

# Replication notes for

Markus Prior and Arthur Lupia  
“Money, Time, and Political Learning Skills”  
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Data: Prior Lupia AJPS 08.dta

1,237 observations  
28 variables

This document contains notes to aid in replicating the results of the above article. It is accompanied by a Stata “do” file with corresponding sections. Pertinent Stata output is included here where not too cumbersome. Full output can be found in the accompanying log file, “Prior Lupia AJPS 08.smcl”.

## 1 Variable Definitions

### 1.1 – Contextual variables

**group** – Experimental condition assignment

**pay** – R in one of the “pay” conditions

**time** – R in one of the “time” conditions

**dt\_end** – Date survey completed

### 1.2 – Demographic / Control variables

For all raw question responses, -2 indicates the question was not asked because the respondent quit the survey before answering all questions. -1 indicates the respondent skipped the question.

**q4** - Some people seem to follow what's going on in government and public affairs most of the time, whether there's an election going on or not. Others aren't that interested. How often would you say you follow what's going on in government and public affairs?

- 1- most of the time
- 2- some of the time
- 3- only now and then

4- hardly at all

**polint** - Recoding of q4 such that

- 0- Hardly at all
- 1- Only now and then
- 2- Some of the time
- 3- Most of the time

R's who "skipped" the question coded as "hardly at all."

**polint2** – Identical to polint, except Rs who skipped the question are coded at missing.

**ppgender**

- 1- R is male
- 2- F is female

**female** – Recoding of ppgender such that

- 0- R is male
- 1- R is female

**ppage** – R's age

**age** – R's age (Identical to ppage)

**ppeth** – R's ethnicity

- 1- White, non-hispanic
- 2- Black, non-hispanic
- 3- Other, non-hispanic
- 4- Hispanic

**white** – Dummy for R is white

- 0- R is not white
- 1- R is white

**ppeduc** – Highest degree received by R

- 1- Less than HS
- 2- Some HS, no diploma
- 3- Graduated from HS
- 4- Some college, no degree
- 5- Associate degree
- 6- Bachelor's degree

- 7- Master's degree
- 8- Professional degree
- 9- Doctoral degree

**edu** – Recoding of ppeduc such that

- 1- Less than HS
- 2- Some HS, no diploma
- 3- Graduated from HS
- 4- Some college, no degree
- 5- Associate or bachelor's degree
- 6- Graduate degree

**ppincimp** – R Household income

- 1- Less than \$5,000
- 2- \$5,000 - \$7,499
- 3- \$7,500 - \$9,999
- 4- \$10,000 - \$12,499
- 5- \$13,000 - \$14,999
- 6- \$15,000 - \$19,999
- 7- \$20,000 - \$24,999
- 8- \$25,000 - \$29,999
- 9- \$30,000 - \$34,999
- 10- \$35,000 - \$39,999
- 11- \$40,000 - \$49,999
- 12- \$50,000 - \$59,999
- 13- \$60,000 - \$74,999
- 14- \$75,000 - \$84,999
- 15- \$85,000 - \$99,999
- 16- \$100,000 - \$124,999
- 17- \$125,000 - \$149,999
- 18- \$150,000 - \$174,999
- 19- \$175,000 or more

**income** – R household income (identical to ppincimp)

**ppmarit** – R marital status

- 1- Married
- 2- Single (never married)
- 3- Divorced
- 4- Widowed
- 5- Separated

**married** -

- 0- R is not married
- 1- R is married

**ppwork** – Current employment status

- 1- Paid employee
- 2- Self-employed
- 3- Owner/partner in a small business
- 4- Works at least 15 hrs/week without pay in family business/farm
- 5- Unemployed, temporarily laid off, but looking for work
- 6- Retired
- 7- Disabled
- 8- Homemaker
- 9- Other

**employ** – R works full time?

- 0- R does not work full time (5-9 in ppwork)
- 1- R works full time (1-4 in ppwork)

1.3 – Regression variables

These dummy variables, derived from those above, are used as regression controls. Indicator variables are frequently used instead of scales to allow for nonlinear relationships.

**intsome** – polint = 2, follow politics “some of the time.”

**intmost** – polint = 3, follow politics “most of the time.”

**hsonly** – edu = 3, R graduated from high school, but did no college.

**somecol** – edu= 4, R has some college.

**college** – edu= 5 or 6, R has college or graduate degree

**age35\_44; age45\_59; age60p**: Indicators for the designated age ranges or 60+

**minority** – R is minority (inverse coding of “white.”)

1.4 - Knowledge questions

For all knowledge questions, -2 indicates the question was not asked because the respondent quit the survey before answering all questions. -1 indicates the respondent skipped the question. For multiple-choice questions, the order in which choice were displayed was varied randomly (maintaining the ordinality of sequential choices.)

All knowledge questions have an accompanying dummy variable – for example Q5x – that takes a value of 1 if the respondent answered correctly by the criteria below and 0 otherwise. Refusals and skipped questions are coded as incorrect, as described in footnote 5.

**q5** - How long is the term of office for a U.S. Senator? If you do not know the answer, please give us your best guess.

Value is R's answer.

Correct iff R answer 6.

**q6** - Of the 100 members of the U.S. Senate, how many are members of the Republican party? If you do not know the answer, please give us your best guess.

Value is R's open-ended answer. (Only numbers from 0-100 allowed.)

Correct iff R's answer was between 51 and 59, inclusive.

**q7** - What was the outcome of the 2000 Presidential Election in the state in which you now live? If you do not know the answer, please give us your best guess.

- 1 - Bush won by more than 5 percentage points
- 2 - Bush won by less than 5 percentage points
- 3 - Gore won by less than 5 percentage points
- 4 - Gore won by more than 5 percentage points

**xanswer** – Correct answer to Q7, based on R's residence

Correct iff Q7 = xanswer

**q8** - President Bush proposed a "Striving Readers initiative" to help high school students who are not reading as well as they should be for their age. What is the status of the Striving Readers program? If you do not know the answer, please give us your best guess.

- 1- The program was implemented in 2002 and has already led to a 1.3% increase in functional literacy among high school students.
- 2- President Bush has proposed to fund this program at \$100 million in his 2005 budget.
- 3- President Bush proposed this program, but did not include any funding for it in his 2005 budget.

- 4- The program started last year, but in his 2005 budget President Bush proposed to cut its funding by \$200 million.

Correct iff R answered 2.

**q9** - In the key Senate vote on October 11, 2002, how many Democratic Senators voted to give President Bush the authority to attack Iraq? If you do not know the answer, please give us your best guess.

- 1- None of them
- 2- Two Democratic senators
- 3- About a quarter of all Democratic senators
- 4- A majority of all Democrats in the Senate, but not all of them
- 5- All Democratic senators

Correct iff R answered 4.

**q10** - A line-item veto allows the president to sign a budget bill while cutting specific spending items and tax expenditures that he disapproves. The Supreme Court recently ruled one version of the line-item veto unconstitutional. Other versions of the line-item veto are less likely to be overruled by the court. Which of the following statements best describes the presidential candidates' positions on new versions of the line item veto? If you do not know the answer, please give us your best guess.

- 1- President Bush and Senator Kerry both oppose the line-item veto.
- 2- President Bush supports a line-item veto, while Senator Kerry opposes it.
- 3- Senator Kerry supports a line-item veto, while President Bush opposes it.
- 4- President Bush and Senator Kerry both support a line-item veto.

Correct iff R answered 4.

**q11** - As you may know, a special government commission—called the “9/11 Commission,” investigated the circumstances surrounding the September 11 attacks and recently issued its final report. Which statement most accurately represents the Commission’s conclusions about the relationship between Iraq and al Qaeda? If you do not know the answer, please give us your best guess.

- 1- They had no connection at all
- 2- A few al-Qaeda individuals visited Iraq or had contact with Iraqi officials
- 3- Iraq gave substantial financial support to al-Qaeda, but was not involved in the September 11th attacks
- 4- Iraq was directly involved in carrying out the September 11th attacks

Correct iff R answered 2.

**q12** - Compared with the citizens of Western European countries, do you think Americans pay a higher percentage of their income in taxes, a smaller percentage of their income in taxes, or about the same percentage of their income in taxes? If you do not know the answer, please give us your best guess.

- 1- A higher percentage
- 2- A smaller percentage
- 3- About the same percentage

Correct iff R answered 2.

**q13** - 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? If you do not know the answer, please give us your best guess.

- 1- around 11 percent
- 2- around 9 percent
- 3- around 7 percent
- 4- around 5 percent
- 5- around 3 percent

Correct iff R answered 4.

**q14** - 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? If you do not know the answer, please give us your best guess.

- 1- About 95% of all Americans
- 2- About 70% of all Americans
- 3- About 50% of all Americans
- 4- About 25% of all Americans
- 5- Less than 5% of all Americans

Correct iff R answered 5.

**q15** - 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? If you do not know the answer, please give us your best guess.

Value is R's open-ended response.

Correct iff R answered was in the range 9.6 - 21.6, inclusive.

**q16** - 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? If you do not know the answer, please give us your best guess.

- 1- Less than 3.5 trillion dollars
- 2- 4.5 trillion dollars
- 3- 5.5 trillion dollars
- 4- 6.5 trillion dollars
- 5- 7.5 trillion dollars
- 6- 8.5 trillion dollars
- 7- More than 9.5 trillion dollars

Correct iff R answered 5.

**q17** - John Kerry says that he would eliminate the Bush tax cuts on families making how much money? If you do not know the answer, please give us your best guess.

- 1- Over 50,000 a year
- 2- Over 100,000 a year
- 3- Over 150,000 a year
- 4- Over 200,000 a year
- 5- Over 500,000 a year

Correct iff R answered 4.

**q18** - 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? If you do not know the answer, please give us your best guess.

Value is R's open-ended answer from 0-99.

Correct iff R answered in the range 6.5 – 18.5, inclusive.

**allknow** – Total number of correct answers

## 2 Analysis

### 2.1 Exclude Rs who did not start knowledge section

Exclude respondents who did not start the knowledge battery. (Keep those started the battery but did not complete it; see fn 5.)

### 2.2 Figures for Table 1

See log file for Stata output.

The results here use polint2, where Rs who deliberately skipped question 4 are coded as missing.

### 2.3 Figures for Table 3

See log file for Stata output.

The results here use polint2, where Rs who deliberately skipped question 4 are coded as missing.

### 2.4 Figures for Table 4 (Table 2 is a subset of table 4.)

See log file for Stata output.

The results here use the polint variable where Rs who skipped question 4 are coded as low political interest.

### 2.5 Additional Claims

**2.5.1 Claim (fn4):** “The first factors have eigenvalues between 2.9 and 3.1, compared to eigenvalues of 1.3 and lower for the next factors.”

This claim requires slight modification. In the published results, “skips” of questions 15 and 18 were coded as missing. To be consistent with the rest of the coding scheme, these responses should have been coded as 0, meaning an incorrect answer. The replication “do” file first replicates the published results by constructing two mis-coded variables, “q15alt” and “q18alt.” It then produces corrected results.

As a result of the correction, the first factors have eigenvalues between 2.9 and 3.2 instead of 2.9 and 3.1. The next factors still have eigenvalues of 1.3 and lower.

See log file for Stata output.

**2.5.2 Claim (fn4):** Cronbach's Alpha is between .672 and .717 for all groups.

This statistic is affected by the same modification described in 2.5.1. The published results should have stated an Alpha between .672 and .715. With correction, the range becomes between .675 and .726,

See log file for Stata output.

**2.5.3 Claim (p.174):** "Eighty percent of the respondents who completed the survey did so within four days of the fielding date."

Note: For ease of interpretation, the values of the "date" variable have here been changed to more readable values. A more intuitive "date" variable can be constructed by removing the year information with a command such as `gen end2 = dt_end-20040000`

```
. tab end2
```

end2	Freq.	Percent	Cum.
1020	836	69.38	69.38
1022	68	5.64	75.02
1024	154	12.78	<b>87.80</b>
1026	35	2.90	90.71
1028	66	5.48	96.18
1030	17	1.41	97.59
1032	13	1.08	98.67
1100	16	1.33	100.00
Total	1,205	100.00	

**2.5.4 Claim (fn5):** Only 24 of the respondents who started the knowledge section did not see all 14 knowledge questions.

The command below displays how many Rs saw the first knowledge question, q5, but not the last one, q18.

```
. tab q18 if q5!=-2  
  
in august |  
2004, the |
```

census bureau reported how many americans live in poverty.	Freq.	Percent	Cum.
not asked	24	1.97	1.97

**2.5.5 Claim (fn6):** “Only 17 respondents quit after reaching that [the political knowledge questions.] Ten were in the “24 hour” condition.

```
. tab group if tm_end=. & q5!=-2
```

data-only: group	Freq.	Percent	Cum.
60 seconds/no pay	3	17.65	17.65
24 hours/no pay	7	41.18	58.82
60 seconds/\$1 per correct answer	4	23.53	82.35
24 hours/\$1 per correct answer	3	17.65	100.00
Total	17	100.00	

**2.5.6 Claim (p. 176):** “A more detailed look at the data reveals that while 28% of the respondents in the control condition answers less than three questions correctly, that share drops to 15% in the “24 hours with pay” condition. Only 10% get more than eight items right in the control condition, compared to almost twice that (19%) in the “24 hours with pay” condition.”

```
. tab allknow if group==1
```

allknow	Freq.	Percent	Cum.
0	6	1.92	1.92
1	40	12.82	14.74
2	40	12.82	27.56
3	43	13.78	41.35
4	43	13.78	55.13
5	36	11.54	66.67
6	25	8.01	74.68
7	24	7.69	82.37
8	23	7.37	89.74
9	15	4.81	94.55
10	10	3.21	97.76
11	5	1.60	99.36
12	2	0.64	100.00
Total	312	100.00	

```
. tab allknow if group==4
```

allknow	Freq.	Percent	Cum.
---------	-------	---------	------

0	8	2.67	2.67
1	11	3.67	6.33
2	25	8.33	<b>14.67</b>
3	37	12.33	27.00
4	38	12.67	39.67
5	46	15.33	55.00
6	33	11.00	66.00
7	23	7.67	73.67
8	22	7.33	<b>81.00</b>
9	17	5.67	86.67
10	18	6.00	92.67
11	8	2.67	95.33
12	4	1.33	96.67
13	8	2.67	99.33
14	2	0.67	100.00
Total	300	100.00	

**2.5.7 Claim (fn176):** Analysis of variance confirms that both experimental factors significantly increase knowledge scores... The interaction of the two factors, however, is not significant.

```
. anova allknow time pay time*pay
```

```
Number of obs = 1220      R-squared      = 0.0187
Root MSE      = 2.94093   Adj R-squared = 0.0163
```

Source	Partial SS	df	MS	F	Prob > F
Model	200.860985	3	66.9536616	7.74	0.0000
time	148.757332	1	148.757332	17.20	0.0000
pay	47.1473245	1	47.1473245	5.45	0.0197
time*pay	3.74843714	1	3.74843714	0.43	0.5105
Residual	10517.2792	1216	8.64907827		
Total	10718.1402	1219	8.79256781		

**2.5.8 Claim (p. 177):** “Four factors in Table 4 are significantly different in the second and fourth columns.”

Separate regressions make pairwise comparisons between the coefficients in each column.

Standard errors from these regressions are used to construct the superscript letters in Table 4.

See log file for Stata output.

**2.5.9 Claim (fn 9):** Entering political interest as a 4-point scale does not affect the substance of our claim. In that case, the OLS coefficient is .91 in the “one minute with pay” condition... In the “24 hours with pay” condition, that coefficient is .48.

The results here use polint2, where Rs who deliberately skipped question 4 are coded as missing. The alternative coding, where “skips” are coded as low political interest, results in coefficients of .89 and .46. This model is also presented in the “do” file.

See log file for output.

**2.5.10 Claim (fn3):** Manipulation check: Respondents in the “Pay” and “24 hour” conditions spent more time answering questions... Increased interview length correlated with better performance.

This section of the “do” file constructs graphs, tables, and an ANOVA analysis showing length of interview by treatment group. The new variables int\_dur1 and int\_dur2 collapse the interview duration variable into a more compact scale. The variable int\_dur3 constructs a logarithmic scale. The variable int\_dur5 divides the duration variable into approximate quintiles.

See log file for output.

**Figure 2** derives simply from adding the appropriate coefficients into predict the number of correct responses:

Political learning skills:

Hardly at all/Only now and then:

$$3.02 - .01 (\text{married}) - .89 (\text{female}) + 1.73 (\text{college}) + .38 (\text{age}) + 9.78 * .12 (\text{income}) \\ - .57 (\text{employed}) = \mathbf{4.8}$$

Some of the time:

$$3.02 - .01 (\text{married}) - .89 (\text{female}) + 1.73 (\text{college}) + .38 (\text{age}) + 9.78 * .12 (\text{income}) \\ - .57 (\text{employed}) + 1.5 (\text{interest}) = \mathbf{6.3}$$

Most of the time:

$$3.02 - .01 (\text{married}) - .89 (\text{female}) + 1.73 (\text{college}) + .38 (\text{age}) + 9.78 * .12 (\text{income}) \\ - .57 (\text{employed}) + 1.5 (\text{interest}) = \mathbf{7.1}$$

Quick Recall:

Hardly at all/Only now and then:

$$2.81 + .16 (\text{married}) - .32 (\text{female}) + 2.2 (\text{college}) + .63 (\text{age}) + 10.1 * .12 (\text{income}) \\ - .15 (\text{employed}) = \mathbf{6.5}$$

Some of the time:

$$2.81 + .16 (\text{married}) - .32 (\text{female}) + 2.2 (\text{college}) + .63 (\text{age}) + 10.1 * .12 (\text{income}) - .15 (\text{employed}) - .01 (\text{interest}) = \mathbf{6.5}$$

Most of the time:

$$2.81 + .16 (\text{married}) - .32 (\text{female}) + 2.2 (\text{college}) + .63 (\text{age}) + 10.1 * .12 (\text{income}) - .15 (\text{employed}) + 1.08 (\text{interest}) = \mathbf{7.6}$$

Figure 2:

