

Dynamics of Diffusion: Conceptions of American Federalism and Public-Sector Innovation

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Boryeong was a pleasant but wholly unremarkable little town on Korea's western coast when Sang-don Park was elected its mayor in 1994. Mayor Park had big dreams for Boryeong. But the town had no major industry, an out-of-the-way location, schools no worse and no better than the rest of Korea, seemingly nothing to distinguish it from every other pleasant little town up and down the coast. One thing Boryeong possessed in abundance, however, was mud. The tilt of the seabed made Boryeong's tidal flats uncommonly rich in deep, viscous goo. This had always been true, and had always been entirely superfluous. But Mayor Park determined to make mud the linchpin of Boryeong's economic development. He first struck a deal with a private company to make and market a line of cosmetics based on Boryeong mud. There were not many takers. One evening the mayor happened to rent a video of an American movie, *The Player*, featuring a scene of the lead actress taking a mud bath, and inspiration struck. If customers were reluctant to wear Boryeong mud on their faces, Mayor Park reasoned, perhaps they would pay to bathe in it. Thus was born the Boryeong Mud Festival. By 2003 the six-day festival was drawing well over a million visitors from around the world, and Boryeong was booming.¹

Governments can and do innovate. Governments refine their strategies and their tactics, develop new solutions to old problems, and find ways to recognize and meet previously latent needs. This is unsurprising, since governments are assemblages of human beings, and humans are inclined to improvise.* That said, the manner in which people are organized shapes and constrains their propensity to innovate, and those organizational forms we call "government" tend to share a set of distinctive features. They are formally structured, entrusted with missions that are multiple or complex or

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* Like any generalization about our species, this one is vulnerable to objections and counter-examples. For a fascinating discussion of technological (as opposed to political, philosophical, and artistic) stagnation in ancient Greece and Rome, see M.I. Finley., "Technical Innovation and Economic Progress in the Ancient World," *The Economic History Review*, Vol. 18, No. 1, 1965.

both, and subject to judgment on many criteria by multiple interests. These features affect the pace and pattern of governmental innovation in characteristic ways.

Public organizations, for reasons that are not in the least mysterious, typically display more inertia and less flexibility than private organizations. The public sector's cardinal virtue—precious when present, crippling when absent—is legitimacy in citizens' eyes. Government is answerable to a broad range of constituencies whose interests, on a wide spectrum of dimensions, must be taken into account. This can be termed “*extensive* accountability,” and is so widely observed in public organizations that it can be posited as a defining feature separating them from private non-profits and businesses. Private organizations, conversely, are distinguished by what can be termed “*intensive* accountability.” They are answerable to a narrower set of masters, but generally in a far more focused manner. Imagine, as the extreme of intensive accountability, a for-profit firm owned by a single, strictly money-motivated investor, operating in an unregulated economy. The managers of that firm are accountable to one interest (the investor) on one dimension (the net present value of the firm's revenue stream.) The extreme of extensive accountability may be the Secretary-General of the United Nations who, at least in principle, owes a measure of fidelity to everyone on the planet.

Intensive accountability is inherently more conducive than extensive accountability to narrow efficiency improvements—rooting out avoidable costs, scanning for markets that might support an extra hundredth of a percent on the rate of return, refining every detail of the production process in search of a competitive edge. To expect government to match business on such scores is as quixotic as expecting business to respond, uncompelled, to the complaints of some unmonied interest its operations happen to inconvenience. Innovation among extensively accountable public organizations is suppressed both by the dilution of pressures to alter the *status quo* and by the profusion of pressures to preserve it. Most governmental entities, at most points in time, represent an intricate equilibrium of multiple pressures. The organization's actual state of operation, in other words, can be viewed as one of a great many *possible* states—but one of the few imaginable states, and perhaps the only one, that satisfies the minimum requirements of all the interests holding a legitimate (or at least an effective) veto.

Since it is so rare that some single interest wields full control over a public entity's agenda*, any contemplated innovation must offer benefits that are reasonably large, reasonably widespread, and reasonably certain before it can be undertaken. And since it is so common that multiple interests have the ability to hinder any change they perceive as inimical, any alteration that threatens more than trivial damage to more than a narrow splinter of a public organization's constituency will generally founder short of implementation.

* It is of course true that narrow interests often wield *disproportionate* influence over public agencies—consider farmers and the U.S. Department of Agriculture, teachers or organized ideologues and local public schools, or professional groups and state licensing boards. But this is a very different thing from untrammled control that need not consider, as meaningful constraints, the interests of other constituencies.

Suppose advancing technology renders it newly possible to substitute a sophisticated voice-mail system for the work of five hundred receptionists. Suppose further that any organization seizing this opportunity will realize net savings of \$10 million per year. The sole proprietor of, say, a subscription-management company would have potent motives to engineer such a change. If the company, instead of a single owner, had ten thousand equal shareholders the payoff would be less concentrated, and no single shareholder would rationally mount a personal campaign to apply the new technology. Yet the per-owner advantage of \$1000 would loom large in any reckoning of financial stewardship, and odds are good the innovation will be made. Imagine, next, that the same automation opportunity, at the same scale, arises at the Social Security Administration. A \$10 million annual savings translates to roughly three cents per American. Insofar as economic motives apply it is quite unlikely that any citizen will insist upon automation, or indeed even pay enough attention to the organization's inner workings to be aware of the option.

Many interests within the Social Security Administration's extensive web of constituencies, meanwhile, are likely to be both motivated and positioned to discourage automation. These may include advocates for elderly beneficiaries believed to be easily flummoxed by voice-mail systems; the five hundred receptionists defending their jobs; and the owner of the office building the government leases to accommodate the receptionists. The goal is not to suggest that all these constituencies have equally valid grounds for objection, or that they make their voices heard in similar ways and with equal effect. It is rather to point out that the Social Security Administration (or any other public organization) must take into account considerations that a private company, in a parallel situation, is free to ignore as it contemplates change.

Both the attenuation of positive motives and the multiplicity of constraints make innovation more challenging in public than in private organizations. Note that this generalization depends in no way on the claim that public managers are less avid for innovation, less able to dream up new possibilities, or less skilled in the management of change than their private counterparts. It may well be that managers with a low tolerance for frustration, or a limited ability to comprehend the complex matrix of interests that set the context for governmental endeavors, tend to filter out of public service. But the same caliber of management effort, applied at the same degree of intensity, will systematically generate less innovation in a public than in a private setting because of the pervasive differences in opportunities and constraints entailed in the distinction between intensive and extensive accountability.

Governmental innovation is worthy of attention both because it is difficult and because it is valuable. Precisely because public organizations touch the interests of so many—and because they tend to be entrusted with particularly vital tasks—a governmental innovation that permits new needs to be met, or old needs to be met more cheaply or more precisely or more flexibly, can produce an increment of value far outpacing the gains obtainable through analogous improvements in many corporate environments. Sluggish or distorted governmental innovation, similarly, implies a correspondingly large surrender of potential benefit. Scholars and practitioners are well

aware of this, of course, which explains both the frequency with which idealistic public managers struggle to effect change despite the obstacles, and enduring academic interest in strategies for lowering the barriers to innovation within the public sector.

American Federalism and the Laboratory Metaphor

Observers have long noted the special potential of America's compound republic to promote governmental innovation. In the phrase coined by Lord Bryce and popularized by Louis Brandeis, the separate states function as "laboratories of democracy."² Lord Bryce was thinking more about forms of representation and other political matters than about all-day kindergarten or one-stop regulatory permitting, but the metaphor has proven elastic. The potentially favorable aspects of American federalism with respect to innovation are intuitively clear. Within an overarching federation, united by cultural and linguistic ties and a common legal foundation, the separate states enjoy broad autonomy to experiment with different approaches to meet their people's needs. Then, once experience tests which innovations are beneficial, other states can adopt the successes and avoid the failures. The plural aspect of American government permits more innovation to occur. The singular aspect of American government amplifies the impact of each valuable innovation. Federalism has the potential to forge an advantageous alloy of diversity and unity.

This chapter does not address the first part of this logic—the notion that a polity's aggregate creativity rises through subdivision into substantially autonomous units. It is entirely plausible, though surely not inevitable, that fifty separate units will generate more new approaches than would a single entity encompassing the same territory and population. For present purposes, let us simply stipulate the rebuttable presumption that federalism will have a positive influence on the rate at which innovations are introduced. This shifts the focus to the second part of the laboratory metaphor and our current subject—the diffusion of valuable innovations beyond their point of origin.

Diffusion is by no means automatic. The water mill, which transforms the force of a flowing stream into usable mechanical energy, was invented in the first century BC. This simple device dramatically improved the efficiency of grain processing and could be applied, through quite minor adaptations, to a wide range of other production processes common in the ancient world, from shaping marble to sharpening tools. But five centuries elapsed before the first known application of water power to any purpose but grain-milling, and it took nearly as long for the innovation to diffuse into general use even for its original purpose³. Diffusion can fail because of impediments to the flow of information (whether engineered or inadvertent) or because of a mismatch between an idea generated in one context and the goals, capacity, and incentives prevalent in other contexts.

Diffusion is fundamental to the “laboratory” metaphor because most of the benefits of a federal model for public sector innovation—to a first approximation, 49/50ths of the benefits—hinge on replication rather than an augmented pace of initial innovation. If a latently replicable innovation fails to diffuse, then states are laboratories in the sense that an isolated and unexplored rain forest is a laboratory of biology. There may be a lot going on with the rain forest’s flora and fauna, but this profusion of biological diversity is sealed off from, and thus irrelevant to, the wider world. Indeed, a unitary government that is slow to innovate but quick to standardize best practices could actually outperform an assemblage of rapidly innovating separate states that lag in adopting each others’ improvements. So if federalism is to deliver on its promise as a device to counter government’s built-in impediments to innovation, the precision and pace of diffusion are matters with very high stakes.

Three Generic Models of Diffusion Dynamics

There is an extensive literature exploring the determinants of state-to-state diffusion of innovations in policies, programs, and processes. This literature is methodologically diverse, including contributions from economists, legal experts, political scientists, and public management scholars, and the variety of approaches and conclusions defy tidy summary. But a substantial share can be sorted into one of three broad models of state-level innovation, which may be termed *competitive*, *idiosyncratic*, and *collegial*.*

Competitive: The competitive model sees states as driven to embrace innovations by rivalry with other states. States seek to enlarge their share of such valuable things as investment and jobs, financial resources (including federal transfers), and residents who are net contributors of value. They seek to minimize their share of financial obligations, pollution, and residents who require more in services than they offer in taxes or other contributions. As a plausible example of diffusion driven by rivalry, consider the rapid liberalization of state gambling laws in the last third of the twentieth century. Most states maintained strict limits on gambling even after Nevada lifted most restrictions during the Great Depression and New Hampshire introduced a lottery some three decades later. But New Jersey’s 1978 legalization of casinos in Atlantic City rendered legal gambling accessible to a densely populated multi-state region, setting competitive forces in motion. A state that adopted casinos or lotteries or both could tap sources of tax revenue and investment unavailable to other states. States without legal gambling, especially those adjacent to early adopters, found that they suffered many of the costs of legalization (as their citizens poured money into out-of-state casinos or lotteries) without reaping any of the benefits, and came under pressure to match or exceed the degree of liberalization in

* Some studies that fall outside any of these categories focus on the federal government’s role in promoting changes in state policies or practices (e.g.. For example, see Susan Welch and Kay Thompson, “The Impact of Federal Incentives on State Policy Innovation,” *American Journal of Political Science* Vol. 24, No. 4, 1980.), pp. 715-729. But this dynamic is more accurately termed “promulgation” rather than “diffusion,” and while clearly important is not dealt with here.

neighboring states. By 1994 only Hawaii (insulated by geography from competitive pressures) and Utah (equally insulated by its distinctive culture) had failed to legalize some form of gambling.⁴

Competition may be seen as in the service of an authentic (if geographically bounded) common cause, or as a stratagem employed by opportunistic government officials.⁵ Some versions of the competitive model, including the predominantly economic literature inspired by Tiebout⁶, depict a positive-sum rivalry analogous to core theories of private-sector market efficiency⁷. Other variants see a more negative dynamic, envisioning policy deformations produced by states' efforts to attract desirable individuals and institutions and repel less desirable ones. The competitive model (in both its positive and negative variants) frequently appears in discussions of innovation in corporate chartering, environmental regulation, taxation, labor, and welfare policies, for example.⁸

Idiosyncratic: Many studies of innovation and diffusion stress the distinctiveness of the separate states. An innovation developed in one state, by this view, will generally be a tailored solution intricately fitted to the originating state's peculiarities. Diffusion is retarded, or blocked altogether, by the innovation's limited applicability outside its original context. States adopt ideas developed elsewhere only after extensive adaptation to fit their own circumstances, and frequently not at all. Alaska's 1976 creation of a Permanent Fund for the stewardship of the state's oil revenues was an important innovation, perhaps, but irrelevant to states lacking Alaska's challenge of a massive but temporary revenue surge. Pennsylvania's Department of Transportation may have displayed commendable creativity when it improvised alternative warning markers for horse-drawn buggies less garish than the big, bright triangles conventionally affixed to slow moving vehicles. But since the Swartzentruber Amish—whose religious principles the innovation was crafted to accommodate—are a splinter group essentially unknown outside Pennsylvania, the prospects for diffusion were limited.⁹

Much of the classic literature on the interstate diffusion of innovation¹⁰ emphasizes the heterogeneity of state cultures, politics, and administrative systems and the consequent retardation of replication. Studies of the spread of new approaches in school-district organization¹¹, recycling programs¹² tort law¹³, and workers' compensation¹⁴ find that the availability of ideas from another state is a relatively minor determinant of whether, when, and how a particular approach is embraced in other states. In an examination of child-abuse reporting, victim-compensation, and campaign finance innovations, Hays¹⁵ finds that policy changes seemingly modeled on ideas originating elsewhere are so extensively altered in the course of adoption that "diffusion" is a simplistic and imprecise term for what is going on. Other studies see competitive dynamics as important in the diffusion of innovations in gambling and tax policy, but stress that the ultimate results of competition-driven diffusion are greatly determined by the heterogeneous circumstances of each state.¹⁶ Even a seemingly classic example of rapid replication—the adoption of "sunset" legislation by 36 states between 1976 and 1982—displays the impediments to durable diffusion that can result from an imperfect fit

between an imported idea and a state's conditions. By 1989 a third of the states had abandoned the sunset laws they had recently embraced, presumably because experience proved the *ex ante* perception of fit to be illusory.¹⁷

Collegial: Yet a third generic model posits an essentially cooperative relationship among state governments. Behind this model is the implicit or explicit presumption that there are large and important realms of similarity in the missions states pursue and the means at their disposal, so that an innovation in one state is likely to be applicable elsewhere. All states issue drivers' licenses, hold elections, and incarcerate prisoners (among many other functions). But unlike the competitive model (which also presumes a degree of homogeneity, at least enough to motivate policy rivalry) studies sharing a collegial framework focus on collaboration.

The laboratory metaphor—in the original formulation of Bryce and Brandeis, and in most contemporary conceptions as well—is premised on collegial motives outweighing competitive ones. The literature rooted in this generic model sees originating states as willing to share information, and other states as receptive to imported innovations, in a mutually beneficial pooling of experience and ideas. This analytic tradition tends to emphasize the institutional conduits—professional communities, networks, associations of state officials—that can accelerate and validate information about new options and thus enable replications that would otherwise remain latent. Mintrom¹⁸ examines the role of well-connected “policy entrepreneurs” in hastening the spread of education reform ideas. Huff, Lutz, and Srivastava¹⁹ and Mintrom and Vergari²⁰ employ network theory to explain the pace and pattern of interstate diffusion. Derthick²¹ sees differential abilities to operate across boundaries (between the separate states and across levels of government) as a general explanatory factor in the outcomes produced by a federal system.

The Logic of Assessment

The respective shares of reality explained by these models is a matter of some consequence, as their policy implications are quite divergent. How might we test the relative plausibility of the three models of diffusion? In principle this is a researchable issue, since the models predict different patterns of diffusion. A stylized pure form of the competitive model would predict that innovations will diffuse most rapidly when embracing the innovation gives a state an advantage, or neutralizes rivals' advantages, in competition over revenue, desirable populations, investment, or other salient items. Diffusion will be sluggish for innovations with few or no competitive consequences. The idiosyncratic model, conversely, would predict interstate diffusion to be systematically scant and sluggish, with somewhat higher rates of replication between similar states and for relatively straightforward innovations whose adoption requires few internal adjustments on the part of replicating states. The collegial model would predict diffusion

to be rapid in general, and especially so for states, and in policy areas, with well-developed institutions for sharing information.

Which model best reflects the reality of interstate diffusion? At one level this is a silly question. Each model surely applies in some instances and fails in others. At a less grandiose plane of inquiry, however, are many questions that are in principle answerable (or at least amenable to substantially narrowed uncertainty) and whose answers matter. In empirical terms, in which policy arenas does each model seem to have the most (and the least) explanatory power? In normative terms, what criteria should determine whether a competitive, idiosyncratic, or collegial approach to innovation is most appropriate? Does the empirical pattern conform to, or depart from, these criteria? For example, do states adopt a competitive stance toward innovations where rivalry can be construed as productive and collaborate where competition would be destructive? Does the balance of competitive, idiosyncratic, and collegial forces differ across states and regions? Does it vary over time? Are there tools available to the states, or to the federal government, than can alter (for better or worse) the prevalence of each generic model?

Yet there are imposing obstacles to addressing even such conceptually tractable questions. A fully satisfying exploration would require us to have a large and representative set of well-defined innovations originating in one state; develop a convincing rubric for coding each innovation in terms of the attributes relevant to each model; and track whether, when, and why it was adopted in other states. Even a respectable approximation of such an effort implies a massive empirical effort, explained at book length. This chapter offers merely a rough artist's sketch for a method one might employ for such a project.

In the absence of any systematically defined and objectively collected set of state innovations to examine, this empirical sketch—described in more detail in an appendix—turns to a data set that has many limitations but one signal advantage. It was assembled independently of this study, and is thus unpolluted by any systematic bias stemming from attachment to one or another of these three models. The data consist of a subset of state programs chosen for Innovations in American Government awards—far from the kind of large-scale, scrupulously objective evidence gathered by the Census Bureau or the Bureau of Labor Statistics, but rather better than an *ad hoc* assemblage of examples.

This award program, funded by the Ford Foundation and run by the John F. Kennedy School of Government at Harvard University, originated in 1986 under the label Innovations in State and Local Government. (Federal applications were permitted from 1994 onwards, and the program altered its name accordingly.) The program invites public agencies whose managers believe they have developed something new and valuable to submit an application describing the innovation and its effects. The applicant pool is progressively winnowed through increasingly stringent reviews—first by graduate students, then more senior scholars and practitioners, and finally by an eminent panel informed by lengthy site-visit reports—until a few winners are selected each year. Winners receive a \$100,000 grant along with validation, publicity, and bragging rights. One goal of the program is to celebrate innovation and thus to encourage creativity in

government, but an equally important, and quite explicit, goal is to promulgate information about successful new approaches in order to accelerate diffusion.*

The initial sample of state-level innovations to examine was limited to the 32 receiving awards in 1994 or earlier—allowing at least a decade for diffusion to occur. For seven of these it proved difficult or impossible to determine, even in principle, whether the innovation had been replicated, leaving a final set of 25. The author consulted application material submitted to the award program along with secondary sources to characterize each program, on a subjective but systematic scale, on a spectrum ranging from highly to not at all salient to interstate competition. A research assistant, who was not informed of these rankings, simultaneously gathered evidence from a range of sources to track the extent of replication in other states. Her findings were also converted into a scale ranging from “no evidence of replication at all” to “direct evidence of significant interstate diffusion.”

From one perspective—that of the scholars and practitioners involved in the Innovations in American Government program—this limited empirical effort yielded reasonably positive results. Only two of the 25 innovations appear to be dead ends, and for 10 of the 25 the award-winner was a precursor to and, to a greater or lesser extent, a documentable inspiration for initiatives in other states. Since “false negatives” are very likely—instances of influence that the research failed to capture—while false positives are substantially less so, this suggests the program has been successful at picking and promoting valuable innovations. For these ten innovations, lessons forged in one state appear to have been more generally applicable than the idiosyncratic model would predict.

But the results give little purchase on the relative force of the hypothesized “competitive” and “collegial” drivers of diffusion. The two scales by which the innovations are ranked were structured so that a higher score indicates (on the one scale) a more collegial, less competitive interpretation of the innovation, and (on the other scale) more evidence of direct diffusion. Thus a strong positive correlation between the two would suggest that collegial innovations diffuse more readily, while a negative correlation would suggest that competitive motives are more powerful. The actual correlation coefficient is a thoroughly inconclusive $+0.04$. Given the noisiness of the underlying data, moreover, applying more sophisticated tools in an attempt to force definitive results out of hiding is unlikely to be very convincing.

The “idiosyncratic” model becomes marginally less plausible in light of these findings. But whether competition or collaboration is the more potent dynamic of diffusion—and, indeed, whether these are the most promising accounts of interstate replication—are mysteries that outmatch the empirical leverage of these 25 winning innovations. More intensive examination of these examples, or an expansion of the

* In this sense the Innovations program is not at all neutral among the models. It is implicitly premised on views consistent with the collegial model, and is inconsistent with at least the purer forms of the idiosyncratic model. But since this set of alternative models has never been explicitly incorporated into the program, there is a real but limited risk of bias in the selection of the programs.

sample to include the more recent state-level award winners, may yield more dispositive evidence. The Innovations awards program is meant to celebrate a set of consciously selected innovations. In this configuration, at least, its archives—unfortunately, but perhaps not unsurprisingly—cast limited light on the broader pattern of interstate diffusion.

Calibrating the relative salience of competitive, idiosyncratic, and collegial drivers of state innovation and interstate diffusion, in short, is an empirical project that this chapter has modeled but not advanced. It is an enterprise that I heartily recommend to some ambitious doctoral student in search of a thesis topic with weighty policy implications. If we ultimately find the competitive model to be best anchored in the evidence, good governance requires structuring our federal system in such a way that the central government controls or regulates functions where competition threatens negative-sum outcomes. Such functions might include policies relating to legal gambling, or the levels of pollutants companies are allowed to pour into the atmosphere, or the subsidies that can be offered to foreign corporations in order to alter where within the United States they will locate a new factory. Where competition is more likely to be productive—efforts to make regulatory processes less cumbersome, for example, or to improve primary and secondary education—Washington should keep its distance and permit states to innovate. The aggregate balance of central and state authority would be shaped by the relative prevalence of positive and negative competitive arenas.

If the idiosyncratic model turns out to be a more useful guide, conversely, the watchwords should be state discretion, federal deference, and modest expectations for cross-state replication (and a corresponding devaluation of the “laboratories of democracy” metaphor.) States should not expect that borrowing best practices elsewhere can often substitute for the hard work of building their own solutions, and Washington should beware the temptation to require or encourage standardization across the states of even the most glittering success.

And if we were convinced of the collegial model’s soundness, finally, there would be different—and perhaps more appealing—implications. The federal government could loosen the reins on state innovation through a liberal waiver policy with respect to the rules surrounding grants and transfers. Pilot projects and demonstration programs could be funded with reasonable confidence that the successes would bear fruit and the failures identified through collegial review. Both federal and state governments would be motivated to invest heavily in institutional mechanisms to pool expertise and share information, and the growth of professional communities of practice would accelerate the spread of good ideas. In short, the relative plausibility of the idiosyncratic, competitive, and collegial models remains an open question—and one where the answer could and should exercise considerable leverage over the evolutionary trajectory of our federal system.

Appendix

Since the inception of the Innovations in American Government competition, state programs have won 60 awards. A cutoff date of 1994 was applied, with only those state winners chosen between 1986 and 1994 examined. One reason for examining only earlier programs is that for more recent winners too little time may have passed for the process of diffusion to work itself out. An additional reason is that the effort required to investigate each innovation, in light of available resources, precluded considering the more recent winners. Thirty-two of the 60 state winners were included and 28, from 1995 and later, were excluded from the start. Any results from so partial a study, obviously, will be quite tentative.

The author and two research assistants obtained descriptions of these 32 state innovations and, prior to undertaking any research on replication, discussed the *ex ante* logic by which diffusion could be identified. These discussions led to the elimination of 7 award winners. Three of these—North Carolina’s Open Public Events television network (1987), Vermont’s Statewide Library Automation Project (1988) and Georgia’s No-Tillage Assistance Program (1991)—involved approaches that had clearly appeared in other states. But each hinged on the exploitation of changing technology, and without unrealistically detailed information it would be difficult to distinguish the contribution of the award-winning model from broadly changing technological constraints. Two other award winners—Minnesota’s Strive Toward Excellence in Performance (1986) and Georgia’s Alternatives to Incarceration (1987)—also had many analogues in later years, but disentangling the effect of innovations by pioneering states from broader trends in policy thinking and practice was too complex a puzzle. Our *ex ante* discussions led us to set aside two other innovations the diffusion of which, for reasons peculiar to each case, seemed especially difficult to trace. (These were Arizona’s Groundwater Management Code and North Carolina’s Rehabilitation Engineering Program.) These exclusions, to be clear, imply no negative reflection on either the merits of the seven innovations or the possibility that they were highly influential, but rather skepticism that such influence could be identified.

The 25 Winning Innovations from 1986 through 1994

This section briefly describes each of these award-winning innovations, and attempts to situate them on the competitive-to-collegial spectrum. In principle, these are separate scales. An innovation could have profound implications for interstate rivalry, scoring high on the competitive criterion, and at the same time feature a well-developed network of advocates sharing information and support across state lines. (An example here might be altering state revenue codes to favor mobile capital by shifting the tax burden from corporate income to consumption.) In practice, none of the 25 displays such a pattern and (given the coarseness of the data) using the simpler one-dimensional scale

entails no major sacrifice in precision. An innovation is scored “1” if it appears to offer significant competitive advantages to early adopters over late adopters. An innovation is scored “5” if it appears to have no significant competitive implications and if a collegial stance is rational for both innovating and potentially replicating states. Intermediate cases are scored 2 through 4. No attempt is made to score innovations in terms of their idiosyncratic fit to the characteristics of the originating state (beyond the exclusions described above.) The wider applicability of an innovation is inferred from the evidence on its diffusion rather than predicted in advance. The rationale for the rating applied to each innovation, on this 1-to-5 scale, is briefly summarized below. These assessments are thoroughly subjective (though in most cases not uninformed.)

One Church/One Child (1986) Adoptable children had proven chronically harder to place with families if they were minority, and particularly black. The Illinois Department of Children and Family Services developed a formal alliance with African-American religious leaders to engage churches—formidable cultural forces in the black community—as advocates for the adoption of black children.

Rating: 5 While a lively imagination could posit some *negative* competitive consequences to encouraging more minority adoption within a state such scenarios seem far-fetched. The cost savings (and consequent potential for tax reductions) associated with shedding wards of the state are at most a trivial competitive factor, and One Church/One Child is scored at the collegial extreme of the spectrum.

Parents as Teachers (1987) Specially trained counselors, organized through Missouri’s public schools and financed by state and local resources, visited the homes of families with pre-school children to instruct parents in child development, encourage best practices in play, socializing, and discipline, forge connections with other parents, and promulgate information on available child and family services.

Rating: 4 While some aspects of education policy may have competitive implications, children from birth through 3—the focus of Parents as Teachers—are so distant from the workforce that interstate rivalry is not a plausible motive for developing or adopting the program.

Parents Too Soon (1987) This program was mandated by Illinois’ governor to discourage teenage pregnancy and reduce its social, health, and economic consequences. Three departments—Public Health, Public Aid, and Children and Family Services—were involved in a diverse campaign of publicity, counseling, school clinics, and job training to both lower the rate and mitigate the consequences of teen pregnancy.

Rating: 3 Particularly in the late 1980s, reducing welfare dependency by discouraging teen pregnancy could have important implications for state spending and taxation requirements, but the effects are too indirect for competition to be a powerful motive for adopting this approach.

Video Courts (1988) In part because of shortages of trained court reporters and in part because of dissatisfaction with paper records, Kentucky switched from paper transcripts to videotape as the official record of state judicial proceedings.

Rating: 5 Videotaping trials, instead of using stenographers, is essentially irrelevant to any consequential aspect of interstate rivalry.

Industrial Services Program (1988) As trade and technological change buffeted its economy, Massachusetts developed this program both to assist companies in distress and to accelerate the redeployment of workers from firms beyond salvage.

Rating: 2 While there were and are debates about the efficacy of such efforts, a superior program to spur economic adaptation could offer significant competitive advantages to a state.

Project Match (1988) A joint effort of the Illinois Department of Public Aid and Northwestern University, Project Match was a program of high-intensity, long-term welfare-to-work services to encourage education, training, and stable employment for seriously disadvantaged urban populations.

Rating: 3 As with Parents Too Soon, this program may have offered significant cost savings, but budgetary advantages were too indirect and long-term to have major competitive implications.

PACE (Parent and Child Education) (1998) Hoping to break the generational cycle of poverty that plagued its isolated rural areas, Kentucky introduced the PACE program of joint services for high-school dropouts and their 3- and 4-year-old children. Families are brought to public schools where the parents take adult-education courses while early-childhood experts work with the children.

Rating: 4 Because of its relatively tight demographic focus, the budgetary and tax stakes of PACE are even lower than for other anti-poverty innovations.

Farm Family Assistance Program (1990) Iowa used federal funding to establish a financial education and credit-counseling program to help farm families manage their debt and avoid bankruptcy.

Rating: 4 Sparing farm families from financial risks that can be avoided by better planning has, at most, minor competitive implications.

Friends of the Family, Inc. (1991) This public-private collaboration was charged with developing and managing Maryland's statewide Family Support Initiative through comprehensive services for families with young children delivered via local support centers.

Rating: 5 There are no indications that this innovation had any but the most long-term and diffuse goals for human-capital development, social service cost reduction, or other aspects of interstate competition.

KET Star Channels (1991) Seeking to bolster the curricular offerings of its geographically isolated high schools, Kentucky developed this early distance-learning program to deliver math, science, and foreign-language classes remotely.

Rating: 3 Since high-school students are not too distant from the workforce and since numerate workers are important factors in business location decisions, this innovation could have significant competitive potential. It is rated only at the midpoint because

Kentucky made Star Channels programming freely available to schools in other states (though replicators could choose to do otherwise.)

Preventing Pollution Before it Happens (1991): A joint effort by Massachusetts' Department of Environmental Protection and Office of Technical Assistance, this project sought to replace arms'-length, after-the-fact inspection and fines with a collaborative relationship with businesses to encourage the adoption of less polluting production methods.

Rating: 2 Although the primary motive was environmental protection, this collaborative approach (for any given level of regulatory stringency) would likely be preferred by most firms, and could thus offer advantages in attracting or retaining capital.

School-Based Youth Services Program (1991) New Jersey established a network of 29 sites in or near high schools offering comprehensive "wellness" services, with a general goal of promoting physical and mental health and a specific focus on deterring substance abuse.

Rating: 4 While no innovation geared to high-schoolers is entirely devoid of competitive potential, this program's focus was only incidentally economic.

Child Assistance Program (1992) This New York program took a strong work-based approach to families collecting public assistance, offering job-search and child care assistance as well as direct financial incentives to work and to obtain court orders for child support from absent fathers.

Rating: 3 While this program could in principle offer states somewhat more competitive advantages than other innovations targeted at welfare dependency, New York officials worked from the start to encourage other states and the federal government to adopt its tenets.

Washington State Workers' Compensation (1992) In the mid-1980s the Washington State agency with sole responsibility for workers' compensation insurance had been under fire from labor (for inadequate benefits and flawed procedures) and from business (for high costs) and was deeply in deficit. An aggressive campaign of management reforms led to sharply improved performance and slowed premium growth to below the national average.

Rating: 1 Reducing the workers' compensation premiums employers are required to pay, without politically unacceptable reductions in benefit levels, can significantly increase a state's ability to attract business.

Quincy Court Model Domestic Abuse Program (1992) The Massachusetts district court in Quincy sharply stepped up its efforts to protect battered spouses and children, steer them toward support services, and convict offenders.

Rating: 5 The benefits of deterring and punishing domestic abuse, and sheltering its victims, are remote from interstate competition.

Child Care Management Services (1993) The Texas Department of Human Services established an integrated information system for guiding eligible parents to child-care subsidies offered by multiple federal and state programs.

Rating: 2 While the sums involved are modest, it is advantageous for a state to ensure that federal funds are fully tapped to minimize claims on its own resources.

Info/California (1993) This initiative by California's Health and Welfare Agency Data Center installed kiosks in accessible public areas providing electronic access to information and services for a wide range of state programs.

Rating: 5 Other than any cost savings realized, which were not emphasized in application materials, this initiative has quite limited competitive implications.

Low-Income Assisted Mortgage Program (1993) West Virginia developed a novel subsidy approach that let non-profits access conventional credit markets to finance housing for low-income families.

Rating: 4 To the extent subsidizing private credit is more efficient than direct public lending this approach would have some budgetary advantages, but no other major competitive effects.

Vendor Information Program (1993) Oregon developed an early electronic procurement system, widening the pool of suppliers and thus increasing competition for goods and service acquisitions.

Rating: 3 While the only competitive effect is to reduce acquisition costs (and potentially revenue requirements) that effect may be large enough to rate this as somewhat consequential for interstate rivalry.

Coles Levee Ecosystem Preserve (1994) An adaptation of the tradable permit system used for some forms of emission regulation, this California initiative allowed a major oil company to establish a large preserve for several endangered species. In exchange the company faced fewer restrictions on activities that may disrupt other populations of those species, and could market its "credits" to other firms seeking to loosen endangered-species barriers.

Rating: 2 For any given level of stringency in safeguarding endangered species, this approach would lower the burden of compliance.

Partnership for Long-Term Care (1994) This New York program eases access to private long-term care insurance to reduce the risk that the elderly will have to rely on Medicaid-funded care, which is both low in quality and expensive for the state.

Rating: 3 The mixed rating balances the very large share of Medicaid in state budgets and the delayed and contingent effect this innovation has on Medicaid spending.

Oregon Benchmarks (1994) Late-1980s legislation established an "Oregon Progress Board" charged with developing performance indicators for the state. The benchmarks are meant to be concrete, measurable, and oriented to specific outcomes across a broad range of economic, social, environmental, and other domains.

Rating: 4 Even if performance management proves as effective as advocates predict at boosting governmental effectiveness, the focus is largely internal and impacts on state competitiveness would be limited.

Quick Court System (1994) This Arizona initiative provided electronic access to legal terms, procedural descriptions, and legal forms to better enable citizens to navigate relatively simple legal processes such as small-claims court and uncontested divorces.

Rating: 5 Demystifying and easing access to the legal system would seem to have only minor, if any, implications for interstate competition.

Student Conflict Resolution Experts (1994) The Massachusetts Attorney General's office developed this program to train high-school and middle-school students in conflict-resolution techniques to reduce the risk of violent confrontations in the schools.

Rating: 5 Marginal reductions in the probability of school violence would have little effect on a state's competitive standing.

Voluntary Investigation and Cleanup (1994) The Minnesota Pollution Control Agency established this program to provide technical assistance and, more importantly, legal protection to property owners who restore contaminated real estate. Its purpose was to lower the perceived risk of acquiring, developing, or operating on land subject to complex state and federal Superfund mandates.

Rating: 2 Reducing impediments to "brownfield" investment offers significant economic development advantages.

Gauging Diffusion

During the summer of 2004 a graduate-student research assistant examined press accounts, state government documents and websites, and other data sources to attempt to trace the extent, pattern, and rate of each innovation's diffusion. While the author instructed the research assistant in the protocol to follow, the effort to track diffusion was kept separate from the coding of the innovations described above. The research assistant was not informed of the ratings applied to the innovations, and the author was not informed about findings on the diffusion of each innovation until the research was complete.

It is worth noting that this method will fail to identify all cases of strictly-defined diffusion—cases, that is, where an external innovation was a major cause of decisions made in a particular state—since the relatively coarse approach inevitably misses some evidence. Only a much more intensive research effort, involving interviews with officials who had been responsible for each relevant policy area in each state in the years after each innovation had been developed, could fully capture the influence of ideas from other states. The *method* is thus biased toward the "idiosyncratic" model. At the same time, the *data* are almost certainly biased toward the "collegial" model. The Innovations program, in selecting award winners, has deliberately sought to choose innovations that

can and should be replicated. Moreover, the program very explicitly endeavors to encourage the diffusion of award-winning innovations. The major purpose of the grants that winners receive is to permit them to spread the word about their innovation. More subtly, and more tentatively, there is reason to believe that many of the people involved with the program have been unenthusiastic about interstate rivalry, and innovations with a competitive thrust may tend to fare badly in the awards process.

Diffusion scoring and results

Based on the evidence assembled on the extent to which programs comparable to each innovation subsequently appeared in other states, the degree of later programs' conformity to the original innovation, and references to the award-winner as a direct model, the 25 innovations were sorted into five categories.

Category 1: Little or no evidence that other states subsequently adopted approaches closely analogous to the award winner.

- Washington State Workers' Compensation
- Farm Family Assistance Program

Category 2: Documentable but limited subsequent increase in programs similar to the award winner.

- Friends of the Family, Incorporated
- School-based Youth Services
- Quincy Court Domestic Abuse Demonstration Project
- Child Care Management Services
- Low-Income Assisted Mortgages Program
- Coles Levee Ecosystem Preserve
- Student Conflict Resolution Experts

Category 3: The general approach became significantly more prevalent, but the record suggests independent developments in response to common pressures and opportunities rather than direct replication of the award-winning innovation.

- Project Match
- InfoCal
- Kentucky Video Courts
- Industrial Services Program
- KET Star Channels
- Quick Court System

Category 4: There was widespread adoption of approaches closely parallel to the winning innovation, but little or no evidence that subsequent programs were explicitly modelled on the award-winner *or alternatively* there is evidence of direct replication, but at a relatively limited scale (that is, in five or fewer states.)

- Parents Too Soon
- Preventing Pollution Before it Happens

- Parent And Child Education
- Vendor Information Program
- Partnership for Long-Term Care
- Voluntary Investigation and Cleanup

Category 5: Not only did the approach become much more prevalent subsequent to the award, but there was direct evidence that the winning program was used as a model by later adopters.

- One Church/One Child
- Child Assistance Program
- Oregon Benchmarks
- Parents As Teachers

Table A summarizes the two dimensions of assessment in tabular form.

Table A: Summary of Ratings

PROGRAM	Rival-to-Collegial Score	Diffusion Score
One Church/One Child	5	5
Parents Too Soon	3	4
Parents as Teachers	4	5
Project Match	3	3
Kentucky's Video Courts	5	3
Parent and Child Education Program	4	4
Industrial Services Program	2	3
Family Farm Assistance Program	4	1
KET Star Channels	3	3
Friends of the Family, Inc.	5	2
Preventing Pollution Before It Happens	2	4
School-Based Youth Services Program	4	2
Quincy Court Model Domestic Abuse Program	5	2
Child Assistance Program	3	4
Washington State Workers' Compensation Info/California	1	1
	5	3
Vendor Information Program	3	4
Child Care Management Services	2	2
Low Income Assisted Mortgage Program	4	2
QuickCourt System	5	3
Coles Levee Ecosystem Preserve	2	2
Student Conflict Resolution Experts	5	2
Voluntary Investigation and Cleanup	2	4
Partnership for Long-Term Care	3	4
Oregon Benchmarks	4	5

¹ Bang-hyeon Kim, "Provinces find Natural sources for more cash," *Seoul JoongAng Daily*, October 8, 2004, p. 8

² Louis Brandeis, *New York Ice Co. v. Liebman* 285 U.S. 262, 1932, p. 311

³ M.I. Finley., "Technical Innovation and Economic Progress in the Ancient World," *The Economic History Review*, 1965, Vol. 18, No. 1, pp. 35-6

⁴ Roger Dunston, "Gambling in California," *California Research Bureau*, www.library.ca.gov/CRB/97/03, August, 2004

⁵ Timothy Besley and Anne Case, "Incumbent Behavior: Vote-Seeking, Tax-Setting, and Yardstick Competition," *The American Economic Review*, 1995, Vol. 85, No. 1, pp. 25-45

⁶ Charles Tiebout, "A Pure Theory of Public Expenditure," *Journal of Political Economy*, Oct. 1956, No. 5, pp. 416-424

⁷ Robert C. Lieberman and Greg M. Shaw, "Looking Inward, Looking Outward: The Politics of State Welfare Innovation under Devolution," *Political Research Quarterly*, Vol. 53, No. 2, pp. 215-240

⁸ Henry N. Butler, "Nineteenth-Century Jurisdictional Competition in the Granting of Corporate Privileges" *The Journal of Legal Studies*, Vol. 14, No. 1, 1985, pp. 129-166; Richard L. Revesz, "Rehabilitating Interstate Competition: Rethinking the 'Race-to-the-Bottom' Rationale for Federal Environmental Regulation," *New York University Law Review* Vol. 67, 1992; Roberta Romano, "Law as a Product: Some Pieces of the Incorporation Puzzle," *Journal of Law, Economics, and Organization*, 1985; John D. Donahue, *Disunited States* (New York: Basic Books, 1997); James M. Buchanan and Roger Faith, "Secession and the Limits of Taxation: Toward a Theory of Internal Exit," *American Economic Review*, 1987; Paul E. Peterson and Mark Rom, "American Federalism, Welfare Policy, and Residential Choice," *American Political Science Review* Vol. 83, No. 3, 1989

⁹ Joe Mandak, "Court sides with Amish in fight over reflective triangles on buggies," *Pittsburg Post-Gazette*, October 23, 2003, p. 1

¹⁰ Robert Eyestone, "Confusion, Diffusion, and Innovation," *American Political Science Review* Volume 71, No. 2, 1977; Virginia Gray, "Innovation in the States: A Diffusion Study," *American Political Science Review*, Vol. 67, No. 4 1975; Jack Walker, "The Diffusion of Innovation Among the American States," *American Political Science Review*, Vol. 63, No. 3, 1965

¹¹ John L. Foster, "Innovation in Governmental Structures: Minnesota School District Reorganization," *American Journal of Political Science*, 1975, Vol. 19, No. 3, pp. 455-474

¹² Richard C. Feiock and Jonathan P. West, "Testing Competing Explanations for Policy Adoption: Municipal Solid Waste Recycling Programs," *Political Research Quarterly*, 1993, Vol. 46, No. 2, pp. 399-419

¹³ Bradley C. Canon and Lawrence Baum, "Patterns of Adoption of Tort Law Innovations: An Application of Diffusion Theory to Judicial Doctrines," *The American Political Science Review*, 1981, Vol. 75, No. 4, pp. 975-987

¹⁴ Price V. Fishback and Shawn Everett Kantor, "The Adoption of Workers' Compensation in the United States, 1900-1930," *Journal of Law and Economics*, 1998, Vol. 41, No. 2, pp. 305-341

¹⁵ Scott P. Hays, "Influences on Reinvention During the Diffusion of Innovations," *Political Research Quarterly*, 1996, Vol. 49, No. 3, pp. 631-650

¹⁶ Frances Stokes Berry and William D. Berry, "State Lotter Adoptions as Policy Innovations: An Event History Analysis," *The American Journal of Political Science Review*, 1990, Vol. 84, No. 2, pp. 395-415 and "Tax Innovation in the States: Capitalizing on Political Opportunity" *American Journal of Political Science*, 1992, Vol. 36, No. 3, pp. 715-742

¹⁷ Richard C. Kearney, "Sunset: A Survey and Analysis of the State Experience," *Public Administration Review*, 1990, Vol. 50, No. 1, pp. 49-57

¹⁸ Michael Mintrom, "Policy Entrepreneurs and the Diffusion of Innovation," *American Journal of Political Science*, 1997, Vol. 41, No. 3, pp. 738-770

¹⁹ David L. Huff, James M. Lutz and Rajendra Srivastava, "A Geographical Analysis of the Innovativeness of States," *Economic Geography*, 1998, Vol. 64, No. 2, pp. 137-146

²⁰ Michael Mintrom and Sandra Vergari, "Policy Networks and Innovation Diffusion: The Case of States Education Reforms," *The Journal of Politics*, 1998, Vol. 60, No. 1, pp. 126-148

²¹ Martha Derthick, "Up-to-Date in Kansas City: Reflections on American Federalism," *Political Science and Politics*, 1992, Vol. 25, No. 4, pp. 671-675

Above all, federalism in its American context conveys something of our high regard for regional, local, and individual diversity, widely varied yet capable of achieving a simultaneous national unity. Such concepts as republican government or limited, constitutional government have come to be regarded as implying only restriction of power and seem to too many people to be entirely negative in character. public affairs, the free voting of taxes, the responsibility of the agents of power, personal liberty, and trial by jury were all positively established without discussion. This diffusion of power made our system a representative republic rather than a democracy. Criticisms of diffusion research. The Pro-Innovation Bias of Diffusion Research . . . This view is inconsistent with more recent conceptions of persuasion: "Persuasion is not something one person does to another but something he or she does with another" (Reardon, 1981, p. 25). 3. Persuasion (and diffusion) scholars are preoccupied with an action-centered and issue-centered communication activity, such as selling products, actions, or policies. The public health service in Peru attempts to introduce innovations to villagers to improve their health and lengthen their lives. This change agency. This case illustration is adapted from Wellin (1955, pp. 71-103), and is used by permission. Diffusion of Innovations: Innovator Stage. Roger's Diffusion of Innovations theory states that Innovators are the first to purchase a product and make up 2.5% of all purchases of the product. Innovators purchase the product at the beginning of the life cycle. They are not afraid of trying new products that suit their lifestyle and will also pay a premium for that benefit. Sales to innovators are not usually an indication of future sales as innovators simply buy because the product is new. Diffusion of Innovations: Early Adopters Stage. The next group of purchasers are called Early Adopters and Compare different conceptions of federalism. The Constitution sketches a federal framework that aims to balance the forces of decentralized and centralized governance in general terms; it does not flesh out standard operating procedures that say precisely how the states and federal governments are to handle all policy contingencies imaginable. Therefore, officials at the state and national levels have had some room to maneuver as they operate within the Constitution's federal design. This has led to changes in the configuration of federalism over time, changes corresponding to different historical periods. On the other hand, diffusion of innovation models offers clear insights into the growing influence of state policy initiatives that arrive on the national agenda and are ultimately adopted (e.g., education reform, environmental protection, health care, and "workfare"). Even agenda-setting models, probably the most sophisticated framework for exploring policy formulation, downplay the impact of the federal matrix. Third, the dynamics of the policy process coupled with the flux in federal institutions tear at any static theory. To cope with. What kind of loom will weave together the threads of federalism and public policy? Over the last ten years there has been a lessening of the optimism that a theory of politics can be constructed by ignoring political institutions (March and Olsen 1984).