Vote for Charity's sake

AARON S. EDLIN, ANDREW GELMAN AND NOAH KAPLAN

As the election approaches, please remember to be kind to any economist you know. Economists feel on election day a little like Jews feel on Christmas. Participating makes them feel like a traitor to their kind but boycotting the extravaganza makes them feel estranged from the rest of society.

Like everyone, economists have a choice on election day, but to an economist neither option seems good. We don't mean the choice of voting for a Republican or a Democrat. We mean the choice of whether to vote.

Aaron Edlin is professor of economics and the Richard Jennings professor of Law at UC Berkeley; Andrew Gelman is professor of statistics and professor of political science at Columbia University and author of Red State, Blue State, Rich State, Poor State: Why Americans Vote the Way They Do*; and Noah Kaplan is assistant professor of political science at the University of Houston.*

An economist who votes commits an irrational act, and to an economist irrationality is a sin. Why bother spending half an hour or more going to the polls and waiting in line when the chance is infinitesimal that your vote will affect the outcome?

Yet, what is the other choice? Not voting. But, an economist who doesn't vote must squirm when others ask that day: "Have you voted yet?" Any explanation about the irrationality of voting will be scorned.

There is no winning for an economist on election day (unless he or she is running for office, and probably even then).

Is there a way out of this box? Can an economist vote without abandoning the principle of rationality? We say yes.

In fact, if you live in a swing state such as Colorado, a vote cast in the 2008 Presidential election on the best candidate is roughly equivalent to showering $50,000 on your fellow citizens.

YOUR VOTE JUST MIGHT MAKE A DIFFERENCE—TO MANY PEOPLE

Caring about others provides a good reason to vote. Suppose you have altruistic preferences so that you want to improve the well-being of others. Then, under plausible conditions, voting may well then pass the cost benefit test, and even pass in flying colors.

How can this be? Isn't the chance of being pivotal vanishingly small in a large election? Indeed it is. As the size of the electorate increases, the chance of being pivotal so that your vote actually determines the outcome does tend toward zero. The important question, though, is how fast the probability tends to zero.

After all, as the population grows, the stakes of the election also grow. The election affects more people. It turns out that the stakes probably grow as fast as the probability of being pivotal shrinks. Both are proportional to N, the population size.

Consider the upcoming presidential race. The two candidates have significantly different policies, and it seems plausible that the average benefit to the citizenry is $1000 or more per citizen to have the better candidate win. If one candidate makes global depression, nuclear war, or global climate change less likely, the benefits might be much greater. Multiply that number by the 300 million people in the U.S. or the 6 billion in the world (if the issue is depression, global climate change or nuclear war) and an altruist might rationally vote even if the chances of being pivotal were 1 in 300 million. And, in a close election, the chance will be much greater than that. Certainly, the chance of being pivotal was higher than that in the year 2000, especially for residents of Florida.

Consider this thought experiment. Suppose that an election looks close so that it seems that the percentage tally will be between a 48–52 split and a 52–48 split between two candidates. If there will be 100 voters, and you are the potential hundred-and-first deciding whether to vote, here is you're the situation. Assume for simplicity that each percentage split has equal probability. (Little changes if we assign a more complicated probability distribution.) Then there will be either 48, 49, 50, 51, or 52 voters voting for candidate A, each with probability 1/5. If there are 50 voters, then the election is a tie and your vote will be pivotal.

Suppose there are 300 citizens (the voter turnout is 50% and 1/3 of citizens are underage); then, under the assumption that you believe that candidate A will benefit the population on average by $1000 per person, your vote will confer an expected benefit of 300($1000)(1/5)=$60,000 on your fellow citizens. Even if you are no great altruist, you might be happy to give up a half hour of your time to vote if your vote is expected to confer that much benefit on others. How else could you create that much value?

Now consider the private benefits to voting. The expected private benefits are ($1000)(1/5)=$200, which would probably be worth half an hour of voting.

So in this small election, either public or direct private benefits can justify your vote. How does it look in a larger election?

Suppose there are 100 million voters and 300 million people in the country. Then everything scales linearly. The probability of being pivotal falls to the order of 1 in 5 million as we explain in a recent article in the journal *Rationality and Society*. The expected benefit to others is then 300,000,000($1000)(1/5,000,000)=$60,000—exactly as in the small election! The expected direct private benefit, on the other hand, shrinks to become negligible at only ($1000)(1/5,000,000) = .002 cents.

Hence, in a large election, if you vote for the chance of being pivotal, it makes no sense to do so for the direct private benefits you expect if your preferred candidate wins. It makes a world of sense, however, to vote in the hope of conferring benefits on your fellow citizens if you believe that your candidate is better for the typical citizen.

To be sure, if you are a cynic who believes that politics is a zero-sum game, that involves nothing more than moving wealth around, then this argument will provide you no good reason to vote. There is no good reason for the

Table 1: 2008 Presidential Election

Scenario: October 23, 2008 forecast				Scenario: Too Close to call	
States	Probability that a single vote will matter	Charity-equivalent value of a vote		Probability that a single vote will matter	Charity-equivalent value of vote
Washington,.D.C.	2.0E-12	$1		2.1E-11	$6
Oklahoma	4.9E-11	$15		4.7E-11	$14
Georgia	1.3E-09	$400		2.9E-09	$854
Nebraska	1.3E-09	$400		3.2E-09	$964
Colorado	1.0E-07	$30,000		6.3E-07	$189,491
New Hampshire	1.3E-07	$38,000		1.4E-06	$426,103
Virginia	1.3E-07	$38,000		1.3E-06	$375,645
New Mexico	1.6E-07	$50,000		1.3E-06	$375,406

Our estimates, based on current poll-based forecasts, of the probability that a single vote will be decisive, in four non-battleground states and four battleground states. For each state, we also calculate the expected value of the vote viewed as a charitable contribution of $1000 per American in the (unlikely) event that your vote determines the election outcome. We work out these probabilities under two scenarios: first, the simulations from http://fivethirtheight.com; second, these simulations nationally shifted by 6.1 percentage points, so that the expected popular vote is tied.

cynic to vote in a large election, unless he or she likes the act of voting, which would be out of character for a cynic in any event.

Likewise, there is little reason to vote if one infers from the fact that the election is close, that there is little net expected benefit to society from one candidate over the other. However, for the policy wonk who thinks he knows better—and, really, don't we all—voting can make a lot of sense.

THE 2008 PRESIDENTIAL ELECTION

How do these probabilities look for the upcoming election? We estimated the probability in each state and in the District of Columbia that a single vote will decide the 2008 presidential election. Nate Silver, a prominent poll tracker (http://fivethirtyeight.com), provided us with 10,000 simulated elections based on his forecast using 23 October 2008 data. We use these to calculate the chance that each state is pivotal and, conditional on that, the chance that the vote in the state is tied, so that a single voter in that state can decide the election. For details, see a recent paper by Andrew Gelman, Nate Silver and Aaron Edlin.

In New Mexico, the chance that a single vote is decisive is roughly 1 in 6 million. Perhaps that seems slim, but if you consider the 300 million people who would benefit from a better choice, voting on the better candidate is equivalent to giving roughly $50,000 to charity (i.e., to others). In Colorado the value is $30,000 per vote, as seen in the table.

If you don't live in a battleground state, voting becomes less worthwhile. In Washington D.C., the outcome is so certain that your vote may only yield others a total expected value of a dollar. Don't fret, though, if you are a budding politico in D.C. Although your vote may not matter, think of the benefits you can deliver by going to a phone bank and calling 100 people in Colorado or New Mexico and getting them to the polls to vote for your favored candidate. One hundred extra voters in those states is worth three to five million dollars in expected value!

If the election becomes closer by election day and Obama's lead shrinks to nil, then the

value of votes in battleground states could soar to over $300,000, as shown in the "too close to call" scenario in the table.

VOTING AS CHARITY

The calculations above suggest that for a policy wonk or other informed voter, voting for president is like making a large gift to charity. Sure the chance of being pivotal in a large election is small, but the stakes are large. On balance, the expected return to society can be enormous relative to the half hour it will cost you to vote.

At $50,000 per half hour, voting is surely one of the best and most efficient charities around for a voter in New Mexico.

So an economist need not feel uneasy about voting. Perhaps he will still feel sheepish if he feels a professional obligation to be self-interested. But, as psychologist Dale Miller has noted, selfishness is an ideal that people profess more often than their behavior confirms.

Letters commenting on this piece or others may be submitted at http://www.bepress.com/cgi/submit.cgi?context=ev.

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