

The Embedded Actor and the Invention of Natural Economic Law

Policy Change and Railroader Response in Early America

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Economic sociologists stress that economic actors are embedded in a sociohistorical context that shapes and constrains activity. Neoinstitutionalists build on this idea and argue that economic actors are embedded in two key ways. First, they are embedded in the rationalized worldview described by Weber in which every end has an optimal means. Second, economic actors are embedded in a local context in which they collectively search for optimal strategies. Whereas local contexts and strategies vary greatly, neoinstitutionalists find great regularity in the script by which economic actors converge in strategies. The present article expounds on this "double embeddedness" by way of a single historical case: the construction of strategy by early American railroaders.

Social scientists tend toward either *atomized* or *embedded* depictions of economic actors (see Granovetter, 1985; Zukin & DiMaggio, 1990). In atomized depictions, economic actors are unencumbered by social relations or traditions. Such depictions, which are common in neoclassical economics, stress that actors rationally calculate the merits of all strategies; furthermore, universal tenets of self-interest and efficiency guide their calculation (see Adams & Brock, 1991). In embedded depictions, economic actors are shaped and constrained by the sociohistorical context in which they are located. Embedded actors pursue many strategies on the basis of widely shared (i.e., implicit) assumptions rather than on the basis of explicit calculation. Such depictions, which are common in economic sociology, suggest that "rationality," "self-interest," and "efficiency" are contingent on local circumstance and are not contextually transcendent (Hamilton & Biggart, 1988; Lazerson, 1988; McGuire, Granovetter, & Schwartz, 1994).

Recent neoinstitutional research vigorously embraces the embedded depiction (Scott & Christensen, 1995). Building on the research of the Carnegie

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school, ethnomethodologists, and cognitive psychologists (DiMaggio & Powell, 1991; Scott, 1995), institutionalists routinely find that economic actors choose strategies by relying on implicit assumptions gleaned from competitors and precedence. This is not to say, however, that economic actors eschew explicit calculation. To be sure, institutionalists also find that such implicit assumptions originate with the explicit innovations of key economic actors. As a result, institutionalists focus on how explicit strategic innovations eventually become strategies pursued with little forethought (see Dowd, 1996).

Institutionalists find great regularity in the process by which innovative strategies become taken for granted (i.e., institutionalized) (DiMaggio & Powell, 1991; Edelman, 1992; Fligstein, 1996). They also find that economic actors collectively recast newly institutionalized strategies as manifestations of “natural” laws of economic order (e.g., efficiency) (Baron, Dobbin, & Jennings, 1986; Dobbin, Sutton, Meyer, & Scott, 1993).

Given the regularity of these empirical findings, institutionalists speak of the “script” by which economic actors innovate, imitate, and institutionalize new strategies (DiMaggio, 1990; Meyer, Boli, & Thomas, 1994). This script, they argue, is rooted in the modern worldview that presupposes one optimal means to every end. As a consequence, business strategies converge as actors seek to discover and institutionalize optimal means (Meyer, 1994; Meyer et al., 1994; Perrow, 1991). Economic actors, therefore, are “doubly” embedded—both in a local context and in a rationalized worldview.

Building on neoinstitutional insights, we offer an argument with several thrusts. First, the role of economic actors is highly scripted; the very notions of self-interest, entrepreneurial innovation, and proactive imitation devolve from the modern worldview. Second, the *content* of this script, however, is not predetermined. Whereas modern economic actors search for optimal strategies, local developments—particularly policy shifts—shape their eventual selection. Thus this script can lead to drastically different outcomes in various contexts. Finally, economic actors obscure their own embeddedness by attributing the origin of strategies to natural law rather than to the policy shifts that originally spurred them.

We use a single case—the new railroad policy regime of the early 1870s—to demonstrate both the scripted nature of economic behavior and the broader worldview to which it corresponds. The present article offers a modest and schematic view of our larger research project (Dobbin, 1994b; Dobbin & Dowd, in press-a, in press-b).

THE AMERICAN STATE AND THE CONSTRUCTION OF NATURAL LAW

Why do economic actors resort to the idea of natural law when explaining widely shared strategies (see Dobbin et al., 1993)? Moreover, what enables

economic actors to overlook how policy shifts often spur the rise of new strategies?

Core precepts of the modern rationalized worldview work against policy-centered explanations of economic practice, particularly in the United States. This worldview reduces policy to an intervening variable in scholars' accounts of management strategies, and it makes policy a wholly inadequate explanation in managers' own accounts (see Baron et al., 1986; Fligstein, 1996). Nonetheless, policy figures prominently in accounts concerning countries other than the United States (see Hamilton & Biggart, 1988; Lazerson, 1988). Why, then, do managers and scholars give policy such short shrift when explaining strategies in the United States?

We argue that there is an affinity between American state structure and the natural law doctrine contained within the modern worldview. Initially designed to preclude the rise of tyranny, the American state developed so as to minimize the appearance that it shapes civil society. Subsequent U.S. policies regarding economic activity have been equally subtle (Dobbin, 1994b). This subtle yet profound effect of policy has escaped the attention of many scholars (see Scheiber, 1981). Before outlining characteristics of the American state that cause it to vanish from accounts of economic practice, we first review the relevant tenets of the natural law doctrine.

TENETS OF NATURAL LAW DOCTRINE IN THE MODERN WORLDVIEW

Max Weber (1922/1978) asserted that the West is becoming increasingly rationalized. That is, actors increasingly attain goals via calculable (rather than ad hoc) means, and they increasingly couch explanations in scientific (rather than mystical) terms. Weber sometimes treated rationalization as embodying universal principles. In other words, Weber's interpretive and historical emphases (*verstehen*) occasionally faded when discussing economic activity and efficiency. Recently, neoinstitutionalists have modified Weber's work by problematizing economic activity and efficiency (i.e., examining how their interpretations vary across contexts). Thus they embed economic action and efficiency in the rationalized worldview (see DiMaggio & Powell, 1983; Dobbin, 1994a).

Since Weber's day, other scholars have portrayed economic activity as reflecting universal principles. In particular, they now treat economic actors (be they firms or entrepreneurs) as instrumental entities whose nature is reducible to a few innate traits; local context, in turn, rarely affects these traits (Granovetter, 1985; Myhrmann, 1989; Scott, 1995). In short, such accounts portray economic activity as governed by natural law in much the same way as is chemical activity (Dobbin, 1994a). Not surprisingly, such scholars—especially neoclassical economists—offer an atomistic depiction of economic actors. This natural law account offers a commonsense epistemology that largely denies the causal role of sociological factors in economic activity. Instead, its causal account relies on a derivative of evolutionary theory.

If we can be somewhat polemical, the natural law doctrine contains the following tenets. First, order in the social universe is the manifest consequence of transcendental laws. For instance, organizations look and behave much the same because common and universal laws govern them. Second, natural selection eventually extinguishes all strategies that contravene natural law. Suboptimal organizational practices will give way to optimal practices. As Smith (1776) argued in *The Wealth of Nations*, national economic policies that contravene natural law will give way to policies that reinforce natural law. Third, social practice is not the consequence of random processes, especially because natural selection eliminates suboptimal mutations produced by historical happenstance. Fourth, there is one best way in which to solve any problem, and, by implication, causation is singular. Fifth, economic self-interest is primary and drives most (if not all) observed actions. Sixth, due to the interaction between the precepts of optimality and self-interest, diversity is driven out of economic practice as self-interested actors seek to discover and institutionalize optimal means to the end of economic gain. Seventh, history is efficient and economic laws are transcendental. Today's complex economic practices, then, evolved from kindred but simpler practices (see Dobbin & Dowd, in press-b, for full academic and business citations). Taken together, these tenets refute sociological explanations for economic activity that stress the visible hand of public policy. The constitution of the American state bolsters this view.

THE CONSTITUTION OF THE VANISHING STATE

Congress governs American industry by *regulating outcomes* rather than *dictating practices and structures*. As a result, organizations typically invent strategies for complying with the law among themselves (Hamilton & Sutton, 1989). Several state characteristics contribute to this process. First, the American common law tradition is regulatory, which means that Congress governs by proscribing certain behaviors and outcomes rather than by positively prescribing action. Second, the administrative branch lacks the power to dictate to corporations because the judiciary is the ultimate arbiter of administrative decisions. Third, and related, the location of enforcement capacity in the judiciary precludes the other branches from mandating organizational practice.

One consequence of the "weak" U.S. state structure is that organizations maintain the freedom to devise strategies for complying with the law. Policy is *indeterminate* because it merely sets the parameters within which strategies are created, and policy's effects are *indirect* because compliance strategies are socially constructed among organizations (Edelman, 1992). Given such indeterminate and indirect policy effects, natural law doctrine can result in "collective amnesia" among managers and scholars as they account for the institutionalization of new strategies.

THE SCRIPT FOR DIVINING OPTIMAL MANAGEMENT PRACTICES

When we consider the process (i.e., script) by which new strategies emerge and diffuse, the embeddedness of economic actors becomes obvious. First, major environmental changes that undermine existing strategies set off search processes in which different innovators create a range of new strategies. Second, actors identify and institutionalize the optimal strategy among these alternatives through politicking, imitation, and governmental coercion (DiMaggio & Powell, 1983; Meyer & Rowan, 1977). Innovators actively *politick* for their practices. They do this to secure those practices and to enhance their own status as innovators. Managers deliberately *imitate* innovators who appear to have found optimal strategies, with the dual goals of pursuing economic interests and exhibiting modern and defensible corporate strategies (DiMaggio & Powell, 1991; Scott, 1994). Governmental *coercion* comes into play when innovations are outlawed or reinforced in case law, administrative law, or legislation (Dobbin & Dowd, in press-b; Dobbin et al., 1993).

This script is not a manifestation of natural law. As already stated, the content of this script is not predetermined. Consequently, nations (e.g., Japan, United States) can institutionalize drastically different strategies yet still attain the same outcome of prosperity (Hamilton & Biggart, 1988; Wade, 1990). Likewise, the palette of strategies from which actors choose sometimes consists of equally optimal strategies; in such a choice, contextual factors (e.g., networks of relations) are more important than efficiency concerns (see McGuire et al., 1994). Finally, economic actors sometimes institutionalize inefficient strategies that persist for an extended time. Nevertheless, managers and certain economists often extol the "natural efficiency" of such suboptimal strategies (see Davis, Diekmann, & Tinsley, 1994; Fligstein & Dauber, 1989; Porter, 1987).

Having discussed how economic actors are embedded in the broad context of the modern worldview, we now turn to the local context of the U.S. railroad industry.

POLICY SHOCKS, ECONOMIC SCRIPTS, AND THE CONSTRUCTION OF NATURAL LAW

THE PUBLIC CAPITALIZATION REGIME, 1825-1871

Prior to the Civil War, the U.S. economy was fragmented among a host of regional economies that were fairly isolated from each other. The mass markets of the present had yet to make their appearance (Chandler, 1977). By the 1820s, local and state governments had staked out their roles. They would ensure that their respective regional economies would become self-sufficient. They based their roles on the assumption that interregional competition rather than interfirm competition would produce local and national prosperity (Lively, 1955).

Local and state governments capitalized a number of industries including those related to transportation (Fishlow, 1972; Handlin & Handlin, 1947; Hartz, 1948). Such public capitalization garnered wide support, particularly as political figures touted how it ultimately would benefit local and national economies (General Court of Massachusetts, 1828, pp. 25-26; Richardson, 1896, p. 295). Shonfield (1965) later described this period of public largesse in the following manner: "At times the degree of tutelage which governments arrogated to themselves in Jacksonian America appears so extreme that it suggests the direct inspiration of Colbert rather than anything that belongs to the Anglo-Saxon period" (p. 303). Indeed, state and local governments provided almost half of all U.S. railroad capital (Dunlavy, 1991, p. 12; Goodrich, 1960, p. 6; Locklin, 1954, p. 107).

During the public capitalization regime, railroaders built ahead of demand. That is, they typically located in an area that promised public funding on the assumption that demand would follow (see Cochran, 1965, p. 402). Railroaders "built [rail]roads everywhere, apparently in perfect confidence that the country would so develop as to support all the [railroads] that could be built" (Adams, 1893, pp. 117-118). The Baltimore and Ohio Railroad illustrates the lure of public funding; it received \$6.5 million from various cities and states between 1828 and 1853 (Goodrich, 1960).

Early railroads initially faced no competition, for local governments often supported just one railroad line. As railroads expanded, however, it was not uncommon for two or more firms to operate in a single area. Railroads responded by way of "dualistic" pricing under which they charged low prices for routes that contained competitors and charged high prices for those routes in which they enjoyed a monopoly. Consequently, short trips (e.g., those between points served by one firm) could cost more than long trips (e.g., those between points served by multiple firms). Adams (1893) wrote that "for a distance of twenty miles, more would have to be paid than for a distance of forty miles" (p. 124).

POLICY SHOCKS AND THE DEMISE OF THE PUBLIC CAPITALIZATION REGIME

Between 1869 and 1871, the situation changed dramatically for railroaders as two new policy developments swept through the industry. The first policy development involved the practice of public capitalization. A total of 14 states amended their constitutions by prohibiting public aid to private enterprise. These states took such action because of the graft and corruption that accompanied public aid. This policy development culminated in 1872, when the federal government swore off land grants in the light of a scandal that involved senators and business leaders (Bruchey, 1990; Cleveland & Powell, 1909; Thompson, 1983).

Public capitalization did not come to an end because it violated a natural economic law. It came to an end because the associated graft violated core American beliefs regarding the concentration of political power (Dobbin,

1994b). As Adams (1893) summarized: "Jobbery and corruption . . . began high up in the wretched machinery of the construction company . . . to affect the unseen transfer of assets from the treasury of the [publicly supported] corporation to the pockets of its directors" (p. 126). Large, powerful railroads had corrupted the governments that backed them, and this threatened the very foundation of constitutional democracy in the United States.

Rate regulation entailed the second policy shift. The public eventually treated dualistic pricing as evidence that railroads abused their charter-given monopoly powers. Numerous New England states established railroad commissions that would address such price inequities. Massachusetts took the additional step of passing the "short-haul" law of 1871, which legally prevented railroads from charging more for sending freight short distances than for sending it long distances. Such rate regulation quickly spread across America (Kennedy, 1991, p. 173; Massachusetts Board of Railroad Commissioners, 1881, p. 31; Sanders, 1981; Wilcox, 1960, pp. 5-22).

Railroaders charged that rate regulation was unconstitutional. The Supreme Court of Massachusetts ruled that railroads were subject to public controls because they held public charters that empowered them to expropriate private lands; therefore, railroads were not purely private concerns. "The conferring upon the railroad corporations the power of carrying freight and passengers has imposed upon them, to some extent, the correlative duty of carrying them at reasonable times and for a reasonable compensation." (quoted in Massachusetts Board of Railroad Commissioners, 1881, p. 131)

THE TRANSITION TO A NEW POLICY REGIME

Rate regulation undermined the prevailing business strategy of dualistic pricing by forcing rates on monopoly routes to resemble rates on competitive routes. The new policies did not dictate how firms should respond. The proscriptive approach of U.S. policy stood in stark contrast to those countries that reacted to rate problems by fixing rates publicly, by sponsoring private rate-fixing conferences, or by creating regional monopolies (see Dobbin, 1994b; Dunlavy, 1993). By comparison, American states established one simple rule for guaranteeing rate equity and left it to railroads to figure out how to comply with that rule.

THE PRO-CARTEL POLICY REGIME

The development of this regime confirms the script we outlined earlier. Rate regulation produced a shock to the prevailing management paradigm and spawned three management innovations as remedies: predatory pricing, control of connecting lines, and pooling. Railroad managers imitated all three strategies, and politicking eventually led pooling to rise as the singular optimal solution. Railroaders soon were treating the short-haul law as inevitable.

Innovation 1: Predatory Pricing

The short-haul law forced railroads to drop rates on their profitable exclusive routes. Such rate reductions obviously led to an immediate profit reduction for many railroads. Yet the new bans on public capitalization prevented railroads from covering their losses by asking governments for new capital (Goodrich, 1960). When the depression of 1873 exacerbated the situation, leading firms experimented with predatory strategies designed to quash competitors.

Jay Gould of the Erie, for example, introduced the idea of below-cost rates on destinations served by multiple railroads. That is, firms had to lose money to eliminate competitors. Few railroad managers believed that such predatory pricing was rational. Nevertheless, they felt that they had no choice but to imitate this new strategy (Adams, 1893). The below-cost rate strategy spread quickly because most railroads confronted competitors on intercity freight lines (Bruchey, 1990, p. 342).

Although many railroaders imitated the below-cost rates against their preferences, financiers eventually put the brakes on predatory pricing through ardent politicking. Managers of individual railroads sometimes saw predatory pricing as in their interests, but diversified financiers had a very different view. Such predatory practices would decimate their holdings in small railroads. The Boston merchant-turned-railroader John Murray Forbes argued that predators such as Gould, whose holdings were not diversified, were “peaceable to the strong, not to the weak” (quoted in Cochran, 1965, p. 162). Gould’s predatory practices brought the wrath of many; as one railroad president said, “He is a perfect eel” (quoted in Cochran, 1965, p. 166).

Innovation 2: Competitive Building

Vanderbilt’s New York Central devised a second strategy for winning control of service to adjacent regions. Vanderbilt built lines into new regions that paralleled existing lines to provide through service that would win all business away from those existing lines. Railroads in other regions soon copied this competitive building.

J. P. Morgan and other financiers decried competitive building. They argued that it would destroy small railroads and lead to widespread bankruptcies. Morgan warned railroaders that the key banking houses, including his own, were “prepared to say that they will not negotiate and will do all in their power to prevent negotiation of any securities for the construction of parallel lines or the extension of lines not unanimously approved by the Executive Committee [of the association]” (quoted in Chandler, 1977, p. 171). By the 1880s, the financial community was beginning to shape business strategy by backing only railroads whose strategies it perceived to be compatible with the interests of finance (Roy, in press).

Innovation 3: Pooling

In the summer of 1874, the directors of the Pennsylvania, Erie, and New York Central railroads met in Saratoga Springs, New York. This "Saratoga Combination" set up the Western Railroad Bureau "not only to establish common rates, but to make those rates binding upon each party to the combination through a central executive organization" (Massachusetts Board of Railroad Commissioners, 1878, p. 65). Railroaders widely heralded this pooling strategy—introduced by the three leading U.S. railroads—as the definitive solution to the income problems that emerged after the anticapitalization and rate policies.

The pooling strategy soon spread to other regions. The Commonwealth of Massachusetts, for example, witnessed the establishment of a Boston-Portland pool in 1874, the co-optation of trunk lines by the Saratoga's successor in 1878, and the creation of a Boston-New York pool in 1879. Albert Fink, a Louisville & Nashville vice president who was the architect of the Southern Railway and Steamship Association of 1875, quickly became the leading proponent of pools. Recruited by the Saratoga members to head their new Eastern Trunk Line Association of 1877, he brought C. F. Adams from the Massachusetts commission to head the Board of Arbitration (McCraw, 1984, p. 49). Just 3 years after the Saratoga experiment, the Massachusetts Board of Railroad Commissioners (1878) dubbed 1877 "the 'pooling' year" and heralded the nearly universal spirit of "yielding and harmony" (p. 66) that had overtaken the industry. Associations were operating in every region with competitive routes by 1880. The agreements generally began as simple rate schedules and progressed to formal pools that allocated traffic or profits among members (Chandler, 1977, p. 142).

State agents cajoled and *coerced* railroads to join pools and eschew predatory pricing, arguing that it was not in the public interest to see government-backed railroads ruined. The courts had long found written rate agreements to be legal, although they would not enforce them. In 1866, Congress passed a law facilitating the sharing of rolling stock and track, signaling that it would not oppose cooperation (Kennedy, 1991, p. 145; McCraw, 1984, p. 49). Pooling became the dominant business strategy, thanks to the efforts of financiers, pool organizers, and state agents (Dobbin & Dowd, in press-b).

POOLING AS NATURAL LAW

An integrated theory of railroad economics emerged in the rail industry with the spread of the pooling strategy. The idea that railroads were part of integrated regional economies gave way to the idea that they were part of an industry prone to price competition. Their experience with ruinous pricing competition led railroaders to conclude that their industry, unlike other industries, was naturally cooperative. As Fink (1880/1979) argued, "The natural laws of competition do not regulate changes in [railroad] tariffs" (p. 9). Given this naturally competitive

industry, railroaders cast pools as the optimal strategy (Dobbin & Dowd, in press-b).

In sum, policy changes at the end of the 1860s, in particular state-level regulation of long-haul/short-haul rate inequities, stimulated a search for a new railroad management paradigm during the 1870s. Public policy was indeterminate because any one of a number of management approaches would have been compatible with the new rate regulations. Railroads experimented with three broadly different strategies. Within a decade of the short-haul legislation, railroads reached consensus on pooling as the new management paradigm. These railroaders subsequently framed that paradigm in terms of the laws of railroad economics rather than as a response to a particular policy shift. Whereas dualistic rates had been natural and efficient at the end of the 1860s, just a decade later railroaders themselves believed dualism to be unnatural because it disadvantaged shippers in remote regions. The result of these events was a new cooperative theory of railroad economics (Dobbin & Dowd, in press-b).

Ironically, the same railroaders later would conclude that their industry was naturally competitive. Their new assessment, although couched in terms of natural law, emerged as new federal policies outlawed pools and enforced competition (Dobbin & Dowd, in press-b).

CONCLUSION

The foregoing history of changes in management strategy underscores the salience of actors, for the eventual outcome was determined by the actors rather than by new policies. This history also highlights the scripted nature of action and self-interest in the modern world.

As far as the salience of actors is concerned, it is quite clear that any one of the three solutions outlined here might have prevailed. Indeed, U.S. railroad strategies mostly diverged with those found in England and France. The convergence predicted by natural law did not occur as each nation pursued a distinct policy regime (Dobbin, 1994b).

As for the scripted nature of the process, human agency operated within clear bounds. Institutionalization is a process (Zucker, 1977). What was most interesting about the events we observed was not the concrete practices that railroaders institutionalized but rather the regularity of the process by which railroaders created and adopted such practices. Furthermore, the roles of innovator, copier, and politicker were surprisingly regular. Nevertheless, the content of those roles was shaped by contextual factors. Thus although railroaders claimed to enact natural economic laws, they actually constructed these economic principles among themselves (Dobbin & Dowd, in press-b). Therein lies the distinction between atomized and embedded actors.

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