. *Id.* at 277–78. For instance, the expected odds in our example of either a fair coin coming up heads or a randomly drawn stone being white (given current information) are both 50%.

Additionally, people may have so-called “time-inconsistent preferences.”²⁷⁴ That is, we may prefer to do something now that is inconsistent with what we would prefer to have happened later.²⁷⁵ The grasshopper sleeps away the summer instead of storing food, even though he may know that he will wish he hadn’t. More technically, the present self perceives the disutility of small but immediate costs as larger than the present-discounted value of undergoing the costs, even when the individual would later reach a different conclusion.²⁷⁶ Innovation requires higher costs now—researching alternatives, deciding between them, persuading the public to accept risks, overcoming political pushback from those who are averse to the risk—in exchange for putative gains later. In effect, officials with a tendency toward avoiding immediate costs will have a highly exaggerated discount rate for the promised future gains, making them disinclined to take on the current costs.

Scholars are only now beginning to debate whether these kinds of cognitive failures can arise or persist among policymakers facing a competitive political market.²⁷⁷ In conventional market theory, underperforming actors will be pushed out by those who are better aware of reality, or at least those who are aware of their own failings and compensate for them—for example, by hiring good advisors.²⁷⁸ If a politician passes up good bets because of her bias toward the status quo, a rival will come along and outperform her.²⁷⁹ While there may be no opportunities for direct challengers to outperform an incumbent, voters can observe the performance of neighboring officials and use their skill as a

²⁷⁴ George Loewenstein & Richard H. Thaler, *Anomalies: Intertemporal Choice*, 3 J. ECON. PERSP. 181, 181–82 (1989). For a helpful overview of the literature, see Manuel A. Utset, *Hyperbolic Criminals and Repeated Time-Inconsistent Misconduct*, 44 HOUS. L. REV. 609, 633–37 (2007).

²⁷⁵ See GARY S. BECKER, ACCOUNTING FOR TASTES 11 (1996) (describing time-consistent preferences as those in which “the choices an individual *would like* to make in the future, if he knew now what would happen in the interim, are exactly the same as the choices he *will actually* make then”). We take no position on whether time-inconsistent preferences should be viewed as welfare-reducing.

²⁷⁶ Christopher Harris & David Laibson, *Hyperbolic Discounting and Consumption*, in 1 ADVANCES IN ECONOMICS AND ECONOMETRICS: THEORY AND APPLICATIONS, EIGHTH WORLD CONGRESS 258 (Mathias Dewatripont et al. eds., 2003).

²⁷⁷ Compare, e.g., Richard A. Epstein, *The Neoclassical Economics of Consumer Contracts*, 92 MINN. L. REV. 803, 803–10 (2008), with Oren Bar-Gill, *The Behavioral Economics of Consumer Contracts*, 92 MINN. L. REV. 749, 749–54 (2008), and Brian Galle, *Federal Fairness to State Taxpayers: Irrationality, Unfunded Mandates, and the “SALT” Deduction*, 106 MICH. L. REV. 805, 819–22 (2008), and David Laibson & Leat Yariv, *Safety in Markets: An Impossibility Theorem for Dutch Books 1–4*, 27–28 (July 9, 2007) (unpublished manuscript), <http://www.hss.caltech.edu/~pbs/zurich/readings/LaibsonYariv.pdf>.

²⁷⁸ Richard A. Epstein, *Behavioral Economics: Human Errors and Market Corrections*, 73 U. CHI. L. REV. 111, 123–32 (2006).

²⁷⁹ Cf. Besley & Case, *supra* note 190, at 50–52 (describing empirical findings on how voters hold politicians to account for failing to live up to performance of other comparable officials).

yardstick for their own government.²⁸⁰ This assumes, though, that neighboring officials are not also biased. Whether “yardstick competition” of this kind is an effective source of market discipline depends on the spatial and other characteristics of the rival jurisdictions.²⁸¹ That is, it may be hard for voters to judge their own politicians by the performance of others in distant, very different states. If there are only a few nearby similar states for voters to look to, it is possible that officials in all of them could equally underperform.

Another source of political market correctives is the housing market. Home values reflect in part the value generated by local government.²⁸² If values are distorted by cognitive biases, “smart” market actors have opportunities for arbitrage—buying at bargain prices from the foolish and selling to the other smarties.²⁸³ Other market actors can see these signals and adjust their own prices accordingly. Thus, it usually takes only a few “smart” actors to correct a market, at least where the products in the market are all fairly similar.²⁸⁴ In the case of homes, though, it is difficult to tell this story, at least for overpriced housing. Suppose a homeowner recognizes that her government is underperforming, and wants to find some way to profit off that recognition. If her home were a security, she could just short it—place a bet that it would decline in value.²⁸⁵ If enough investors short a given security,

²⁸⁰ See Timothy Besley & Anne Case, *Incumbent Behavior: Vote-Seeking, Tax-Setting, and Yardstick Competition*, 85 AM. ECON. REV. 25, 26 (1995). For information on yardstick competition generally, see Andrei Shleifer, *A Theory of Yardstick Competition*, 16 RAND J. ECON. 319, 319–27 (1985).

²⁸¹ Reulier & Rocaboy, *supra* note 241, at 3, 11, 13–15; see ALBERT BRETON, *COMPETITIVE GOVERNMENTS: AN ECONOMIC THEORY OF POLITICS AND PUBLIC FINANCE* 234 (1996).

²⁸² Peter Mieszkowski & George R. Zodrow, *Taxation and the Tiebout Model: The Differential Effects of Head Taxes, Taxes on Land Rents, and Property Taxes*, 27 J. ECON. LITERATURE 1098, 1110–17, 1127–31 (1989) (surveying other studies); Wallace E. Oates, *The Effects of Property Taxes and Local Public Spending on Property Values: An Empirical Study of Tax Capitalization and the Tiebout Hypothesis*, 77 J. POL. ECON. 957, 966–67 (1969). *But cf.* Richard Schragger, *Consuming Government*, 101 MICH. L. REV. 1824, 1830 (2003) (arguing that evidence on this point is somewhat mixed).

²⁸³ Epstein, *supra* note 278, at 123–32.

²⁸⁴ See Epstein, *supra* note 277, at 814 (arguing that well-informed consumers can assist others in recognizing product flaws); Louis Kaplow, *Fiscal Federalism and the Deductibility of State and Local Taxes Under the Federal Income Tax*, 82 VA. L. REV. 413, 442 (1996) (noting that correct pricing in political markets requires only “comparison shopping by a sufficient portion of individuals to discipline the market”).

We assume for the sake of argument the truth of these claims; if space permitted, there is much more nuance to explore. For instance, for market correction mechanisms to be effective, there must be a market where it is possible to earn arbitrage rewards, see Galle, *supra* note 277, at 819–22. To take one example of when this might not be the case, if consumers are difficult to educate, there may be low rewards to education. See Bar-Gill, *supra* note 277, at 754–64.

²⁸⁵ “[S]hort-sales [are] undertaken by an arbitrageur when she believes the market price of a security is higher than its efficient price. . . . [T]he arbitrageur [is] betting that the price of the security will fall”

prices will tend to decline, as the market absorbs the negative signal.²⁸⁶ But there are few obvious ways to place a bet that one's own home will decline in value.²⁸⁷ Thus, we doubt that the private housing market can currently be an important source of negative information about biased government.²⁸⁸

In any event, as we have said, this a field where work is just beginning. At present, though, there seems a fair chance that the psychology of public officials and voters may impede innovation.

F. Role of Political Parties

Another highly undeveloped field is the influence of political parties on policy innovation. There is, of course, a vast literature on the purposes, behavior, and governance of parties. To date, though, there has been no real effort to connect these analyses to the innovation question. Our own tentative view is that parties will tend to moderate the degree to which individual candidates deviate from the preferences of their constituents, whether toward or away from greater risk.

On one leading account of the function of parties, voters lack complete information about candidates, and rely on the endorsement of the party as an

Ronald Gilson & Reinier Kraakman, *The Mechanisms of Market Efficiency Twenty Years Later: The Hindsight Bias*, 28 J. CORP. L. 715, 726 (2003).

²⁸⁶ Arturo Bris et al., *Efficiency and the Bear: Short Sales and Markets Around the World*, 62 J. FIN. 1029, 1031 (2007) (reporting that evidence supported widespread view that short sales result in "more efficient price discovery at the individual security level"); Jonathan R. Macey et al., *Restrictions on Short Sales: An Analysis of the Uptick Rule and Its Role in View of the October 1987 Stock Market Crash*, 74 CORNELL L. REV. 799, 811–12, 821 (1989).

²⁸⁷ The transaction costs involved in designing a financial instrument specifically for placing a bet on a single-family home are likely substantial, which may explain the evident absence of a market for such instruments. Probably the most viable avenue would be for the owner to take out a nonrecourse home equity loan. "Nonrecourse" means that the loan is secured only by the property, not the borrower's underlying assets; so a nonrecourse equity loan would allow the owner to pull cash out of the property, and then walk away. This is a profitable venture if the property declines in value. Real estate experts tell us, however, that it is very difficult to obtain a nonrecourse equity loan on personal property. We are grateful to Don Weidner, Michael Knoll, and Lee Anne Fennell for conversations on these points.

²⁸⁸ Cf. Gilson & Kraakman, *supra* note 285, at 728–29 (noting that limits on arbitrage ability in securities markets may result in inaccurate pricing). As Professor Malani explains, wages and rents also capitalize the value of government, although in the case of wages salaries decline as quality of government goes up due to increased competition for jobs in the desirable jurisdiction. Anup Malani, *Valuing Laws as Local Amenities*, 121 HARV. L. REV. 1273, 1275, 1284–85 (2008). Wages, however, are famously "sticky," which is to say that they do not necessarily move as market forces would dictate. *E.g.*, Robert E. Hall, *Employment Efficiency and Sticky Wages: Evidence from Flows in the Labor Market*, 87 REV. ECON. & STAT. 397, 397 (2005). And rents tend to capture only the rather short-term perspective. Malani, *supra*, at 1289.

indication of the candidate's quality and expected policy views.²⁸⁹ Individual actors can harm the party by performing poorly or otherwise enacting unpopular policies, which reduces the value of the party's endorsement for all other party members.²⁹⁰ Thus, the party members have incentives to select favorable candidates, and to use whatever influence they have to promote policies that increase their collective reputation.²⁹¹ There is something of a danger of party members free-riding on one another's efforts at monitoring each other, but the members can hire agents to monitor themselves, and write contracts to incentivize the monitors adequately.²⁹²

In another account, political parties exist in order to prevent politicians from adopting extreme policies. As Gilat Levy explains, where there are large rents from holding office and exercising wide policy autonomy, individual candidates cannot credibly commit to keep their campaign promises.²⁹³ That is, Levy posits a situation where rewards from breaking a promise are potentially large enough that candidates will be willing to give up future reputation to earn them. Because voters do not know the individual candidate's utility function, they do not know whether they are likely to face this situation. The party, on the other hand, is a repeat player with many investors who contribute shared effort in exchange for collective benefits. Thus, the party can credibly commit to sanctions against members who act contrary to the party's own interest, which is plausibly tied closely to voter preferences. So membership in a party is a promise not to enact policies far enough from median preferences that they would hurt the party.²⁹⁴

Thus, under either view the general effect of parties should be to constrain individual officials from undertaking behavior that will displease the electorate. Parties should dampen any preference individual officials may have to take on more risk than their constituents prefer. At the same time, parties

²⁸⁹ ANTHONY DOWNS, *AN ECONOMIC THEORY OF DEMOCRACY* 96 (1957); Besley & Case, *supra* note 190, at 49–50; Caillaud & Tirole, *supra* note 199, at 1454–55; Snyder & Ting, *supra* note 267, at 90–91, 94.

²⁹⁰ Jean Tirole, *A Theory of Collective Reputations (With Applications to the Persistence of Corruption and to Firm Quality)*, 63 *REV. ECON. STUD.* 1, 2 (1996); see KARCH, *supra* note 73, at 52; cf. Acemoglu et al., *supra* note 174, at 286–88 (describing problem of moral hazard in teams).

²⁹¹ Caillaud & Tirole, *supra* note 199, at 1458; Snyder & Ting, *supra* note 267, at 91–92; see Tirole, *supra* note 290, at 15.

²⁹² See Acemoglu et al., *supra* note 174, at 287, 297.

²⁹³ Gilat Levy, *A Model of Political Parties*, 115 *J. ECON. THEORY* 250, 251 (2004); see also Enriqueta Aragonès et al., *Political Reputations and Campaign Promises*, 5 *J. EUR. ECON. ASS'N* 846, 847–88 (2007).

²⁹⁴ Levy, *supra* note 293, at 253, 269; see also Daron Acemoglu, *Why Not a Political Coase Theorem? Social Conflict, Commitment, and Politics*, 31 *J. COMP. ECON.* 620, 622 (2003); Snyder & Ting, *supra* note 267, at 92.

ought to discipline slacking officials who innovate at far below public expectations.

The importance of these party influences depends on whether parties are able to create high-powered incentives for individual officials in office.²⁹⁵ We do not have space here to canvass these in depth. Briefly, many of the benefits the party has to offer pertain to election and reelection: favorable branding, the promise of moderation, fundraising, volunteers, and the like.²⁹⁶ An incumbent who is confident she will win, or who is uninterested in reelection, will be as indifferent to these influences as she is to the electorate generally. Parties can also deliver other kinds of spoils, though, such as post-retirement rewards, appointment to administrative positions, and support from other branches or tiers of government for contested policy.²⁹⁷ There is some data to suggest that parties are a more important influence on governors when a governor's own party also holds the legislature, suggesting that at least some of these forms of policy assistance are significant.²⁹⁸

Complicating all of this analysis is the fact that parties are typically national in scope. Different policies may have varying reputational effects for the party in different regions. Parties may encourage policy that looks very risky to some constituencies but safe to its own leadership, or vice versa. How these choices play out will likely depend on the political landscape, the party's internal governance structure, and similar factors. For instance, parties might allow candidates in jurisdictions relatively hostile to the party's national platform to deviate fairly far from the party's preferences, in order to maximize the odds of winning.²⁹⁹ Conceivably, this could include permitting local candidates to take risks, or to avoid innovation, more than most candidates offered by the party.

It might be argued that, inasmuch as the parties are an agglomeration of national interests, they should encourage candidates to internalize spillovers from innovation. For example, the Republican Party might coordinate experiments by Republican governors, in an effort to develop winning policy

²⁹⁵ Cf. Charles W. Wiggins et al., *Interest-Group and Party Influence Agents in the Legislative Process: A Comparative State Analysis*, 54 J. POL. 82, 97 (1992) (finding that party leadership can *sometimes* overcome interest-group pressure).

²⁹⁶ KARCH, *supra* note 73, at 52; Snyder & Ting, *supra* note 267, at 91.

²⁹⁷ See KARCH, *supra* note 73, at 55–58; Caillaud & Tirole, *supra* note 199, at 1459.

²⁹⁸ Snyder & Ting, *supra* note 267, at 93.

²⁹⁹ See *id.* at 103.

positions it could use nationwide.³⁰⁰ This may be true for policies with clearly conservative valence, such as major restrictions on abortion rights.³⁰¹ But for policies that might plausibly be emulated by Democrats, the party, like an individual state, should prefer to free ride. Parties may also be risk averse because of the potentially large reputational harm of failed policies.³⁰² Think of Michael Dukakis's experiences with Massachusetts Bay, or national pushback against local gay-marriage ordinances.

As we said, given the paucity of prior work in this area, it is difficult to be confident about any predictions about the effects of parties. However, a tentative analysis suggests that they are unlikely to be effective in encouraging innovation. To the extent that innovation depends on individual officials' willingness to defy local preferences for free-riding, parties may actually dampen it.

G. Summary

As we have emphasized from the outset, generalizations about innovation are hazardous. However, based on our analysis in this Part, it would seem that imperfect agency by public officials, if anything, will tend to diminish state and local innovation. Rational public actors have incentives to avoid risk, whether motivated directly by electoral success or indirectly by money or rents. Irrational behavior could potentially compound these tendencies. The standard reputation-building story spun by RA's doubters, we have shown, has numerous holes. For reputation to increase a candidate's willingness to experiment, the candidate would have to value the future increased odds of success in higher office above the present increased risk of loss. Considering that it is unclear whether voters can distinguish good experiments from bad, or from copies, that seems like a poor wager. Even if an individual candidate perceived reputational benefits from ignoring her current constituency's preferences, the candidate's party may see things differently, and exercise its influence to rein her in.

³⁰⁰ *Cf.* Cai & Treisman, *supra* note 19, at 3 (arguing that candidates for a central office should be willing to take risky experiments in some localities to win electoral rewards from the rest of the population).

³⁰¹ *Cf. id.* at 14 (observing that even a central planner will not internalize externalities that benefit citizens outside her expected winning coalition).

³⁰² Recall that in our earlier widget example, the federal government was willing to experiment because, while successes could be repeated to realize nationwide benefits, failures could be limited to a single state. Parties do not have that luxury: successes may have nationwide benefits, but failures, too, can hurt the party across the nation. *See supra* text accompanying notes 46–48.

CONCLUSION

At this point, there is a strong theoretical argument—backed by some empirical findings—that, absent outside intervention, state and local governments will on the whole innovate at well below the socially optimal level. Optimal innovation demands rather extreme conditions: unique state policy needs, utterly opaque information, or first-mover premia that greatly exceed the expected cost of experimenting. Absent these circumstances, states will still invent, but to a degree that diminishes overall social welfare.³⁰³ And these conditions may be fleeting. For instance, “leader” states may have reasons to act first, but, having won their first race, may be inclined to coast afterwards.³⁰⁴

Critics of RA have typically accepted this reality, but focused instead on the incentives of individual politicians to innovate in excess of their own constituents’ preferences. But politicians are structurally risk averse, a tendency that is only exacerbated by the status-quo biases of large contributors and officials’ own psychology. We have shown that the only story that has been offered to justify risk-seeking—the urge to garner a reputation as an innovator—is extremely implausible. Given that only insecure incumbents should take risks, innovation could well signal low ability, not high aptitude. And, even if innovating were a positive signal, it is a very noisy one, easily copied and hard to measure except *ex post*.

Defenders of the innovation theory of federalism have also pointed out that, even if each state tends to avoid experiments, the sheer fact that state and local governments greatly outnumber the federal government, and have different views about policy, will produce many different policies.³⁰⁵ But the claim that innovation increases with the number of jurisdictions, too, is at best ambiguous. It is true that the likelihood of differing views rises as the number of actors increases. But so, too, does the number of ways in which the pie of

³⁰³ Ayres, *supra* note 17, at 550. It is worth emphasizing that our prediction is not that there will be no state innovation, but instead that innovation will fall below the level an ideal central planner would choose. Thus, in our view it proves nothing to point to this or that particular state-level innovation, as some legal scholars have done in the past. *E.g.*, Baher Azmy, *Squaring the Predatory Lending Circle*, 57 FLA. L. REV. 295, 396 (2005); Friedman, *supra* note 7, at 398–400. We cannot learn much useful information about the overall level of state experimentation by examining a collection of anecdotes.

³⁰⁴ See Abramowicz, *supra* note 37, at 164, 168–69.

³⁰⁵ Azmy, *supra* note 303, at 395; Rapaczynski, *supra* note 15, at 410.

innovation gains must be sliced.³⁰⁶ Free-riding also increases with the number of jurisdictions, as the more states there are, the more likely it is that there will be another jurisdiction upon which any given state can free ride at a cost-effective rate. Which effects predominate for any particular policy is theoretically indeterminate. Further, as we have noted, experimentation and the concept of a “laboratory” is about more than multiple policies and random innovations: it is also about coordinating innovations to reduce waste and ensure that what appear *ex ante* to be low-value wagers sometimes are taken. Large numbers of jurisdictions may help to diversify wagers but increase waste. Again, theory does not tell us in which direction social welfare is increased.

Finally, neither of these sets of responses truly vindicates the claim that states can be “laboratories” of democracy. Experimentation implies efforts to pool information, diversify risks, and learn from both successes and failures. Only in that way do efforts at policy innovation maximize society’s return on the investment in new lawmaking. We found no plausible account to suggest that states on their own would engage in that behavior.

What, then, are the implications of our findings for the federalism debate? Even if innovation were the only justification for federalism, it still would not necessarily follow from our analysis that all policy should be made by a centralized, national government. At most, we have shown that policy innovation is reason to situate *some* policies in the national government.³⁰⁷ To be sure, it is difficult to say for certain when decentralized experiments will lag. We have shown that whether a state will experiment depends on many factors, which will vary based on the policy, the state, the state’s citizens’ preferences, and the preferences, electoral security, and party membership of the state’s officials. Still, it should be straightforward to identify some policy areas as having very strong potential for suboptimal innovation. Policies that will be easy for other jurisdictions to notice, difficult to conceal, cheap to copy relative to their benefits, and that would be of similar value in most of the

³⁰⁶ See Abramowicz, *supra* note 37, at 165 (noting that incentives to innovate are smaller when returns must be shared); Strumpf, *supra* note 19, at 228–29 (same for incentives to experiment).

³⁰⁷ Accordingly, our effort fits squarely in the economic tradition of “fiscal federalism,” pioneered by Oates, in which the goal is to locate each discrete set of policy choices at the level of government where that placement will maximize social welfare. Oates, *supra* note 6, at 1120.

country are likely to see significant free-riding, and so are good candidates for nationalization.³⁰⁸

Another crucial reason that our results here do not necessarily imply the superiority of centralized government is because we have told only half the story. We have demonstrated the likelihood that, absent intervention, states will fall short of being ideal planners. But so, too, may Congress and the President. The question whether there are other institutions that states might employ to overcome some of their own shortcomings is also still open. For instance, states might contract with private firms, whether for-profit or nonprofit, to perform innovative services. If firms retain property rights in their innovations, they should have stronger incentives to experiment—although, as monopolists, they may price the right to use their inventions at a level that reduces social welfare. Finally, there may be various hybrid institutions that, in combination, can account for the shortcomings of any one approach alone. All of these topics we must leave for our sequel article to this one; stay tuned.

³⁰⁸ Significant for the debate over corporate charters, many reforms in the law of corporations appear to have nearly all of these features.