You Cannot be Serious:
The Impact of Accuracy Incentives on Partisan Bias in Reports of Economic Perceptions

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Online Appendix

Online Appendix: Part A

Survey Instructions for Knowledge Questions

In the 2004 study, respondents saw this common introduction:

> In the next part of this study, you will be asked 14 questions about politics, public policy, and economics. Many people don't know the answers to these questions, but it is helpful for us if you answer, even if you're not sure what the correct answer is. We encourage you to take a guess on every question. At the end of this study, you will see a summary of how many questions you answered correctly.

In this paper, we only use the five questions about economic conditions. The common introduction in 2008 was similar:

> In the next part of the study, you will be asked five questions about how well the economy is doing.
> You will have 45 seconds to answer each question. If you are not entirely sure which answer is correct, please mark your best guess.

In the 2004 study, respondents in the pay conditions received the following instructions:

> We will pay you for answering questions correctly. You will earn 1,000 bonus points ($1) for every correct answer you give. So, if you answer 3 of the 14 questions correctly, you will earn 3,000 bonus points ($3). If you answer 7 of the 14 questions correctly, you will earn 7,000 bonus points ($7). The more questions you answer correctly, the more you will earn.

Administration of Incentive Payments

Respondents received credit for correct answers in the form of "bonus points." Knowledge Networks sends their panelists checks for $25 when they reach 25,000 points (which they can also earn in other surveys they take). For all practical purposes, our incentives can be seen as direct cash rewards. The instructions in the pay conditions mentioned the bonus points as well as their dollar equivalents. Respondents in the pay conditions were reminded on every screen with a knowledge question that a correct answer would earn them a specific monetary reward.

To facilitate payment for open-ended questions in the relevant experimental conditions, we specified in advance a range of answers (e.g., "within X percentage points of the true percentage") that would earn compensation. These ranges were never revealed to the respondents. At the very end of the interview, they learned the number of questions they had answered correctly (and the rewards they earned).

No Treatment Effects on Question Completion

We examined whether assignment to the experimental conditions affected completion rates (i.e., whether paying respondents for correct answers would affect the likelihood that they complete the entire interview). If it did, then we must estimate this indirect effect of the experimental manipulations as well as their direct effects. Part of this complication is avoided because the assignment of the experimental condition occurred only when respondents reached the knowledge section of the interview. Respondents who quit the survey before that point could not have been affected by the monetary incentive as we had not yet revealed that aspect of the survey. After respondents learned about the experimental condition they were assigned to, only 7 respondents in 2004 and 8 respondents in 2008 quit the interview. Furthermore, the drop-out was roughly evenly distributed across conditions (2004: 4 in the 'pay' condition, 3 in the control; 2008: 1 in 'pay', 5 in 'accuracy appeal', 2 in the control.) Hence, selection effects are very unlikely. Therefore, we consider experimental differences between respondents who completed the interview as valid estimates of the true treatment effects.

Table A1: Economic Knowledge Questions

Question ID	Question wording	Response options (Correct response in bold)
Unemployment rate, 2004	The U.S. Bureau of Labor Statistics counts a person as unemployed if they are not employed at any job and are looking for work. By this definition, what percentage of Americans was unemployed in August of 2004?	• around 11 percent • around 9 percent • around 7 percent • **around 5 percent** • around 3 percent
Unemployment rate, 2008	The U.S. Bureau of Labor Statistics counts a person as unemployed if the person is not employed at any job and is looking for work. By this definition, 4.7 percent of Americans were unemployed in 2001 [at the beginning of President Bush's first term in office]. What percentage of Americans are currently unemployed?	**open-ended, correct: 4.8**
Uninsured Americans, 2004	In August 2004, the United States Census Bureau reported an estimate of the number of Americans without health insurance. The Census Bureau classified people as uninsured if they were not covered by any type of health insurance at any time in 2003. By this definition, what percentage of Americans did not have health insurance in 2003?	**open-ended, correct: 15.6**
Uninsured Americans, 2008	Each year, the United States Census Bureau reports an estimate of the number of Americans without health insurance. The Census Bureau classifies people as uninsured if they were not covered by any type of health insurance at any time during the year. By this definition, 14.1 percent of Americans did not have health insurance in 2001[, the year President Bush took office]. According to the latest estimate (for 2006), what percentage of Americans do not have health insurance?	**open-ended, correct: 15.8**

Table A1 (cont.): Economic Knowledge Questions

Question ID	Question wording	Response options (Correct response in bold)
Estate tax, 2004	There is a federal estate tax – that is, a tax on the money people leave to others when they die. What percentage of Americans leaves enough money to others for the federal estate tax to kick in?	• About 95 percent of all Americans • About 70 percent of all Americans • About 50 percent of all Americans • About 25 percent of all Americans • **Less than 5 percent of all Americans**
Estate tax, 2008	There is a federal estate tax – that is, a tax on the money people leave to others when they die. [President Bush has repeatedly proposed to eliminate the estate tax.] What percentage of Americans leave enough money to others for the federal estate tax to kick in?	• About 95 percent of all Americans • About 70 percent of all Americans • About 50 percent of all Americans • About 25 percent of all Americans • **Less than 5 percent of all Americans**
Federal Debt, 2004	The outstanding public debt of the United States is the total amount of money owed by the federal government. Every year the government runs a deficit, the size of the public debt grows. Every year the government runs a surplus, the size of the public debt shrinks. In January of 2001, when President Bush took office, the outstanding public debt of the United States was approximately 5.7 trillion dollars. Which of the following responses is closest to the outstanding public debt today?	• Less than 3.5 trillion dollars • 4.5 trillion dollars • 5.5 trillion dollars • 6.5 trillion dollars • **7.5 trillion dollars** • 8.5 trillion dollars • More than 9.5 trillion dollars
Federal Debt, 2008	The outstanding public debt of the United States is the total amount of money owed by the federal government. Every year the government runs a deficit, the size of the public debt grows. Every year the government runs a surplus, the size of the public debt shrinks. In January of 2001, [when President Bush took office,] the outstanding public debt of the United States was approximately 5.7 trillion dollars. Which of the following responses is closest to the outstanding public debt today?	• Less than 5.5 trillion dollars • 6.5 trillion dollars • 7.5 trillion dollars • 8.5 trillion dollars • **9.5 trillion dollars** • 10.5 trillion dollars • More than 11.5 trillion dollars

Table A1 (cont.): Economic Knowledge Questions

Question ID	Question wording	Response options (Correct response in bold)
Poverty rate, 2004	In August 2004, the Census Bureau reported how many Americans live in poverty. The poverty threshold depends on the size of the household. For example, a person under age 65 is considered to live in poverty if his or her 2003 income was below $9,573 and a family of four is considered to live in poverty if its 2003 income was below $18,810. By this definition, what percentage of Americans lived in poverty in 2003?	**open-ended, correct 12.5**
Gas price, 2008	According to the American Automobile Association (AAA), the national average price for a gallon of regular gasoline was $1.49 in January 2001 [at the beginning of George W. Bush's presidency in January 2001]. What is the current national average price for a gallon of regular gasoline?	**open-ended, correct $3.27 (average during field period)**

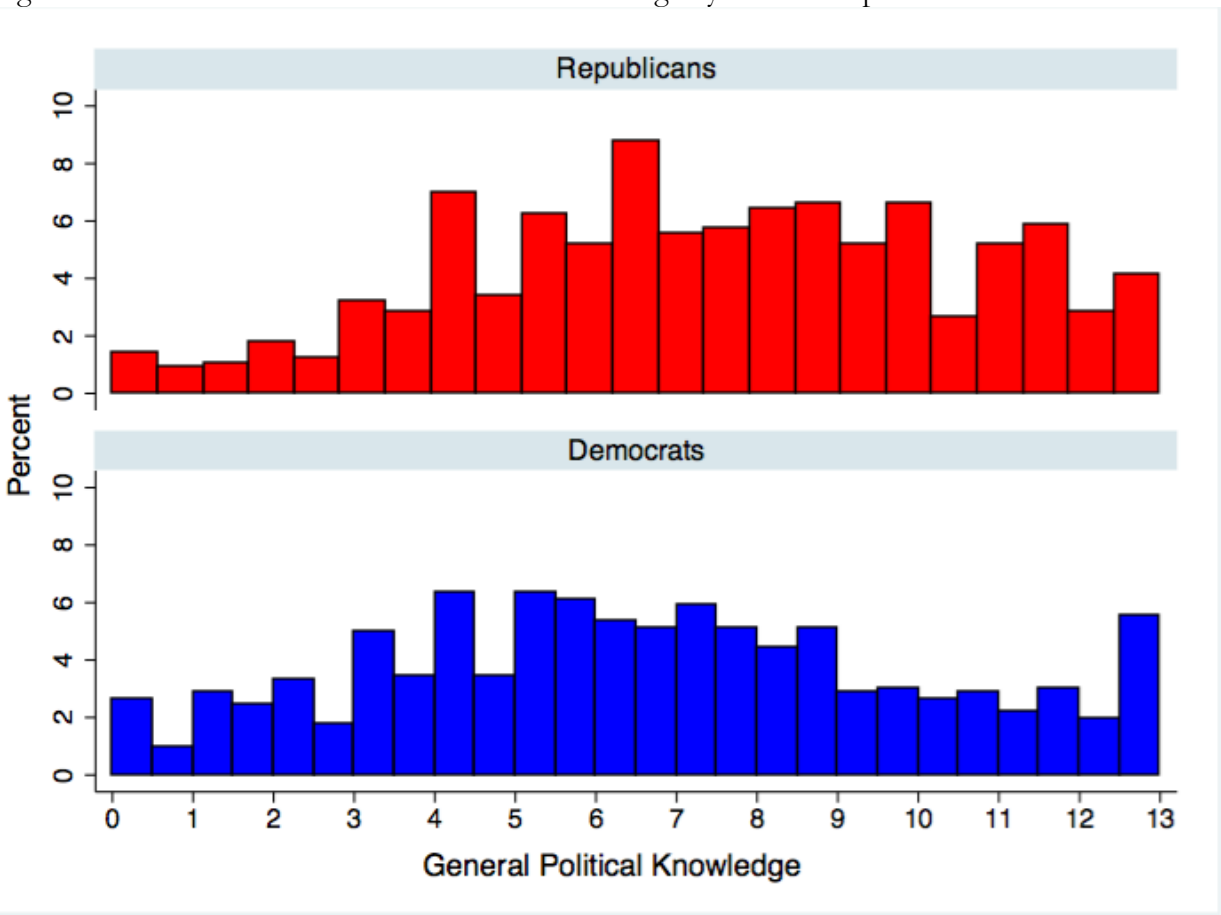
Note: For 2008 items, phrases in parentheses were randomly shown for half the sample.

Table A2: General Political Knowledge Questions (Study 2)

Question wording	**Response options (Correct response in bold)**
Who is the current secretary of defense?	Donald Rumsfeld, John Ashcroft, **Robert Gates**, Colin Powell
Who is the current Speaker of the U.S. House of Representatives?	**Nancy Pelosi**, Dana Perino, Barbara Boxer, Elizabeth Edwards
Who is the Chief Justice on the U.S. Supreme Court?	William Rehnquist, **John Roberts**, Antonin Scalia, Samuel Alito
Who is the President of Iran?	**Mahmoud Ahmadinejad**, Nouri al-Maliki, Hamid Karzai, Pervez Musharraf
What office is currently held by Condoleezza ("Condi") Rice?	Director of the Central Intelligence Agency, National Security Adviser, **Secretary of State**, White House Chief of Staff
What position is currently held by Ben Bernanke?	Treasury Secretary, **Chairman of the Federal Reserve**, Secretary of Homeland Security, Chairman of the National Economic Council
What position is currently held by Michael Mukasey?	**U.S. Attorney General**, President's General Counsel, Senate Majority Leader, Supreme Court Justice
What position is currently held by Nicolas Sarkozy?	**President of France**, Foreign Minister of the European Union (EU), Prime Minister of Turkey, UN Secretary General
For each of the following politicians, please indicate to which party they belong (Republican, Democrat, Green Party, Reform Party):	Bill Richardson, Fred Thompson, Mike Huckabee, Ron Paul
Of the 100 members of the U.S. Senate, how many are members of the Democratic [Republican] party?	Open-ended: **51 [49]**

Note: As part of an independent study, the first twelve questions randomly varied whether names, faces, or names and faces were shown. The design was balanced so that all respondents answered some questions in all three modalities. The randomization was orthogonal to the randomization for this study.

Figure A1. Distribution of General Political Knowledge by Partisanship



Note: Figure displays percent of Republicans and Democrats (including leaners) at each level of general political knowledge scale (range: 0 to 13).

Online Appendix: Part B

Robustness Checks

This appendix provides evidence that the treatment effects of accuracy incentives were not caused by respondents looking up answers and are robust to alternative scoring of the dependent variable.

Cheating. If incentives for correct answers merely caused respondents to look up answers, it would be invalid to conclude that the treatment reveals hidden knowledge or adjusted inference rules. We designed our surveys so that respondents had little opportunity to consult help, and there is compelling evidence that attempts to look up answers, if they occurred, did not distort our results. First, both surveys made it hard for respondents to look up answers by limiting the time they had to answer each question. As discussed above, time limits were 60 seconds in Study 1 and up to 90 seconds in Study 2 (although respondents were initially told only about the first 45 seconds).

Second, Study 2 included screen completion timers for all knowledge questions, allowing us to exclude slower responses, which may indicate attempts to look up answers. We reran our main analyses using a variety of screen completion time cutoffs. Table B1 displays results for the entire sample (reported in Table 2) and for cutoffs of 35, 40, 45, and 60 seconds. Regardless of cutoff, the effects of the monetary incentive and accuracy appeal cannot be statistically distinguished and remain statistically significant, making it unlikely that our findings are due to cheating.

Third, respondents who completed their surveys via a WebTV unit effectively did not have the opportunity to use a web browser. Respondents who accessed the Knowledge Networks website through a dial-up Internet connection also could not have easily taken advantage of online resources. Realistically, only respondents with high-speed connections could have looked up answers in the allotted time. Allowing the coefficients in Table 2 to vary by availability of a high-speed connection does not improve the model fit ($\chi^2[2] = 3.4, p = .18$ for (1); $\chi^2[3] = 2.5, p = .48$ for (2a)),

suggesting that respondents who had the option of looking up answers and respondents who did not have this option behaved similarly. In sum, we find little evidence that respondents consulted help when answering the knowledge questions.

Alternate Scoring Rules. Table B2 verifies the robustness of our estimates to different definitions of "correct" answers to open-ended questions. Our main results score open-ended questions so that 33 percent of responses are classified as correct. We check three alternate definitions in Table 2: predetermined ranges for which respondents received payouts (*Payout*), responses that are within 10 percent of the correct answer (*+/- 10%),* and ranges defined such that 23 percent of responses are correct (*23%*). The results are statistically and substantively very similar no matter which definition we use. Thus, we are confident that our main results in Table 2 do not depend on idiosyncratic or post-hoc scoring of the dependent variable.

Finally, we estimate the effects of monetary incentives and accuracy appeals on responses to each individual survey item via a series of item-level ordered logistic regressions. Table B3 contains the results for each item in Study 1 (2004) and Study 2 (2008). The monetary incentive effects are in the hypothesized direction (negative) for each item, except for the two Estate Tax items. However, the magnitude of effects is somewhat variable. We can only estimate the effect of accuracy appeals in Study 2. For three of the five items, it is in the hypothesized direction and indistinguishable from the effect of monetary incentives. For the other two items (Estate Tax and Gas Price), the effect of accuracy appeals is indistinguishable from zero.

Table B1. Robustness of Table 2, Column (2a) to Different Completion Time Cutoffs

	All	(1) ≤ 60 seconds	(2) ≤ 45 seconds	(3) ≤ 40 seconds	(4) ≤ 35 seconds
Monetary Incentive	-.14^{+}	-.15*	-.14^{+}	-.18*	-.18*
	(.09)	(.09)	(.09)	(.10)	(.10)
Accuracy Appeal	-.15*	-.14*	-.13^{+}	-.15*	-.12^{+}
	(.08)	(.08)	(.09)	(.09)	(.09)
Significantly different?					
χ_1^2 (p-value)	.02 (.89)	.00 (.96)	.02 (.89)	.09 (.76)	.26 (.61)
σ_α^2	.06 (.04)	.06 (.04)	.06 (.04)	.09 (.05)	.09 (.05)
# Responses	3,276	3,085	2,863	2,662	2,395
# Respondents	660	658	655	649	636
Log-Likelihood	-3,579	-3,371	-3,130	-2,908	-2,616

* $p<.05$, $^{+}$ $p<.10$ (one-tailed)

Table B2: Robustness Checks (Definition of "Correct" Interval)

Coding Rule	(1) *Payout*	(2) *+/- 10%*	(3) *23%*	(4) *Payout*	(5) *+/- 10%*	(6) *23%*	(7) *Payout*	(8) *+/- 10%*	(9) *23%*
	Studies 1 & 2			Study 2			Study 2 (Consistent Partisans Only)		
Monetary Incentive	-.10* (.06)	-.10* (.06)	-.14** (.06)	-.08 (.09)	-.06 (.08)	-.13^{+} (.09)	-.13^{+} (.10)	-.12^{+} (.10)	-.19* (.10)
Accuracy Appeal	-	-	-	-.13^{+} (.08)	-.17* (.08)	-.16* (.08)	-.14^{+} (.10)	-.19* (.09)	-.16* (.09)
Significantly different? χ_1^2 (p-value)	-	-	-	.31 (.58)	1.81 (.18)	.10 (.75)	.01 (.93)	.61 (.44)	.11 (.74)
σ_α^2	.09 (.04)	.08 (.04)	.08 (.04)	.06 (.04)	.03 (.03)	.06 (.04)	.11 (.05)	.05 (.04)	.09 (.05)
Number of Responses	4,324	4,324	4,324	3,276	3,276	3,276	2,614	2,614	2,614
Number of Respondents	878	878	878	660	660	660	525	525	525
Log-Likelihood	-4,667	-4,671	-4,653	-3,575	-3,537	-3,552	-2,804	-2,770	-2,787

** p <.01, * p<.05, $^{+}$ p<.10 (one-tailed)

Note: Cell entries are coefficients from a hierarchical ordered logistic model, with standard errors in parentheses.

Table B3: The Impact of Monetary Incentive and Accuracy Appeal on Item-Level Responses

Study 1	Unemployment Rate (2004)	Estate Tax (2004)	Federal Debt (2004)	Uninsured Rate (2004)	Poverty Rate (2004)
Monetary Incentive	-.22 (.17)	.11 (.17)	-.37 (.18)*	-.08 (.17)	-.01 (.17)
χ_1^2	1.55 (.21)	.39 (.53)	4.25 (.04)	.20 (.66)	.00 (.97)
Number of Respondents	460	462	433	451	461
Log-Likelihood	-488	-492	-467	-484	-491

Study 2	Unemployment Rate (2008)	Estate Tax (2008)	Federal Debt (2008)	Uninsured Rate (2008)	Gas Price (2008)
Monetary Incentive	-.11 (.18)	.16 (.18)	-.17 (.19)	-.21 (.18)	-.34 (.18)*
Accuracy Appeal	-.15 (.17)	.02 (.18)	-.45 (.18)**	-.13 (.17)	.004 (.17)
Significantly different? χ_1^2 (p-value)	.05 (.82)	.61 (.44)	2.43 (.12)	.21 (.65)	3.91 (.05)
χ_2^2	.81 (.67)	.90 (.64)	6.45 (.04)	1.40 (.50)	4.90 (.09)
Number of Respondents	656	657	654	654	655
Log-Likelihood	-705	-688	-654	-714	-715

** p<.01, * p<.05, $^+$ p<.10

Note: Cell entries are coefficients from an item-level ordered logistic regression, with standard errors in parentheses. T-tests are one-tailed because all hypotheses are directional. Samples use all partisan respondents, excluding those in the Bush Reference condition of Study 2.