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Preferences, Promises, and the Politics of Entitlement

Paul M. Romer

7.1 Prologue

In 1953, the U.S. Chamber of Commerce proposed a major expansion in the coverage of the Old Age and Survivors Insurance Program—the program that we now think of as Social Security. There was much room for expansion because only 55% of the workforce was covered when the Social Security Act was passed in 1935. Legislation enacted in 1950 had already expanded the coverage of the program. It brought many additional workers into the Social Security system and substantially reduced the number of quarters of covered employment that were necessary to qualify for retirement benefits. However, these changes came too late for many people. Many workers had retired before 1950. Others died without working long enough to qualify, leaving widows who were not eligible for survivors insurance. Under the Social Security Act, these unfortunate people were eligible only for Old Age Assistance, the less-generous, means-tested welfare program administered by the states.

Under the chamber's proposal, everyone over the age of sixty-five would immediately become eligible for retirement benefits. The Old Age Assistance program would be terminated. Retirement benefits would continue to be financed on a pay-as-you-go basis, using a payroll tax. All remaining workers who had not yet been brought into the Social Security system would be subjected to the payroll tax, but the tax rate would still have to be increased to pay for the expanded system of benefits.

From the perspective of the 1990s, it seems odd that a proposal for expanded social spending should come from a major business lobby. The political response this proposal provoked is equally surprising. Conservative Republicans

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in Congress took the initiative in promoting the chamber's plan. Daniel Reed, the conservative chairman of the Republican-controlled Ways and Means Committee, called for fundamental reexamination of the system. Carl Curtis, a Republican from Nebraska who had been critical of the evolving Social Security system, chaired the subcommittee hearings on the chamber's proposal and took the lead in promoting it in Congress. After lengthy consideration, the liberal Republicans in control of the Department of Health, Education, and Welfare in the new Eisenhower administration decided not to support it. Nelson Rockefeller, the undersecretary responsible for legislative proposals, was generally supportive of the existing Social Security system and did not want to propose any major changes to its structure. Senior citizens, even those who would become eligible for retirement benefits under the chamber's plan, did not offer any organized support for the plan.

Program executives in the Social Security Administration reacted with alarm and outrage to the hearings conducted by Curtis. As government employees, and especially as holdovers from the previous Democratic administration, they were constrained from openly attacking the merits of the proposal and the integrity of the members of Congress who supported it. However, they did feed analyses and denunciations to sympathetic policy analysts on the staff of the American Federation of Labor (AFL), who passed them on to the Washington press corps. Because the Eisenhower administration did not support the chamber's plan and because opponents were able to characterize it as a dangerous assault by enemies of the Social Security system, it never received serious consideration in Congress.

Five years later, in 1958, internal estimates prepared by the Research Department of the Social Security Administration showed that 35% of the people over age sixty-five still were not eligible for Social Security retirement benefits (Cates 1983, 72). Large numbers of them had no private source of income and refused to accept public assistance—to “go on the dole.” They lived out their lives in circumstances of extreme poverty. Ultimately, the Social Security system did succeed in reducing poverty among the elderly, but demographics were an important part of the story. The poverty rate fell as the uncovered elderly died.¹

7.2 Introduction and Summary of the Argument

The arguments in this paper address three types of questions. The most specific question, and the one that is easiest to answer, is why the different actors in the Social Security debate of the 1950s chose such surprising political strategies. The answer to this narrow question raises a second question that is broader and more troubling for economists, one that goes to the heart of any

1. See Derthick (1979, chap. 6) for details of the chamber's proposal and the debate it spawned. See Cates (1983, chaps. 3 and 5) for a critical evaluation of the treatment of the uncovered elderly.

analysis of political economy: What determines why and how people vote? This second question is important in its own right, but it is raised here with a view toward an even deeper and more controversial third question: How can economists and like-minded social scientists begin to address the effects that values have on policy choices and that policies have on values?

The logic behind the liberal and conservative strategies during the 1950s is clear from the historical record. Both sides in the fight over the Social Security system adopted positions that seemed to run counter to their natural interests, because they were actually fighting over something far more important than expanding benefits for the uncovered elderly. They made important tactical concessions to win the war over the public's sense of entitlement. This explanation covers the behavior of the proponents and critics of the chamber's plan, but it leaves open the question of why the elderly, especially the uncovered elderly, were absent from the debate. Observing that they were not organized then is not an explanation. It is a description of the fact that needs to be explained. We will return to this issue in the conclusion.

Conservative critics of the Social Security system were willing to accept higher current payments in hopes of limiting future growth in payments. Specifically, they were willing to accept an expansion of the Social Security program in exchange for structural changes that would keep voters from treating Social Security retirement benefits as an entitlement. The chamber's plan would dispense with the carefully crafted imagery of individual contributions and personal retirement accounts that the architects of the Social Security system had been developing for fifteen years. It would remove all pretense that there was any link between taxes paid and benefits received. It would lay bare the economic essence of the program, showing that it was a system of transfers from the young to the old. No voter believes that paying income taxes entitles the payer to cash welfare benefits. If it had been adopted, the chamber's plan would have given payroll taxes and government payments to the elderly the same political status as income taxes and welfare payments.

On the other side, the proponents of the Social Security system sacrificed the well-being of the uncovered elderly to create a system of government transfers that recipients would regard as an entitlement. Program administrators in the Social Security Administration reacted with anger and indignation to the hearing chaired by Curtis because his goal was to demolish the imagery that was at the heart of the program. He wanted to show that the previous administration had intentionally misled the public about the nature of the program. The sacrifice of the uncovered elderly was just one of several tactical concessions advocates of the system made as part of a long-run strategy for convincing people that they were entitled to payments from the government. A similar concession came in the decision to finance Social Security payments with a regressive payroll tax. President Roosevelt personally vetoed early proposals that retirement benefits be financed partially from general tax revenues. In a private remark, he later gave one of the most candid statements of the logic

behind his strategy. When a visitor to the White House complained about the regressivity of the payroll tax, he explained: "I guess you are right about the economics, but those taxes were never a problem of economics. They are politics all the way through. We put those payroll contributions there so as to give the contributors a legal, moral, and political right to collect their pensions. . . . With those taxes in there, no damn politician can ever scrap my social security program" (quoted in Derthick 1979, 230).

The evidence presented in section 7.6 documents the claim that the fundamental issue in the fight over Social Security in the 1950s—in fact, the fundamental issue in the construction of the entire Social Security program—was the notion of entitlement. Both sides recognized the importance of the implicit promises that were bundled with the taxes and transfers, although conservative critics of the program were arguably slower to catch on to the importance of this issue. In light of subsequent political developments, Roosevelt and his allies in the Social Security Administration decisively won the war and imbued the Social Security program with a strong sense of entitlement. At a time when even the most radical budget cutters in Congress are afraid to even mention Social Security, it is hard to dispute the accuracy of Roosevelt's implicit model of how the political process works.

This explanation leads inexorably to the second question about the motivations that determine whether and how people vote. If the notion of entitlement is such an important political force, something important is missing from formal economic models of voting. Most conventional models of political economy summarize individual behavior with the assumption that people prefer more wealth to less. They also assume that a person will vote for a policy that would increase the voter's wealth.² The first assumption generally passes without comment. The second assumption is highly problematic, as many economists and political scientists have noted. But setting aside the well-known difficulty of explaining why anyone bothers to vote when the chances that one vote will matter are so small, economists are still faced with the awkward fact that their style of analysis permits no distinction between government payments that take the form of welfare checks and payments that take the form of Social Security benefits; that is, the standard model cannot distinguish between transfers and entitlements.

The models suggest that, everything else equal, voters will prefer larger payments from the government to smaller payments. From the individual's point of view, it makes no difference whether these payments are labeled "earned benefits" or "welfare payments." It makes no difference whether the voter has paid payroll taxes or not, or whether government officials made any promises about benefit payments when they collected those payroll taxes. As a result,

2. For a presentation of models of this type as applied to the analysis of voting on Social Security, see the model in Boadway and Wildasin (1989) and the models from other papers that are discussed there.

conventional models cannot accommodate the concept of entitlement, the issue that was the paramount concern of both the proponents and critics of the evolving Social Security system.

In a model of repeated interaction between two people, concepts such as reputation and punishment strategies can be invoked to give meaning to everyday concepts such as a promise or an entitlement. But in situations in which millions of voters interact with a small number of elected officials, it makes no sense to assert that any individual voter sets out to establish a reputation for toughness or to punish bad behavior by the government.

In an effort to go beyond the limitations of existing models of political economy, section 7.3 starts by briefly summarizing some of the early discussion in political science about formal models of voting. It recapitulates the conclusion that emerges from this literature—that economists and political scientists must modify the assumption that maximizing wealth is a good summary description of the motivation of an individual voter. Stated more explicitly, we have to go beyond the assumption that conventional consumption goods are the only arguments in a person's utility function and allow the act of voting to be a consumption activity that provides utility. As many political scientists have emphasized (see, for example, Aldrich 1993 and Jackman 1993), this does not signal a retreat from rational-choice models. It is merely a refinement of the objective function that a rational voter seeks to maximize.

Section 7.4 shows how an extended model of individual preferences can be used to formalize Roosevelt's implicit model of political dynamics. It shows that there are good reasons to expect that people will care about promises made to them by others and that they will be willing to incur a cost to punish someone who has made and broken a promise. The act of making, then breaking, a promise induces a taste for punishing the offender.

A desire to express anger by voting against a politician can motivate some people to go to the polls and can influence how they vote, but there are many other factors that motivate voting. Someone may feel a sense of duty or may enjoy the satisfaction that comes from demonstrating to others that one is a good citizen. Nevertheless, if anger is a potential motivation, it may be a particularly important one to study because it can be manipulated by politicians who behave strategically.

If people are angrier when a promise has been broken, it is possible to give content to the notion of an entitlement. An entitlement is a set of transfer payments that are bundled together with an explicit, credible promise from the government about the duration and level of future payments. If a politician such as Roosevelt can create an entitlement for a large number of people, this decisively changes the subsequent political dynamics. If a successor reduces the payments under the entitlement program, this will induce anger and a taste for retribution in large numbers of voters. These voters will act on this taste by voting against the successor.

The quotation from Roosevelt cited above, together with the actions of his

administration documented in section 7.6, provides direct support for the claim that creating a sense of entitlement was a paramount concern for the people who developed the Social Security system. Under the assumption that they knew what they were doing, their actions offer indirect evidence that the hypothesized form of preferences with a built-in taste for punishment is correct. But there is also direct evidence that bears on the nature of preferences. Section 7.5 points to evidence ranging from the behavior of animals, to experimental economics, to recent political developments, all of which support the notion that something like anger is an important source of motivation. The laboratory experiments are particularly relevant because they decisively refute the claim that statements about preferences cannot have scientific content.

The questions addressed here in the context of the Social Security program are directly relevant for other social policy issues. A positive analysis of the policies that governments have adopted, or might adopt, in areas such as child care, education, health care, and long-term care must take account of the fact that government policies are outcomes from a political process. If we cannot understand the forces that have driven the politics of the relatively well established and relatively well studied Social Security program, there is little hope that we will be able to understand the politics of new areas of social policy.

7.3 Voting and Preferences

The probability that one vote will be decisive is very low in elections with realistic numbers of voters. Suppose that the number of people who will vote is equal to $2n + 1$. Fix a particular voter, and assume that all other voters will vote in favor of a particular candidate with probability q . For simplicity, assume that this voter's vote is decisive only in the case of a tie. The probability that the other $2n$ voters will split evenly between the two alternatives is

$$\Pi = \frac{2n!}{n!^2} q^n (1 - q)^n.$$

For large values of n and values of q that differ from one-half, this probability is very small.

The largest values for Π arise in the case where q is equal to one-half, so that all other voters are equally likely to vote for or against this voter's preferred candidate. Consider an election for a seat in the U.S. Senate in which the total number of other voters, $2n$, is 2 million people. The probability of a tie is about .0004. In a presidential election in which 50 million people vote, the probability is reduced to .0001. If q differs from one-half, the values for Π are even smaller. Suppose that a voter has a prior probability distribution on the value of q that is uniform over the interval (.4, .6). Ex ante, the outcome in the election is still a toss-up, but now there is a reasonable chance that the actual vote will not be close. In this case, the values for Π fall by a factor of more than

one hundred. (See Brennan and Buchanan 1984 for additional calculations along these lines.)

Political theorists have long understood the problem that this poses for simple theories of voter participation. Let $U(y)$ denote an indirect utility function defined over the disposable income y that is available to the consumer after all taxes or transfers from the government. If people maximize $U(y)$ when they make their decision about whether to vote, even a small cost from voting—something like \$1—will be orders of magnitude larger than the expected increase in y that comes from voting for the candidate who offers this voter the best package of taxes and transfers.

Starting at least with Downs (1957), formal theorists have argued that there must be other components to the utility function that influence the decision to vote. In the terminology used here, they rely on an extended preference model, a model that lets preferences depend on arguments other than the standard consumption goods that are implicit in the function $U(y)$. Implicitly or explicitly, they proceed along the following lines: Let x denote the decision about whether to go to the polling station and $W(x)$ denote the utility from voting. If voters maximize $U(y) + W(x)$, then the small cost of voting can be offset by the utility associated with this act.

Riker and Ordeshook (1968, 1973) formalized this additional term in the utility function and gave it empirical content. They suggested, for example, that a voter may care about the size of the margin by which a candidate wins. They use this observation to explain why, for example, many people bothered to vote for Lyndon Johnson in his landslide victory over Barry Goldwater. They also acknowledge that other aspects of preferences like a sense of duty or a strong sense of affiliation with a particular political party may contribute to the direct satisfaction that a person gets from the act of voting. They provide evidence that their augmented model is consistent with the evidence, but as Barry (1970) notes, almost all of the explanatory power comes from the $W(x)$ term in the utility function.

Fiorina (1976) takes this kind of analysis one step further. In his analysis, the utility for a representative voter may be written as $U(y) + W(a, v)$. The variable a captures the party affiliation of the voter. Suppose that the absolute value of a represents the intensity of the identification and the sign represents the party, positive for Democrat and negative for Republican. Let v denote the candidate for whom the voter votes, with $v = 1$ representing a vote for the Democratic candidate and $v = -1$ a vote for the Republican.

The act of going to the polling station, x , and the candidate for whom the voter votes, v , both have an effect (albeit a very small one) on the expected wealth of the consumer. Fiorina refers to these as the instrumental aspects of voting. He calls the effects that a and v have as arguments of W the expressive aspects of voting. He treats the party affiliation variable a as a state variable that is determined by the voter's history, one that is given at the time of an election. The crucial assumption in Fiorina's analysis of participation is that

there is an interaction between a , and v in the function W , a positive cross-partial derivative. If v and a line up and if a is large in absolute value, then the utility from choosing to vote will be larger. In everyday language, having a strong affiliation with a political party and voting for that party together make the act of going to the polls more satisfying. In the language of consumption theory, a and v are complements.

As Aldrich (1993) concludes in his survey of the literature on voter participation, there is no escape from the conclusion that, to understand voting, it takes a broader theory of preferences. There is room for dispute about what the arguments of W should be and about how strong the interaction effects between these arguments and other choice variables might be. But there is no reasonable alternative to a term like W that depends on arguments other than wealth and conventional consumption.

As a result, the remaining debate is not about the presence of a term like W , but rather about the nature of the arguments of this function. On a priori grounds, some theorists follow Riker and Ordeshook, and maintain that the utility function W depends only on the act of voting x , not on how the vote is cast. This approach uses an extended model of preferences to explain why people vote, but it preserves the traditional instrumental theories about which alternative they vote for. Duty gets people to the polls, but once they are there, wealth maximization determines how they vote.

The alternative is to follow Fiorina and allow for the possibility that the extended preference approach is important for understanding not just why people vote but also how they vote. Other arguments besides the act of voting, x , enter in the function W , arguments such as the vote choice v and party affiliation a . If one starts from a general formulation that allows for the possibility that arguments other than wealth can influence how people vote, one then can use both theory and evidence to test assertions about W .

It is in this spirit that this paper considers additional arguments that could appear in the utility function. The variables considered in what follows capture the effects that promises and anger can have on how people vote. These variables can coexist with more traditional variables like a sense of duty or party affiliation, but for simplicity these other variables are suppressed because they are not central to the analysis that follows.

As Fiorina's analysis shows, extended preference models can be tested like any other model. He finds evidence that affiliation does indeed influence voter turnout. These models are consistent with the general methodological approach of rational choice. As Aldrich emphasizes, they do not make political theory less interesting or reduce the degree to which strategic calculation plays a role in political outcomes. On the contrary, they explain important forms of strategic behavior by politicians that cannot be captured in the narrow preference models. Economists who are interested in positive theories of politics should therefore be willing at least to consider the evidence that is relevant for

evaluating arguments in the utility function besides wealth when they engage in discussions of political economy.³

There is nothing unusual about this line of investigation. Despite occasional claims to the contrary, economists do consider both theory and evidence about the nature of human preferences. Two examples illustrate the issues involved. The first centers on intergenerational altruism. For many years, economists treated altruistic acts between close kin in the same way that they treated altruistic acts between people who are not related. Gifts from parents to children were lumped together with gifts from individuals who support public broadcasting. It was behavior that obviously took place, but it was placed outside the bounds of mainstream economists.

It is hard to say exactly when the change took place, but over the course of the 1970s, economists changed views on gifts to close kin.⁴ Before, the utility function of a parent could have as arguments only those goods that the parent directly consumed. By the end of the 1970s, the assumption that the consumption of children or their utility levels could also enter as arguments in the utility function of the parents passed largely without comment. There are empirical and theoretical debates about how strong this effect is and about what its implications are in areas like public finance, but there is no longer any disagreement about the notion that a taste for altruism toward children is an inherent aspect of human preferences that economists can and should study.

With a bit of a lag, this change followed the development of the notion of kin selection in evolutionary biology.⁵ Because the biological basis for the economic theory of intergenerational altruism was rarely discussed in economics papers, it is difficult to trace the direct effects that developments in biology had on thinking in economics. Nevertheless, it seems to have played an important role. In a very short time, economists recognized that people had to have preferences that induced them to give valuable resources to their offspring. Otherwise, we would not have survived as a species.

In this period, what seems to have changed was the theory, not the evidence. Once economists had a theory about why preferences toward children should be the way they are, they proceeded to study the theoretical and empirical questions that this new assumption about preferences raised.

Another revealing example in economics arises in the context of preferences toward risk, and in this case it has been the evidence that has driven recent developments. Traditionally, economists relied on a mixture of introspection

3. Some economists clearly are willing. See, for example, Brennan and Lomasky (1985). In a separate paper, Lomasky (1985) develops a different model of the political dynamics of Social Security. His claim is that voters get a small psychic benefit from voting for a program that they perceived to be a good program.

4. Robert Barro's article on government debt (1974) seems to have marked a crucial turning point in the professional attitude toward this issue.

5. William Hamilton published the pioneering paper on kin selection in 1964.

about the plausibility of various axioms and logical deduction to support various assumptions about the nature of preferences over risky consumption bundles. For many years, the expected utility hypothesis was the only formal model of such preferences, but in the last ten years, a variety of alternative theories about preferences have been proposed. In this case, the observation that the preferences we observe must be the result of a process of biological evolution does little to guide our choice between the alternatives. Increasingly, what does help us choose is how well they account for the growing body of evidence that is emerging from laboratory experiments. (See Harless and Camerer 1994 and Hey and Orme 1994 for recent summaries of progress in testing the different assumptions about preferences.)

If we ignore what economists say about the study of preferences and look at what they do, it is clear that they make progress in understanding preferences in the same way that they make progress in any other area—by making use of theory and evidence. Theory plays an important role in delimiting the areas of investigation and setting the agenda for types of evidence to collect and study, but it is the accumulation of evidence that ultimately determines which assumptions survive and achieve broad professional support.

7.4 A Preference-Based Theory of Promises and Revenge

As noted above, the aspects of preferences that seem to be necessary to understand Roosevelt's model of politics relate to promises and punishments. People can threaten punishment for two distinct reasons. A person who has no underlying taste for imposing a punishment may consciously adopt a strategy that involves threats of punishment because the threats have strategic value. She may make good on the threats because they have instrumental value, in a repeated game, for example. Alternatively, a person can have a taste or desire for punishing others that is triggered by a particular sequence of events. In this case, a person carries out the threats because it is satisfying to do so.

It is this second possibility that is relevant for the discussion that follows. Much of the behavior we observe, both in the field and in the laboratory, makes sense only if we admit that people sometimes have a taste for punishing others in particular circumstances. Most of the arguments that follow are directed at specifying just what these circumstances might be. But before turning to this issue, we must address the question of why a taste for punishing others might have evolved in humans.

There are two reasons why people might have a hardwired taste for punishing others instead of a general-purpose cognitive capacity that lets them adopt threat strategies when they are useful. The first reason is that specialized, hardwired mechanisms are relatively efficient at solving evolutionary design problems. One of the reliable lessons from the study of artificial intelligence is that general problem solvers are very slow and inefficient compared to specialized mechanisms.

To illustrate the practical implications of this general lesson, consider the evolutionary problem of getting people to eat the right kinds of objects from their environment. Like other animals, we have hardwired tastes that guide this process. We could have been endowed with a preference for surviving and with general problem-solving capabilities for evaluating which objects to eat, but this would apparently have been less efficient. (If this cognitive approach to deciding what to eat had efficiency advantages over the preference-based approach, all animals would have been under strong selection pressure to develop the kinds of brains that humans have.) Hardwired tastes let information about valuable foods accumulate across many generations. Long ago, evolution stored the information that sweets and fats are good sources of calories somewhere in the parts of our DNA that supply the code for our food preferences. If we were endowed only with a general problem-solving mechanism, we would have to start from scratch in each generation relearning this fact, or rely on extensive and time-consuming training from other members of the species to get this simple message across.

Now consider the evolutionary problem of implementing a strategy such as tit for tat in a repeated game. Humans could have been given the kind of general-purpose cognitive capacities that are assumed in most of economic analysis and left to infer that this strategy (or some more complicated strategy) would be a good one to follow in a particular repeated game. Alternatively, they could have been given hardwired tastes that give them a desire to implement the punishment phase of a strategy after an opponent behaves opportunistically. Repeated strategic interaction with other humans was surely an important part of our evolutionary past. A taste for punishing defection or opportunism, analogous to our taste for sweets and fat, might have emerged from the selection pressures that resulted from hundreds of thousands of years of social interaction in small hunter-gatherer bands. In a game against nature, parts of our strategy for eating are coded in preferences. In a game against other people, parts of our strategy for cooperating and punishing might also be coded in preferences.

There is a second reason why a hardwired taste for punishing others might be more valuable than a general cognitive capacity for making strategic calculations. In some settings, a threat to punish someone who defects from cooperation will not be credible. After defection takes place, it may not be in the interest of the person who issued the threat to carry through with the punishment. If someone has a strong taste for punishment that is triggered by defection from cooperation, he will incur a cost to punish the defector in cases in which someone making cognitive calculations might not.⁶ This kind of taste can support cooperation in circumstances such as one-shot games where cooperation might otherwise be impossible. As a result, this taste can enhance sur-

6. This explanation of emotion as a solution to commitment problems has been advanced by Frank (1988), Hirschleifer (1987), and Posner (1981), and no doubt by many others.

vival for the person who possesses it and for all members of a small band if they all possess it.

It does not follow, however, that this kind of taste will necessarily evolve or that it will survive for long if it does evolve by chance. The problem here has been long recognized in discussions about the evolution of altruism. A population with preferences that are beneficial to the group may be susceptible to entry by new individuals who have different kinds of preferences. Someone who seems to have a taste for punishment, but does not have this taste, gets the deterrent value without ever having to pay the cost of punishing someone else.⁷

For the purposes of the arguments that follow, it does not matter which of these two reasons explains why the taste for punishing opportunism is hardwired. All that matters is that the taste for punishing was built into our preferences just as the taste for sweets and fats was. This matters because preferences presumably have changed very little in the last few thousand years, even as our economic environment has changed almost beyond recognition. Think again of food preferences. Our hardwired tastes for fats and sweets still express themselves, even though many of us face serious health risks from consuming too many calories. In the same way, a taste for punishing others that evolved in circumstances where all social interactions took place in repeated encounters among small numbers of people may now express itself in circumstances where it too has no value.

The role for promises then enters because a taste for punishing others may have been adaptive in some circumstances in our evolutionary past, but it may have been quite harmful in other circumstances. Ideally, people would be able to turn the taste for punishing opportunism on and off as appropriate for the situation. If tastes were invariant over time, this would pose a problem for a taste-based mechanism for solving problems of deterring opportunistic behavior. But tastes are not invariant. They can change over time. More specifically, they exhibit obvious state- or history-dependence. Think again of food tastes. On top of our general tastes for sweets and fats, we have powerful mechanisms that induce history-dependence in our food tastes. For example, we form long-lasting aversions to strong tastes that we are exposed to before a bout of nausea.

The extensive form game in figure 7.1 illustrates why it would be useful for the intensity of the taste for punishment to depend on the act by someone else of making a promise. In this game, there are gains from cooperation. Depending on the magnitude of the parameter x , there may also be incentives for defection. This game can be interpreted as a food-sharing game that was played repeatedly in our evolutionary past. It can be divided into upper and lower branches that are identical except for the terminal payoffs. For the moment, ignore the initial decision by player 1 about whether to make a promise. Start at the point on each branch where player 2 can decide to share food or to pursue autarky. The only difference between these two branches is that the preferences

7. See Frank (1988) for a discussion of this point and of possible ways to address it.

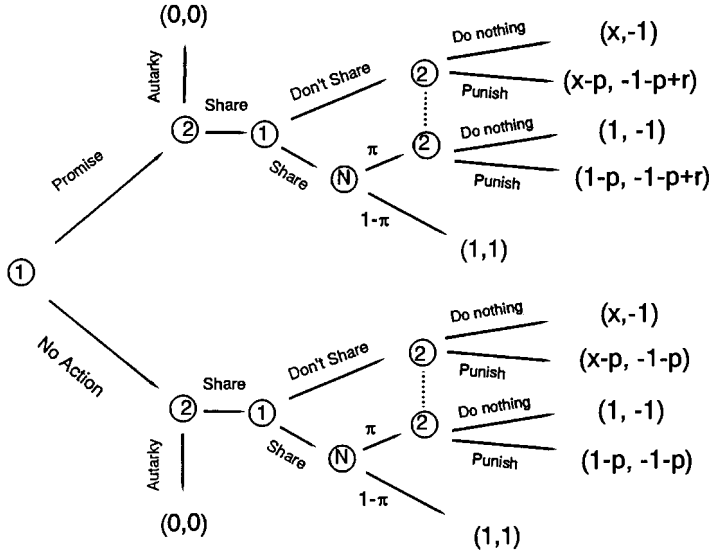


Fig. 7.1 Opportunism and punishment in a food-sharing game

of player 2 are different. For now, treat them as separate games played by 1 against different player 2s.

Assume that player 2 has a large quantity of nonstorable food from a hunt. He can eat it all, or he can share half of it with player 1, who has no food in the initial period. In the next period, player 1 will catch a similar large quantity of food, and player 2 will have none. If they both eat their own catches, they each receive a baseline utility of 0. Suppose that player 2 decides to share his food. After collecting his prey, player 1 can then defect and eat it all or set some of it aside for player 2, who will arrive later. If player 1 sets aside some food for player 2, nature intervenes. With probability π , a large animal comes and takes the food being stored for player 2. Assume that π is small.

If player 2 comes back and there is food for him, both players are better off than they would be if they had not shared the food. They get the payoffs (1, 1) instead of the baseline payoffs (0, 0) because they can smooth their food consumption and eat after both hunts. If, on the other hand, player 2 comes back and there is no food for him, he faces a decision about whether to punish player 1. The dashed line connecting the two nodes indicates that player 2 cannot tell whether player 1 did not share or player 1 did share and the random draw from nature was bad. If he does inflict a punishment, for example by starting a fight, this imposes a direct cost p on both players.

The player 2 on the top branch has a taste for punishment that is indicated by the additional term r (for revenge) in his payoffs. Player 2 gets this psychic payoff when he inflicts punishment on player 1 in circumstances in which player 2 feels wronged. In principle, player 2 could also consider taking re-

venge after they have successfully cooperated, but in this case there would be no psychic payoff r , and player 2 would not choose to punish. Along the lower branch, player 2 never feels satisfaction from punishing player 1, even in cases in which things have turned out badly for him because of a bad draw by nature.

Throughout, we will maintain the assumption that r is greater than p and that p is larger than $x - 1$. This means that the taste for punishment is strong enough to give the player 2 on the top branch of the game an incentive to punish player 1, even though doing so inflicts a cost p on himself. It also means that punishment deters opportunism.

In this game, the critical parameter is x , the payoff for player 1 when he defects. Consider first a case in which x is smaller than the payoff of 1 that player 1 gets from cooperation. (Imagine, for example, that the amount of food from each hunt is twice what one person can eat and that refraining from sharing imposes direct costs on player 1.) In this case, player 1 will always want to cooperate. If the probability π of a bad draw from nature is small, both players will prefer the cooperative outcome in which each player shares. Player 2 will suffer occasional losses because of bad draws from nature, but the gains from cooperation outweigh these costs. In this case, the players clearly want to play along the lower branch. This avoids punishments when draws from nature are bad.

Now consider the case in which the payoff x is larger than 1. The best state of affairs for both players would be to play along the upper branch. It is better for both players if player 2 has a taste for revenge. In the absence of a taste for revenge, it is no longer possible to sustain cooperation when x is large. This is bad for both players, for they both are stuck with the autarky payoffs $(0, 0)$. If they could sustain cooperation, the sharing payoffs $(1, 1)$ will occur with probability $1 - \pi$, and the unfortunate outcome with punishment, which generates payoffs of $(1 - p, -1 - p + r)$ will arise with probability π . If π is not too large, both players would prefer the cooperative outcome to the autarky outcome.

With the exception of r , all of the payoffs in this game have a direct positive effect on survival. They can be thought of as being measured in units of calories of food energy. The psychic payoff r that player 2 sometimes enjoys from punishing player 1 has no direct positive effect on survival. The point of the arguments given above is that this taste for punishment can have an indirect effect that is positive because it deters player 1 from abandoning the strategy of cooperation. This is the case when x is greater than 1. Any costs associated with carrying out the punishments might therefore be outweighed by the gains. The point illustrated by the game in the figure is that the comparison might also go the other way. When x is less than 1, both players will be better off if player 2 has no taste for punishment. In this kind of world, the ideal arrangement would be for player 2 to have a taste for punishment that is activated only in those circumstances where x is large. The challenge is to arrange for this

kind of contingent behavior under the assumption that a taste for punishment is hardwired into preferences.

Faced with these different possible values for x , it is in the interest of both players to find a way to selectively “turn on” the taste for punishment in player 2. One way to do so is suggested by the first stage of play by player 1. Moving back to this stage, the game suggests that communication between the players in the initial stage can influence the preferences that player 2 ultimately expresses. Specifically, if player 1 says to player 2 that he promises that some food will be available after the second hunt, this statement by itself could activate the taste for revenge in player 2. Suppose that the full game starts with player 1 making a promise to player 2, so now we are on the upper branch. If player 2 arrives to find no food after player 1 has promised that food will be there, player 2 may have a strong sense of having been wronged and a strong desire for revenge. This sense and this desire might be absent if player 2 arrived at the same node on the lower branch; that is, player 2 might not feel any taste for revenge if he finds no food after unilaterally deciding to share, in circumstances in which player 1 has made no promise about whether he will reciprocate.

Because of the assumption that p is large enough to deter defection by player 1 and that r is even larger so that the threat of punishment is credible along the upper branch, cooperation can be sustained after player 1 has made his promise. Because π is small but positive, there will occasionally be misunderstandings, cases when player 2 imposes punishments even though player 1 has cooperated. Nevertheless, it may be a cost worth paying if the gains from cooperation are high.

Of course, if π were too high or if x were low, player 1 could simply refrain from making a promise that he might not be able to keep. That is the value of a mechanism that makes the taste for punishment contingent not just on a bad outcome for the person who expresses this taste, but also on an act like a promise by his partner. It lets the players avoid invoking the revenge mechanism in states where it would not be helpful, but lets them turn it on in cases where it would be helpful. If the gains from cooperation are high, and if situations where deterring opportunism is frequently an important issue, it would be advantageous to be a person like player 2.

The discussion here has been given in the context of a one-shot game. The implied advantage of the hardwired taste for preferences is the second of the two advantages noted above. These preferences make some kinds of threats credible. As has already been noted, it is an open question whether these kinds of preferences could have emerged from the process of human evolution. Alternatively, this one-shot game could be embedded in a repeated game. In this case, the taste for punishing others might simply be a mechanism for implementing a particular Nash equilibrium strategy in the repeated game. Regardless of its origins, the relevant question for the behavior of modern voters is

how people with these kinds of preferences might behave when they are put into the evolutionarily novel context of an industrial democracy.

This story seems to violate the useful methodological assumption that consumer preferences are stable. However, it is possible to specify a utility function that is stable. The strategy is the same as the one followed by the early political scientists, to include additional arguments in the utility function. Let *promise* denote the action of player 1 in the first round. It takes on the value of “make a promise” or “do nothing.” Let *food* indicate what player 2 observes when he comes to collect his food after the second hunt. Let *punish* denote the act by player 2 in the last stage. It can take on the values “inflict punishment” or “do nothing.” Finally, let *c* represent survival-related payoffs, measured as before in calorie equivalents. Under the assumptions used so far, the amount of food that player 2 gets to eat, the timing of when he gets to eat it, and the punishment he inflicts will all affect *c*. In a way that is symmetrical with the preferences that reflect voter affiliation that were used above, the stationary utility function for player 2 can be written in the form $U(c) + W(\textit{food}, \textit{punish}, \textit{promise})$.

This utility function is an example of what Gary Becker has called metapreferences. As Becker has argued in his development of the extended-preference approach to human behavior, the crucial assumptions about metapreferences are concerned with cross derivatives.⁸ In traditional economic language, these are assumptions about complementarity. They are analogous to the assumption noted above, about complementarity between party affiliation and voter turnout. The crucial assumption in the analysis here is that *W* does not increase when *punish* increases unless *promise* takes the value “made a promise” and *food* takes on the value “no food available.”

The approach followed here is closely related to the work on fairness by Rabin (1993) and the underlying theory of psychological games outlined by Geanakoplos, Pearce, and Stacchetti (1989). In a more formal and more general setting, these papers pursue the goal of introducing new, empirically relevant arguments into the utility function of economic agents. Rabin, in particular, tries to develop an explanation for punishment and its mirror image, reciprocal altruism, in a one-shot game. In Rabin’s model, the payoffs that an agent receives and the strategies that the player adopts are functions not only of the underlying material payoffs (the payoffs that are measured in calories here) but also of beliefs that a player has about the motivations of other players. Technically, the description of the game outlined in this paper avoids the introduction of beliefs or intentions and makes the payoffs a function of actions (making a promise) and observables (finding no food). These actions have the unusual property that they have no effect on material (i.e., calorie) payoffs.

8. For examples in this line of work, see Stigler and Becker (1977) on the general approach; Becker and Murphy (1988) and Becker, Grossman, and Murphy (1994) on addiction; Becker and Murphy (1993) on advertising; Becker and Mulligan (1993) on the endogenous discount rates; and Mulligan (1993) on determinants of the intensity of intergenerational altruism.

The alternative approach pursued in Rabin's work lets preferences depend on the intentions of the other agent and allows actions and observables to matter only to the extent that they signal intentions. This deeper strategy introduces fundamental conceptual issues that have not yet been fully resolved. It would make it possible to deal with deeper questions about how our own cognitive inferences about the intentions behind the acts of others interact with our preferences. Once this richer style of analysis is fully developed, the arguments in this paper based on actions alone can presumably be extended to take advantage of it.

7.5 Evidence on Extended Preferences

The prediction from the model outlined above is that people have a taste for revenge that can be activated or primed by an act like a promise. The taste can then be triggered by an opportunistic act or by an outcome that is interpreted as an indicator of an opportunistic act. The theoretical arguments try to suggest that this kind of assumption does not blatantly contradict basic facts about selection. They suggest that the hypothesized form of preferences could have had survival value relative to standard preferences that do not exhibit a state-dependent taste for retribution. But this kind of abstract argument can only get one so far. The theory should be understood primarily as a justification for looking at the evidence to see whether humans do have a taste for revenge, and whether it is contingent on acts such as a promise made by others followed by subsequent opportunism.

There is abundant direct evidence suggesting that people do have a taste for revenge. For example, after surveying the available evidence from ethnographies, Daly and Wilson (1988) conclude that "lethal retribution is an ancient and cross-culturally universal recourse" for people who have been seriously harmed by others. In modern societies, the individual desire for revenge is suppressed by the state, but vestiges of it still show through. People pay money to play video games that simulate the experience of being attacked and taking violent revenge. They also pay to watch movies in which someone the audience cares about gets hurt by some bad person. The emotional payoff comes from watching the bad person suffer a violent punishment in the end. There is also evidence suggesting that a taste for revenge is present in nonhuman primates such as chimpanzees (see, for example, de Waal 1989, 205–7). People who study animal behavior call this behavior "moralistic aggression" and distinguish it from other kinds of aggression. A key stimulus for this type of behavior is the failure by one animal to reciprocate after the other has been helpful.

Recent political developments offer indirect evidence that bears on the model outlined here. Following the 1994 midterm elections, exit polls and most postelection analysis both suggest that anger was a potent motivating factor in this election. In contrast to the recent downward trend, turnout nationwide was up compared to the last midterm elections, increasing from 36.5%

to 38.7%. In the notably nasty race between Oliver North and Charles Robb, turnout was up a remarkable 16%.

As the experience with expected utility theory suggests, the best cross-check on a theory about preferences is evidence from controlled experiments. At least one experiment designed to test for expressive aspects of voting behavior has been attempted (Carter and Guerette 1992). As the authors note, the results from this particular experiment are unclear because of problems in the experimental design, but presumably better experiments can be constructed. One of the advantages of a theory that can be stated explicitly in terms of actions and payoffs in a game form is that it is possible to play the game in a controlled laboratory setting and observe the outcomes. So far, the precise game outlined above has yet to be tested in an experiment, but in principle it could be. Meanwhile, we can take advantage of related experiments that were developed for different reasons but that bear directly on the extended-preference approach outlined here.

The most relevant evidence comes from the Ultimatum game and its close relative, the Dictator game.⁹ The Dictator game is very simple. Player 1 is given the opportunity to divide a fixed sum of money s between herself and an unknown player 2. After the money is divided, the players take their shares, and the game is over. The prediction from most economic models is that player 1 will take all of the money. This is in fact what happens, if the game is set up to assure player 1 that her choice will not be known to anyone else. The evidence suggests that people prefer more money to less but that they also care about what others think of their behavior.

The Ultimatum game adds a second stage in which player 2 has a chance to respond. In this game, player 1 gets to propose a split of the amount s . In the second stage, player 2 can accept or reject the proposed split. If player 2 accepts, the players are given the amounts proposed by player 1. If player 2 rejects the split, both players receive nothing. In a representative version of the experiment, the total amount to be split is \$10 and the splits must be made in units of \$1. The traditional narrow-preference model makes an unambiguous prediction about the outcome of the Ultimatum game. Player 1 will propose a split that gives \$1, the smallest allowable positive unit of money to player 2. Player 2 will then accept the proposed split because some money is preferred to no money. The game is of interest to economists because the prediction is so clear-cut and repeated experiments have shown that the observed behavior is significantly different from the prediction. Many of the offers proposed by player 1 are close to 50–50 splits. For the purposes of the discussion here, the interesting observation is that player 2 will often reject a split that differs too much from a 50–50 split, even if it means giving up several dollars of income.

The rejections by player 2 fit naturally in the framework outlined above. Player 2 has a taste for revenge that is triggered by opportunistic behavior by

9. For a summary of results from experiments with the Dictator game and the Ultimatum game, see Davis and Holt (1993) or Camerer and Thaler (1995).

player 1. It is worth sacrificing a few dollars to be able to punish a player 1 who behaves opportunistically and demands too much. It is interesting to note that people assigned the role of player 1 also seem to have the right model of the behavior of player 2. When they are given an anonymous opportunity to take all the money in the Dictator game, they do so significantly more often. But when they play the Ultimatum game, they restrain themselves because they know that player 2 will punish them if they push too hard.

Some economists who would like to preserve the narrow-preference model have criticized these kinds of experiments by saying that the stakes in the typical experiment are small and by claiming that other kinds of behavior should emerge when the stakes are larger. This is an easy proposition to test. At least for the Ultimatum game, the available evidence suggests that the stakes do not matter. The behavior is about the same when people divide \$100 as when they divide \$10. The irony in this charge is that it is sometimes made by economists who support instrumental explanations of voting, where the stakes are many orders of magnitudes smaller.

If the model of the taste for revenge that is outlined above is correct, people should be sensitive to the actions that do not have any direct effect on material payoffs. Other experiments suggest that this is the case. For example, if it is revenge rather than a general sense of fairness that motivates the rejections in the second round, player 2 should be less likely to reject an uneven split if it is the result of a random device rather than a choice made by player 1. Results in Blount (1994) confirm this prediction. Other aspects of the general context may also be relevant. For example, if one of the two players earns the right to be the divider (for example by winning a trivia contest in an earlier round of play), the dividers ask for a large share of the total, and the second-round players acquiesce. Davis and Holt summarize these kinds of results by saying that “economically irrelevant procedural details can have a significant effect on the bargaining behavior, especially when such details alter the perceived symmetry of the situation” (1993, 267). According to the model from the last section, what these “economically irrelevant procedural details” are doing is turning up or down the intensity of the taste for revenge. That is, they are providing clues about the nature of the strategic interaction that will take place. Our emotional commitment mechanisms are sensitive to these clues. In these terms, we can give a new interpretation to the game in figure 7.1. It predicts that the outcome will depend very strongly on the economically irrelevant procedural detail of whether player 1 makes a promise at the start of play. Of course, this kind of detail is economically irrelevant only if one takes a very narrow view of preferences and assumes that a promise does not influence anyone’s behavior.

7.6 The History of the Social Security Program

The most striking aspect of the history of the Social Security system is the remarkable amount of attention that all sides devoted to issues that most economists would dismiss as “economically irrelevant procedural details.” In retro-

spect, it is clear that the small core of people who led the Social Security system through its first four decades had a more acute awareness of the political salience of these details and were more successful at manipulating them to their advantage. But from a very early stage, at least some of the critics of the system also recognized that the implicit and explicit promises hidden in these details would determine the political future of the Social Security system.

Because of a historical accident, we have detailed evidence about how calculated the attempt was to build up the insurance imagery that was at the heart of the strategy for making Social Security benefits into an entitlement. The architects of the system feared a Supreme Court challenge to an explicit attempt by the federal government to set up a retirement system. Because the federal government clearly has the power to raise taxes and make spending decisions, the Social Security Act of 1935 described a new system of payroll taxation and a set of old-age benefits that would be paid to some citizens. The act never makes any explicit link between these two parts. Words like *insurance* and *contribution* do not appear.

At the time of the 1938 Supreme Court decision that upheld the constitutionality of the 1935 act, Wilbur Cohen was working as an aid to Robert Altmeyer, the chairman of the Social Security Board. Cohen was perhaps the most important person in the development of the system. He was a central participant in all the major developments of the system from the time of its creation up through his participation on the Greenspan commission in the 1980s. He later recalled his reaction to the Supreme Court decision upholding the constitutionality of the 1935 act. "I recall walking down the steps of the Supreme Court building in a glow of ecstasy. . . . When I got back to the office I obtained Mr. Altmeyer's approval to send out a memo to the staff stating that because of the decision, we could now call the old age benefits program 'old age insurance.' . . . The American public was and still is insurance-minded and opposed to welfare, 'the dole,' and 'handouts'" (quoted in Derthick 1979, 199).

Cates (1983, 32–33) uses excerpts from public information pamphlets to illustrate how the system's rhetoric changed immediately after the Supreme Court decision was handed down:

[From a 1937 pamphlet produced before the Supreme Court decision]

The United States Government will send checks every month to retired workers . . . under the old-age benefit plan. . . . The same law that provides these benefits for you and other workers sets up certain new taxes to be paid to the United States Government.

[From a 1938 pamphlet written after the decision]

Your [Social Security card] shows that you have an insurance account with the U.S. Government—Federal old age and survivors insurance. This is a national insurance plan for all workers in commerce and industry. . . . taxes are like the premium on any other kind of insurance.

Achenbaum (1986, 35) observes that Roosevelt himself participated in this effort, claiming that people eligible for benefits "could be likened to the policy

holders of a private insurance company.” The Social Security Amendments passed by the Congress in 1939 made the changes in terminology that had already been implemented within the Social Security bureaucracy official. At the insistence of the program officials within the agency, the insurance language was incorporated into the law. The Old-Age Reserve Account established in the 1935 act was renamed the Old Age and Survivors Insurance Trust Fund. The original taxes were repealed and the new insurance “contributions” were imposed under the Federal Insurance Contributions Act (FICA). As Achenbaum observes, “[A]ny dispassionate analysis of the 1939 debate over social security must recognize that there was a gap between what policymakers were doing and what they said.”

It was this gap that Curtis threatened to expose to broad public view with his hearings on the Chamber of Commerce’s plan. Altmeyer, who had just stepped down as the commissioner of social security, wrote to Representative Curtis refusing to appear before his committee. He accused Curtis of being hostile to the entire concept of social security, noting that “you contend that [the] old-age and survivors insurance system is not insurance, although it is so designated in the law itself.” Altmeyer eventually was subpoenaed. In his responses to questions from the committee, he eventually admitted that some of the language about a “contract” between beneficiaries and the government was misleading. After the hearings, the literature distributed by the Social Security system did tone down some of its insurance rhetoric (Cates 1983, 84). Nevertheless, it is remarkable how consistent and persistent the early leaders of the program continued to be in their defense of the insurance imagery. Derthick (1979, 199) reports the following testimony by Cohen before the U.S. Senate in 1961:

Senator Wallace F. Bennett. My idea of a contribution is something that I myself take out of my pocket and hand to somebody. It is not, it does not apply to what somebody else takes out of my pocket, and I think this is a tax . . .

Mr. Cohen. You have to change the law then because it says it is the Federal Insurance Contributions Act.

Unfortunately for Cohen, there was someone at those hearings who had heard this justification before and knew the history of how the insurance language got into the law.

Senator Carl T. Curtis. Who told us to do that, Wilbur? I remember the day it happened.

Mr. Cohen. I think it was a good idea, Mr. Curtis.

In the end, the repeated conservative attacks on the logic of the position that the Social Security proponents adopted seem to have had little effect. There is certainly no evidence that they changed the political debate surrounding the program. The conservatives seemed to have missed the deeper significance of what was going on, or not to have known how to respond. In this deeply politi-

cal battle, it did not work to fight rhetoric with logic. It was not the logic of the arguments made by leaders of the Social Security system that influenced the behavior of voters. It was the promise itself that changed the behavior of the listeners. Logic had nothing to do with it.

In a vague and indirect fashion, Cohen himself tried to make this point in a 1971 debate with Milton Friedman: “Mr. Friedman calls a lot of the things he doesn’t like about the social security system rhetoric. And that gets me to a point that I want to stress. My point is that economists do not determine all of the choices and options and attitudes prevailing in this nation. People do live by rhetoric. . . . True, if you are an economist, you may exclude all matters of politics from your thinking. But to do so is not reality” (Cohen and Friedman 1972, 54–55).

From the beginning in 1935 until the mid-1970s, the Social Security system underwent a process of steady and significant expansion. To the original retirement benefits, benefits for surviving spouses and children were added in 1939. The coverage of the system and the level of benefits were substantially increased in 1950. Disability benefits were the most important direction for expansion during the rest of the 1950s. After disability coverage was introduced in 1956, planning for coverage of medical expenses began within the Social Security Administration. The Eisenhower administration then in power did not support the extension of the system to cover medical care, but work on the various plans proceeded and eventually culminated in the Medicare legislation of the mid-1960s. The push for increased cash benefits—the next priority—culminated in the substantial benefit increase of 1972.

Along the way, the possibility of retiring with reduced benefits at age sixty-two was added, and the coverage of the system was steadily expanded. Originally, planners anticipated that the combined tax on workers and firms of less than 6% would be sufficient to finance the system when it was fully mature. We have now reached a level of more than 15% on a much higher real wage base, and it has probably not reached its maximum. There is genuine uncertainty about how high the tax rate might have to go to cover the large benefit payments that will be required when the baby boom generation begins to retire in the third decade of the next century.

This remarkable pattern of consistent expansion was made possible in large part because program advocates and sympathetic politicians were able to make long-term, self-fulfilling promises about future tax and benefit payments. At each stage in the expansion, the advocates were able to commit the government to an upward-sloping time profile of new benefit payments and an even steeper upward-sloping profile of tax obligations. Because the initial increase in benefits was larger than the initial increase in taxes, the initial stages of expansion were generally popular and posed little political risk.

A crucial element in this program of expansion was the ability of decision makers to tie the hands of future politicians. When the full cost of previously enacted benefits eventually became apparent—when previously scheduled tax

increases went into effect or expenditures exceeded revenues and some kind of adjustment had to be made—there was always a risk that policy makers would respond by cutting back on benefits instead of implementing the required tax increases. This is why the ability to create a sense of entitlement was so important. At every stage, the proponents of expansion were able to promise that a given level of benefits would be paid. And merely by making that promise, they were able to make it come true. When they told people that they had earned their benefits as a matter of right, people believed them. If those rights were threatened, they reacted with anger. When the Reagan administration finally proposed in 1981 that Social Security benefits be cut, primarily through a 25% reduction in the benefits available for early retirement, everyone learned how politically potent these promises were.¹⁰

7.7 Conclusion

Some economists and political scientists use the tools of economics to formulate positive models of political action. This is a difficult area, so it is no slander on people who have worked there to claim that there is room for improvement. Many other economists have taken the seemingly easier path of normative analysis. By examining various kinds of market failures, these economists claim to identify policies that would permit efficiency gains if they were adopted. Without making any claims about which policies *are* adopted, these economists identify policies that *should* be adopted. That is, they claim that if the identified policies were adopted, it would be possible to make everyone better off. Even this kind of analysis must ultimately confront deeper questions about preferences.

Imagine that economists really were philosopher kings. Imagine that they could bypass the political system, draw up policies, and implement them. Small, seemingly irrelevant details like the difference between transfer payments and entitlements might ultimately have a very big impact on the preferences, and therefore on the behavior, of the citizens in a nation. One of the puzzles noted in the beginning was that the typical elderly widow who was not eligible for survivors benefits did not participate in the debate about Social Security in the 1950s. But this was perfectly rational behavior. She had no ability to influence the outcome. At that time, she also lacked any sense that she had been wronged—that promises had been made and not kept—so she had no taste for writing angry letters, protesting, or making a special effort to vote against the people who opposed a plan that would have given her a windfall. As the prologue reminds us, sixty years ago policy makers were constrained because many poor people refused to accept assistance payments from the government. Today, we face a different constraint. Large numbers of affluent old people are primed for action, ready to explode in a spasm of anger at

10. See Light (1985) for a description of the furious response that this suggestion provoked.

any suggestion that the transfer payments they receive from the government be reduced.

The arguments presented here suggest that this change in the preferences or values of large numbers of people was an inevitable, intentional side effect of the way that the Social Security program was designed and implemented by the Roosevelt administration. This change in values represents a possible cost of the policies adopted then. Many people count the redistribution of income that the Social Security program achieved among the most important accomplishments of social policy in the United States. For them, this benefit may very well outweigh any costs associated with increased public perceptions about entitlement. For others, the costs of the program may seem too high. The point here is that it is not possible to weigh all the costs and benefits of this program or any other policy program without taking account of all of its effects, including its effects on values and politics.

Important, long-lasting changes in values and behavior might follow from proposed government programs in the areas such as health care and long-term care. Economists who focus only on incidence may see little difference between an employer mandate and a worker mandate concerning health care coverage. The long-run effects of these two arrangements might nevertheless be very different. They could induce very different beliefs about individual responsibility and entitlement, and these could substantially affect voting, future policy debates, and the other aspects of social life in important ways.

Presumably, even an economist who ignores how policies get adopted, who is engaged only in a purely normative analysis of the costs and benefits of various policies, would want to take account of the effects that these policies can have on values. Changes in values are one of the outcomes that the citizens of a nation care about, both for their own sake and because of the secondary effects they can induce. Economists who are interested in the positive analysis of politics and political economy will be particularly interested in how these changes in values influence subsequent political dynamics.

The goal of shaping values was arguably the driving motivation behind the widespread adoption of the most important social policy in the early history of the United States—mandatory attendance at public schools. Hunches and dim intuitions about the effects that policies have on values are driving the current debate about welfare reform. Questions about values are beginning to be addressed in discussions of reform of social welfare programs in Europe (Lindbeck 1994). Other economists have noted how much richer our policy advice would be if we could address questions about values (Aaron 1994; Aaron, Mann, and Taylor 1994). What is missing is not the will or the interest but the tools with which to begin an analysis of values.

There are many subtleties and ambiguities that need to be explored if we are to study values, but several things are clear: State-dependent preferences that allow for arguments capturing a broad range of actions or beliefs about the intentions of others offer a feasible framework for beginning to address ques-

tions about values. As Becker's analysis suggests, this framework can make use of conventional tools such as a stable underlying utility function and complementarity between different arguments in this function. In principle, the study of values need not be any more difficult conceptually than the study of party affiliation in the analysis of turnout. What we need to do is identify state variables analogous to party affiliation that capture what we mean by values, and begin to study how these variables affect other choices. There is also reason to hope that continued experimentation in the laboratory will slowly accumulate a rich body of evidence that can be used to test all theories about preferences, including ones about the deeper preferences we label values. Given the importance of the topic and the potential for headway, it would be a shame if economists held back from pursuing these questions because of a misconception about what constitutes good science when we study people.

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Comment Roger G. Noll

Paul Romer's essay has three objectives: to develop an economic theoretic explanation for why a genetic predisposition to vengeful behavior has survival value for the human species; to apply the theory of revenge as a conditional argument of an individual's utility function to voting behavior; and to explore the implications of this type of behavior with respect to the politics of Social Security. The specific line of reasoning in the paper proceeds as follows: humans are genetically predisposed to derive utility from revenge when another human abrogates an agreement to cooperate; legislative entitlements are analogous to bilateral cooperative agreements; and hence attempts to roll back entitlements would trigger vengeful responses by voters. This reasoning is then used to explain why Republicans proposed, and Democrats rejected, an attempt to reorganize Social Security as a universal old-age assistance program. According to Romer, the Republicans cleverly proposed these changes in the hopes that they would make Social Security easier to kill in the future, and the Democrats equally cleverly saw through this strategy and so opposed what would seemingly be part of their agenda—to expand the coverage of transfer payments.

Romer's work is an example of both the strengths and the weaknesses of what scholars in other disciplines have called "economics imperialism." The term refers to the invasion of the provinces of other social sciences—anthropology, political science, psychology, and sociology—by economists applying their toolkit of optimizing decision-theory models to traditional problems of other disciplines, and claiming to provide simpler, better, more comprehensive explanations than have been supplied by generations of scholars in sister fields. Much of the criticism of the exportation of economic methodology to other fields is defensive and wrong-headed, reflecting a lack of understanding about decision-theoretic models. But some of this criticism is on target. Economists frequently do overinterpret their results (most commonly, interpreting a qualitative, partial-equilibrium finding as a dominant, if not comprehensive, explanation for an observed phenomenon). And economists are notorious for ignoring previous research on the same issue by noneconomists and for testing their theories against a null hypothesis of chaos (e.g., the absence of a competing explanation) rather than against other plausible explanations that have been developed by scholars in other disciplines.

The Core Theory

The core of Romer's paper is a game-theoretic explanation of how natural selection favors humans who are willing to make and accept promises for co-

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operation but who, when a promise is abrogated, derive personal satisfaction from extracting an eye for an eye and a tooth for a tooth. The novelty in Romer's conceptual model is the intertemporal asymmetry of the cooperation: the sacrifices and rewards of the parties to an agreement are not distributed in the same way over time. Regarding Social Security, a working-age adult interprets the entitlement feature of the program as an intertemporal commitment to reward current sacrifice (the payroll tax on current wages) with a proportional pension upon retirement at some time in the distant future.

Romer's core theoretical model is an interesting contribution to an important and influential body of literature about, to use Robert Axelrod's provocative term, the "evolution of cooperation." This literature as much as any demonstrates the best of multidisciplinary research, and convincingly refutes the wrong-headed critics of the application of optimizing models outside of economics. Moreover, scholars from many disciplines have made important contributions, including political scientists (e.g., Axelrod), philosophers (e.g., Jon Elster), sociologists (e.g., James Coleman), and, of course, many economists. To say that Romer has contributed to this literature is not a small compliment.

My concern about Romer's essay is his exuberance in using his theory to explain voting behavior and its policy implications regarding entitlement programs. Romer's core accomplishment is really a "possibility theorem" in that it demonstrates that one among many human emotions could motivate behavior that, while seemingly irrational on the surface, is rational because it leads to mutually beneficial cooperation among egoistic actors. Stated this way, the model illustrates a standard game-theoretic result: a commitment to irrational out-of-equilibrium behavior supports the cooperatively rational equilibrium. Romer's twist, of course, is the suggestion that genetic preprogramming twiddles our utility functions in a way that makes the irrational out-of-equilibrium action in fact rational because we derive pleasure from entering the punishment phase of a cooperative game.

A single-effect, single-cause plausibility argument of this form suffers from two pitfalls. The first is that it borders on tautology: assume a level of utility, R , from punishing a defector that is sufficient to prevent most defectors from defecting, but is not so large that humans regularly bash each other for the slightest disappointment. Romer escapes the tautology by invoking sociobiology: because humans survived, R , like Baby Bear's porridge, must have been just right. The second is that it ignores all but one dimension of human motivation and behavior. Two others that come immediately to mind are altruism and rational foresight.

First, humans seem to have interdependent utility functions (i.e., they are quasi-altruistic). Thus, one alternative to revenge as the mechanism that polices the fulfillment of promises is that humans actually care about each other enough not to renege on promises when doing so is not too costly (Harsanyi's principle of "low-cost objectivity" [1969]) or when the benefits to others

from altruistic behavior are enormous (Monroe's conclusion based on her study of Germans who protected Jews during the Holocaust).¹ Altruistic theories can also be defended on evolutionary grounds as attributes that enhance the survivability of the human species.

Second, the key to human survivability as a species, given that we are slow, weak, soft, clawless, long in maturing, and tasty, may be that we are good problem solvers who, among animals, are exceedingly unlikely to let autonomic emotional drives dictate our behavior. Moreover, humans probably are smart enough to recognize that life is a repeated game and that fulfilling a promise today enables one to make a similar beneficial agreement tomorrow. The advantage of this view of humans is that it avoids the fatalistic inexorability of genetic theories, leaving room for true choice and learning. The challenge to Romer is not just to demonstrate that revenge can explain cooperation, but that it predicts some behavior that other respectable theories cannot explain.

Applications to Voting Behavior

Romer's immediate application of his theory is to voting behavior. Not surprisingly, a preoccupation of political scientists for an entire century has been to explain why and how citizens vote (given that voting is costly but is unlikely to affect outcomes and so to generate instrumental benefits). In the mountain of explanations for this seemingly irrational behavior, decision-theoretic models are a fairly late entrant. Initially, practitioners of rational-choice models in political science simply assumed that the act of voting was consumption, with citizens simply "feeling good" about engaging in participation. The tautological assumption that each citizen can capture R utils from voting even offered to escape tautology by actually explaining something: differentials in turnout rates by income groups and age groups.

Romer's work can be interpreted in the context of this literature as providing an explanation for R , but one that is conditional on circumstances. In particular, R is larger if voting enables the citizen to cast a vengeful vote against a candidate who has broken an intertemporal agreement of the form modeled by Romer.

Of course, hypotheses like Romer's are hardly new. Political scientists even have a term for it: negative voting. Indeed, for two decades a quite interesting debate has taken place concerning whether negative voting actually exists, and if so, whether psychological or rational-actor accounts provide a better explanation. A leading exponent of psychological theories is Richard Lau (1982, 1985), who provides two reasons for expecting that citizens are more likely

1. These and other extensions of the rational self-interest model of political behavior are discussed in various essays in Monroe (1991), many of which are written by proponents as well as opponents of rational-choice theory.

to respond negatively to political disappointments than positively to desirable political events.²

Lau's first explanation is tied to the idea of an altruistic superego governor of behavior: humans generally are thoughtful of each other, and derive pleasurable and rewarding experiences from their interactions; as a result, a failure to behave in a pleasant, cooperative, reliable way draws special attention and causes others to have serious doubts about the integrity of the person whose behavior is nonstandard. (This assumption certainly makes me wish I were a member of Lau's department!) Hence, a citizen who observes noncomplying behavior by an elected official will be prone to conclude that the official is untrustworthy, engaging in noncompliance when behavior is unobserved, and to vote accordingly. This form of response can be interpreted as reflecting the "availability heuristic"—a cognitive pathology whereby an individual overreacts to unusual events.

Lau's second explanation is, like Romer's, sociobiological. Lau argues that the "survival of the species" is promoted if people behave according to the precepts of Amos Tversky's prospect theory—that is, if humans go to greater lengths avoiding significant costs at the sacrifice of pleasurable gains than would be predicted from an expected utility calculation. Survival requires avoiding catastrophes, not having a good time. Hence, Darwinian natural selection causes us, when scoring our political leaders, to give them unusually large negative scores for their mistakes in comparison to the positive scores we assign to their successes.

On the rational-actor front, among the leaders of the analysis of negative voting are Morris Fiorina and Kenneth Shepsle (1989, 1990). Their approach is to use decision theory under conditions of incomplete information to analyze whether negative voting is plausible. They offer two different arguments.

First, Fiorina and Shepsle argue that one must be careful in asserting that negative voting has been detected because of a form of selection bias in elections. If voters underestimate the worth of a candidate, the candidate is likely to lose and, therefore, not to have the opportunity to generate more information that would change voters' minds. But, if voters overestimate a candidate's worth, the candidate is more likely to be elected, voters will then update their beliefs after observing poor performance in office, and the candidate will do less well in the next election. Indeed, if voters are Bayesian, the candidate will tend to do worse in every subsequent election until defeated.

Second, Fiorina and Shepsle develop a game-theoretic model of voter behavior in which a voter can decide how to weigh good news against bad news about performance in office. They demonstrate that a rational voter, facing imperfect observability of an office holder, will overweight the bad news relative to the good news because to do so causes less shirking by the elected official.

2. For a variety of other psychological theories of voting, see the symposium in the *American Political Science Review* 85 (December 1991).

This model is very similar to both standard trigger strategies and to Romer's, differing from the latter in that citizens elect to behave vengefully because they see its consequences down the decision tree, rather than because they derive pleasure from seeking revenge.

Finally, as an empirical matter, no negative voting theory can explain most (let alone all) voting behavior. In all postwar elections, most voters have voted for incumbents, and most voters cast nearly all their votes for the same party. Votes against challengers who have yet to break their first promise, and for a party regardless of changes in the policies of either party, can hardly be explained as punishment. The most one can expect from negative voting theories is a more powerful explanation for shifts in behavior by marginal voters.

The preceding brief, highly selective literature review is intended to demonstrate a single point: neither psychology, sociobiology, game theory, nor the idea that some voters are prone to vote against one candidate rather than for another are new to the study of voting behavior. Romer's particular model, however, is different than the rest, but to demonstrate its usefulness requires that it be run against other attractive horses.

Application to Entitlements

The final step in Romer's logical chain is to argue that his version of negative voting sheds light on the politics of entitlement programs. In essence, Romer argues that the 1950s dance between Democrats and Republicans about changes in eligibility and financing of Social Security reflected rational response by each side to their partisan differences about the program and the reactions of voters to attempts to cut it. Vengeful voters, argues Romer, see the entitlement form of Social Security as a long-term agreement on which they have relied in making other long-term decisions (notably, about plans for retirement), and so would be more prone to punish a political official who reneged on this arrangement than another political official who simply cut a transfer program to all old people.

This account raises several important issues. The first is about the identity of the support constituency, based upon the simple calculation of costs and benefits, of the Social Security system as initially designed compared to a straightforward old-age assistance program. The pseudoinsurance feature of Social Security makes the program less redistributive by income categories than a standard transfer payment because it ties benefits to tax payments. And, because total benefits are tied more closely to current receipts than past payroll tax collections, a salient feature of the program is its intergenerational redistribution. A reasonable interpretation of the effect of Social Security on most working-age adults in the 1950s is that they picked a system in which their children would support them in retirement, but preferred one in which they would be more likely to live independently rather than on direct payments from children, perhaps within the same household. As a result, most working-age adults in the 1950s could expect a positive net benefit from Social Security

(and this expectation has been fulfilled), whereas a similarly designed straight pension would cause the net benefits of some higher-income individuals to turn negative. The Democrats certainly favored greater coverage, and did, in fact, pass a sequence of bills that gradually made Social Security (or state counterparts) virtually universal, but by preserving the pseudoinsurance feature they retained the support of some voters with above-average incomes. Thus, to argue that “vengeful voters” provide an additional explanation for the episode reported by Romer, one has to find elements of attitudes about Social Security that are not explained by this simple model of self-interested behavior. I personally do not find anything surprising in the Democrats’ behavior to sacrifice some progressive redistribution in order to secure broader political support for the program, particularly a few years after the rise of the Conservative Coalition stopped further extensions of the New Deal.

Another challenge to the vengeful voter theory is to make convincing distinctions between this particular entitlement program and other governmental activities that reflect intertemporal commitments. In a sense, the nature of political competition is for candidates for office to make promises about future performance. Each candidate offers a vector of positions on issues. For incumbents, performance in office provides voters with estimates of likely future performance, to be weighed against more uncertain promises of a challenger. Most likely, because of the centralizing tendency of electoral competition, voters—at least, the decisive ones—are not likely to see one candidate as strictly dominating another on all elements of the position vector. Hence, electing one over another has an opportunity cost—sacrificing the advantages offered by other candidates on some issues. If a challenger runs for office on the basis of asking voters to sacrifice welfare on some dimensions in order to obtain more welfare on another, and then fails to deliver on the latter, should not Romer predict vengeful voting—even when the net benefits delivered by the winner are slightly higher than the benefits promised by the loser? What, then, differentiates entitlements as sources of vengeful reaction from other campaign promises that go unfulfilled?

Perhaps the closest parallel to entitlements is a long-term public investment program. Suppose the government embarks on a project that is expected to take ten years to complete, and then cancels the project halfway through. Rational-choice political theory predicts more resistance to cancellation than support for initiation, *ceteris paribus*, because once the project is begun, some citizens will have occurred sunk costs in reliance upon completion of the project. Hence, the expected net benefits that are required to initiate a program exceed the amount that, in midstream, are necessary to continue it. Vengeful voter theory should apply here as well, so that some voters who derive net positive benefits from an incumbent’s whole platform will nonetheless vote for the challenger because the project was cancelled. Specifically, a voter who would derive private benefits from the project would have made parallel tax

payments to support it during initial construction, but would then not be rewarded in the end by the stream of benefits.

Perhaps the biggest challenge to the theory is to explain all Social Security programs (including disability insurance, survivors' benefits, and Medicare). These elements vary considerably in the degree to which benefits are even symbolically tied to contributions and in their generosity. Medicare, for example, is certainly the most generous, bears the least connection between contributions and benefit entitlements, and so corresponds most closely to a standard transfer program that would generate the least revenge from cancellation or cutback. It is also the element of Social Security that is growing most rapidly and the principal threat to bankrupt the system, yet it has been impervious to significant containment. How does vengeful voter theory explain this phenomenon?

These questions are important to testing vengeful voter theory because the latter predicts that, holding constant the magnitude and distribution of benefits from a program, negative voting is more likely for cuts in entitlements than for other programs. If this is not true, the theory cannot be distinguished from other negative voting theories. In reality, the degree to which a program can be regarded as an intertemporal commitment, requiring some sacrifice now for benefits in the future that could engender a sense that the later rewards had somehow been earned, varies among programs. My sense is that this variation is more continuous than dichotomous, but in any case, the argument that entitlements are somehow separate from all other programs seems to me to be insufficiently explained.

Conclusions

The thrust of these comments is that my comfort with Romer's argument is far greater at the more abstract, general level of argument, and least at the level of an application to understanding the politics of a particular program like Social Security. Economic modeling is obviously highly useful in a number of contexts other than analyzing private economic decisions, and equally obviously can add to our understanding of how people solve collective action and coordination problems. Romer's focus on emotionally motivated behavior as plausibly having value to humans in these types of circumstances is interesting and promising as part of the agenda for economic theorizing. For the specific case at hand, Romer's argument makes a good case for explaining the existence of revenge and its likely partial-equilibrium effects.

My skepticism deepens as the model is extended to the specific applications of voting behavior and the design of a program. Both voting behavior and designing programs plausibly involve numerous human emotions and values. They are also consequential decisions that are made after a protracted period of information dissemination and consideration. Here much work remains to demonstrate that the motive of revenge is a dominant force, compared

to rational pursuit of some combination of self-interest and interdependent utility.

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