Democracy, Public Policy, and Timing:

Toward a Theory of Intertemporal Policy Choice

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In the title to a 1950 book, Harold Lasswell provided what has become a classic definition of politics: "Who Gets What, When, How."[1] Lasswell's definition is an invitation to study political life as a fundamental process of distribution, a struggle over the production and allocation of valued goods. It is striking how much of political analysis – particularly the study of what governments *do* – has assumed this distributive emphasis. It would be only a slight simplification to describe the fields of public policy, welfare state politics, and political economy as comprised largely of investigations of who gets or loses what, and how. Why and through what causal mechanisms, scholars have inquired, do governments take actions that benefit some groups and disadvantage others? Policy choice itself has been conceived of primarily as a decision about how to pay for, produce, and allocate socially valued outcomes.

Yet, this massive and varied research agenda has almost completely ignored one part of Lasswell's short definition. The matter of *when* – when the benefits and costs of policies arrive – seems somehow to have slipped the discipline's collective mind. While we have developed subtle theoretical tools for explaining how governments impose costs and allocate goods at any given moment, we have devoted extraordinarily little attention to illuminating how they distribute benefits and burdens *over time*. We have conceived of government choices and social conflict over those choices as almost purely cross-sectional, and rarely as temporal, in nature.

The omission is striking. For those living with governments' policy choices, the timing of policy outcomes may matter just as much as their cross-sectional incidence. On the most obvious level, today's citizens may care more about *when* costs and benefits will arrive than about *where* they will fall. Consider, for instance, the origins of the American welfare state. As a cross-sectional distributive move, Franklin Roosevelt's decision to establish the Social Security program amounted to a massive reallocation of resources from active producers to retirees, and from higher-earners to lower-earners. To indigent older Americans living in 1935, however, the construction of this massive engine of redistribution was a material non-event. It mattered little

[1] Harold D. Lasswell, *Politics: Who Gets What, When, How* (New York: Peter Smith, 1950).

to Depression-era seniors that the government was undertaking to insure people like them against poverty. The far more important fact was that the program would pay its first benefits years later, only to those who had accumulated entitlements by paying contributions while in work. Old-age insurance would thus do nothing for those in old age at the moment of its creation.[2] To examine the politics of Social Security in purely distributive terms would be to overlook what is perhaps most morally startling and most intellectually perplexing about the program's design.

Further, there is a vast range of social goods that governments simply cannot provide to citizens without getting the timing right. The very slowness of many social, economic, and physical processes imposes a temporal stricture on the logic of government action. Modern administrative states can boost subsidies to farmers or cut unemployment benefits virtually at the stroke of a pen. But no government can produce a skilled workforce, promote economic development, or paying down public debt overnight. Chemical and biological chains of cause and effect impose their own temporal constraints on states' attempts to protect the environment or to preserve stocks of natural resources.

To achieve many of the social outcomes their citizens most value, governments have no choice but to impose the *costs* of policy change long before its *benefits* will arrive – i.e., to make an *investment* in those benefits. Conversely, a host of social and economic ills – from polluted waters to urban decay or high inflation – result from a kind of social *dis*investment: from government decisions or non-decisions taken years earlier that produced benefits or avoided costs at the time of their adoption.

The *political* implications of these temporal policy dynamics will be readily apparent. To a politician on an electoral schedule, few policy features could be more important than *when* the outcomes will emerge. The slowness of a policy's consequences can confront the elected official

[2] Edward Berkowitz, *America's Welfare State: From Roosevelt to Reagan* (Baltimore: The Johns Hopkins University Press, 1991); Edwin E. Witte, *The Development of the Social Security Act: A Memorandum on the History of the Committee on Economic Security and Drafting and Legislative History of the Social Security Act* (Madison: University of Wisconsin Press, 1962).

with a dilemma of timing just as brutal as any distributive tradeoff that she faces. For the student of politics, to ignore the intertemporal dimension of policy choice will often be to neglect its most politically puzzling and most normatively compelling traits. And, yet, as will be argued below, the vast majority of political analysis of policy making has done precisely this, ignoring variation in how governments time the costs and benefits of public policies. As I will contend, his oversight is highly consequential. Variation that goes unnoticed goes unexplained; we thus lack causal accounts of policy differences that have major social consequences. In addition, by ignoring the temporal features of the policy choices that they *do* seek to elucidate, analysts may often arrive at seriously incomplete or misdirected explanations.

The aim of this paper is to address this gap at a theoretical level. I seek here to identify what might be the core features of a theory of the politics of intertemporal policy choice in democratic contexts. If we were to attempt systematically to account for variation in elected governments' timing of policy consequences, with what theoretical expectations ought we to begin? A political science focused on explaining who gets what and how does not offer up many ready-made predictions about the conditions that should most influence intertemporal policy choice. In fact, I will contend that the politics of the long term differs from the politics of short-term distribution in critical respects, requiring a different set of explanatory strategies. Most significantly, the long term introduces into actors' calculations massive *uncertainty* about the consequences of their choices. With powerful actors deeply unsure about the size and allocation of policy benefits, governments' decisions about the long term are much less likely to be shaped by objective distributive features of policy alternatives, and much more likely to be shaped by how actors manage the uncertainty of the future.

The analysis proceeds in four steps. First, I briefly sketch the kinds of variation in intertemporal policy choices to which such a theory might be addressed, merely making plausible the claim that there is indeed something important to be explained. Then I characterize the two chief ways in which the current literature on the politics of public policy deals with the matter of

time – either by ignoring the timing of policy consequences or by assuming that distant consequences are politically irrelevant. As a first step toward taking timing seriously, the third section suggests a conceptualization of the intertemporal policy choices governments make. Here I propose and specify the concept of a *policy investment:* a class of policy choice that imposes social costs in the short term, accumulates resources extracted, and dedicates them to a long-term purpose.

The remainder of the paper then asks under what conditions democratic governments might be most likely to adopt policy investments. The aim is not to generate precise, testable hypotheses but rather to suggest the core features of a framework of analysis that could guide theory building. It is also to suggest that, though scholars have rarely focused on the politics of the long term as such, they have, while studying *other* political phenomena, produced a powerful set of causal insights that may guide our thinking about intertemporal choice.

Partly based on such insights, I contend that the politics of policy investment is likely to be greatly influenced by the ways in which voters, interest-group leaders, and politicians form beliefs about policy consequences under high levels of uncertainty. Moreover, I argue that we are unlikely to achieve much explanatory leverage by applying standard rationalist analytic tools to the problem. While rational choice offers powerful insights about political action in a range of spheres, intertemporal policy choice may represent the arena *par excellence* for the application of an assumption of bounded rationality. I contend that we will get furthest by building our theories of intertemporal policy choice by modeling how individuals overloaded by causal complexity allocate attention across possible outcomes and take shortcuts to causal inference.

An empirical motivation

Even a casual glance across the cross-national policy landscape suggests that democratic governments have, in a range of spheres, placed themselves at widely divergent points along the intertemporal axis of choice. We might, for instance, look at how governments make broad

tradeoffs over time in the state's fiscal capacities – whether they have tended to accumulate or to pay down levels of public debt. Though the net macroeconomic effects of debt are in dispute, it arguably has rather clear intertemporal implications for the public budget. Governments that reduce public debt levels are imposing higher levels of taxation or distributing fewer programmatic goods than they otherwise could, while reducing the interest payments that will have to be carved out of future budgets, whether through higher tax burdens or lower program expenditures.

European countries displayed impressive variation in debt trends from the 1960s to the 1990s. At the extremes, while Belgium's debt-to-GNP ratio skyrocketed from 50 percent to 120 percent, the United Kingdom's fell over the same period from about 75 percent to below 30 percent.[3] Only some of this variation can be explained by the impact of economic forces beyond governments' control; a great deal of the spread represents politicians' choices about levels of taxation and spending.[4] These differing choices represent, at least implicitly, very different tradeoffs between today's fiscal room for maneuver and tomorrow's.

Alternatively, we could look at specific fields of government activity that represent an investment in future social goods. We might reasonably view government spending decisions on education, for instance, as a tradeoff between present and future consumption possibilities. Resources committed today to building schools and paying teachers are foregone for producing consumer goods and services today; most concretely they will take the form of taxes in the short term. Yet, those resource commitments today are intended, at least in part, to expand a country's capacity to produce useful goods and services tomorrow.

As Figure 1 indicates, democratic governments' willingness to invest currently available resources in the skills of future workforces varies tremendously. Taking public spending as the

[3] These figures come from Robert J. Barro and Vittorio Grilli, *European Macroeconomics* (Houndmills, Basingstoke: Macmillan Press, 1994).
[4] See Robert J. Franzese, "The Political Economy of Public Debt: An Empirical Examination of the OECD Postwar Experience through the 1990s," (Unpublished Manuscript).

clearest measure of policy choice, OECD governments' allocation of national income to schooling at the end of the last decade ranged from Japan's 3.5 percent of GDP to Norway's 6.5 percent. Variations in state spending do not merely reflect differing mixes between public and private financing; total spending levels vary nearly as widely as public spending. Nor are these budgetary choices a simple function of countries' levels of economic development, as a comparison of similar spenders (e.g., the United States and the Slovak Republic, Norway and Portugal, or Germany and Hungary) makes evident.[5]

Elected governments also make widely varying tradeoffs in the allocation of scarce *natural* resources over time. Figure 2 presents the cross-national picture for the OECD's forests. By regulating rates of harvest and replanting, governments' policy decisions have a major impact on the rate at which this finite resource base is depleted or enlarged, trading off today's use against tomorrow's. All countries depicted in the graph effectively invested in future forest resources in the late 1990s, but to widely varying extents. While South Korea harvested less than 10 percent of its forest growth, Belgium and Finland consumed in the present almost three-quarters of what they planted. Moreover, these figures represent a dramatic shift over time for several countries, away from policies of depletion and toward policies of investment. Denmark and Finland in the 1970s and Belgium, Switzerland, and Portugal in the 1980s cut down trees faster than they grew them. By the late 1990s, all had shifted into conservation mode, planting more – in the Danish and Swiss cases, nearly *double* – what they harvested.

In light of common conceptions of democratic politics, this kind of policy variation is rather puzzling. Politicians across the OECD confront a similar set of temporal pressures, driven

[5] A similar degree of variation emerges if we compare countries based on per-student spending relative to GDP.

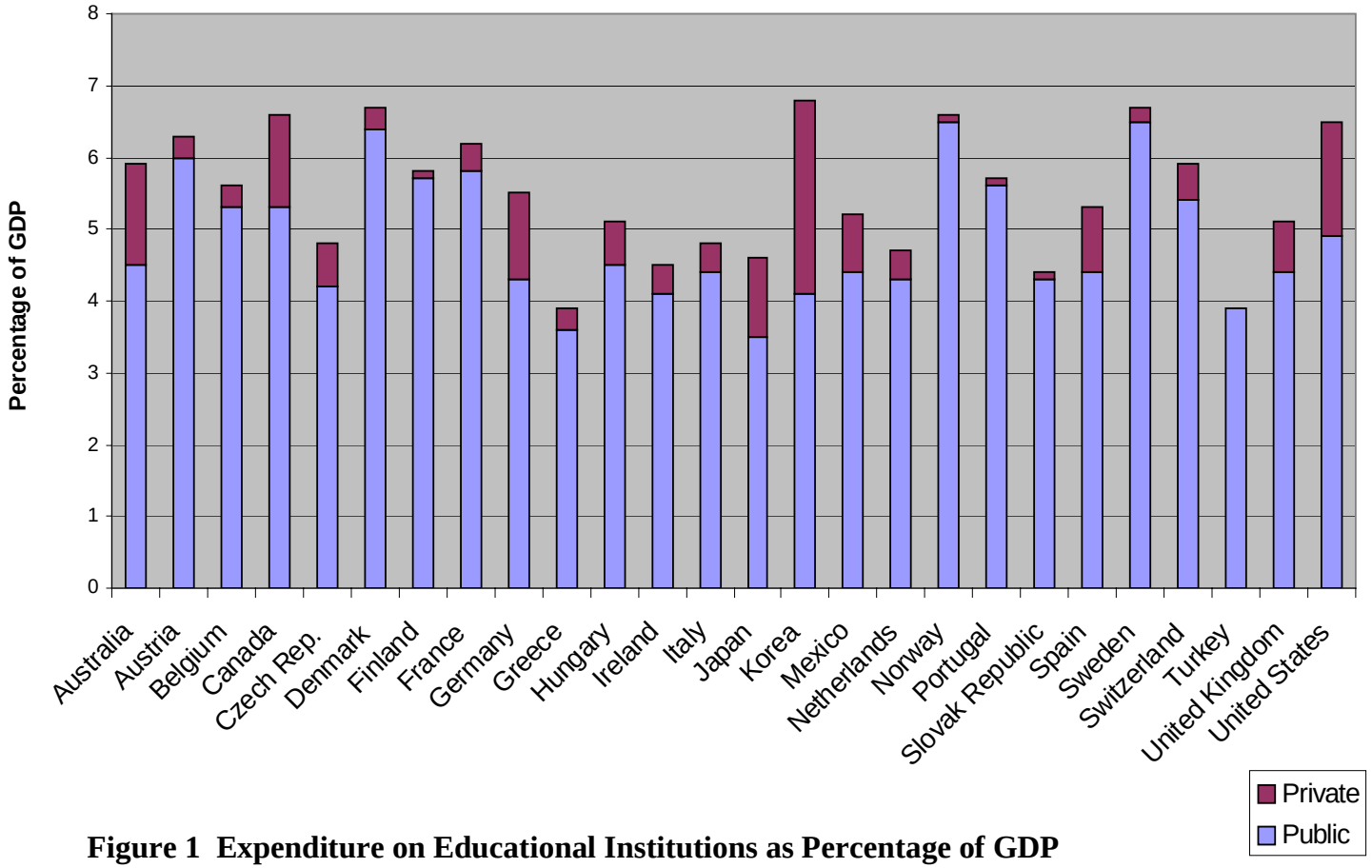

Figure 1 Expenditure on Educational Institutions as Percentage of GDP

Source: OECD, *Education at a Glance: OECD Indicators* (Paris: OECD, 2002).

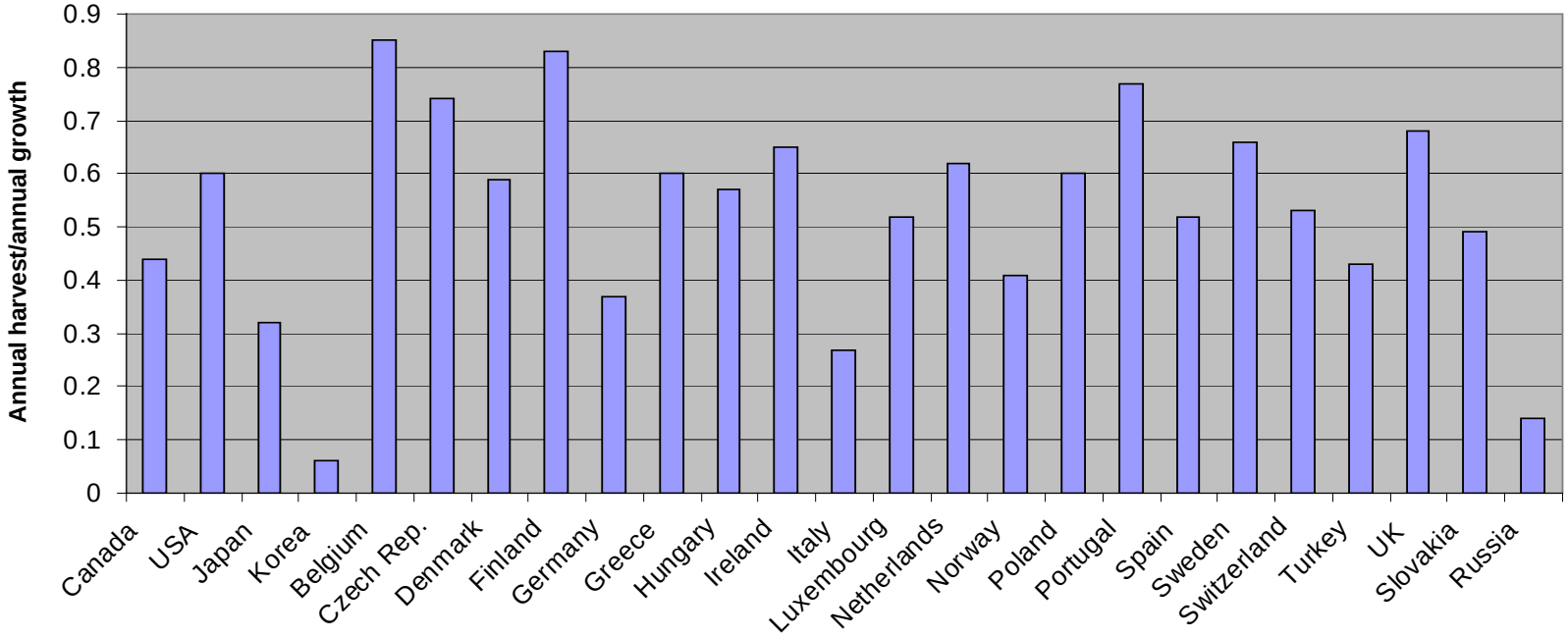

Figure 2 Intensity of Forest Use (Late 1990s)

Source: OECD, *OECD Environmental Indicators: Towards Sustainable Development* (Paris: OECD, 2001).

by frequent and (usually) competitive elections. All reelection-seeking governments thus face strong incentives to deliver material benefits as quickly as possible and to put off the imposition of costs. I will argue that conventional explanatory approaches – tailored to illuminating the volume and cross-sectional distribution of policy-generated goods and costs – are often poorly suited to explaining the allocation of policy's benefits and burdens *over time*. While distribution across groups and distribution over time may *interact*, they represent distinct dimensions of choice and present governments with fundamentally different political problems. To understand how governments make policy tradeoffs over time, we must turn our attention to the particular political features of the long term. Before doing so, however, it is useful to characterize the temporal approach taken in most existing scholarship on the politics of policy making.

The non-temporal analysis of policy choice

While I will not pretend to characterize this massive literature comprehensively – and while there are important exceptions to the norm outlined here – I hope to illuminate a predominant temporal orientation in the study of the politics of public policy. What distinguishes this common approach from that proposed in this paper is, first, the way in which it conceptualizes the policy choices to be explained: the vast majority of studies on the politics of public policy *ignore the timing of policy consequences.* Such studies frame policy choice as a decision about who gets or loses what and how, without differentiating between outcomes that occur shortly after policy enactment and those that emerge much further down the road. Rather, they distinguish among governments' policy choices according to the volume of social costs and benefits they generate and the distribution of those costs and benefits across groups. Second, because the features of a policy are usually an important part of its politics, this restricted definition of what policy does then shapes scholars' search for explanations.

The distributive view marks a wide range of public policy and political-economy research, from analyses of how governments choose to spend to studies of how they tax, regulate,

and manage the economy. My aim is in no way to minimize either the importance of distributive differences in policy choices or the contributions of such work to our understanding of what governments do and why. It is instead to suggest, by reference to prominent examples, that this literature has been largely indifferent to the politics of intertemporal policy tradeoffs. I will draw on the exceptions to this characterization in identifying building blocks of a model of intertemporal policy choice. But I will contend that the overwhelming bulk of literature on the politics of public policy fits this temporal profile.

The large body of research on the comparative politics of welfare-state origins and development perhaps most clearly displays this exclusively distributive orientation. Gøsta Esping-Andersen's influential typology of welfare states is typical in its focus on differences in who gets what and how. His three worlds of welfare capitalism are demarcated by the degree to which they decommodify labor, detaching individuals' survival prospects from participation in the labor market, and the degree to which they reinforce or counteract the social stratification engendered by markets.[6] Esping-Andersen contrasts his own taxonomy with earlier, leading approaches to distinguishing among welfare states. But, while different in the allocative principles they emphasized, Esping-Andersen's predecessors were equally focused solely on matters of cross-sectional distribution, ignoring the intertemporal tradeoffs governments make.[7]

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[6] Gøsta Esping-Andersen, *The Three Worlds of Welfare Capitalism* (Princeton, N.J.: Princeton University Press, 1990).

[7] In particular, he sets his approach apart from that of Goran Therborn and that of Richard Titmuss. Therborn distinguishes among states according to their allocation of resources between provision for the welfare of households and other routine activities (law and order, defense, etc.). Titmuss focuses upon the degree to which social programs limit their commitments to marginal and deserving groups or provide benefits on a universal basis. Another classic volume on welfare-state origins in Western Europe and North America provides a typical definition of the variation of interest. The editors divide the variation among welfare states into two dimensions: the degree of equality and the degree of economic security that programs provide. Peter Flora and Arnold J. Heidenheimer, eds., *The Development of Welfare States in Europe and America* (New Brunswick, U.S.A.: Transaction Books, 1981). The distributive nature of the egalitarian function of welfare requires little comment. Security – i.e., the risk-pooling function – is a slightly more complex goal. Risk-pooling involve an intertemporal tradeoff *for the individual*, who is typically asked to pay into a social insurance program while working, and can claim benefits at a later point when a risk (illness, disability, unemployment, old age, etc.) is incurred. For *collectivities*, however – i.e., for the risk pool itself – social insurance entails only a redistribution of resources across individuals, from those paying contributions at any given moment to those currently claiming benefits. As a policy, social

The most powerful challenges to Esping-Andersen's typology have drawn our attention to important axes of distribution of social rights and resource claims – especially gender lines – that traditional class-based models ignored, but they remain equally focused on processes of allocation across groups.[8]

Moreover, the conceptualization of the welfare state in purely distributive terms extends even to the policy field with the most striking intertemporal component: public pensions. The intertemporal quandaries of pension policy arise from the long-term nature of the benefit promises, from the gradual demographic changes to which such schemes are vulnerable, and from the opportunities for capital accumulation that such schemes present. Governments face a stark intertemporal dilemma in deciding how to finance their long-term pension commitments: whether to tax each year just enough to meet annual outlays (pay-as-you-go financing), or to tax more and accumulate surpluses that can be dedicated to supporting tomorrow's heavier pension burden (funding). Yet, analysts of welfare-state development have almost always depicted pension policy design as a choice about the redistribution of resources from producers and taxpayers to retirees – almost never as a choice about the allocation of resources or consumption possibilities over time.[9]

Other fields of comparative political economy have also mostly – though not entirely – ignored timing in favor of a focus on other kinds of economic tradeoffs. While the welfare-state literature primarily focuses on the allocation of a fixed economic pie, other fields of political-economic inquiry have viewed policy as having important effects on the *size* of the pie itself. While this literature often pays careful attention to the varying efficiency or optimality of

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insurance implies no particular tradeoff for society between today's welfare or consumption possibilities and tomorrow's.

[8] Ann Shola Orloff, "Gender and the Social Rights of Citizenship: The Comparative Analysis of Gender Relations and Welfare States," *American Sociological Review* 58, no. 3 (1993); Theda Skocpol, *Protecting Soldiers and Mothers: The Political Origins of Social Policy in the United States* (Cambridge, MA: Belknap Press of Harvard University Press, 1992).

[9] See, for instance, Ann Shola Orloff, *The Politics of Pensions: A Comparative Analysis of Britain, Canada, and the United States 1880-1940* (Madison, WI: University of Wisconsin Press, 1993). Pensions are also one of primary policy fields that Esping-Andersen uses to sort welfare states into regime categories.

alternative tradeoffs, it has not usually viewed efficiency in intertemporal terms. To provide just a suggestive roster of objects of explanation in the literature:

- interactions among some combination of partisan governments, organized labor, and central banks that bring about varying levels of employment or real wages or varying tradeoffs between unemployment and inflation[10]
- policies of economic openness that differentially affect different coalitions of economic interests[11]
- variations in the incidence and volume of taxation[12]
- the analysis of alternative political-economic regimes, defined by interlocking and self-reinforcing institutions across labor markets, financial markets, training schemes, and social protection. Scholars have viewed these regimes as consequential because they encourage particular patterns of coordination among

[10] Lars Calmfors and John Driffill, "Bargaining Structure, Corporatism and Macroeconomic Performance," *Economic Policy* 6, no. April (1988); David R. Cameron, "Social Democracy, Corporatism, Labour Quiescence and the Representation of Economic Interest in Advanced Capitalist Society," in *Order and Conflict in Contemporary Capitalism*, ed. John H. Goldthorpe (Oxford: Oxford University Press, 1984); Peter A. Hall and Robert J. Franzese, "Mixed Signals: Central Bank Independence, Coordinated Wage Bargaining, and European Monetary Union," *International Organization* 52, no. 3 (1998); Torben Iversen, "Wage Bargaining, Central Bank Independence, and the Real Effects of Money," *International Organization* 53, no. 3 (1998); Peter Lange and Geoffrey Garrett, "The Politics of Growth: Strategic Interaction and Economic Performance in the Advanced Industrial Democracies, 1974-1980," *Journal of Politics* 47, no. 3 (1985); David Soskice, "Wage Determination: The Changing Role of Institutions in Advanced Industrialized Countries," *Oxford Review of Economic Policy* 6, no. 4 (1990).

[11] See the review of the trade literature and the research agenda put forward in James E. Alt et al., "The Political Economy of International Trade: Enduring Puzzles and an Agenda for Inquiry," *Comparative Political Studies* 29, no. 6 (1996). See also Jeffry Frieden, "Invested Interests: National Economic Policies in a World of Global Finance," *International Organization* 45, no. 4 (1991); Ronald Rogowski, "Political Cleavages and Changing Exposure to Trade," *American Political Science Review* 81, no. 4 (1987).

[12] Sven Steinmo, *Taxation and Democracy: Swedish, British, and American Approaches to Financing the Modern State* (New Haven: Yale University Press, 1993). See also Carolyn Weber and Aaron Wildavsky, *A History of Taxation and Expenditure in the Western World* (New York: Simon and Schuster, 1986). More recently, see Sven Steinmo and Duane Swank, "The New Political Economy of Taxation in Advanced Capitalist Democracies," *American Journal of Political Science* 46, no. 3 (2002). One important exception is Margaret Levi, *Of Rule and Revenue* (Berkeley: University of California Press, 1988). Levi views tax policy choices, in part, as a tradeoff between current and future revenue maximization.

economic actors with implications for economic performance,[13] or because they lead to differing distributive outcomes.[14]

Whatever the economic consequences that authors hold policy or institutions to entail – employment, prices, wages, efficiency, or distribution – the *timing* of these outcomes is rarely noted in such studies, and the choice of policies or institutions is rarely conceived of or explained as an intertemporal dilemma. Even when examining variation in policies and processes that implicitly involve tradeoffs over time – such as an economy's adjustment to trade openness or investments in skills or capital – analysts have rarely foregrounded these intertemporal features.

There are important exceptions, and comparative political economists have probably been more sensitive to the temporal features of policy than scholars of most other areas of government activity.[15] In particular, analysts have sometimes attended to the intertemporal features of governments' policy choices. Later in this paper, I will draw on insights from these works in suggesting the direction in which I believe theorizing about intertemporal policy choice ought to develop.

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[13] Peter A. Hall and David W. Soskice, eds., *Varieties of Capitalism: The Institutional Foundations of Comparative Advantage* (New York: Oxford University Press, 2001).

[14] Gøsta Esping-Andersen, *Social Foundations of Postindustrial Economies* (New York: Oxford University Press, 1999).

[15] One important exception is work that views wage bargaining in an intertemporal light. See, for instance, Barry Eichengreen and Torben Iversen, "Institutions and Economic Performance: Evidence from the Labour Market," *Oxford Review of Economic Policy* 15, no. 4 (1999). The authors explicitly conceptualize one of the key outcomes of interest as the varied willingness of economic actors to forego current consumption in favor of investment in future productivity. Though they provide a persuasive account of how institutional and policy conditions generated these intertemporal tradeoffs, the article does not attempt to explain why governments made the critical policy choices that they did. Also, some of the institutional pre-conditions they identify (such as centralized wage bargaining) appear to be at least partly outside the control of governments. The article does not directly shed light on the conditions shaping governments' intertemporal policy choices. A similar case is the analysis of the conditions for class compromise in Adam Przeworski and Michael Wallerstein, "The Structure of Class Conflict in Democratic Capitalist Societies," *American Political Science Review* 76, no. 2 (1982). Przeworski and Wallerstein conceive of workers as trading off current wages against future wages in deciding how much of the capital stock to claim in the present. The authors derive the conditions – primarily neo-corporatist state enforcement of agreements – that encourage workers to restrain current wage demands in pursuit of higher wage levels (through capital investment) over the long term. Again, however, the article does not seek to explain why governments adopt policies more or less conducive to this intertemporal optimizing behavior.

The absence of temporal sensitivity is perhaps most surprising in the literature on the politics of regulatory policy, a sphere in which governments are often considering threats that will take a long time to emerge. An early analytical tradition viewed regulatory policy as an effort to correct the failure of markets to achieve socially efficient outcomes, but without attention to the timing of the costs of regulation or of the social harms that unregulated markets generate.[16] Later, more explicitly political, analyses viewed regulatory policy variously as an arena of winners and losers. Theorists of agency capture, for instance, saw much regulation as an anti-competitive boon to firms and workers in regulated industries, a transfer of rents from consumers to producers.[17] Similarly, in James Q. Wilson's highly influential framework, what defines the politics of policy choice is how the costs and benefits are distributed.[18] In none of these broad theoretical traditions does the timing of those costs and benefits play a role, either in typifying policies or in explaining their emergence.

What is striking about the atemporality of such studies is that they are often considering variation in policies that imply fairly clear intertemporal tradeoffs – paying costs now to avoid harms unlikely fully to emerge for a long stretch of time. For instance, environmental protection is often characterized, in the words of one scholar, as "a classic case of diffuse benefits and concentrated costs."[19] Whether scholars employ this precise Wilsonian formulation, the fact that the costs of protection often emerge *long before* the benefits will arrive usually plays little or no role in their analyses. This tends to be true of studies of the politics of pollution policy,[20] of

[16] See the review in Giandomenico Majone, *Regulating Europe* (New York: Routledge, 1996).
[17] For one influential formulation, see George Stigler, "The Theory of Economic Regulation," *Bell Journal of Economics* 2, no. 1 (1971).
[18] James Q. Wilson, "The Politics of Regulation," in *The Politics of Regulation*, ed. James Q. Wilson (New York: Basic Books, 1980).
[19] Kathryn Harrison, *Passing the Buck: Federalism and Canadian Environmental Policy* (Vancouver: UBC Press, 1996).
[20] In addition to Harrison's study, see, for instance, Lyle A. Scruggs, "Institutions and Environmental Performance in Seventeen Western Democracies," *British Journal of Political Science* 29, no. 1 (1999); David Vogel, *National Styles of Regulation* (Ithaca: Cornell University Press, 1986). Scruggs conceives of the problem of environmental protection largely as a collective-action problem, without noting the temporal difference between the costs and benefits of regulation. Vogel conceives of policy variation according to the degree of conflict characterizing the relationship between regulators and regulated.

climate-change policy,[21] and of regulation of slow-acting occupational hazards, like carcinogenic substances.[22] Even the literature that conceives of regulation in these fields as risk-management largely ignores the temporal feature of the gamble governments are taking as they make regulatory decisions – the fact that whether they win or lose their bet may not become apparent for many years.[23]

Interestingly, the arenas inhabited by collective-action problems are also often marked by intertemporal dilemmas: the harms of free-riding in many spheres often materialize only in the long term. Yet, it is important to note the distinction between the two framings of social problems and policy responses. A field like environmental protection is characterized *both* by a divergence between individual and collective interests *and* by a large delay between the payment of costs and the receipt of benefits. Yet, with surprising frequency, collective-action analyses tend not to build the timing of policy costs and benefits into their models. In ignoring timing, they may well be missing much of what is puzzling about the policy variation being examined. When governments impose pollution restraints or when legislatures bind themselves to budgetary rules, they are not merely squaring individual interests with a view of the collective welfare. They are also deciding to impose costs today to achieve collective outcomes far into the future – a feature of the choice that is unlikely to escape the attention of powerful participants in the political process.

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[21] One study, for instance, seeks to explain cross-national variation in policies to prevent global warming without drawing any attention to the fact that such policies' costs will predate their benefits by decades. Eugene B. Skolnikoff, "The Role of Science in Policy: The Climate Change Debate in the United States," *Environment* 41, no. 5 (1999).

[22] See, for instance, Steven Kelman, *Regulating America, Regulating Sweden: A Comparative Study of Occupational Safety and Health Policy* (Cambridge, MA: MIT Press, 1981); Terry Moe, "The Politics of Bureaucratic Structure," in *Can the Government Govern?*, ed. John E. Chubb and Paul E. Peterson (Washington, D.C.: The Brookings Institution, 1989); Graham K. Wilson, *The Politics of Safety and Health: Occupational Safety and Health in the United States and Britain* (New York: Oxford University Press, 1985).

[23] See, for instance, Kathryn Harrison and George Hoberg, *Risk, Science, and Politics: Regulating Toxic Substances in Canada and the United States* (Montreal: McGill-Queen's University Press, 1994); Sheila Jasanoff, "American Exceptionalism and the Political Acknowledgement of Risk," *Daedalus* 119, no. 4 (1990).

The treatment of policy as timeless can have two important effects on our understandings of the politics of public policy. It may, on one hand, direct our attention toward particular kinds of policy variation and away from others: toward variation in the distributive, productive, or efficiency features of policy, and away from variation along the dimensions of policy choice that generate intertemporal tradeoffs. As a result of this kind of selective attention to policy variation, we gather little causal understanding of temporally relevant policy choices and, quite possibly, of those dimensions of choice that may have the greatest impact on social outcomes *over the long term*.

Meanwhile, even when choosing to study policy variation with major intertemporal implications, scholars have tended to ignore those intertemporal features. On one level, this choice results in an incomplete characterization of what is at stake, socially and normatively, in the variation being explained. At the same time, the occlusion of timing fundamentally shapes the explanations of policy variation that analysts provide. Our arguments about *why* certain policies emerge usually depend on our conceptions of what they *do*. Explanations of policy variation that fail to note when actors expected the costs and benefits of policy alternatives to arrive may be missing or significantly misinterpreting the nature of the choices they faced. If actors' policy preferences are shaped not just by *what* they will win or lose, but also *when*, then we need to build the temporal features of government action directly into our political analyses.

A dependent variable: *Policy investment*

In theorizing the causal factors that might shape elected governments' policy tradeoffs over time, it will help to have a clear specification of the outcome to be explained. In selecting a suitable dependent variable for the study of intertemporal policy choice, we are confronted with a thorny problem of observability. Identifying the nature of the intertemporal tradeoff that a government has made with a given policy choice is not simple. For a whole host of distributive decisions that governments routinely make – for instance, about tax burdens or welfare payouts –

the largest and first-order allocative effects are fairly transparent to the analyst. Most importantly, these effects flow both *quickly* and *directly* from the application of the policy instruments themselves.

By contrast, the nature of the intertemporal bargains governments strike is usually far murkier. For a few reasons, while the short-term costs and benefits of policy choices may be quite clear, the long-term outcomes are usually not. First, in most fields of public policy, there is substantial disagreement among experts about the long-term consequences of alternative policy options: consider expert dissensus on the long-term effects of public debt or education spending. Second, in any given instance of policy choice that we seek to explain, it will often be too early to discern the long-term consequences of that decision. In the study of "who gets what" in the near term, the distributive impacts have, in most cases, already occurred once the investigation begins. When studying intertemporal policy tradeoffs, we will often arrive on the scene too soon to tell how things turned out. Third, even when studying intertemporal tradeoffs old enough to have had their long-term effects already, these effects may be exceedingly difficult to identify. As I will discuss further below, when the time lag between policy and outcome is long, the causal chain is also often long and complex, and much else in the world will have changed in the meantime. Thus, we have a basic problem of coding the dependent variable: How do we know how to classify policies in intertemporal terms if we do not know their long-term effects?

Ironically, the study of the politics of intertemporal policy choice requires a method of identifying intertemporal tradeoffs *independently* of their long-term effects. One solution is to categorize policies based on the structure of the *observable mechanisms* that they employ. The causal complexity described above means that governments do not *create* long-term outcomes like higher economic productivity in the same sense in which they create a distribution of tax burdens or of welfare payments. The long arm of the state does not reach very far into the future. Rather, governments set in motion particular kinds of policy mechanisms commonly and plausibly connected to certain kinds of long-term outcomes. The most appropriate metaphor

might be one of *investment:* like individuals saving for retirement, governments can set aside current resources and direct them toward a portfolio of longer-term social purposes, but they can never know in advance what, if any, returns their investment will yield.

The task then is to identify a kind of policy mechanism that, by its observable structure, amounts to a kind of investment in future social outcomes. I propose that one set of mechanisms suitable for the analytical purpose is described by processes of *extraction* and *accumulation* over time. Consider the following definition of an intertemporal policy choice that we might call a "policy investment." A policy investment is a policy choice that:

> (a.) Imposes a cost in the short term by restricting, on net, the current consumption opportunities of members of a society. This cost can be either a direct cost imposed via an identifiable higher burden on individuals or firms or a cost paid indirectly out of government budgets. For instance, a government might levy higher tax rates or might require logging companies to replant forests at a given rate over the next few years.
>
> (b.) Accumulates the extracted resources over a period of time and legally or physically dedicates the resulting reserves to a specific future purpose. When the resources are financial, the accumulated resources may be invested in interest-bearing assets, with the principal and returns committed to a specified future purpose. In the case of a pension system, some share of contribution revenues collected today might be built up in a fund, invested in a portfolio of stocks and bonds, and legally dedicated to the payment of future pensions. In the field of forestry policy, trees replanted today might be protected from logging and cultivated over a period of many years, to be harvested at maturity only after a specified future date. The resources need not remain accumulated in the same form in which they were extracted: resources collected as money may be used to purchase the physical construction of capital goods, like roads and bridges, or to

purchase services, like education, that generate stocks of human capital.[24] In some fields, like fiscal policy, we can conceive of the cumulative process instead as the observable *diminution* of a steady *drain* on resources, like debt obligations.

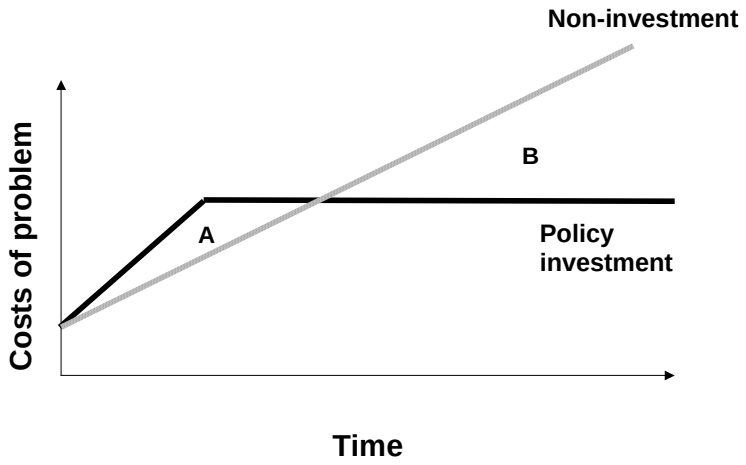

Figure 3 The Policy Investment Dilemma: Costs over Time

The intertemporal transfer that a successful policy investment generates is depicted in Figure 3. Imagine a slowly gathering social problem – perhaps growing pension costs, mounting debt payments, or tightening natural-resource constraints – expected to impose increasing costs on society as time passes. Governments confront an intertemporal choice. On one hand, they can allow the problem to take its natural course, generating escalating costs over time, as represented by the gray line. Alternatively, they can adopt a policy investment: impose costs in the short term that are higher than necessary to deal with the problem's short-term impact, accumulate the surplus resources extracted (area *A*), invest them, and dedicate them to holding social costs down over the long term.

[24] Even growing stocks of human capital may well be observable through, for instance, changes in measures of educational performance or achievement.

The long-term payoff, labeled as area *B,* may be much larger than the amount invested (*A*) if the accumulated resources are invested at some rate of interest, thus accruing compounded returns. This compounding may take the form of compound interest in the ordinary sense or of a compounded process of self-reproduction, as with living resources. Yet, even if *B* is the same size as *A,* the investment will have achieved a *smoothing* of resources over time. Given the declining marginal value of most resources, such a smoothing will often produce a net increase in social welfare over the long term.

These crossing lines represent ideal-typical consequences, like the comfortable retirement a financial planner might sketch out for a young client. Like any investment, a policy investment carries a risk that the expected future rewards will never materialize. In fact, policy investment can turn into social disaster by draining resources vitally needed for current consumption and channeling them toward ill-conceived projects of economic or social transformation.

Crucially for our analytical purposes, however, the definition describes a set of observable measures, commonly seen across the policy landscape, that bear the *structural* marks of an investment. Quite simply, where we see extraction paired with accumulation over time and legal or physical dedication to some future purpose, we see policy investment. Most importantly, such policy action can be observably distinguished from the intertemporal alternatives: (i.) policies that simply transfer from one group to another at a given moment in time, with no accumulation and (ii.) policies that draw down resource reserves to augment present consumption. We thus have a clear way of characterizing intertemporal policy variation.

This variation is moreover meaningful in both substantive and theoretical terms. We can reasonably expect policy investments, even if not always successful, to have different long-term social consequences from synchronic transfers and borrowings from the future. Policy investment, where we see it, also poses a distinctive puzzle for our common conception of competitive democratic politics: why would any elected government choose to adopt one? I devote the remainder of this paper to sketching the contours of an answer to this question.

Toward a theory of policy investment

A baseline model

To clarify the theoretical problem, let us begin with a plausible but highly simplified model of democratic politics – one that captures our armchair intuitions about the chronic myopia of the electoral arena. In fact, we can tightly specify this intuition on the basis of a common set of theoretical assumptions. One core premise of most analyses of democratic politics is that elected politicians are primarily, if not purely, motivated by the pursuit of reelection. If authoritative government decision makers are pure office-seekers, then the likelihood of policy investment should depend on its electoral consequences. Our expectation about those electoral consequences should, in turn, derive from our understanding of electoral behavior.

Not all models of voting suggest predictions about how the electorate will react to different temporal distributions of costs and benefits. Spatial models and theories of voting based on party identification typically tell us little about voters' preferences over the timing of policy consequences. Models of *economic* voting, on the other hand, display stark temporal features. In these frameworks, voters choose candidates instrumentally with the aim of maximizing future economic welfare, whether their own or aggregate. In most economic voting models, voters are assumed, however, to face tight informational and cognitive limits on their ability to calculate how alternative candidates would perform if they were in office. Not only must the instrumental voter collect sufficient information to predict what policies each candidate would support if elected, but she must also determine how each of those policies would affect the social conditions she cares about. In short, she faces massive uncertainty about the consequences of any particular electoral outcome.

According to one common theoretical approach, boundedly rational individuals simplify the demands of the voting decision by adopting a *retrospective* decision rule, based on readily

available information: vote for the incumbent if *past* personal or social economic experience meets a simple minimum standard.[25] In deriving this rule, it is not necessary to presuppose that voters are shortsighted, or that they heavily discount distant outcomes (though analysts do sometimes make an additional assumption of myopia). Voters in the retrospective model are backward-looking *not* because they are indifferent to the future but – to the contrary – because the past offers the most efficient indicator of what the future holds. Scholars have used this temporal logic to hypothesize the existence of political cycles in macro-economic policy making as well as in budgetary policies and transfer programs: in all cases, politicians respond strategically to voters' retrospective decision rule by choosing policies with quick benefits, regardless of longer-term costs.

If voters make up their minds based largely on past experience, then office-seeking incumbents under tight electoral competition face a clear set of temporal incentives: Whatever it is that voters value, provide as much of it as possible, and take away as little as possible, before the next election. The literature on political business cycles (PBC), in fact, models politicians as designing policy precisely in response to such incentives. In PBC frameworks, politicians manipulate policy parameters to achieve an economic outcome valued by voters – e.g., higher output or lower unemployment – immediately *before* the next election, without regard to post-election adverse consequences, such as higher rates of inflation.[26] Myopic or backward-looking

[25] For early expositions of this logic, see Morris P. Fiorina, "Economic Retrospective Voting in American National Elections: A Micro-Analysis," *American Journal of Political Science* 22, no. 2 (1978); Gerald H. Kramer, "Short-Term Fluctuations in U.S. Voting Behavior, 1896-1964," *American Political Science Review* 65, no. 1 (1971). More recent empirical tests of the economic voting hypothesis can be found in Michael Lewis-Beck, "Comparative Economic Voting: Britain, France, Germany, Italy," *American Journal of Political Science* 30, no. 2 (1986); Helmut Norporth, "Presidents and the Prospective Voter," *The Journal of Politics* 58, no. 3 (1996).

[26] For reviews of political business cycle models, see Alberto Alesina and Nouriel Roubini, "Political Cycles in OECD Economies," *The Review of Economic Studies* 59 (1992); James E. Alt and K. Alec Chrystal, *Political Economics* (Berkeley: University of California Press, 1983). The earliest – and in many ways most elegant – formulation of the macroeconomic argument can be found in William D. Nordhaus, "The Political Business Cycle," *The Review of Economic Studies* 42, no. 2 (1975). For a model of budgetary cycles, see Kenneth Rogoff, "Equilibrium Political Budget Cycles," *American Economic Review* 80, no. 1 (1990). A model in which politicians use a range of policy tools to maximize real disposable income and minimize unemployment before elections is presented in Edward R. Tufte, *Political Control of*

voting behavior has also been adduced as an explanation of populist but shortsighted economic policies in developing democracies.[27]

Though empirical evidence of political cycles and populist myopia has been mixed, the argument that policy choice responds to the imperatives of retrospective voting suggests a clear expectation about the likelihood of policy investment. As William Nordhaus states the prediction of his own PBC model, "…[A] perfect democracy with retrospective evaluation of parties will make decisions biased against future generations."[28] Figures 4 and 5 make the point graphically. Figure 4 plots actual social welfare over time under two policy options: the *status quo* and a policy investment. Under policy investment, voters sacrifice area *A* in the short term but gain area *B*, in exchange, over the long term. A voter with perfectly rational expectations would, therefore, reward the incumbent who invested.[29]

Figure 5 overlays the perceptions of the retrospective voter at election time onto this graph. Suppose that policy investment has generated at election time a level of social welfare *lower* than that which would have accrued under the status quo. The retrospective voter will form beliefs about future welfare levels based on a simple extrapolation from current welfare (or, even worse, based on an extension of the downward slope of the trend line at election time). As a result, the retrospective voter should strictly prefer the *status quo* to policy investment. Under

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the Economy (Princeton: Princeton University Press, 1978). Scholars have also used this temporal logic to hypothesize the existence of political cycles in m budgetary policies and transfer programs: in all cases, politicians respond strategically to voters' retrospective decision rule by choosing policies with quick benefits, regardless of longer-term costs.

[27] For a review of this sizeable literature, see Susan C. Stokes, "Public Opinion and Market Reforms: The Limits of Economic Voting," *Comparative Political Studies* 29, no. 5 (1996).

[28] Nordhaus, "The Political Business Cycle," 187. Arguing against the PBC framework, Kiewiet contends that retrospective economic voting creates strong incentives for governments to adopt policies that enhance efficiency and reduce economic rents. Tellingly, however, he explicitly limits the scope of his argument to policies that "pay off very quickly" – i.e., before the next election. D. Roderick Kiewiet, "Economic Retrospective Voting and Incentives for Policymaking," *Electoral Studies* 19, no. 2-3 (2000): 431.

[29] I am assuming that the rate of social return on the investment and voters' discount rates are such that the discounted value of area B exceeds that of area A.

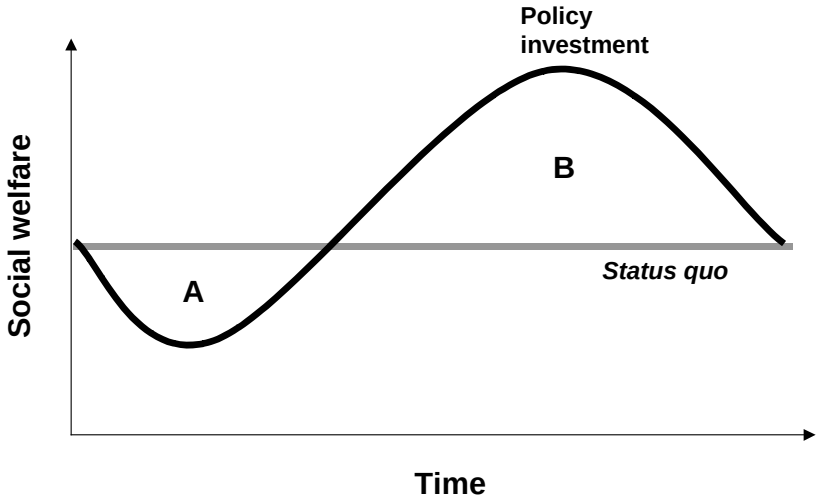

Figure 4 Policy Investment vs. *Status Quo*: Social Welfare over Time

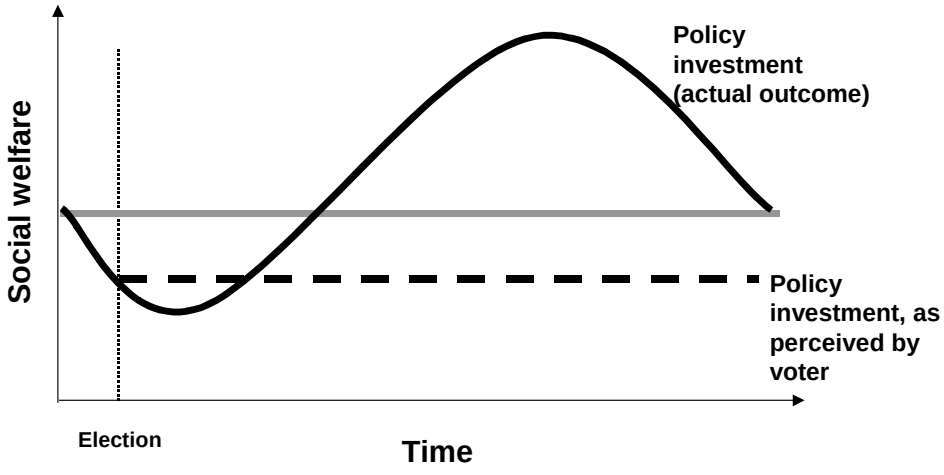

Figure 5 Policy Investment vs. *Status Quo*: Perception of Retrospective Voter

these conditions, no office-seeking politician facing electoral competition should ever make an investment that takes longer than an electoral cycle to pay off.[30] To underline the point, this result obtains *even if voters do not discount future outcomes at all.* In fact, if voters do care about the long term, then the intertemporal allocation of policy goods will be *inconsistent* with their time preferences, heavily biased toward the short term.[31]

This prediction of *constant* non-investment stands in stark contrast, however, to observed *variation* in the willingness of governments to adopt policy investments. Sometimes governments *do* adopt policies that sacrifice short-term consumption opportunities – policies from which the only potential benefits will emerge long after the next election. To explain variation in governments' intertemporal policy choices, we have to consider theoretical departures from this simplified model of democratic politics. We will consider two specific departures from which we can generate predictions of policy investment under particular circumstances.

Prospective voters

We might first depart from the baseline model by relaxing the core assumption of a retrospective electorate – that voters use information only about *past* conditions when making their choice among candidates. Alternative theories of economic voting conceptualize voters as *prospective* decision makers. Though prospective models vary in the degree of sophistication they attribute to voters, all posit that voters formulate expectations about future conditions based on more than just extrapolation from the

[30] This analysis assumes that retrospective voters extrapolate horizontally from the current level of welfare. Alternatively, they might extrapolate from the slope of the curve. Adam Przeworski argues implicitly for this assumption in his study of economic reform. He argues that politicians will not adopt reforms that will not put the economy "on the upward curve" by the next election. Though a slightly more generous assumption for the prospects of policy investment, it would still rule out all policy investments that take more than one electoral cycle – usually 4 or 5 years, maximum – to bottom out. Adam Przeworski, *Democracy and the Market: Political and Economic Reforms in Eastern Europe and Latin America* (New York: Cambridge University Press, 1991), 166.

[31] Of course, retrospective voting poses no problem for policy investments that produce net rewards *before* the next election. Indeed, *fast-acting* policy investments may be highly congruent with politicians' electoral interests in a world of backward-looking voters. But the economic, social, demographic, and natural processes underlying many of the most important intertemporal dilemmas politicians face take far longer than a single electoral cycle to play out. See, for instance, Susan Stokes' study of neo-liberal reform "by surprise" in Latin America Susan C. Stokes, "Constituency Influence and Representation," *Electoral Studies* 17, no. 3 (1998); Susan C. Stokes, *Mandates and Democracy: Neoliberalism by Surprise in Latin America* (New York: Cambridge University Press, 2001).

past.[32] If voters make judgments based on information about the prospect of reaping area *B* in Figure 3, then the temporal character of politicians' electoral incentives may be fundamentally altered.

In one of the more prominent formulations of the prospective framework, Erikson, MacKuen, and Stimson contend that even unsophisticated voters can extract information about future conditions, relatively effortlessly, from their immediate environment. Their model of a prospective electorate is based on three core contentions: (1.) Individuals "are exposed to much free and accidental information about the economy" in the course of their everyday lives, from expert commentaries and objective indicators; (2.) Voters incorporate this "learned information" along with their experience of the recent past in making candidate judgments; and (3.) Even if individual voters' expectations diverge from experts', the errors cancel out at the aggregate level, producing an *electorate* with macro-level responses that reflect sophisticated expectations about the future.[33]

Though there is vigorous debate over the balance between retrospection and prospection in voters' candidate assessments, the literature provides substantial empirical evidence that prospective evaluations, measured independently from current conditions, play a significant role in electoral outcomes.[34] In an unusual direct application of a prospective model to the politics of public policy

[32] In the most cognitively demanding models, voters adopt rational expectations about the future based on a mental model of the intertemporal dilemmas policy makers confront. As Chappell and Keech formulate their assumption, "…[S]ophisticated voters would recognize that short-run choices are constrained by economic possibilities, and they would reward or punish according to whether selected policies would promote movement toward desired long-run outcomes." In their theory of electoral judgments of macroeconomic policy, voters are assumed to have substantial economic knowledge, including a basic mental model of the long-run tradeoff between unemployment and inflation and knowledge of the economy's maximum, non-inflationary level of real output. Henry W. Chappell, Jr. and William R. Keech, "A New View of Political Accountability for Economic Performance," *American Political Science Review* 79, no. 1 (1985). As Erikson, MacKuen, and Stimson (discussed below) make clear, assumptions of this level of cognitive sophistication are unnecessary to sustain the argument that the electorate behaves in line with rational expectations about the post-election world.

[33] Robert S. Erikson, Michael B. MacKuen, and James A. Stimson, "Bankers or Peasants Revisited: Economic Expectations and Presidential Approval," *Electoral Studies* 19 (2000). For the argument's original formulation, see Michael B. MacKuen, Robert S. Erikson, and James A. Stimson, "Peasants or Bankers? The American Electorate and the U.S. Economy," *American Political Science Review* 86, no. 3 (1992). Evidence on prospective voting has also come from outside the U.S. See, for instance, Michael Lewis-Beck, *Economics and Elections: The Major Western Democracies* (Ann Arbor: University of Michigan Press, 1988); David Sanders, "The Real Economy and the Perceived Economy in Popularity Functions: How Much Do Voters Need to Know? A Study of British Data, 1974-97," *Electoral Studies* 19 (2000).

[34] In addition to Erikson et al. and Chappell and Keech, cited above, see Henry W. Chappell, Jr. and William R. Keech, "Explaining Aggregate Evaluations of Economic Performance," in *Economics and Politics: The Calculus of Support*, ed. Helmut Norporth, Jean-Dominique Lefay, and Michael Lewis-Beck (Ann Arbor: University of

making, Stokes and her collaborators provide evidence that voters in new democracies are sometimes willing to discount the current pain of market reforms by crediting politicians' promises of post-election gain.[35]

By relaxing a strict assumption of retrospection, one possible pathway to policy investment emerges. Office-seeking incumbents appealing to even a partially prospective electorate should face substantial incentives to make policy investments, even when their short-term costs are highly visible to voters. At the aggregate level, these "investing voters" ought to respond to policy decisions as though they expected the long-term gains. As a result, policy made by office-seeking politicians should sometimes take the form of investment in valued post-election outcomes.

Assuming that voters are in some measure prospective, however, begs a further question. The forward-looking voter faces a substantial problem of *uncertainty* in forming beliefs about the long-term consequences of alternative policy options. Yet, in critical ways, arguments and evidence about prospective voting tell us little about how voters overcome this uncertainty. If expert policy analysts are unable to determine with much confidence the distant consequences of many policy alternatives, how do inattentive and poorly informed voters form *their* beliefs? One aspect of belief-formation that prospective models leave vague is just how sophisticated voters are as consumers and processors of information. At a

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Michigan Press, 1991); Henry W. Chappell, Jr. and Motoshi Suzuki, "The Rationality of Economic Voting Revisited," *Journal of Politics* 58, no. 1 (1996); Harold D. Clarke and Marianne C. Stewart, "Prospections, Retrospections, and Rationality: The "Bankers" Model of Presidential Approval Reconsidered," *American Journal of Political Science* 38 (1994); Brad Lockerbie, "Prospective Voting in Presidential Elections, 1956-1988," *American Politics Quarterly* 20 (1992). For evidence from outside the United States, see Lewis-Beck, *Economics and Elections: The Major Western Democracies;* Michael Lewis-Beck, "Who's the Chief? Economic Voting under a Dual Executive," *European Journal of Political Research* 31, no. 3 (1997); David Sanders, "Government Popularity and the Next General Election," *Political Quarterly* 62 (1991); Sanders, "The real economy and the perceived economy."

[35] Stokes, "Public Opinion and Market Reforms: The Limits of Economic Voting." In her introductory and synthetic essay in this special issue of *CPS*, Stokes summarizes the findings of the issue's country case studies (Peru, Poland, and Mexico) as showing that voters sometimes behave retrospectively, sometimes prospectively. Neither her synthetic piece nor the individual country articles provide much insight, however, into the *conditions* that promote intertemporal or backward-looking voting decisions. Przeworksi in his article on Poland merely observes, without theoretical explanation, that voters seem to think retrospectively with respect to unemployment, to withhold blame for inflation, but to think inter-temporally about real wages. Adam Przeworski, "Public Support for Economic Reforms in Poland," *Comparative Political Studies* 29, no. 5 (1996). Moreover, Stokes speculates that these studies' findings of inter-temporal electoral behavior are contextually limited to transition politics and "absent in advanced capitalist democracies in which normal economic voting reigns."

theoretical level, prospective-voter arguments simply propose plausible mechanisms by which voters might take into account prospective information; but they do not provide clear predictions about *how much* or *what kind* of information will be incorporated.[36] Moreover, the empirical tests indicate only that voters are using *some* prospective information. A related issue that these arguments leave largely unexplored is how – or whether – voters' foresight extends downward from aggregate economic outcomes to specific policy choices. Does the electorate respond to the intertemporal dilemmas policy makers confront when designing systems of natural resource management, paying down public debt, reforming pension schemes, or engaging in any other *particular* policy endeavor?

An assumption of prospective voting allows us to hypothesize an important possible causal mechanism for generating policy investment in a democratic context: office-seeking politicians respond to investment-oriented voters. But developing crisp hypotheses about the *conditions* under which policy investment will emerge from this interaction will require us to specify how voters arrive at their beliefs about long-term policy consequences under massive uncertainty. As I will argue, the problem of uncertainty bedevils arguments about the intertemporal preferences not only of mass publics, but also of elite policy makers.

Insulated politicians

We might relax a second assumption undergirding the retrospective-electoral model: that politicians must satisfy voters' preferences to get reelected. Under either of two conditions, however, this may not be the case. First, incumbent politicians or parties may enjoy electoral slack. Second, governments may be able to limit voters' capacity to assign responsibility for the pre-election costs of policy choices. If either of these conditions holds, then policy investment might emerge because politicians themselves want to pursue it, independently of what their constituents want. Given sufficient

[36] Stokes, for instance, summarizes the results of the three country studies in the thematic issue of *Comparative Political Studies* as demonstrating that there is some evidence that voters are sometimes willing to make intertemporal tradeoffs. Yet neither she nor her collaborators attempts to specify the conditions under which prospective voting is most likely. Stokes, "Public Opinion and Market Reforms: The Limits of Economic Voting."

insulation from electoral pressure, elected officials might pursue policy investment because they believe that it will promote their own long-term social goals. Alternatively, they might want to invest in their own, or their parties', longer-term reputations for responsible, farsighted stewardship of the commonweal. Let us consider each form of electoral insulation in turn.

Electoral slack. The baseline model assumes that incumbent politicians or parties face stiff competition in the electoral marketplace – credible opponents prepared to capitalize on their every misstep. Yet, to assume invariably tight electoral competition is to blot out, among other things, the effects of electoral institutions and organizations. For instance, non-proportional electoral systems – like first-past-the-post rules in single-member districts – have a disabling effect on parliamentary oppositions that are divided among two or more sizeable parties.[37] These conditions will offer the party of government substantial electoral slack by suppressing its opponents' seats-to-votes ratios. Furthermore, decision-making procedures within party organizations may prevent parties from responding optimally to electoral rules and conditions by, for instance, consolidating with competitors. Such conditions plagued the British opposition parties during the 1920s and again during the 1980s, as well as the Canadian opposition during the 1990s.

Scholars have occasionally drawn a connection between the tightness of electoral competition and governments' intertemporal policy choices. In a study of the United Kingdom and Sweden, Geoffrey Garrett argues that governments facing substantial electoral slack will be willing to adopt electoral strategies that are non-optimal in the short run in order to achieve longer-term political advantage and social change. He illustrates the argument by examining projects of slow "structural transformation" undertaken, at near-term cost, by the electorally ascendant Swedish Social Democrats in the 1930s and British Conservatives in the 1980s.[38] A similar logic of insulation also runs through the literature on policy reform in developing countries. Without making explicitly intertemporal arguments, authors such

[37] Specifically, the opposition will be disabled if these parties compete against one another in a large number of districts. If they are able to reach a pre-election pact to divide districts among themselves, and if a post-election coalition between them is possible, then these disabling effects are eliminated.
[38] Geoffrey Garrett, "The Politics of Structural Change: Swedish Social Democracy and Thatcherism in Comparative Perspective," *Comparative Political Studies* 25, no. 4 (1993).

as Peter Evans, John Waterbury, and John Williamson have argued for the critical role of a bureaucratic elite, shielded in some manner from social constituencies, in achieving painful policy change.[39] Like politicians enjoying electoral slack, powerful technocrats enjoying autonomy from outside pressures should be more likely to devise reforms that exchange short-term consumption for long-term social welfare. And politicians should be more willing to grant technocrats policy-design discretion when electoral pressures are at an ebb. Analyzing less-democratic dynamics, Barbara Geddes makes a parallel argument, contending that Latin American presidents are more willing to enact farsighted administrative reforms when they are safe from the immediate threat of a military coup.[40]

This line of argument seems to suggest a clear hypothesis: policy investment should be more likely to emerge under conditions of greater electoral slack.

Blame avoidance. Independently of the matter of electoral competition, we might relax the assumption, implicit in the baseline model, that retrospective voters actually *perceive* the past costs of policy investment. Indeed, a substantial body of work – pioneered by Kent Weaver, Douglas Arnold, and Paul Pierson – suggests that the electoral salience of the costs of policy may vary considerably. Like most of the literature on the politics of public policy, this work mostly ignores issues of intertemporal choice (with an exception noted below). However, its arguments about the ability of governments to hide or avoid blame for painful policy choices may suggest a set of conditions under which "investing politicians" will be more likely to emerge.

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[39] Peter Evans, "The State as Problem and Solution: Predation, Embedded Autonomy, and Structural Change," in *The Politics of Economic Adjustment: International Constraints, Distributive Conflicts, and the State*, ed. Stephan Haggard and Robert R. Kaufman (Princeton: Princeton University Press: 1992); John Waterbury, "The Heart of the Matter? Public Enterprise and the Adjustment Process," in *The Politics of Economic Adjustment: International Constraints, Distributive Conflicts, and the State*, ed. Stephan Haggard and Robert R. Kaufman (Princeton: Princeton University Press: 1992); John Williamson, "In Search of a Manual for Technopols," in *The Political Economy of Policy Reform*, ed. John Williamson (Washington, D.C.: Institute for International Economics, 1994).

[40] Barbara Geddes, *Politician's Dilemma: Building State Capacity in Latin America* (Berkeley, California: University of California Press, 1994). Margaret Levi has made a similar argument about the role of security in office in shaping rulers' willingness to tax less today in order to maximize revenues over the long term. Levi, *Of Rule and Revenue*.

The literature on welfare-state reform has identified numerous strategies of policy design through which politicians can minimize accountability for imposing costs in the short term.[41] One set of strategies attempts to disguise painful measures in ways that are hard for voters even to perceive as losses. For instance, those seeking to control social spending can seek savings through low-visibility changes to benefit formulae – such as a temporary freeze in the annual cost-of-living adjustment for pensions – rather than through reductions in nominal benefit levels. Or politicians may time the initial costs of policy to begin just *after* the next election, rendering them imperceptible to relatively inattentive voters. Another set of strategies involves obscuring the link between losses to voters and the policies that produce them: policy makers can, for instance, impose cutbacks on service providers – such as doctors or hospitals – who will then pass the burden on to beneficiaries through restricted access or higher fees.

Even where no feat of policy design can obscure costs, politicians may be able to neutralize the electoral impact of unpopular policy choices by confusing lines of accountability. They may, for instance, be able to forge a broad consensus in favor of reform, thus *diffusing* the blame for painful policy change. Analysts examining welfare-state reform have argued that consensus-building institutions and arenas – like corporatism, grand coalitions, or social pacts – can enhance governments' capacity to impose losses by allowing them to spread the responsibility across a broad coalition of parties or organized interests.[42] Further, politicians may try to occlude their own responsibility for policy changes

[41] What follows is based largely on Paul Pierson, *Dismantling the Welfare State? Reagan, Thatcher, and the Politics of Retrenchment* (New York: Cambridge University Press, 1994). Other discussions of blame-avoidance strategies can be found in R. Douglas Arnold, *The Logic of Congressional Action* (New Haven: Yale University Press, 1990); Joan M. Nelson, "Poverty, Equity, and the Politics of Adjustment," in *The Politics of Economic Adjustment: International Constraints, Distributive Conflicts, and the State*, ed. Stephan Haggard and Robert R. Kaufman (Princeton: Princeton University Press: 1992); Pierson, *Dismantling the Welfare State;* R. Kent Weaver, "The Politics of Blame Avoidance," *Journal of Public Policy* 6, no. 4 (1986). Other strategies these authors identify include the use of secrecy and omnibus legislation (Arnold) and making loss-imposition automatic or blaming it on circumstances beyond government's control (Weaver).

[42] Weaver calls this strategy "circle the wagons." On the political advantages of sharing blame across a reform coalition, see also Martin Lucio Baccaro, "Negotiating the Italian Pension Reform with the Unions: Lessons for Corporatist Theory," *Industrial and Labor Relations Review* 55, no. 3 (2002); Christoffer Green-Pederson, "Welfare-State Retrenchment in Denmark and the Netherlands, 1982-1998: The Role of Party Competition and Party Consensus," *Comparative Political Studies* 34, no. 9 (2001); Rhodes, "The Political Economy of Social Pacts: 'Competitive Corporatism' and European Welfare Reform," in *The New Politics of the Welfare State*, ed. Paul Pierson (New York: Oxford University Press, 2001); Martin Schludi, "The Politics of Pensions in European Social Insurance Countries," MPIfG Discussion Paper 01/11 (Köln: Max-Planck-Institut für Gesellschaftsforschung, 2001).

by, for example, delegating difficult decisions downward to local officials or by delaying painful cutbacks until long after they will have left office.

In Pierson's and other scholars' theoretical accounts, politicians' menu of blame-avoidance methods is limited by a set of fixed conditions, such as the structure of existing government programs. For instance, programs of service delivery offer plentiful opportunities to impose costs on service providers, rather than directly onto consumers, while income-transfer schemes offer little room for such deflection techniques. Similarly, unindexed social programs allow governments quietly to scale back benefits simply by holding them constant, whereas inflation-indexed programs require a more visible change in the legislated formula. Further, the existence of consensus-building institutions in a given polity – arenas in which routinized bargaining produces reputational incentives and trust among party and interest-group leaders – makes strategies of blame-diffusion far more feasible.[43]

We thus have at hand a second, distinct set of circumstances under which the Investing Politician might emerge. We might expect policy investment to be more likely when existing policy structures and political institutions allow broad scope for policy design and coalitional strategies for hiding, deflecting, or diffusing blame.

Yet, as currently framed, these two propositions about electoral insulation present a problem: they implicitly assume that politicians, left unconstrained by electoral pressures, will tend to prefer policy investment as an intertemporal allocation. The insulated government is presumed to be an intertemporal social optimizer. Setting aside the question of whether this assumption is justified at a general level, there is a difficulty in applying it to the prediction of investment in specific policy-level goods. Why should we assume that a forward-looking politician would favor any *particular* policy investment that may be our object of study? Confronting a budget constraint in the short term, even a benevolent dictator would have

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Light makes a similar argument about Social Security reform in the U.S. case in Paul Light, *Still Artful Work: The Continuing Politics of Social Security Reform* (New York: McGraw Hill, 1995).

[43] Equally important will be an opposition that sees a strategic advantage in negotiation rather than resistance to unpopular reform. The factors that will influence this strategic choice are bound to be highly complex. For one attempt to specify them, see Schludi, "The Politics of Pensions in European Social Insurance Countries."

first to set aside some resources for current consumption and *then* to select from among all conceivable investments a limited number that she believes will yield the highest rate of social return.

Once again, the uncertainty of the long term rears its head. Generating predictions about the adoption of particular policy investments by electorally secure incumbents requires knowing something about where those incumbents' expectations of social return come from. It requires theorizing how elite policy makers form beliefs about the uncertain long-term consequences of their policy choices. I turn now to an examination of how we might theorize belief formation about the long term for both voters and elite policy makers. As I will argue, constructing a useful theory means carefully specifying the *nature* of the uncertainty actors face in considering policy investment.

The uncertainty of the long term

Even when considering the short-term effects of policy options, policy makers are sometimes confronted with competing predictions about those effects. Yet, I will argue that the long term poses a problem of prediction at a far higher order of complexity. One type of complexity that the long term generates is what we might term *policy uncertainty:* quite simply, the uncertainty induced by the complexity of the social or natural causal processes leading from policy implementation to policy outcome. For at least two reasons, policy uncertainty multiplies as the time horizons of decision making lengthen.

First, policies that are expected to play out over longer time periods often rely on longer causal chains. Many policy endeavors pay off only in the long term precisely *because* their production mechanisms rely on an extended cascade of social or natural processes. The long-term effects of public debt reduction on future rates of economic growth depend, for instance, on many things going right: individual investors have to know enough to channel capital, formerly tied up in government bonds, toward private (or other public) endeavors that will – through a complex effect on processes of good or service production – add *more* to future economic productivity than would any current government expenditure lost in the service of reducing debt. We might similarly think about the concatenation of

processes that are involved in an attempt to enhance future economic welfare by spending more on public education or in an effort to slow climate change through an emissions trading program.

Not only will these causal processes be uncertain under conditions prevailing at the moment of decision, but the degree of uncertainty is also *multiplied* by the prospect of changing exogenous conditions. In the case of debt reduction, for instance, the returns to private investment are likely to be greatly influenced by changes in conditions like the size of the working-age population or the degree of political stability in foreign countries. Similarly a state-financed training program is likely to have very different payoffs under different sets of conditions of labor demand. While policy makers and voters concerned with achieving short-term effects can choose among options while holding much else equal, those focused on distant outcomes must consider the possibility that a great deal of the current environment, now taken for granted, will change.

Moreover, uncertainty about consequences mounts steeply as the causal chain lengthens because total uncertainty is the product of uncertainty at each stage. To illustrate, imagine a one-step policy move in which that step is sufficiently well understood that we have 75-percent confidence that the policy will have some expected effect. By simply adding to the policy endeavor two additional steps about which we have the same, 75-percent level of confidence, our expectation of achieving the policy's intended final outcome would plummet to 42 percent.

As troubling as policy uncertainty may be, policy investment is also vulnerable to a second risk – a threat from politics. Not only may actors have difficulty determining the long-term effects of a plan faithfully implemented, but they also face the risk that a policy adopted today will be overturned tomorrow, eliminating any long-term benefits it might have promised. In a democratic context, what Terry Moe has called *political uncertainty* plagues policy investment for two reasons.[44] First, at least one election is likely to fall between a policy investment's up-front costs and its long-term benefits. Thus, unlike with policy adopted for quick effect, the interests and policy preferences of those in government

[44] Terry Moe, "The Politics of Structural Choice: Toward a Theory of Public Bureaucracy," in *Organization theory: from Chester Barnard to the present and beyond*, ed. Oliver Williamson (New York: Oxford University Press, 1990).

may well change midstream, producing a risk of policy reversal before the investment has paid off. Of course, all of the policy achievements of today's government may face some risk of reversal. But the possibility of reversal is far more troubling for policies that may not have generated significant social benefits by the time they are derailed.

Second, policy investments provide future governments not just with an *opportunity* to dismantle them; many also provide a compelling *motive*. Policy investments that require the accumulation of fungible resources over long periods of time will make an especially tempting target for future governments in need of resources for their own endeavors of the moment. The public pension fund amassed by today's incumbents through painful tax increases or benefit cuts may look to tomorrow's rulers like a terribly convenient source of financing for farm subsidies or armaments. Such a diversion of resources from their original purpose would eliminate the long-term benefits expected by the policy investment's creators.[45]

I propose that there are, broadly speaking, two approaches to modeling how actors arrive at beliefs about policy consequences in the face of policy and political uncertainty about the long term. One approach derives from an assumption of comprehensive rationality while the other is based on an assumption of bounded rationality. As I will argue, while an assumption of comprehensive rationality can provide plausible predictions about political choices over relatively short-term outcomes, its usefulness breaks down under the more radical uncertainty of the long term. An assumption of bounded rationality, on the other hand, suggests far more fruitful lines of theory development and empirical inquiry about the intertemporal policy preferences of voters and politicians.

Rational actors under uncertainty

[45] It is important to note that not all policy investments are equally vulnerable to the dangers of diversion. Some, like investments in public infrastructure, do not rely on an accumulation of easily fungible resources that would provide either opportunity or motive for reversal. Investments that operate through forms of physical capital are probably the least exposed to political uncertainty because their resources cannot be easily redeployed for purposes alien to the intentions of the investing government. Even if tomorrow's government overturns a 10-year highway project, it cannot turn bridges already built into stealth bombers. For this sort of investment, political uncertainty may be a less severe problem.

From the perspective of rational-choice theory, the mere fact of uncertainty about outcomes presents no fundamental decision-making problem. The decision maker can simply represent each policy option as a lottery over possible outcomes, in which each outcome can be expected to occur with some probability. By assigning each possible outcome of each option a probability and a cardinal utility value, she can then calculate an expected utility for each option. According to the expected-utility theorem, we should be able to explain politicians' and voters' preferences over policy options as a maximization of expected utility.[46] In terms of Figure 3 above, rational choice theory would predict an actor to prefer policy investment when and only when the *expected* discounted value of area *B* exceeds the *expected* discounted value of area *A.*

Framing a theoretical expectation in something like these terms, however, presents us with a fundamental methodological problem. How is the analyst to figure out what the *rationally expected* long-term consequences of a policy option are? Crucially, to provide a fair test of the hypothesis, the rational expectation must be defined independently of those consequences that *in fact* occurred, which are only subset of those outcomes that *might* have occurred with some probability. Moreover, the rational expectation must be identified separately from actors' *actual* expectations at the moment of decision, even if those are knowable. After all, whether those expectations are rational ones is part of what is to be determined by the empirical test.

It is thus left to the analyst to assign objective *a priori* probabilities to all possible outcomes of each policy option under consideration. Yet, of course, in this endeavor the analyst faces precisely the same causal complexity that the actors themselves faced: long causal chains playing out against a range of possible background conditions, plus the prospect of policy reversal by a future government. Arriving at any reliable inference about these probabilities would require being able to observe each policy option implemented, and its long-term consequences emerging, multiple times under each of a range of possible

[46] For a textbook proof of the theorem, see Peter C. Ordeshook, *Game Theory and Political Theory: An Introduction* (New York: Cambridge University Press, 1986), 37-42.

background conditions. Needless to say, these data are unlikely to be available in the vast majority of cases, especially given the long time lag required between policy enactment and observation of outcomes.

Notably, this is a methodological problem that distinctively plagues the analysis of decision-making about the long term. Where the relevant social outcomes of a policy emerge quickly, causal complexity is vastly reduced, and there are likely to be far more instances available to the analyst from which to draw inferences about policy consequences. With policies of short-run redistribution, for instance, rationalist assumptions may be quite straightforward to operationalize; the likely effects of each option may be knowable with reasonable precision. In contrast, where the relevant consequences are distant in time, a model based on some notion of rational expectations will usually lead to empirically hollow propositions that are effectively untestable. Yet, the difficulties with applying the analytical tools of rational choice to intertemporal policy tradeoffs run even deeper than this. As I will argue momentarily, an assumption of comprehensive rationality is theoretically unjustifiable when actors are considering outcomes that lie many years into the future.

The strong *uncertainty of the long term*

The obstacles to calculation that voters and policy makers confront in optimizing over the long term are profound. The distinction between "weak" and "strong" uncertainty is a useful one for characterizing these impediments. Weak uncertainty, or simply "risk," describes a situation in which actors face incomplete information but, as assumed in an expected-utility model, can reliably assign probability distributions to the possible outcomes of the choices before them. Under conditions of weak uncertainty, the decision problem still remains well defined in terms of substantive rationality since actors can compare options based on their probability-weighted outcomes and the resulting expected utility. In contrast, strong (or "Knightian") uncertainty describes a situation in which actors possess too little information to assign probabilities to all possible outcomes of the available options.[47] Under conditions

[47] A Bayesian would challenge this traditional distinction, arguing that in fact a subjective numerical probability can be placed on any outcome. Betting rates can be used to elicit actors' subjective numerical probability assessment for

of strong uncertainty, even instrumental and strategic actors are prevented from engaging in the maximization of expected-utility maximization as dictated by the principles of substantive rationality.

The key question, then, is what conditions are most likely to generate uncertainty so strong as to preclude probability assessments. Where do we draw the line? Arthur Denzau and Douglass North have argued that three features of the decision-making situation are critical to the capacity of actors to behave as substantively rational.[48] First, the more complex the theories[49] actors need to understand the consequences of their choices, the less justified is an assumption of substantive rationality. Second, the decision maker's motivation – both the subjective importance of the choice and her perceived ability to affect the outcome – will influence the share of scarce cognitive resources she will devote to the problem. The less attention she devotes to the problem, the less efficiently she is likely to learn about the possible effects of alternative choices. And, third, the mapping of options onto their possible outcomes depends on high-quality, frequent, and transparent feedback from the consequences of past choices. As Denzau and North frame the problem of drawing inferences from such feedback:

> The basic problem is that the mappings we are trying to learn are usually multidimensional, possibly involving several dimensions in a complex, nonlinear relation. We only have a finite, often very small, data sample of real experiences from which to learn this mapping. This is not a simple statistical problem, especially when we start out not certain as to the relevant arguments involved in the mapping.[50]

To the extent that these three conditions are important, policy making for the long term is an excellent candidate for the assumption of strong uncertainty. First, as discussed above, the policy mechanisms and political contingencies that determine the long-term outcome of policy choices display

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any event. The Bayesian position, however, still has to allow for varying degrees of *confidence* in subjective prior assignments of probability. Ellsberg's urn experiments indicate that the difference between known and highly uncertain probabilities is empirically relevant to actors' choices. Actors differently perceive bets in which probabilities are known and those in which they are unknown in that they are less willing to make bets under the latter condition. D. Ellsberg, "Risk, Ambiguity and the Savage Axioms," *Quarterly Journal of Economics* 75, no. 4 (1961). Denzau and North identify the set of conditions under which substantive rationality assumptions are likely to hold in choice situations. These include the simplicity of the choice, the frequency with which the choice is made, and the quality and speed of the feedback received. None of these conditions is likely to hold for either voters or elites where policy consequences take many years or decades to emerge. Arthur T. Denzau and Douglass C. North, "Shared Mental Models: Ideologies and Institutions," *Kyklos* 47, no. 1 (1994).

[48] Denzau and North, "Shared Mental Models: Ideologies and Institutions," 7-8.

[49] Denzau and North actually use the term "mental model" here, which they define as "the internal representations that individual cognitive systems create to interpret the environment." Ibid.: 4.

[50] Ibid.: 8.

an unusually high order of causal complexity, requiring actors to fit highly complex theories to the data they collect from history and from their environment.

Second, motivation to learn about policy outcomes, and cognitive resources devoted to the task, will often be low. Motivation is likely to be lowest among ordinary voters, a class of actors that survey work has established to be singularly inattentive to politics under most conditions. Given the limited influence an individual voter can wield over policy choices, ignorance about arcane policy matters is often perfectly rational. Moreover, distant outcomes are likely to draw even less attention than near-term ones. While the motivation to learn about policy consequences will generally be higher for politicians, bureaucrats, and interest-group leaders, their stock of attention still remains tightly limited. As Bryan Jones has argued, this means that policy makers can typically only attend to multiple issues serially, not simultaneously.[51] Not only does any single policy decision vie with many others, but learning about *distant* policy outcomes also has to compete for attention against the demands of short-term political and social exigencies. Thus, policy makers' cognitive investment in learning about long-term outcomes will often be small relative to the complexity of the cognitive task.

Finally, policy making for the long term is, nearly by definition, an endeavor unlikely to generate frequent and clear feedback about consequences. Everyday choices like consumption or work routines may offer a wealth of opportunities for trial-and-error learning, providing a promising domain for the application of a weak-uncertainty assumption. In contrast, the relative slowness of change in the arena of public policy means that decision makers there are unlikely to have frequent opportunities for experimentation. If this is true of most policy making, policy making for the long term presents the *worst-case* conditions for trial-and-error learning. The longer the time delay between policy adoption and the emergence of the valued consequences, the fewer the instances of feedback voters or policy makers will have available, and the less interpretable the available feedback will be.[52]

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[51] Bryan D. Jones, *Reconceiving Decision-Making in Democratic Politics: Attention, Choice, and Public Policy* (Chicago: University of Chicago Press, 1994).

[52] Similarly, while learning from policy experiments abroad or at the subnational level may help expand decision makers' datasets, this will not necessarily multiply their "degrees of freedom." Wide variations in background

While policy making for quick distributive effect may be best characterized as a problem of ordinary risk, policy choice for the long term is far more likely to be clouded by a more radical form of uncertainty that runs up against the bounds of actors' capacities for rational calculation. This insight need not threaten an assumption of instrumental behavior, of actors doing their best to serve some definition of their own interests. But at the core of any explanation of intertemporal policy choice must lie an account of how voters and politicians *connect policy options to their long-term interests*, absent the ability systematically to assign probabilities to possible outcomes. It will need to take seriously the *cognitive* problem of preference formation under uncertainty.

One of the chief virtues of a rationalist analytical framework is its ability, in many spheres, to generate determinate predictions about actors' behavior that can be tested against the empirical record. Despite its disadvantages, we might hesitate to abandon the framework for fear of wading into a swamp of theoretical and empirical murkiness. As we have seen, a rationalist model may in fact provide little clear direction for deriving testable hypotheses. I want to argue, further, that an approach to intertemporal policy choice based on assumptions of bounded rationality can offer hypotheses that are both more brittle than those suggested by a rationalist model and far better grounded in the empirical study of decision making. In the remainder of this paper, I will identify three promising routes that theorizing about the formation of intertemporal policy preferences might take. What these theoretical responses have in common is a conception of the problem of decision making under uncertainty as a problem of the allocation of a scarce stock of *attention*. Before even engaging in causal inferences about consequences, voters and elite policy makers must decide to *which* of many potential long-term outcomes they ought to attend.

One strand of literature directs us to the role of salient *signals* in the political and social environment in drawing actors' attention to distant outcomes. A second alternative considered here highlights the causal importance of the stable ideational *frames* through which political actors view the

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conditions across jurisdictions (e.g., culture, institutions, and other policy structures) mean that any gain in inferential leverage will usually be extremely modest.

policy world. The third theoretical response, suggested by work on cognition, would conceive of preference formation as a process of *lesson drawing* from recent experience. Each suggests ways in which we may able to generate clear – and empirically justifiable – predictions about intertemporal policy choice based on assumptions of bounded rationality. I do not attempt here to specify those propositions here, but rather to trace the theoretical outlines of three modes of explanation that have already proved their explanatory usefulness in other, related domains.

Informational signals. The literatures on agenda setting and information in politics suggest the existence of informational triggers that occasionally generate vivid and easily understood signals about policy consequences. For the most part, these literatures are insensitive to the timing of the consequences about which information is being generated, and are often implicitly focused on short-term problems and policy effects. But the logic of attention and information-production that they suggest points toward mechanisms that may also alert electorates and elites to the long-term implications of policy choices.

Scholars have identified the importance of signals both exogenous to and endogenous to the policy making process itself. John Kingdon has highlighted the role of dramatic "focusing events" and crises – such as plane crashes or company bankruptcies – in turning the public's attention to social problems that would otherwise persist unnoticed.[53] Focusing events aggregate and concentrate outcomes that are otherwise highly diffused while providing vivid, emotionally interesting imagery with which voters can associate a policy problem.

Kingdon's discussion deals mostly with the way in which today's dramatic crises attract attention to *current* problems. Nevertheless, today's crises – by raising the profile of a policy field, public program, or kind of social outcome – may also coalesce attention around similar slowly evolving and distant problems that would otherwise draw little notice. Further, many of the current problems to which focusing events direct attention may only be tractable through long-term investment. Just as a plane crash may turn the public eye toward existing defects in air travel safety, a summer of unusually destructive

[53] John W. Kingdon, *Agendas, Alternatives, and Public Policies* (New York: Harper/Collins, 1984), 94-100.

hurricane activity may turn policy makers' and voters' attention to longer-term processes of climate change. Similarly, nuclear plant disasters may raise the salience of distant dangers of atomic-waste storage, a summer of suffocating smog may turn minds to long-term pollution hazards, and a rival state's satellite launch can draw attention to domestic under-investments in scientific skills.

Students of "policy feedback" have identified mechanisms through which public policies themselves can produce highly salient focusing events.[54] The structure of public programs, these scholars contend, can be critical in shaping the kind of information voters have available to them about the consequences of policy choices. In some cases, policy-generated information can take dramatic form. Paul Pierson and Eric Patashnik have each argued, for instance, that public programs financed out of a "trust fund" can distill complex information about distant fiscal outcomes into easily understood signals to which the media and policy makers attribute a high degree of authority. These signals can be particularly powerful where a program's trust fund relies solely on its own dedicated and finite revenue stream – like, for instance, the U.S. Social Security system's complete reliance on a dedicated payroll tax. Unlike programs financed through annual appropriations out of general revenues, programs with their own source of revenues can technically become insolvent, providing an intuitively simple yardstick against which voters can assess expected future financial developments.[55] Much like exogenous focusing events, programmatic signals of future "bankruptcy" can act as loud alarm bells, making long-term policy effects salient to individuals normally unmindful of policy mechanics.

We thus might theorize the politics of the long term as a process driven by the salience and clarity of informational signals about long-term outcomes. In particular, it would lead us to think of decision-making about the long term as a dynamic of problem identification. Loud and vivid signals of future trouble, by generating interest among inattentive but prospectively oriented voters, can turn long-term problems into a focus of short-term electoral competition. Yet, such signals can also help politicians

[54] Kingdon also discusses the role of feedback from policy implementation in the process of problem definition. His discussion, however, focuses on mechanisms through which policy elites come to notice problems rather than the dramatic events that jar voters. Ibid., 100-3.
[55] Eric Patashnik, *Putting Trust in the U.S. Budget: Federal Trust Funds and the Politics of Commitment* (New York: Cambridge University Press, 2000), 33-4; Pierson, *Dismantling the Welfare State?*

select from among the countless possible distant social problems on which they might take policy action, given sufficient electoral insulation to do so. Determinate predictions might emerge from a careful specification of the processes through which long-term problems may generate signals and of the informational properties of such signals that shape their salience to voters and to elites.

Ideational frames. Ideas can perform a critical function of simplification for political actors. The literature on ideas in politics of the last decade or so has produced a diverse range of ideational typologies that do not map neatly onto one another. To be clear, I will use the term "ideational frame" here to refer to a stable and integrated set of political ideas, shared within a political group or community, that define the general features of a desirable course of state action. As Erik Bleich explains, reflecting the tradition of frame analysis, "A frame is a set of cognitive and moral maps that orients an actor within a policy sphere."[56] A frame specifies the *problems* and *goals* toward which policy ought to be addressed as well as the kinds of *tools* that it should employ.[57] As I use the term, it means something very close to what Denzau and North refer to as an "ideology" and what Peter Hall calls a "policy paradigm."

Arguments about the role of frames, ideology, and paradigms in shaping political choice abound in political science, in literatures on both voters and elite decision makers.[58] If such organizing ideas shape policy preferences across a wide range of issues, actors ought to lean even more heavily on their preconceived mental maps when confronted with the causal complexity of the long term. By combining

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[56] Erik Bleich, "Integrating Ideas into Policy-Making Analysis: Frames and Race Policies in Britain and France," *Comparative Political Studies* 35, no. 9 (2002): 1063.

[57] Denzau and North, "Shared Mental Models: Ideologies and Institutions," 15. Peter A. Hall, "Policy Paradigms, Social Learning, and the State," *Comparative Politics* 25, no. 3 (1993): 279. Or to put this in terms of Goldstein and Keohane's taxonomy of ideas, ideologies combine "causal" and "principled" beliefs. Judith Goldstein and Robert O. Keohane, "Ideas and Foreign Policy: An Analytical Framework," in *Ideas and Foreign Policy: Beliefs, Institutions, and Political Change*, ed. Judith Goldstein and Robert O. Keohane (Ithaca, N.Y.: Cornell University Press, 1993), 9-10.

[58] To take just a few examples, see Bleich, "Integrating Ideas into Policy-Making Analysis: Frames and Race Policies in Britain and France."; Mark Blyth, *Great Transformations: Economic Ideas and Institutional Change in the Twentieth Century* (New York: Cambridge University Press, 2002); Hall, "Policy Paradigms, Social Learning, and the State."; Hugh Heclo, *Modern Social Politics in Britain and Sweden: From Relief to Income Maintenance* (New Haven: Yale University Press, 1974); Margaret Weir, "Ideas and Politics: The Acceptance of Keynesianism in Britain and the United States," in *The Political Power of Economic Ideas: Keynesianism Across Nations*, ed. Peter A. Hall (Princeton: Princeton University Press, 1989). **Citations on voting and ideology to come.**

generalized positive propositions about the *consequences* of particular policy instruments with normative specifications of *goals,* frames allow actors radically to reduce the complexity of policy choices under uncertainty. Applying a generalized frame to particular instances allows actors, with minimal cognitive effort, both to restrict their attention to a narrow range of possible social outcomes and to form beliefs about how alternative policy options will shape those outcomes.

Of course, most prominent political frames are not *explicitly* inter-temporal in nature. That is, they do not usually ascribe value to a particular allocation of costs and benefits over time or to a temporal orientation of policy; their dictates tend to be orthogonal to the temporal dimension of choice.[59] Nevertheless, they could allow actors to evaluate proposals for policy investment in two ways. First, by prioritizing certain social outcomes over others, they could tell actors *which* social goods are worth investing in. Second, by privileging certain policy *instruments* over others, they have strong implications for the desirability of particular mechanisms for inter-temporal allocation.

Laissez-faire liberalism, for instance, tells its bearers little about how they should weigh future against current consumption, or even about whether government policy should be oriented toward maximizing long-term welfare or immediate consumption. Nevertheless, within particular policy contexts, the frame will have clear implications for inter-temporal choices. In some contexts, the concrete policy leanings of economic liberalism will be highly investment-oriented: we might think, for instance, of the bitter medicine of structural reform that mainstream economists prescribed for the transition states of Central and Eastern Europe, promising long-term prosperity for short-term pain. Where the mechanism of investment involves the state's getting out of the way, economic liberals will tend to view its long-term consequences in favorable terms. At the same time, economic liberals are likely to view

[59] This is also one likely reason why political *analysts* have tended to ignore the temporal dimension of politics. Of course, some ideologies *are* explicitly inter-temporal. Forms of environmentalism or fiscal conservatism, for instance, that stress intergenerational equity place a high priority on *long-term* outcomes. Also, occasionally, an ideology will prescribe a particular temporal *sequence* of cost-imposition and benefit-delivery. I am thinking principally of Keynesianism and its directive to finance ministers to borrow and spend their way through economic downturns and to tighten the fiscal screws as the economy begins to overheat. Counter-cyclical demand management, however, is actually a claim about the proper alignment of economic conditions and macro-economic policies. Its dictates have *implications* for the temporal ordering of costs and benefits, but it does not assign any innate value to any particular inter-temporal allocation of welfare.

with suspicion policy investments that rely on direct state production of economic goods, like housing or skills. Moreover, economic liberalism will tend to focus its adherents' attention on certain social outcomes at the expense of others, leaving them more likely to favor investments in higher economic growth than in lower income inequality or environmental protection.

To the extent that such frames do guide actors' selection of outcomes to attend to and mechanisms to favor, the impact on intertemporal policy choice could be enormous. Thus, a second route for theory development would be to examine how actors apply pre-existing ideational commitments to resolving the intertemporal policy dilemmas they confront. Deriving clear predictions would require identifying – perhaps more precisely than existing studies have done – how actors select from among the frames available to them and how they connect generalized ideational templates to the specific choices that they confront.

Lesson-drawing. Alternatively, as students of international relations and public opinion have increasingly done, we might turn to the field of psychology for a rich set of insights into how individuals draw inferences under uncertainty. As cognitive and social psychologists have established, individuals facing uncertainty employ a range of heuristics in processing information to arrive at judgments.[60] Rather than carrying out calculations consistent with the laws of probability and substantive rationality, they employ procedures that economize on information and effort. For example, in judging whether process B will generate event A, individuals tend to rely on a "representativeness" heuristic: they will assess the probability of event A as higher, the more closely A seems representative of, or resembles, B while ignoring much information logically relevant to judging probabilities such as prior probabilities and

[60] For an overview, see Robyn M. Dawes, "Behavioral Decision Making and Judgment," in *The Handbook of Social Psychology*, ed. Daniel T. Gilbert, Susan T. Fiske, and Gardner Lindzey (Boston: McGraw-Hill, 1998).; chapters in Daniel Kahneman, Paul Slovic, and Amos Tversky, eds., *Judgment Under Uncertainty: Heuristics and Biases* (New York: Cambridge University Press, 1982); Paul Slovic, Baruch Fischhoff, and Sarah Lichtenstein, "Cognitive Processes and Societal Risk Taking," in *Cognition and Social Behavior*, ed. John S. Carroll and John W. Payne (Hillsdale, N.J.: Lawrence Erlbaum Associates, 1976). See also Yuen Foong Khong, *Analogies at War: Korea, Munich, Dien Bien Phu, and the Vietnam Decisions of 1965* (Princeton, N.J.: Princeton University Press, 1992), 35-7, 212-3.

sample size.[61] Crucially, much evidence indicates that experienced and highly trained decision makers, including scientists and statisticians, employ many of the same shortcuts as lay subjects, and that biases often persist even under high levels of motivation.[62]

One of the shortcuts that has received the most sustained empirical support is the "availability" heuristic. A recent dissertation on cognition and risk concluded that availability "is one finding from behavioral economics that appears entirely consistent with the data."[63] When individuals employ the availability shortcut, they judge the frequency or probability of an event by the ease with which instances or occurrences can be brought to mind. For instance, one might judge the likelihood of divorce among middle-aged couples by recalling occurrences of divorce among one's middle-aged acquaintances. Similarly, people will judge the riskiness of an adventurous expedition by the ease with which they can vividly imagine many threatening contingencies. In the paper that first described the heuristic, Amos Tversky and Daniel Kahneman presented results of ten clinical experiments demonstrating the frequent use of this heuristic in contradiction of the principles of probability theory.[64] Since this seminal work, more recent studies have provided persuasive evidence of the effect in controlled laboratory settings.[65]

Other studies have demonstrated the use of the availability heuristic by decision makers in natural, high-stakes settings. In particular, decision makers show a tendency to overestimate the likelihood of outcomes that are easily imaginable because similar events have occurred *in the recent past.* In a classic study of the behavior of residents on flood plains, Kates found that individuals with a strong

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[61] Amos Tversky and Daniel Kahneman, "Judgment under Uncertainty: Heuristics and Biases," *Science* 185 (New Series), no. 4157 (1974).
[62] Hillel J. Einhorn and Robin M. Hogarth, "Behavioral Decision Theory: Processes of Judgment and Choice," in *Decision Making: Descriptive, Normative, and Prescriptive Interactions*, ed. David E. Bell, Howard Raiffa, and Amos Tversky (New York: Cambridge University Press, 1988), 117; Slovic, Fischhoff, and Lichtenstein, "Cognitive Processes and Societal Risk Taking," 173.
[63] Jacob E. Gersen, "Strategy and Cognition: Regulating Catastrophic Risk" (University of Chicago, 2001), 57.
[64] Amos Tversky and Daniel Kahneman, "Availability: A Heuristic for Judging Frequency and Probability," *Cognitive Psychology* 5 (1973).
[65] For a review of some of this literature, see Leigh Ann Vaughn and Gifford Weary, "Roles of the Availability of Explanations, Feelings of Ease, and Dysphoria in Judgments About the Future," *Journal of Social and Clinical Psychology* 21, no. 6 (2002). Some of the literature distinguishes between reliance on ease of recall, which it refers to as the availability heuristic, and ease of imagining, which it refers to as the simulation heuristic. I refer here to both, as Kahneman and Tversky originally did, as the availability heuristic.

incentive to arrive at accurate assessments about disastrous potential outcomes systematically based judgments about the future on experience from their recent past:

> A major limitation to human ability to use improved flood hazard information is a basic reliance on experience. Men on flood plains appear very much to be prisoners of their experience….Recently experienced floods appear to set an upward bound to the size of loss with which managers believe they ought to be concerned.[66]

Individuals demonstrated an "inability to conceptualize floods that had never occurred."[67] More recently, Timur Kuran and Cass Sunstein have argued that a similar availability bias pervades public policy making directed at the regulation of risk.[68] Jacob Gersen, in a study of natural disaster policies, provides systematic quantitative evidence of the use of availability shortcuts in individuals' evaluations of the probabilities of disaster.[69] And in the context of national-security policy, Yuen Foong Khong demonstrates through a detailed tracing of decision making that U.S. leaders weighing options in Vietnam relied disproportionately on evidence from *recent* historical events in forming beliefs about the outcomes of alternative courses of action.[70]

We can immediately see how such a shortcut might allow voters and politicians to cope with the causal complexity of the long term. The availability heuristic allows actors to cut two inferential corners. First, they can rely solely on *empirical evidence* from the world of politics and policy making. This is no trivial shortcut. Rather than spreading their attention across *all* outcomes or contextual conditions that deductive reasoning could uncover as hypothetically possible, they can restrict their attention to those causal possibilities actually observed in similar cases and to those contextual conditions actually experienced. They need not conceptualize floods that have never occurred. Second, in their search for empirical evidence, actors need not take into account information about *all* historical events and conditions observable in the world. Instead, they can restrict their attention to the most recent and most

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[66] Robert W. Kates, "Hazard and Choice Perception in Flood Plain Management," Department of Geography Research Paper No. 78 (Chicago: University of Chicago, 1962) 140. Quoted in Slovic, Fischhoff, and Lichtenstein, "Cognitive Processes and Societal Risk Taking," 173.
[67] Kates, "Hazard and Choice Perception in Flood Plain Management," 88. Quoted in Slovic, Fischhoff, and Lichtenstein, "Cognitive Processes and Societal Risk Taking," 173.
[68] Timur Kuran and Cass R. Sunstein, "Availability Cascades and Risk Regulation," *Stanford Law Review* 51 (1999).
[69] Gersen, "Strategy and Cognition"."
[70] Khong, *Analogies at War: Korea, Munich, Dien Bien Phu, and the Vietnam Decisions of 1965*.

local occurrences and background conditions. Implicitly, they can make the radically simplifying assumptions that (1.) the consequences of future policy endeavors will resemble those of similar recent and local endeavors and (2.) the future political, economic, and social context within which policy will operate will resemble the current context.

To choose but one example to illustrate the point: In the 1950s, the West German federal government was considering whether to adopt a policy investment in the public pension system. Concretely, there were deciding whether to levy sufficiently high contribution rates to amass a large fund that could help pay for a growing future pension burden without raising premiums. In considering the long-term consequences of this option, ministers and their bureaucratic advisers confronted an enormous range of potential outcomes – from the successful stabilization of future contribution costs to the raiding of the fund for other purposes by a future cash-hungry government. Analysis of internal deliberations reveals that decision makers focused substantial attention on the disastrous results of recent attempts to accumulate a fund in the German pension scheme. Both times – during the Weimar era and during the Nazi period – the value of the accumulated funds had been lost to inflation, and, in the Nazi case, had been drawn upon by the government to finance rearmament. Policy makers fastened tightly onto the dangers of inflation and fund diversion, dangers readily available to recall, and opted against a major policy investment.

Given the limited range of causal possibilities and background conditions that can have recently and locally occurred, this heuristic is likely to produce deliberative processes and policy choices divergent from those that would be generated by the dictates of substantive rationality. While focusing on dangers available to recall, West German policy makers paid little attention to the substantial risks of *foregoing* fund accumulation, such as the ever-increasing contribution rates that a system with no fund might encounter – a threat that in fact would materialize in particularly nasty form by the 1990s. This danger of a cost explosion was plausibly every bit as worrisome as the outcomes upon which decision makers focused. But it was a threat that policy makers in the 1950s had not yet *empirically observed* in any dramatic form: the German scheme had mostly been operated with a fund since its establishment in the

1880s. A threat not yet experienced in the domestic policy environment was one weakly available to recall, and it played only a modest role in the decision making process.[71]

The availability shortcut provides a mere caricature of decision makers' complex cognitive processes, and it describes only one of many possible heuristics that decision makers might employ. But it suggests the possible usefulness of adapting models empirically grounded in studies of cognition to political decision-making about the long term. Most importantly, accounts of the cognitive mechanisms that individuals employ under uncertainty can identify the particular kinds of data that they are likely to extract from the world and the inferences they are likely to draw from those data. A useful set of cognitive insights would likely carefully distinguish between the shortcuts used by naïve voters and those used by sophisticated elites. Properly differentiated, the study of heuristics could tell us a great deal about how actors extract causal beliefs from the complexity of the long term.

Conclusion

The aims of this paper have been to identify a strikingly under-examined empirical puzzle in the politics of policy making – one with enormous normative importance – and to point toward a fruitful avenue for theory development about its dynamics. A cross-national survey of outcomes in policy fields with a strong intertemporal component suggests wide variation in the willingness of elected governments to invest in the future at short-term cost. This variation is both socially significant and theoretically perplexing in light of our common intuitions about the intrinsic myopia of democratic politics.

Rarely, however, have analysts of the politics of public policy even conceived of governments' policy decisions in terms of the social tradeoffs that they make over time. As a result, not only have scholars tended to ignore policy variation that lies along the temporal dimension, but they have also

[71] Hans Günter Hockerts, *Sozialpolitische Entscheidungen im Nachkriegsdeutschland* (Stuttgart: Klett-Cotta, 1980); Alan M. Jacobs, "Governing for the Long Term: Democratic Politics and Policy Investment" (Harvard University, 2004); Philip Manow, "Kapitaldeckung oder Umlage: Zur Geschichte einer anhaltenden Debatte," in *Geschichte und Gegenwart der Rentenversicherung in Deutschland: Beiträge zur Entstehung, Entwicklung und vergleichenden Einordnung der Alterssicherung im Sozialstaat*, ed. Stefan Fisch and Ulrike Haerendel (Berlin: Duncker & Humblot, 2000).

focused little on the dramatic intertemporal differences among those policy outcomes that they *do* seek to compare and to explain. If the timing of policy consequences matters to participants in the policy process – from voters to elected officials – then a narrow focus on the synchronic distribution of benefits and costs may have major analytical consequences: it likely leads us to neglect important causal dynamics driving the outcomes under examination.

Yet, if political scientists have devoted little attention to the study of intertemporal policy choice *per se*, the discipline has, through the examination of analogous political phenomena, developed powerful causal insights that can be usefully adapted to the problem of policy investment. One of the most common models of the policy making process in a democracy – as driven by reelection-seeking politicians beholden to retrospective voters – does not get us far in explaining variation in intertemporal policy choices. Yet, empirical findings drawn from the study of voting, agenda setting, and the politics of blame avoidance suggest at least two highly plausible departures from the retrospective-electoral view. In particular, (i.) voters may take into account information about post-election consequences in choosing among parties and candidates; and (ii.) politicians may often enjoy a range of electoral and informational conditions that allow them to escape punishment at the polls for the short-term costs of their policy decisions, allowing them to pursue investments in their own long-range social goals.[72]

Such theoretical moves usefully bring the long term directly into the calculations of powerful decision makers, allowing us to generate predictions of policy investment. But these lines of argument, in turn, confront us with a deep explanatory problem: in the face of the uncertainty of the future, how do investment-oriented voters and politicians figure out *which* policy options will further their long-term goals? Rational-choice theory provides a ready-made approach to modeling decision making under

[72] We could depart from the baseline model in other ways, too, that would produce predictions of variation in intertemporal policy choices. Most obviously, we might assume that politicians respond not only to voters but also to *organized interests.* Interest group leaders, with the expertise and time to devote to policy analysis, are far more likely to attend to the longer-term implications of policy choice than are ordinary voters. If politicians are beholden to interest groups, then governments may face an additional set of political incentives to pursue long-term investments that serve their welfare. Under this assumption, too, however, explanations must still be based on some understanding of how group leaders figure out, under massive uncertainty, which policy options are in their members' (or their own) long-term interests. The argument pursued in this paper should thus apply with equal force to explanations of policy investment focused on the demands of organized interests.

uncertainty, based on the maximization of expected utility. But, as I have argued, decision-making about the long term is a phenomenon extraordinarily poorly suited to these analytical tools, in both methodological and theoretical terms. The nature of the uncertainty that actors face, about both social and political contingencies over long stretches of time, is so radical as to preclude the construction of a meaningful test of rationalist propositions. Moreover, evidence about individuals' information-processing capacities and decision-making patterns provides weak empirical grounding for rationalist assumptions in this domain.

I have contended that abandoning the assumption of comprehensive calculation leaves us better able to produce determinate theoretical predictions about the kinds intertemporal choices that voters and politicians are likely to make. I have not attempted to derive a specific set of hypotheses here, but rather to identify strategies of explanation based on a premise of bounded rationality that have borne fruit in the study of analogous phenomena. We might theorize the politics of the long term as driven by the nature of vivid informational signals about future social problems, by the dominant frames through which actors view the policy world, or by the cognitive shortcuts they routinely use to process overwhelming amounts of information.

There is a larger analytical implication of the argument made here for the study of the politics of public policy. The study of policy choice has benefited enormously from the application of stylized policy typologies – like Theodore Lowi's, Wilson's, or Esping-Andersen's[73] – that allow us to simply describe and categorize the complex policy outcomes that we seek to explain. Such typologies have also been a font of plausible hypotheses about the kinds of politics that will be associated with particular kinds of policy. Yet, reliance on ready-made templates is accompanied by a serious danger: that analysts will take a fixed and constricted view of what the important and intriguing dimensions of policy variation are. To the extent that political actors care about what policy *does*, our explanations of their choices can only be as accurate as *our* understanding of what policy does, and of how policy choices differ across our cases

[73] Esping-Andersen, *The Three Worlds of Welfare Capitalism;* Theodore J. Lowi, "American Business, Public Policy, Case-Studies, and Political Theory," *World Politics* 16, no. 4 (1964); Wilson, "The Politics of Regulation."

in what they do. In short, too much focus on our causal factors and too little attention to our dependent variable may lead us to improbable or incomplete explanations. To be good explainers of policy choice, we must also be careful and creative policy analysts.