Reply to Caplan:
On the Methodology of
Testing for Voter Irrationality

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A COMMON COMPLAINT BY AUTHORS IS THAT THEIR REVIEWERS have misinterpreted what the author has said. This is not my complaint here, because Bryan Caplan has explained my position better than I have. And I certainly cannot complain when Caplan sees my views as being more opposed to Lenin's views than Milton Friedman's are. Furthermore, I agree with two of Caplan's major points: (1) that people are more likely to be irrational or uninformed (I add the latter because it is often hard to distinguish the two) when the cost of being so is slight; and (2) that more empirical work on voter rationality is needed (as an aside, I would like to add that Caplan has made important steps in this direction).

Where we disagree is whether the evidence of voter irrationality amassed by Caplan is definitive. I am skeptical. However, my remarks should be seen not as a criticism of what Caplan has done, but rather as part of an ongoing collective effort at refining our understanding of voter behavior. Thus, my remarks here should not be considered definitive, either. Instead, a long series of empirical studies (each building on earlier work) and theoretical refinements (again building on earlier work) is in order.

In the following pages, I will (1) explain why I don't think the evidence demonstrates that voters are more irrational than consumers,[1] (2) discuss what I consider to be the appropriate methodology for testing

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[1] Caplan did not explicitly compare voter to consumer rationality.

irrationality, and (3) suggest hypotheses that could be the subject of future empirical research.

VOTERS' BELIEFS AND POLITICAL REALITY

Caplan presents results from the *National Survey of Public Knowledge of Welfare Reform and the Federal Budget* (1995) showing that those surveyed systematically overestimate the percentage of the budget going to foreign aid (the average person surveyed believed that foreign aid comprises 10% of the federal budget, when in fact it only comprises 1%) and systematically underestimate the percentage of the budget going to social security.[2]

I suspect that the bias in the foreign aid estimate is partially explained as a statistical artifact. Suppose that a person is equally likely to overestimate as underestimate the percentage of the budget going to foreign aid. The lowest that an estimate can be is 0, while the highest the estimate can be is 100%. So the average estimate is likely to be above the true value. The median estimate of foreign aid is probably closer to the true value.

A somewhat related argument, but one that I find more compelling, is a slight variation of an argument brought up by Caplan. There is little cost to being misinformed when *your choice* would be the same if you were informed (this is to be distinguished from one of Caplan's arguments, with which I disagree, that voters make irrational choices because their choice will not affect the outcome). Let me start with an example regarding consumer behavior. Some vegetarians are repulsed by the idea of eating meat. It would make little sense for strong vegetarians to stay abreast of the latest research on meat (even if the results were positive) or to keep track of meat prices. It is unlikely that such information would be sufficient to tip the scales in favor of their eating meat; so it would not make sense to gather such information in the first place. As a result, strong vegetarians might be misinformed, possibly holding irrational views, about meat. Of course, there are many others who do not have strong preferences one-way or the other and, therefore, would keep abreast of the facts. Let us now turn our attention to voters. Unless a person enjoyed acquiring political information, it would be irrational to obtain new information when the new information

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[2] It would be interesting to discover whether the survey response of those who regularly vote differs systematically from those who vote rarely, if at all.

was unlikely to be strong enough to change the voter's behavior. I predict that people who greatly overestimate are against foreign aid and would still be against foreign aid even if they were informed of the true value. If this is the case, there is little cost to their being uninformed since they would take the same position (reduce foreign aid) even if correctly informed. Since we are trying to advance the empirical agenda, here is my first hypothesis: Those people who overestimate the cost of a program (say foreign aid) are more likely to be against the program than those people who underestimate it, both before and after they are given the true facts of the situation. Turning to social welfare programs, I suspect that those who are more adverse to social welfare programs in general, are more likely to overestimate the percentage of the budget going to welfare. This leads to hypothesis #2: Republicans are more likely to overestimate the cost of welfare than Democrats.

I would like to consider a variation on hypothesis 1 in a slightly different context. According to an October 21, 2004 Harris Poll, 52 percent of those who preferred Bush thought that Saddam had helped plan and support the hijackers who attacked the U.S. on September 11 (it was 23 percent for those who preferred Kerry) and 58% of those who preferred Bush thought that Iraq had weapons of mass destruction when the U.S. invaded (it was 16% for those who preferred Kerry). Neither of these assertions is true. Now, some might use this as evidence that voters, or at least Bush voters, are misinformed, if not irrational. I believe that the cost of strong Bush voters being misinformed or irrational was slight because these supporters would not change their vote even if they were apprised of the truth on these issues (not because the person's vote would not influence the outcome of the election as Caplan would argue). Now some might say this would demonstrate how irrational Bush supporters are, but I think it is entirely rational. So let us try a little thought experiment. If you were strongly in favor of one of the candidates, and then you found out that you were wrong about several facts regarding the candidate, would you be in favor of the other candidate? If the answer is no, then why bother checking your facts in the first place, as it is unlikely to alter your vote. So here is another hypothesis that we can test. Hypothesis #3: Voters who are strongly in favor of one candidate are likely to have biased beliefs favoring that candidate, but when such voters are informed of the truth, they are unlikely to prefer the other candidate.

If hypotheses 1 and 2 are empirically validated, this would show that evidence, which first appeared to indicate voter irrationality, actually indicates voter rationality once we realize that it is irrational to be more

informed when more information is unlikely to change your preference and vote. I will revisit the foreign aid data in the fourth section below.

VOTERS' BELIEFS VERSUS EXPERTS' BELIEFS

Caplan reports on his published research comparing voter beliefs on the economy to expert beliefs (economists with Ph.D.s). There is considerable divergence. Caplan believes this to be strong evidence against voter rationality. While I find Caplan's study very interesting and valuable, not surprisingly, I have a different interpretation.

First some differences are to be expected. A very large percentage of economists are in favor of free trade. But it would be irrational for all voters to be in favor of free trade as a great number of voters are hurt by it.

My second response is done more tongue-in-cheek. Federal Election Commission records of individuals who contribute over $200 to political campaigns reveal that Kerry received 94% of the donations from Harvard affiliated individuals (compared to Bush's 6%), 93% of the donations from Yale, and 84% from Princeton.[3] If Caplan voted for Bush (or the libertarian candidate, Badnarik), Caplan faced the following quandary: (1) Should he argue that there is a problem with comparing ordinary voter preferences to expert preferences (thereby undermining the importance of his own evidence)? Or should he say that he too was irrational in not voting for Kerry (thereby proving the point that voters, including Caplan, are irrational)?

My third point is the most important and, therefore, I will devote a whole section to the issue.

VOTER RATIONALITY AND CONSUMER RATIONALITY SHOULD BE TESTED IN THE SAME WAY AND COMPARED

Caplan provides evidence that (1) voters have their facts wrong and (2) voters' understanding of policy issues differs significantly from the

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[3] See: http://davidm.blogspot.com/2004/07/political-giving-at-ivy-league-schools.html

experts. According to Caplan, this is convincing evidence that voters are irrational. For the sake of argument, let us ignore what I said in the previous two sections and accept the facts at face value.

Suppose I undertook a parallel test of consumer rationality. One might ask consumers whether homeopathic medicine works, Ginko Biloba improves memory, Echinacia prevents colds, and colloidal silver helps the immune system. I suspect that the answers provided would differ greatly from experts at the major medical schools and the National Institute of Health and that consumers understanding of many medical matters was greatly off the mark. The reason I suspect this to be the case is that consumers spend tens of millions, if not hundreds of millions, of dollars on worthless cures.

If I am correct in my supposition, then Caplan is placed in another quandary. Either he agrees that this data implies that consumers are irrational, thereby agreeing with Lenin that neither economic markets nor democracy works because the actors are irrational, or he believes that this data does not prove that consumers are irrational, thereby undermining his parallel evidence that voters are irrational (unless he can find a very clever way of distinguishing between the two irrationalities). Since I don't think that he wants to be allied with Lenin, let me consider the alternative that neither set of data is much evidence for irrationality.

The main way that economists have tested consumer rationality is to see whether demand goes down when price goes up. If demand curves were upward sloping, that would be evidence for consumer irrationality. Because they don't, we are pretty confident that consumers are rational. The same type of test should be employed to see whether voters are rational. Do they have (weakly) downward sloping demand curves? I suspect that they do and, of course, Caplan does as well since that is a major point of his work—that voters are rationally irrational. So this suggests empirical test #4—when the cost of a policy increases, voters on average will be less likely to vote for the policy.[4] Because this is the standard test of rationality for consumers, it should also be the standard test of rationality for voters. When we undertake comparative statics, we cannot differentiate between Caplan's rational irrationality and rational rationality. In both cases, individuals respond rationally.

A more subtle test of rationality is to see whether demand remains the same if all prices (including wage income) increase by the same

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[4] Note the word average. Not all voters will change their vote just as not all consumers will increase their demand for McDonalds hamburgers when the price goes down.

percentage—that is, consumers do not have money illusion. So this suggests empirical test #5: voters do not have significantly more money illusion than consumers and workers.

Before I proceed further, I want to emphasize three points. (1) We should use the same standards and methodologies in testing the rationality of consumers and voters. I do not believe that this has been the case. (2) The major method of testing rationality of consumers is via comparative statics and in particular the test of (weakly) downward sloping demand. This should be the prime method of testing rationality of voters, as well. I believe that voting will pass this test. (3) There is some evidence that voters are at times irrational, but there is also some evidence that consumers are at times irrational.

HOW DOES ONE DEAL WITH EVIDENCE OF IRRATIONALITY?

How should social scientists deal with this third point that there is some evidence that voters and consumers are at times irrational? I would like to consider five alternative ways of dealing with this type of evidence.

First, one might treat irrationality as the unexplained variation, with emphasis on the word unexplained. It is the absence of rationality and comes after the fact. We have a model that predicts behavior in a certain way, and if the behavior is not consistent, we label the error term as irrational. Unless we can predict the irrationality *a priori* (and more than just predicting that people who acted some way last time will continue in this pattern this time), we are just defining irrationality *ex post*. We think that we are explaining something when we are not saying anything at all. This is not scientific explanation, and it is the wrong way to deal with the evidence of irrationality.[5] Of course, when the model does not fit the facts, it makes sense to search for more explanation, but attributing irrationality to the error term is not the way to do science, especially when the rationally explained variation is ignored.

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[5] I am not accusing Caplan of this or many of the other methodological errors mentioned here.

Second, irrationality may not give us much of a prediction. Let us go back to Caplan's examples. If the average voter is informed, or has rational expectations, then the average voter will predict that foreign aid is 1% of the federal budget. If the average voter is uninformed and/or does not have rational expectations, then the prediction will be not 1%. One is comparing a point estimate to the whole space minus the one point. Obviously, it makes no sense to compare the two (as they are not the same thing) and stated this way, all that irrational expectations predicts is that the average estimate will not be 1%, which is not a prediction at all.[6] One solution is to have uniform priors on the set of possible irrationalities (assuming that people are not so irrational that they believe that foreign aid could be 110% of the budget), so that irrational expectations predicts 50%, but then the actual average voter perception of 10% is much closer to 1% than 50% so we should reject the irrational expectations model in favor of the rational expectations model. And even if the set of irrational beliefs were confined to being less than 50%, uniform priors would suggest an expected irrationality of 25%, which is still further away from 10% than 1%. If this uniform priors assumption is accepted, then Caplan's prime example of voter irrationality suggests that *the evidence is more consistent with the rational expectations model than the irrational expectations model.* Furthermore, I suspect that foreign aid was chosen because the divergence between voter beliefs and the facts was above average, possibly the most extreme, for this case. If I am correct, then the data as a whole is even more supportive of rational voter expectations.

Third, when we engage in comparative statics, irrationality gives us the wrong result. If the cost goes up and people are rational, then as voters or consumers they will demand less on average; if they are irrational, then they will demand more. While more empirical tests need to be done along these lines, the evidence so far disconfirms the irrationality hypothesis. As noted earlier, this evidence is consistent with Caplan's rational irrationality as well as rational rationality—either way the voter is responding rationally. But the evidence is not consistent with irrational irrationality.

Fourth, there is often a counting problem. We can point to instances of irrationality, but we can also point to instances of rationality. If we are forced to assume either that people are always rational, or always irrational, because we have no good way to predict when one is operative, we will have to choose the hypothesis that works best over all cases. This means

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[6] From a theory perspective, there is not one theory of irrationality, but a whole slew of mutually contradictory irrationality theories.

considering all cases, not just providing examples that fit with our notions (rational voters for Wittman; irrational voters for Caplan). This is a hard thing to do and people make little effort in this direction. This problem has plagued the debate.

The fifth method is to predict when people will act rationally or irrationally. As an example of prediction, consider using blood alcohol as a predictor of irrationality. The higher the blood alcohol content, the more irrational the person is likely to be. One might test whether people are more likely to be drunk when they vote than when they make purchases. A more serious test of whether voters are less rational than consumers is test #6: Scan the brain and see whether voters use more primitive centers of the brain when voting than when making purchases. One would have to control, however, for the possibility that people get more excited about politics than about what clothes to wear (at least this is true for the people that I know). So perhaps one would have to compare political matters, like where one stands on the war in Iraq, to questions more akin to day-to-day matters, like where one stands on whether dog owners should clean up after their dogs. I have mentioned some biological sources of irrationality. There may be social-psychological predictions of irrationality, such as cognitive dissonance, as well. These might also be used to test differences between voter and consumer susceptibility to irrationality.

When we deal with levels instead of comparative statics, determining what behavior is irrational is extremely difficult, and there is likely to be little consensus on what is irrational. I am sure that many Kerry supporters believe that most Bush supporters, particularly those who are poor, are irrational. Likewise, many Bush supporters believe that anyone supporting Kerry is irrational. Is William Bennett irrational because he lost millions gambling, are my students irrational because they like the rap group, Public Enemy, or am I irrational because I won't eat rabbit? Or is this just a question of tastes? All of this leads me to the next section: experimental politics.

EXPERIMENTAL POLITICS

The advantage of economic experiments is that the experimenter can induce the subjects' preferences by altering their payoffs (as long as the subjects value money). Thus, experimental subjects can be made to prefer A

over B by making the payoff to A larger than B. In this way, we know the preferences of the subjects and do not have to infer them *ex post*. Caplan argues that voters will not pay attention to voting decisions because their vote is unlikely to have an affect on the outcome. Here is a set of experiments that might help determine whether voters as a collectivity are more or less rational than consumers. In experiment 1, the subject gets the payoff from A, B, C or D if he chooses A, B, C or D. Further, he gets the highest monetary payoff if he chooses D, but somehow the experiment is designed so that it takes complicated logic for the person to understand that the choice should be D. In experiment 2, the subject gets the payoff from A, B, C, or D if a majority chooses A, B, C or D. The subject can abstain from voting. To be a good experiment the people in the two experiments should be different. Here is hypothesis #7. The majority decision will, on average, be more accurate than the individual decision. If the evidence is contrary, then I am wrong and Caplan is right. Because I do not want to be labeled a Leninist, I note that most personal decisions are best made by the individual; I know what car I like best, so I do not submit the decision to majority rule by the electorate.

For experiment 3, the number of subjects is increased, perhaps doubled or tripled, but otherwise the nature of the experiment remains the same as in experiment 2. This means that the likelihood that a voter has an effect on the outcome is reduced. If I am correct, then the following hypothesis will be confirmed. Hypothesis #8: the larger the number of potential voters, the more accurate the decision is likely to be. If Caplan's argument is correct, then individuals will be more irrational because they are less likely to have an affect on the outcome.

CONCLUDING REMARKS

In this comment, I have provided a methodology for research on irrationality and for the interpretation of the results. I have argued that the evidence presented does not show that voters are more irrational than consumers. I have also provided an empirical research agenda to test voter rationality that gets around the pitfalls that I have pointed out.

Bryan Caplan has correctly raised the issue of empiricism. I have picked up the gauntlet. I believe that our joust will provide the basis for much future work on the issue.

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