Forging industrial policy

The United States, Britain, and France in the railway age

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1. Political culture and industrial rationality

Introduction

During the nineteenth century, each Western nation-state developed a distinct strategy for governing industry. Prevailing theories of policy-making neglect the origins of those strategies, and ultimately fail to explain why they persist through revolutions, regime changes, wars, and depressions. Functional and economic theorists who suggest that policy is driven by laws of economic efficiency cannot account for the fact that different nations show no clear pattern of convergence toward a most-efficient model. Political theorists who suggest that policies reflect the preferences of those who hold power cannot account for the fact that national industrial strategies endure under regimes with dramatically different ideologies.

Analysts use words such as "tradition" and "legacy" to explain national policy strategies, yet most theoretical frameworks privilege generalizable political and economic variables and make no place for national customs. The result is an unfortunate disjuncture between theory and empirical findings in comparative studies of policy: Whereas theory highlights universal political and economic forces, in the last analysis empirical investigations usually point to the effects of tradition. Thus in many studies, after theoretically important factors are used to explain a tiny proportion of the cross-national variance, culture and tradition are thrown in to explain the huge remaining "residual" variance. The reluctance to theorize and investigate traditions stems, I contend, from a core tenet of the modern worldview – namely that idiosyncratic traditions are relics of an earlier age that will eventually be washed away by the forces of logic and reason. A central premise of the modern worldview – that today's policy choices are governed by universal laws of interest and rationality – makes it difficult to conceive of something cultural guiding policy-making.

In this book I explore the origins of national industrial policy strat-

egies by charting the evolution of railway policy in the United States, France, and Britain between 1825 and 1900. My aim is to conceptualize the national traditions that shape policy-making. Two theoretical observations prompted me to take on this task. First, modern economies and the policies that support them are organized in quite different ways and show no compelling signs of convergence, yet most analysts focus attention on everything but the processes that produce and sustain these differences. Second, the few theories that do purport to explain such national differences present major flaws. National character arguments employ a peculiar form of reductionism to trace national institutional differences to collective psychological traits of unspecified origins. The new institutional/statist approaches to politics that emphasize structural inertia have generated many synonyms for continuity, but little in the way of explanation. To say that institutions persist because they are institutionalized is to define, not explain. I argue that national traditions influence policy-making by contributing to collective understandings of social order and instrumental rationality. History has produced distinct ideas about order and rationality in different nations, and modern industrial policies are organized around those ideas.

My argument is based on two simple empirical observations. First, during the nineteenth century nation-states developed institutions for organizing economic life that paralleled those they used for organizing political life. The American polity located sovereignty in a series of autonomous community governments under a weak federal structure dominated by the courts. Industrial policy situated economic sovereignty at first in community governments, which practiced active stewardship of growth, and later in an adjudicative federal structure that made Washington the referee of a free market. The French polity located sovereignty in the central state, as the only force that could orchestrate political order and hold the nation together. Industrial policy likewise located economic sovereignty in the central state, under a parallel logic that only orchestration from the center could produce economic order and further the nation's material goals. The British polity located sovereignty in elite individuals by protecting them from their neighbors, the Crown, and the state bureaucracy. Industrial policy sought to locate economic sovereignty in individual firms at first through laissez faire, and later through active protection against the intrusion of market and political forces.

Most analysts have taken the parallels between political culture and industrial culture for granted, but I contend that they contain the secret to cross-national policy variation. My contention is that different conceptions of industrial efficiency originated in the traditions of political life. As modern industrial policies were devised, extant principles of social and political order were generalized to the economic sphere.

The second empirical observation is that national industrial strategies are reproduced when nations tackle new problems. When nations face new policy dilemmas they design new institutions around the principles of existing institutions. For instance, nations that have tried to promote efficiency by stimulating price competition in the past will use this strategy to achieve efficiency in new industries. I will argue that policy approaches are reproduced because state institutions provide principles of causality that policymakers apply to new problems, and not simply because institutions give policymakers the organizational resources to repeat history. By examining policy reproduction and evolution over the first seventy-five years of the life of the railways, I explore the role of these principles of causality in policy continuity and change.

Before proceeding with the theoretical argument I review, in brief, the legacy of the national industrial policy strategies that appeared by the end of the nineteenth century. What did the different strategies look like, and how did nations' industrial strategies develop thereafter? The United States entered the twentieth century with industrial policies designed to guard economic liberties by preventing restraints of trade and enforcing price competition. Federal antitrust policy sought to preclude price fixing and combinations that would create industrial monopolies. Industry-specific regulatory agencies aimed to prevent cartels and keep price competition alive. These policies came to be associated with the idea that natural selection of firms in free markets is the mainspring of growth. Since the beginning of the twentieth century antitrust law has been expanded and fortified, and it has been used to structure industries ranging from oil to telecommunications to computers. Regulatory agencies oversee pricing and competition in such industries as electricity generation, natural gas, radio, television, and aviation. The United States' market-enforcing industrial policies contribute to the conviction that free competition will induce efficiency in virtually every economic sector.

France could hardly look different. By the close of the nineteenth

century the French were working out a system of industrial governance based on public concertation of economic life. French policy aimed to guide major manufacturing and infrastructural sectors from above, on the principle that only the state can prevent self-interested entrepreneurs and market irrationalities from disrupting progress. The early twentieth century found state technocrats experimenting with mixed public-private enterprises and nationalizations. The indicative industrial planning that began in the 1950s extended the reach of state technocrats to every sector of the economy; five-year plans set sectoral goals and empowered the state to coordinate the rise of new sectors and the decline of sunset industries. French policy has been driven by the notion that a cadre of expert technocrats can guide the economy better than a hodge-podge of self-interested capitalists and better than the invisible and unthinking hand of the market.

If American policy allocated authority over economic life to markets at the end of the nineteenth century, and French policy allocated authority to technocrats, British policy allocated authority to entrepreneurial firms. Under the guise of laissez faire, Britain had encouraged cartelization and discouraged predatory mergers in order to shield small firms. The notion that the entrepreneurial spirit of the small firm was the mainspring of growth survived to shape policy in the twentieth century. The British responded to the economic crisis of the 1920s and '30s by encouraging cartelization to prevent bankruptcies. When Labour nationalized firms for ideological reasons after World War II, it preserved managerial independence from political meddling. When Britain mimicked France's industrial planning efforts in later years, attempts to promote promising sectors were bastardized into bailouts that would negate the effects of market forces on failing firms. During the 1980s the Thatcher Government returned to policies explicitly designed to locate economic authority in the firm. Twentieth-century industrial policy has guarded private initiative against interference from markets and politics to foster the profit-oriented entrepreneurialism that was identified in the last century as the source of economic dynamism.

How did the United States, France, and Britain settle on these strategies? Most political, economic, and institutional/statist approaches fail here because they take for granted the very socially constructed axioms of modernity that they should treat as objects of study. They take the modern worldview – in which behavior is oriented to economic utility maximization and to political struggles over collectivized material interests – at face value. They treat instrumental rationality as given. They objectify institutions in a way that treats the sustenance of social practices as unproblematic. They have, in essence, formalized the commonsense understandings that the modern worldview presents and turned those understandings back on modernity as analytic tools. The result is that instead of asking the big questions that stimulated the development of the social sciences in the nineteenth century – about how new social institutions and attendant conceptions of reality emerge and evolve – political, economic, and institutional/statist analysts ask questions that spring from within the modern worldview. Political analysts try to understand why one interest group or another appears to win a particular policy battle, rather than how modernity came to structure identity and action around corporate groups called nations, classes, races, and interests (but see Anderson 1983; Ruggie forthcoming; Thomas and Meyer 1984; Lipset and Rokkan 1967). Economists try to divine definitive principles of economic efficiency, rather than trying to understand how modern society came to be organized around progress and how particular conceptions of progress and efficiency emerged, as a number of economic sociologists have argued (for example, Granovetter 1985; DiMaggio and Powell 1991; Zelizer forthcoming). Institutional/statist analysts try to discern what kinds of institutionalized practices are best suited to the promulgation of particular policies, rather than trying to understand how such practices are given collective meaning and thereby sustained – how practices *become* institutions (but see Berger and Luckmann 1966; Meyer, Boli, and Thomas 1987; Scott 1992; Jepperson 1991). I call these three approaches "realist" below, to distinguish them from social constructionist approaches to the same realms. My contention is that these varieties of realism obfuscate the nature of rationality in modern settings by taking too much of the social world at face value, when they should be asking how the world got to be the way it is.

Political realism

It is a premise of democratic government that policy choices reflect the relative power of different interests in society. That idea has been at the core of the political science perspectives that explain policy choices by calculating the influence of rival groups. The interest group approach

taken by pluralists (Truman 1951; Lowi 1969) and many neo-Marxists (Mills 1956; Miliband 1969) depicts policy-making as a process of conflict among competing interest groups; liberal and radical thinkers differ principally over whether the ground rules in political contests are fair. Among pluralists this approach can be traced back at least to Weber's *Economy and Society,* which discussed the rise of multifarious political clusters. Among neo-Marxists the approach can be traced back to the *Eighteenth Brumaire,* which mapped out the elite factions that struggled for control of the state under Louis Philippe. The commonsense premise of these theories – that policy decisions reflect the relative power of competing groups – so pervades academic political science that even the self-styled revolutionaries in the field treat it as a given. Rational-choice theory adds the spin that interests can be objectively assessed with mathematical models; coalitional approaches add the spin that because group interests vary over time, different factions coalesce in different moments.

This approach has offered insights into how nations choose from among *given* policy alternatives, but it fails in comparative studies. First, it fails to address the origins of those given policy alternatives (but see Bachrach and Baratz 1963; Lukes 1974). Because nations almost never choose from the same sets of options, and most often choose from mutually exclusive sets of options, understanding the origins of options is crucial. Take the issue of railway route planning. State planning was literally never considered in Britain: private planning was never considered in France. Understanding why these options did not enter political discussion is key to understanding why Britain used private planning and France used state planning, but interest group analysts have largely neglected the issue of how policy options are generated. Second, the interest approach fails to explain why a weak interest group in one country often wins a better policy outcome than its stronger counterpart in another country. Interest group analysts take it as an article of faith that the strongest group always gets its way, so that when a weak group appears to win a policy battle analysts go to great lengths to show either that the group wasn't weak, or that it didn't win. In practice, they define a group's strength by its capacity to win. Third, and perhaps most important, political realism fails to address the issue of why parallel interest groups in different countries believe very different policies to be in their interest. Railroads advocated widely divergent policies in these three countries even when their

material situations would appear to have been identical. I contend that political approaches are unable to explain cross-national differences in policy because they are plagued by a form of realism that prevents them from asking how interest groups, collective problems that demand policy solutions, and actual policy alternatives are constituted.

Economic realism

The economic determinist arguments found in commonsense discourse and academic theory suggest that social systems are subject to economic laws that structure institutions. Policy institutions conform to economic laws either through macro selection processes, in which adaptive policies are reinforced, or through micro processes, in which individual-level utility maximization aggregates into collectively rational institutions. For both approaches, exogenous, universal, economic laws govern the cosmos and produce social practices. Contemporary economic theory is an exercise in discovering those laws in full detail. A central tenet is that economic reality is singular, and conforms everywhere to the same external laws. A corollary is that institutional context is not constitutive of economic life and laws, as economic sociologists are wont to argue (White 1988; Zelizer 1988). Instead, context is thought of as a set of conditional variables that have predictable effects under a general theory of the economic universe. Once the general theory is well understood, a full understanding of economic behavior and institutions devolves.

Macro approaches suggest that economic institutions, including policy, evolve toward efficient solutions and adapt efficiently to new environmental factors. In some versions, politicians and interested parties actively select efficient policy instruments, whereas in others functional requisites appear to determine policy choices. The logic-of-industrialization thesis, which has been revived in the recent development literature, suggests that each stage of economic development elicits a particular set of attendant policy and economic institutions. Alexander Gerschenkron asserts in his "late-industrializer" thesis that states respond to relative underdevelopment with certain activist policies to promote growth. Neoclassical theorists take it as an article of faith that because they coincided with growth, American market-enforcement policies reflect universal economic laws. They frequently predict convergence toward the United States' policy model. Andrew

Shonfield's political economy of modern capitalism heralded French industrial planning as the institutional model that would soon outcompete, and replace, laissez faire. These macro approaches posit that over time the most efficient policy institutions are selected either by rational agents of the state or by the invisible hand of the international market.

The new institutional economics and rational choice theory begin at the micro level to explain social institutions. Institutionalism in economic theory links overarching economic institutions, such as industrial policies, to the utility-maximizing behavior of self-interested actors. For Douglass North (1981), political rulers maximize state revenues by creating institutions that will maximize individual income, and this is how collectively efficient policy institutions emerge. For game theorists and transaction-cost analysts, macro institutions are the manifest outcomes of micro-economic activity; thus theoretical attention is fixed at the micro level. Rational-choice theory suggests that in the aggregate, individual self-interested political behavior will eventuate in policy institutions that achieve a utilitarian compromise, that promote efficiency by maximizing the common good.

Empirically, the argument that universal economic laws structure social institutions has become increasingly difficult to sustain. When the United States followed Britain as the world's unrivaled leader in economic growth, it made sense to think that the ostensibly laissez-faire policies of these two countries reflected universal economic laws. However, the accomplishments of entirely different models of growth – found in countries as diverse as Sweden, France, and Japan – have helped to undermine that way of thinking. If dramatically different economic systems can produce comparable rates of growth, then the universe's economic laws must be broad rather than narrow; inclusive rather than exclusive. And if policies that effect cartels and make the state the arbiter of corporate success can produce growth, then the laws of economics we thought we understood must be substantially wrong. Modern societies organize much activity around the search for transcendental economic laws, believe such laws to exist, and characterize behavior as motivated by such laws. Yet, in practice, economic logic and behavior patterns vary dramatically from one context to the next. This insight dates back at least to early institutional economists, such as Thorstein Veblen (1904), who insisted that economics be an evolutionary science because economic patterns are products of history that are not overdetermined by exogenous forces. If economic laws are situational rather than transcendental, and if different sets of laws serve as adequate functional alternatives, we should be trying to understand the causes of the diversity of economic systems.

Institutional realism

The new institutional/statist perspective in political science responded to the failure of political and economic paradigms to answer the question: Why do national policy strategies persist over time? Their answer is that the inertia of state organizational structures sustains policy strategies. They subscribe to a variety of realism in which social institutions – customs, that is – have the same ontological status as skyscrapers. Social "structures" exist independently of the human actors who inhabit them. These analysts bracket the immense question of how millions of individuals achieve collective understandings of reality sufficiently coherent to motivate them to get up in the morning, staple papers together, unscrew bolts, cook hamburgers, visit post offices, and do whatever else they do to reproduce social institutions (cf. Sewell 1992). Modern state institutions are reenacted daily in all of their complexity by masses of people who share cognitive frames that give meaning to the collective project of modernity and to the minutiae of daily activity. Rather than trying to explain how these shared conceptions of reality that are the basis of customs arise, they attribute "thingness" to customs with terms like institutional equilibrium, branching, path dependence, political learning, and inertia. The result is often a descent into tautology; institutionalized practices persist because they have inertia – because they persist. An institutional approach that addresses *why* they persist promises more useful insights (for example, Jepperson 1991; DiMaggio and Powell 1991; Meyer, Boli, and Thomas 1987).

The organizational resources of states are central to these arguments. Existing resources facilitate the adoption of new policies that are isomorphic with existing policies, and thwart the implementation of policies that are fundamentally different. In the United States of the nineteenth century, for instance, the federal administration had meager organizational resources, and as a result governing strategies that required little federal coordination developed across a wide range of policy realms (Skowronek 1982). Institutionalists do not simply argue that some states have greater resources than others. They hold that

states have the resources to do particular things, and that new policies that call for states to do other sorts of things tend to unravel because such policies overtax states' organizational resources (Skocpol and Finegold 1982). Studies that trace policy over long periods of time confirm that nations tend to solve new problems with familiar strategies (Krasner 1978; Zysman 1983; Ikenberry 1988), and this is taken as evidence of the ontological "thingness" of institutions.

Institutional/statist realists claim that the state's organizational features are at the heart of overtime policy continuity. One empirical quandary institutionalists do not resolve is that nation-states have grown so much in the last 150 years that they no longer resemble their former selves (Tilly 1975). The mid-nineteenth century American state, with few permanent employees outside of the post office and armed forces, quickly grew into an organizational leviathan that employs millions. Yet in the period during which the modern nation-state emerged and exploded, national policy strategies show remarkable continuity. I will argue that it is the socially constructed logics of state action, more than the organizational resources of states, that persist to produce policy continuity. In fact, states regularly create new policy instruments that require organizational resources they do not hold, but they model those policies on the principles embodied by existing policies.

Culture and meaning in modern states

Because they were developed to explain policy choices within nations, existing approaches to public policy are seldom well suited to explaining broad differences between national policy styles. That is, most theorists have started out with questions such as, "Why did the United States pass one amendment to antitrust law in 1953 and a different amendment in 1962?" The answers they have come up with shed little light on cross-national questions such as, "Why does the United States always use antitrust law to govern industries, whereas France always uses proactive state coordination?" The problem is not that it is hard to predict national policy strategies, but that existing theories don't capture what is needed to make predictions. What kinds of policies will the United States adopt to govern a new industry? Place your money on policies that enforce price competition. What are the chances that the United States will, as France sometimes does, designate the industry a

"national champion" and use public monies to turn it into a monopoly? Take any odds against it.

One needs to know nothing about interest groups, micro-economic patterns, or state organizational resources to make these broad predictions. One need only grasp the logic underlying current policies to be able to guess what future policies will look like, because policies in different countries follow fundamentally different logics. They may be organized around a logic of natural selection, as in the United States, a logic of state concertation, as in France, or any number of other logics. These logics are palpable and enduring. We immediately recognize what was typically French about state railway planning and what was typically British about the state's reluctance to expropriate private lands for the railways because we comprehend these logics.

Policy analysts have not theorized nations' policy logics because the idea that national economies follow different cultural patterns is at odds with the modern worldview, in which economics, like physics, is governed by a single set of laws under one general theory. Industrial policy and other macro-economic institutions fall under that theory. Social scientists have largely embraced this idea that social reality is unitary and have undertaken the task of searching for transcendental social axioms. Ethnographers are an exception because they expect to find radically different principles of behavior in premodern societies that are not attuned to the universe's transcendental economic laws, and hence they expect to find practices and meanings that are local in origin. They begin the task of understanding social systems with an advantage that analysts of modernity lack: They know for certain that the meanings represented by premodern institutions are local fictions. When the denizens of modernity study modernity, by contrast, they presume that social institutions reflect exogenous economic laws, and hence don't treat such cultural artifacts as neoclassical theory as part of an institutionalized meaning system that shapes policy solutions and individual behavior. Instead, analysts take neoclassical theory to be true in a way that ethnographers do not take indigenous theories of the relationship between spirits and harvest outputs to be true. In recent years, the successes of economies organized on non-neoclassical lines (see Hamilton and Biggart 1988) might well have led economists to see economic theory as a belief system because those successes suggest that known economic principles are not universal. Instead, neoclassical economists defend their theories by arguing that economies not orga-

nized on market principles have been subjected to unnatural political manipulations that will be their undoing in the longrun. In short, the social sciences emerged to explain the character of modernity, and have since taken up modernity's task of uncovering the uniform social laws of the universe.

Institutionalized meaning systems

I argue that by following the lead of ethnographers, and viewing the institutionalized meanings found in modern society as products of local, social processes, we can gain a better purchase on public policy. To do so one must shift from the realist problematic, "What are the universal, rational laws of social reality?," to the constructionist problematic, "How do particular, rationalized social institutions develop in particular social contexts?" I argue that differences in rationalized meaning systems explain broad cross-national policy differences, and that rationality is essentially cultural.

There are several broad types of institutionalized meaning systems. The social sciences were born in an effort to comprehend the transformation from premodern religious meaning systems to modern, secularized, rational meaning systems. All religious meaning systems orient institutions to the service of a higher power, with an eye to the achievement of grace in the afterlife. However, systems represent the higher power and the religious ethic variously, so that social practices oriented to salvation take markedly different forms. Likewise, all rational meaning systems orient institutions to science and efficiency, with an eye to accumulation through the mastery of nature. However, systems represent the nature of rationality and the instrumental means to accumulation variously, so that social practices oriented to progress take markedly different forms. As a result, although we expect to find very different solutions to collective problems under radically different cultural systems (for example, under Muslim fundamentalism, British secular rationality, and Brazilian shamanism), it is also the case that we find very different solutions under putatively similar rationalized cultural systems.

Practices and meaning. In religious, rationalized, mystified, and totemic societies alike, actions become customs as they are imbued with meaning. That is, actions become customary only when actors develop collective understandings of their purposes. Insofar as all social practices must be intersubjectively understood to be enacted, all practices carry meaning. Often, meaning consists of mundane, taken-for-granted relationships between means and ends that have the tone, "this is how the world works." One result is that actors often fail to recognize meaning as such because they think of collective, purposive means-ends designations as direct reflections of the nature of reality. Albert Hirschman, following Polanyi, refers to this level of meaning as the "tacit dimension" – "propositions and opinions shared by a group and so obvious to it that they are never fully or systematically articulated" as such (1977, p. 69). In modern societies, we generally deny that anything that is explicitly instrumental is also cultural.

As integrated and comprehensive meaning systems, all cultures purport to represent reality accurately and deny the existence of alternative realities. There can be only one God, or system of gods, only one general theory in physics, only one set of economic laws. The failure of social scientists to think of rationalized institutions as meaning-laden is a result of this feature of meaning systems. The problem originates in a failure of introspection. From within, it is difficult to see any cultural frame as such. It was easy for Western missionaries to see alien meaning systems as just so much superstition, but they continued to believe that their own religious system captured the essence of reality. Similarly, it is easy for students of modernity to see alien social institutions as motivated by beliefs that are social in origin ("there go those crazy French social engineers again"), but analysts have continued to believe that their *own* secular, instrumentally rational, social institutions embody the "true" nature of reality.

To explain the obvious differences among modern social systems, analysts have cordoned off instrumentally rational institutions from the realm of culture and have attributed differences to culture. The term culture, then, is reserved for institutions that are recognized by modernity to be symbolic rather than instrumental, such as the arts, religion, fashion, and education (Eisenstadt, Abitol, and Chazan 1987). Instrumental social institutions such as government, markets, firms, and science are generally treated as acultural by the social sciences. Talcott Parsons formalized this distinction for the social sciences. At the individual level, behavior is similarly partitioned into cultural and instrumental categories, and behaviors that do not appear to be self-interested are explained away by culture and norms (see Elster 1989). This general approach has led to the impoverishment of studies

of culture because it has removed instrumentally rational institutions from the purview of cultural analysis. How does antitrust policy symbolize the rational universe? It is for all intents and purposes impossible to ask the question. A central paradox of modernity, then, is that a wide range of cultural forms can be found in different nations' instrumental institutions despite the fact that all of those institutions are purportedly oriented to a unitary set of economic laws. Social science has responded to this dilemma by identifying a few "cultural" institutions that cause differences in national institutional and behavioral patterns rather than by defining all institutions and behaviors as cultural and thereby problematizing rationality. Yet instrumental institutions represent means and ends in the world, and as such they are necessarily cultural.

My point is neither to challenge the modern worldview nor to propose a method for the social sciences that is so radically reflexive that it denies the capacity of modernity to study itself. I simply want to suggest that to comprehend differences among instrumentally rational cultural systems it is necessary to think of them as social phenomena. To the extent that they reflect efforts to represent the universe in rational and scientific terms, modern institutions will vary as societies settle upon different representations.

In fact, social constructionists have made these very points about a number of other rationalized realms (Berger and Luckmann 1966). Students of the nation-state have argued that it is a peculiar historical social construct that has been part and parcel of the rise of rationality, but that as a social form the modern state was in no way historically inevitable (Thomas and Meyer 1984; Anderson 1983; Sewell 1985; Ashcraft 1986; Krasner forthcoming). Institutional economists (Veblen 1904; Commons 1934) and economic sociologists (White 1988; Zelizer 1988; Granovetter 1985) have argued that patterns of rationalized economic behavior emerge for identifiable historical reasons, and then become socially constructed as efficient. The "new institutionalism" in organizations theory treats rationalized organizational policies as social constructs much as I treat state policies as social constructs (Meyer and Rowan 1977; Zucker 1977; DiMaggio and Powell 1983; Scott 1987). And constructionist sociologies of science (Bloor 1976; Wuthnow 1987; Latour 1992) treat rationalized scientific precepts as historically dependent social constructs. My approach bears strong affinities with these macro-constructionist approaches to

rationalized institutions in that it makes the interpretation of subjective meaning a central component of understanding rationality.

Verstehen. Most analysts have presumed that interpretation plays no role in the analysis of instrumental institutions because the purposes and means of those institutions are transparent. The notion that instrumental practices symbolize something seems ludicrous, because they are just there to get the job done. However, as Weber argued, the project of sociology is the "interpretive understanding of social action" and action exists only "insofar as the acting individual attaches a subjective meaning to his behavior." All action has subjective meaning, and no realm of action conforms to objective reality in a way that makes it analytically unproblematic: "In no case does [meaning] refer to an objectively 'correct' meaning or one which is 'true' in some metaphysical sense" (1978, p. 4). In other words, no type of action is intelligible in and of itself. All action is intelligible to the social scientist only through the apprehension of its subjective purpose, and of the causal relationships the actor understands to link action and purpose. Weber refers to this interpretive process as *verstehen*. My aim is to understand how different rationalized social systems came to link substantially different social processes to economic growth.

Weber contributed to our confusion about the nature of instrumental rationality by judging rational practices against an ideal-type, which suggested that they are organized around a universal set of causal relationships. His treatment of rationality contrasted sharply with his studies of religious social systems, which showed religions in all of their complexity and diversity. In fact, like Weber, most early analysts treated modernity as a unified reality.

Rationalized meaning systems

From this cultural perspective, rationality and science are the *geists* that pervade and motivate social action in the modern age. The rational universe is ordered not by overarching spiritual or mystical forces, but by a set of transcendent, disenchanted physical and social laws. The project of modern social systems is to unveil those laws and employ them to master the universe. The success of this venture, which, if we are to believe economists, is driven by an innate desire to accumulate wealth, is judged by "progress," as measured by the aggregate accumu-

lation of goods. As progress-oriented rationality and science came to motivate human action, the bureaucracy and market replaced the church and monarchy as the central cultural loci of collective action. Like religious systems, rationalized meaning systems externalized the genesis of social order in the process of articulating general social laws. Where religious social systems posit a higher-order transformative consciousness that is essentially an incarnation of the transformative capacity of individual consciousness, rational systems posit a higher-order set of physical and social laws that rule the world in predictable ways.

The cultural systems of modern societies are thus organized around a search for the immutable physical and social laws that can enable humankind to alter the world in the name of progress. The social sciences are integral to this process, as they seek to discern the functions of complex social customs and attribute purpose even to those institutions that are not conspicuously oriented to accumulation. Rational choice approaches to norms, for instance, seek to show that although norms may serve no identifiable individual-level purpose, they do serve some higher-order rationality (see Elster 1989). Parsons' (1951; 1971) functional theory sought to show that the acknowledged symbolic, and apparently useless, institutions of modern society actually serve vital functions by producing social integration and sustaining social order. Thus, every detail of social life is envisioned in modern thought as part of a single project of furthering the accumulative mission of humankind. The modern worldview and the social sciences admit that there are nonmaterial dimensions of progress, including equity and democracy, yet they often subsume those dimensions under accumulation by suggesting, for instance, that economic liberty is an ingredient to growth (Bowles and Gintis 1986).

In brief, modernity is distinctly different from what preceded it, but it is not of a piece because the social and economic laws we believe to be "revealed" from experience are actually products of social life. Just as the deities of religious social systems assume the characteristics of the social systems they command, so do the rationalized laws of social reality tend to assume the characteristics of the social systems they govern.

The epistemology of rationalized systems. In the quest for progress, rationalized societies employ scientific epistemology to identify uniform laws of the physical and social universe. Knowledge in all

rationalized domains is governed by this epistemology – in science, in management, in economics, and in public policy. Knowledge consists of generalizations about the world that are based on empirical evidence and that take the form of cause-effect designations. These designations must be demystified, transparent, and logically consistent with existing knowledge. Empirical confirmations must follow established procedures.

The substantive laws of rational meaning systems are subject to amendment and change, because these systems stand on the claim to a method for discerning the nature of reality, rather than, as is the case with religious meaning systems, the claim to accurate substantive knowledge of the nature of reality. Thus, evidence that falsifies their cause-effect designations does not threaten rationalized meaning systems. On the contrary, disconfirmations tend to prove the utility of the method, and epistemological rules are designed to facilitate falsification. Rationality poses knowledge-building as cumulative and iterative, so that even when paradigmatic shifts sweep away all accepted knowledge in a particular realm the newly archaic wisdom is looked upon nostalgically as a necessary step on the road to enlightenment. For instance, we acknowledge that only orthodox macro-economic theory could have spawned neo-orthodox Keynesianism, and humanity had to believe the world to be flat in order to deduce that it could not possibly be. Religious systems cannot so easily withstand such disconfirmations.

Whereas epistemological principles are isomorphic across different rationalized realms, the rules of evidence vary. The natural sciences are highly formalized in that they employ clear, codified, empirical evidentiary rules. Economic theory is also highly formal, but as in mathematics the rules of evidence permit logic alone to be used to confirm theories – indeed the rules privilege logic over empirical evidence. Economic theory is also subject to constant real-world tests, so that prevailing theories can be disproven by experiences such as depressions (Hall 1989). All kinds of theories can be developed and diffused by practitioners as well as by professional theorists, but this is especially true of management theories, which are often evidenced by a single "strong" case. Because management theory is thought to be cognitively accessible to the layperson, isolated cause-effect relationships are frequently "discovered" by practitioners and diffused in charismatic treatises or through the popular press. In the natural sciences, homespun

theories generally get no further than the tabloids in part because the rules of evidence are more exacting and in part because nature is not thought to be sufficiently flexible to accommodate isolated theories. Industrial-policy theory is closer, epistemologically, to management theory than to scientific theory because the general principles are considered to be cognitively accessible, so that the novice can comprehend the logic of antitrust or pro-cartel policies, for instance, and render judgments about proposed policies on the basis of commonsense canons.

Rationalized meaning – theory – in all of these realms is phenomenological in that it consists of intersubjective understandings of cause and effect. Actors generally grasp meaning from experience, whether it is the meaning of gravity (science), market competition (economics), the chain-of-command (management), or antitrust litigation (policy). We first comprehend that gravity is universal, inanimate, and demystified not through high school physics but through experience – gravity is taken to have these characteristics by everyone around us. Likewise, Americans comprehend that antitrust litigation reinforces natural selection mechanisms that produce macro-economic efficiency not through high-school civics courses but through everyday experience – antitrust is taken to have this purpose by those around us. Much of modern understanding is produced through this kind of passive social construction, in which laws of nature, economics, and so on are reflected in prescriptions for action, and are then internalized in individual cognitive structures. To say that these laws are social constructs is simply to say that they are *representations* of reality rather than reality itself. The law of gravity, as opposed to the force itself, consists of a cultural frame for representing and explaining this thing called gravity.

Vocabulary for a cultural approach to policy

An approach to policy that focuses on culture, in the form of institutionalized means-ends designations, demands a new vocabulary.

Industrial cultures. Industrial cultures are the institutionalized principles of industrial organization and economic behavior found within countries (Dyson 1983). Being cultural, they consist of practices and associated meanings. The meaning side of culture has been referred to with terms such as trope, frame, ideology, worldview, typification, collective unconscious, habitus, collective representation, toolkit, and

episteme. Because I treat meanings as inseparable from the practices they are constructed around, I use "industrial culture" to refer to meaning and practice simultaneously. Being rationalized, industrial cultures share the characteristics of other rationalized systems. They are woven through different levels of action to bring coherence to those levels. They are organized around recognizable logics that have the pragmatic tenor of commonsense and are often patterned on natural analogy – as Mary Douglas (1986) argues of rationalized institutions more generally – so that where natural selection is thought to effect rationality, customs at the individual, organizational, and public policy levels will be oriented to selection processes.

Industrial policy paradigms. Industrial-policy paradigms are the institutionalized principles of policy action that reinforce industrial cultures. In Peter Hall's (1992) words, a policy paradigm is like a gestalt, in that "it structures the very way in which policy-makers see the world and their role within it." Policy paradigms consist of both practices, in the form of policies, and means-ends designations, in the form of the tenets of governmental action. They reinforce industrial cultures by creating and sustaining particular behavior patterns among economic actors, and by symbolizing those patterns as efficient. Thus American antitrust policy encourages price competition among firms, and symbolizes market competition as the source of macro-economic efficiency.

The argument

With the rise of modernity, the central endeavor of the political order was transformed from the conquest and subjugation of territories and their peoples to the conquest and subjugation of nature in the pursuit of economic growth. The political structures that were built to achieve military glory or social order through the monopolization of violence (Hintze 1975) were soon retrofitted to this goal of economic expansion. Despite their widely varying political ethics – from republican to monarchical to theological – modern nation-states came to pursue progress, so defined, single-mindedly. Empires and regimes soon came to live and die by GNP growth.

In the process of modernization, institutions that had effected political order were teleologically reinterpreted as means to economic order and progress. This occurred everywhere, but it was nowhere more

evident than in Britain, where Adam Smith heralded British political traditions that had arisen for any number of historical and conjunctural reasons, but certainly not to maximize gross national product, as the ultimate cause of Britain's economic greatness. Wherever nations could call their economies successful, they linked that success to peculiar characteristics of their political orders.

Modern industrial strategies took on the character of political institutions not only because nations reinterpreted existing state characteristics as strategies for growth but also because they employed the broad means-ends designations of political culture to design economic institutions. Political cultures shaped new industrial and economic strategies principally by determining the kinds of economic and industrial *problems* nations would perceive and by delimiting the *solutions* that nations would conceive to those problems.

First, political culture influenced the sorts of events and practices nations saw as problematic – the *problems perceived.* Every political culture is organized around the sustenance of certain sorts of practices as constitutive of social order, and the repression of others as destructive of social order. For instance, in the United States and Britain, political institutions reinforced community and individual sovereignty, respectively, and guarded against the concentration of political power in the central state. In the emergent industrial economy, these countries viewed community and individual *economic* self-determination as integral to *economic* order, and guarded against the concentration of economic power in the state and in private enterprises. France, with political structures designed to achieve order by concentrating authority, perceived concentrated economic authority as a means to economic order and thus chartered huge regional railway monopolies that operated under close state supervision.

Policy-making begins when nations identify collective problems that demand public solutions. In the course of railway development, these countries identified entirely different sorts of problems. Britain saw the concentration of the industry as a problem that demanded government action: France saw inadequate concentration and coordination as a problem for the state to address. The industrial issues nations perceived to be problematic mirrored the political issues they typically perceived to be problematic, and determined the realms in which policy action would be taken. Political culture also influenced which effects of policy would be seen as problematic and hence which policies would be re-

worked. For instance, price homogeneity was interpreted as a failure of policy to induce competition in the United States, whereas it was read as a success of policy to stabilize the industry in Britain. The Americans took action to end price homogeneity, and the British left well enough alone.

Second, the cause-effect relationships embodied by political culture influenced the industrial policy strategies envisioned – the *solutions conceived.* For instance, in France, political order had been achieved through military absolutism and the imposition of control from the center. In Britain, order had been achieved by maximizing the autonomy of local elites who would further the public good by pursuing their own interests. As a result, when the French perceived problems of industrial order they initially thought of solutions that involved central state control. When the British perceived problems, they thought of solutions that would cause economic actors to identify their interests with collective interests. The very causal mechanisms that were symbolized as the source of political order in these countries were thus replicated in the economic realm to achieve order and growth.

The solutions used to address industrial problems were socially constructed as efficacious as they were deployed to solve new problems. For instance, New England states invented adjudicative regulatory agencies to control the behavior of firms in industries of vital interest to the public. Soon, other states adopted the same solution, and later the federal government modeled the Interstate Commerce Commission (ICC) on these state agencies. Britain established inspectorates to remedy problems in a dozen different industries, including the railways, in the second quarter of the nineteenth century. This process of reproduction contributed to the articulation of general principles of industrial order and rationality, as nations distilled the principles underlying existing policies and used them to design policy solutions to new problems.

Industrial policy solutions changed over time either when policies produced unanticipated consequences, as when government aid to railways was plundered in the United States, or when experience falsified the cause-effect designations carried by policies, as when Britain's effort to improve safety by publicizing accidents failed. In both types of situations, nations developed new policy strategies. However, once particular policies and their cause-effect designations became institutionalized, they had independent effects on future policies. Britain

floundered a bit before settling on the inspectorate model of industrial governance, and eventually chose a more interventionist solution, but in its heyday the inspectorate model was used in virtually every industrial realm. The United States experimented with active state and local promotion of industry before settling on federal enforcement of price competition, but once this strategy was established it found its way into policies governing all sorts of sectors.

I argue, in general, that culture shapes how nations perceive and respond to problems and, in particular, that characteristics of political culture shaped emergent industrial policy strategies. The process was historically complex, and it was indeterminate in that each nation might have taken other paths along the way, but the effects of political culture were discernable throughout the history of railway policy. The details of what happened in each country will have to wait for subsequent chapters, but the broad outline of how industrial policy paradigms emerged can be summarized here. It is important to note, first, that the railway policy strategies I chronicle were paralleled in a number of other industries. I examine the railway industry because it emerged before modern industrial policy paradigms had been forged, because railway policy evolved alongside broad policy paradigms between 1825 and 1900, and because the industry's importance guaranteed that policymakers would generate plenty of material to be analyzed a century or more later.

Political culture

The argument begins with political culture. By 1825, each of these countries had developed a distinct political culture, comprising practices and their meanings. Political practices that had emerged for identifiable historical reasons took on meaning when ideological principles were articulated to support them, so that existing state characteristics were socially constructed as constitutive of political order. In each case, state characteristics symbolized particular positive means to political order and citizens came to think of those means as the only way to achieve order. And in each, state structure designated particular evils that threatened order. In the United States, the framers of the Constitution articulated the principle of local self-rule that had emerged in the vast, poorly integrated colonies as a theory of democratic government and sought to formalize it. Community sovereignty was the source of

political order. French monarchists and republicans alike glorified the centralized institutions of the French state as the foundation of their own brands of political order, and articulated political philosophies that made centralization integral to both monarchy and democracy. Democracy, for the French, demanded a strong center to preclude the emergence of intermediate groups that might supplant the republican state in the lives of citizens. State sovereignty was the source of political order. The English Revolution supported a King-in-Parliament model of government in which every lord reigned over his own turf. British political philosophers exalted this structure as the instantiation of a minimalist theory of government and the foundation of political order and liberty. Individual sovereignty was the source of political order.

The core logic of political order was woven throughout state institutions. I argue in the coming chapters that in each nation, a single logic could be discerned that permeated such diverse state attributes as the locus of public authority, the concentration of powers, the nature of the legal system, the system of office-holding and public expertise, and public fiscal capacities.

Emergent industrial culture

National industrial strategies grew up in the railway industry around efforts to address the problems perceived in four functional areas. Nations addressed a variety of perceived problems in planning, finance, technical and managerial coordination, and pricing and competition. In each country, new industrial policies replicated, in the industrial realm, the processes and practices that had been constructed as constitutive of political order. And in each country, industrial policies prevented the processes and practices that had been constructed as destructive of political order. In the process of designing policies for growth, these countries developed cultural constructions of industrial rationality that were isomorphic with their constructions of political order. Policymakers shaped industrial institutions with the principles of social organization offered to them by a familiar world.

The United States. In the United States, community self-rule was constitutive of political order; centralized political authority was destructive. Early rail policies were characterized by local government activism. Route planning was influenced directly by state and local governments, which actively sought to win rail service with the aim of

regional growth. Governments encouraged rail construction by offering land and capital to private agents. Finance was also dominated by state and local governments, which used financial incentives to spur construction. The federal government flirted briefly with public financing of the transcontinental lines, but graft soon put an end to federal, state, and local activism. Railroads in the United States and Europe considered how to achieve technical and managerial coordination in such areas as rail gauge, time zones, safety practices, and scheduling. American governments steadfastly refused to interfere with the operation of railways; they left it to private railway owners to decide these issues. Finally, when it came to pricing and competition, American state and federal governments at first left railroaders to their own devices, but as control over the industry became increasingly concentrated, they settled on a policy of enforcing price competition as a way of guarding Americans' economic liberties against the demon of concentrated economic power. Market enforcement took the form of state and federal regulation to prevent rate discrimination, price fixing, cartelization, and the whole range of practices used by large railroads to restrain trade. By the end of the nineteenth century, state policy had become oriented to the reinforcement of market mechanisms to ensure economic liberties and effect growth, and the prevention of other forms of government meddling with economic life.

France. In France, central state concertation of society was constitutive of political order; excessive privatism was destructive. Many in France expected the state to nationalize railroads, but fiscal constraints made that impossible. Instead, the state settled for exercising close supervision over the industry. Once the importance of railroads was recognized in France, the central state's bureaucracy assumed authority for planning the rail network. State engineers rebuffed the efforts of localities and railroaders to influence route decisions because they regarded those efforts as a potential threat to the rationality of their grand national rail scheme. Railway finance was orchestrated by the central state, which provided all of the lands and a large proportion of the capital. The state also guaranteed dividends on private capital, to attract construction funds, and in hard times took over railway construction itself to ensure progress on the network. Operating and construction standards were governed entirely by state bureaucrats, who set rates, determined management procedures, established construction specifications, engineered bridges and tunnels, and dictated carriage specifications. Pricing and competition policy was unique in France, where the state forced mergers between early independent lines to create six private regional monopolies. By creating monopolies and setting prices, the state precluded competition in the industry. In general, state policy was oriented to the central orchestration of the industry, and to preventing private self-interested railway promoters from disrupting the coherence and efficiency of the network.

Britain. In Britain, the political autonomy of individuals was constitutive of political order; domination by government or other private actors was destructive. British policy was as different from French policy as it could be. Planning was left entirely to private investors. Neither localities nor the central state presumed to meddle in private planning, except to protect landowners against unnecessary government expropriation. Railway finance was also entirely private. Parliament never once heard a proposal for public financial aid to British railways. Generally, operating procedures and construction standards were left up to the railways themselves, but the state did intervene to regulate public safety and to set third-class passenger rates in the name of protecting Britain's sovereign citizens from the excesses of concentrated capitalism. British pricing and competition policy aimed to protect firms from concentrated political authority, in the form of unwarranted state meddling in the affairs of railroads, and from concentrated economic authority, in the form of huge predatory railroads. Competition policy took the form of public interventions to prevent mergers, which aimed to maintain the autonomy of small firms, and public encouragement for cartels, which likewise aimed to stabilize entrepreneurial firms. Here, British policy differed markedly from American policy. Parliament sought to locate control over the industry in the hands of individuals, and to that end undermined market mechanisms in order to sustain firms – Britain protected firms rather than market competition.

In each country, then, industrial policy was designed to effect, in the industrial realm, processes that were thought to create order in the political realm. My ambitions in this chapter are modest. I hope to have shown that isomorphism is to be found, and to suggest that on the one hand this isomorphism is quite astounding given the diversity of institutional arrangements humanity has invented, and on the other hand it does not succumb to explanation by any of the prevailing theoretical paradigms.

To distinguish my argument from others, I have been more than a little polemical in this chapter. I do not mean to suggest that politics, economics, and institutions are epiphenomena in the modern world. Rather, I mean to suggest that these realms are more problematic than realist approaches generally concede. Economic theory makes the useful point that there are limits to what kind of behavior is rational, but real-world evidence seems to undermine the meta-theoretical presumption that one set of rules governs all economic systems. Economic analysts who study the thorny issues of how systemic logics differ, and where they come from, may be able to offer more useful insights. Political analysts are right to examine struggles among groups, but they tend to take for granted the existence of particular groups as well as groups' ideas about what is in their self-interest. Political analysts who ask how groups emerge and how they come to form preferences may be able to answer the more fundamental questions. Institutional/statist analysts are on to something when they argue that institutions reproduce themselves over time, but they have an annoying tendency to bracket the difficult question of how institutionalized constructions of reality emerge and how they influence policymaking. In the space of one volume I cannot even begin to investigate the role of institutionalized cultural meaning in these three realms. I do hope to provide some evidence that the role of meaning has been underemphasized in policy studies.

Conclusion

In sum, the cultural cause-effect designations that characterized the American, French, and British polities came to characterize their modern industrial policy strategies. This occurred as nations read reason into existing state institutions and presumed that those institutions existed to further modernity's project of progress. It also occurred as actors applied the causal logics found in the institutions around them to new problems of industrial organization. This overview has outlined early political cultures in three countries and shown that industrial cultures developed along similar lines. In no case did these parallels appear mechanistically. In each case the development of national industrial policy paradigms was an iterative and evolutionary process involving false starts, innovations, errors, and paradigm shifts. Policy paradigms continue to evolve today, and they continue to be shaped by

both national and international conceptions of efficiency. In no case was today's policy paradigm overdetermined by early political culture, but in every case was its evolution conditioned by how nations had come to think about order and efficiency in the world. I hope to show in the coming chapters that the very core tenets of economic efficiency and rationality – the central ideas about how capitalism and modernity operate – are products of identifiable social and historical forces rather than of extra-societal economic precepts.

The Grabbing Hand

Government Pathologies and Their Cures

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