

# Crying Wolf in the Lab

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August 24, 2023

## **Abstract**

Keywords:

# 1 Introduction

## A Results

### A.1 IP and Beliefs

Figure 1: Average Blind Protection Response

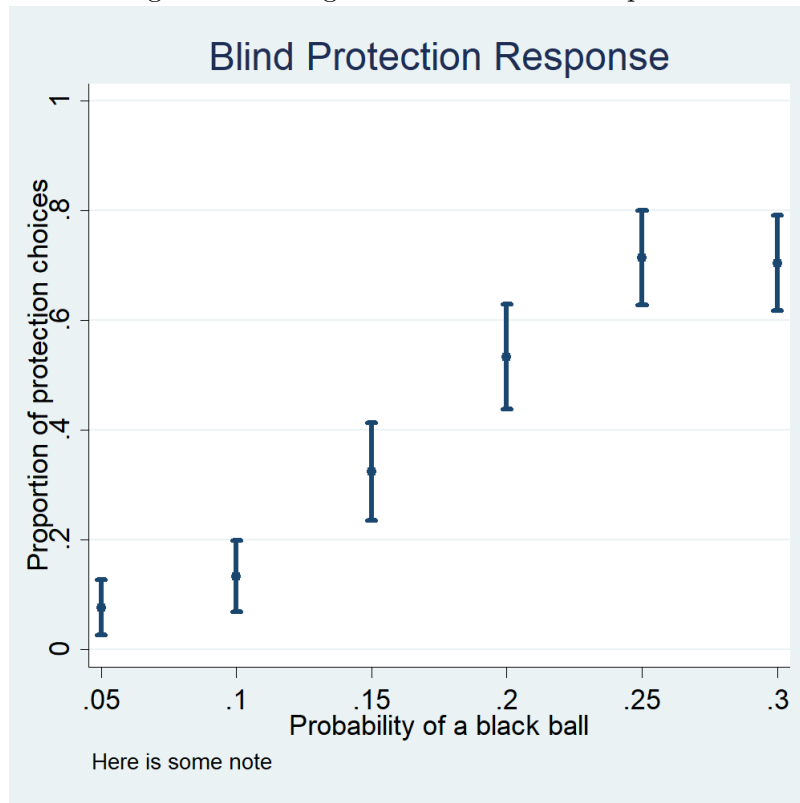
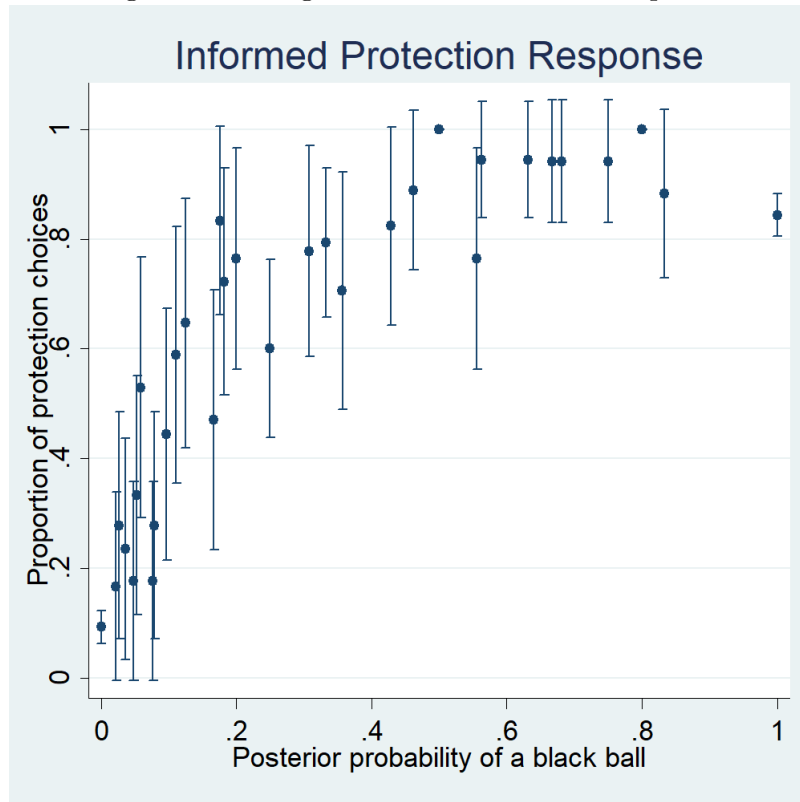


Figure 2: Average Informed Protection Response



ALEX: Double check: Are these everyone or  $p \leq 0.2$ ? YES

ALEX:

- IP Table:
  - We have Table 23 (new version) that controls for beliefs - $\hat{\epsilon}$  finds that beliefs explain biases except for  $s=\text{white}$ , FP.
  - We want to tell the story of what happens (or the biases that remain) once we account for belief errors.

Table 1: Belief Elicitation: When Mistakes Happen

|                | (1)                | (2)              | (3)               |
|----------------|--------------------|------------------|-------------------|
|                | All                | S=White          | S=Black           |
| FP rate        | .6***<br>(0.1)     | .292***<br>(0.1) | .908***<br>(0.1)  |
| FN rate        | .0108<br>(0.1)     | .273***<br>(0.1) | -.251***<br>(0.1) |
| Constant       | -.0784***<br>(0.0) | .314***<br>(0.0) | -.47***<br>(0.0)  |
| Subject FE     | Yes                | Yes              | Yes               |
| Observations   | 1248               | 624              | 624               |
| Adjusted $R^2$ | 0.15               | 0.41             | 0.52              |

Standard errors in parentheses

Dep. variable: reported belief - posterior probability

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

ALEX:

- BE Table:
  - Keep Cols 1-3 (Panel A)
  - \*Drop for now

## B WTP

Table 2: WTP for Information (tobit)

|                | (1)               | (2)               | (3)               | (4)               | (5)               | (6)               |
|----------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
|                | All               | p=0.1             | p=0.2             | All               | All               | All               |
| model          |                   |                   |                   |                   |                   |                   |
| FN costs       | -.261***<br>(0.1) | -1.24**<br>(0.5)  | -.682***<br>(0.3) | -.407***<br>(0.1) | -.332***<br>(0.1) | -.316***<br>(0.1) |
| FP costs       | -1.04***<br>(0.2) | -.647***<br>(0.2) | -.519**<br>(0.3)  | -.917***<br>(0.2) | -.754***<br>(0.2) | -.713***<br>(0.2) |
| BP costs       |                   |                   |                   | .362***<br>(0.1)  | .353***<br>(0.1)  | .373***<br>(0.1)  |
| Belief change  |                   |                   |                   |                   | .512**<br>(0.2)   |                   |
| Certainty      |                   |                   |                   |                   |                   | 1.2**<br>(0.5)    |
| Constant       | 2.39***<br>(0.1)  | 1.79***<br>(0.2)  | 2.33***<br>(0.2)  | .983***<br>(0.3)  | .636**<br>(0.3)   | -.14<br>(0.6)     |
| sigma          |                   |                   |                   |                   |                   |                   |
| Constant       | 1.94***<br>(0.1)  | 1.83***<br>(0.1)  | 1.7***<br>(0.1)   | 1.89***<br>(0.1)  | 1.88***<br>(0.1)  | 1.88***<br>(0.1)  |
| Observations   | 624               | 159               | 153               | 624               | 624               | 624               |
| Adjusted $R^2$ |                   |                   |                   |                   |                   |                   |

Standard errors in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

ALEX:

- Blind Protection costs: what you lose if you don't use signal.
- Belief change: Respondents' belief change due to the signal from white to black (how info structure changes the relative value of hint).
- Certainty: How close is your belief to 1 or 0. (Willingness to pay for certainty):
- Certainty =  $P(S = W)(1 - \mu(B|S = W)) + P(S = B)\mu(B|S = B)$ ,  $\mu(B|S = Y)$  is the reported belief that the ball is black when the signal is  $Y$ ,  $P(S = Y)$  is the actual prob of the ball being  $Y$ . This is an ad-hoc measure, I probably need to check literature to see if there is something more standard.
- Describe why better than OLS: because we truncate.

Table 3: Average WTP discrepancy (WTP-Value) by Signal Type

| <b>False-positive</b> | <b>False-negative</b> | <b>Mean WTP discrepancy</b> | <b>P(= 0)</b> |
|-----------------------|-----------------------|-----------------------------|---------------|
| No                    | No                    | -0.106                      | 0.433         |
| No                    | Yes                   | 0.143                       | 0.250         |
| Yes                   | No                    | 0.081                       | 0.502         |
| Yes                   | Yes                   | 0.492                       | 0.000         |



Table 4: WTP minus Value of Information (OLS)

|                                       | (1)     | (2)     | (3)     | (4)      | (5)      |
|---------------------------------------|---------|---------|---------|----------|----------|
| FP costs                              | .237*   | .231*   | .204    | .448***  | .412***  |
|                                       | (0.1)   | (0.1)   | (0.3)   | (0.2)    | (0.1)    |
| FN costs                              | .353*** | .319*** | .232    | .337***  | -.635*** |
|                                       | (0.1)   | (0.1)   | (0.3)   | (0.1)    | (0.2)    |
| Risk-loving                           |         |         | 0       |          |          |
|                                       |         |         | (.)     |          |          |
| Risk-averse                           |         |         | 0       |          |          |
|                                       |         |         | (.)     |          |          |
| No risk av. measure                   |         |         | 0       |          |          |
|                                       |         |         | (.)     |          |          |
| Risk-loving $\times$ FP costs         |         |         | .165    |          |          |
|                                       |         |         | (0.4)   |          |          |
| Risk-averse $\times$ FP costs         |         |         | -.0197  |          |          |
|                                       |         |         | (0.4)   |          |          |
| No risk av. measure $\times$ FP costs |         |         | .0244   |          |          |
|                                       |         |         | (0.5)   |          |          |
| Risk-loving $\times$ FN costs         |         |         | .177    |          |          |
|                                       |         |         | (0.3)   |          |          |
| Risk-averse $\times$ FN costs         |         |         | .0608   |          |          |
|                                       |         |         | (0.3)   |          |          |
| No risk av. measure $\times$ FN costs |         |         | .114    |          |          |
|                                       |         |         | (0.3)   |          |          |
| Inaccurate beliefs                    |         |         |         | .293**   |          |
|                                       |         |         |         | (0.1)    |          |
| Inaccurate beliefs $\times$ FP costs  |         |         |         | -.197    |          |
|                                       |         |         |         | (0.5)    |          |
| Inaccurate beliefs $\times$ FN costs  |         |         |         | .309     |          |
|                                       |         |         |         | (0.2)    |          |
| plevel=200                            |         |         |         |          | -1.39*** |
|                                       |         |         |         |          | (0.2)    |
| plevel=300                            |         |         |         |          | -1.37*** |
|                                       |         |         |         |          | (0.1)    |
| plevel=500                            |         |         |         |          | 0        |
|                                       |         |         |         |          | (.)      |
| plevel=200 $\times$ FP costs          |         |         |         |          | .162     |
|                                       |         |         |         |          | (0.2)    |
| plevel=300 $\times$ FP costs          |         |         |         |          | -.417*** |
|                                       |         |         |         |          | (0.2)    |
| plevel=500 $\times$ FP costs          |         |         |         |          | -.755*   |
|                                       |         |         |         |          | (0.4)    |
| plevel=200 $\times$ FN costs          |         |         |         |          | .828***  |
|                                       |         |         |         |          | (0.2)    |
| plevel=300 $\times$ FN costs          |         |         |         |          | .886***  |
|                                       |         |         |         |          | (0.2)    |
| plevel=500 $\times$ FN costs          |         |         |         |          | 1.02***  |
|                                       |         |         |         |          | (0.2)    |
| Constant                              | -.207   | -.182** | -.184** | -.409*** | .575***  |
|                                       | (0.2)   | (0.1)   | (0.1)   | (0.1)    | (0.1)    |
| Observations                          | 624     | 624     | 624     | 624      | 624      |
| Adjusted $R^2$                        | 0.05    | 0.38    | 0.37    | 0.38     | 0.58     |

Standard errors in parentheses

Table 5: WTP minus Value of Information, connection to self-reported protection strategy

|  | (1)             | (2)              | (3)              | (4)             | (5)               | (6)              |
|--|-----------------|------------------|------------------|-----------------|-------------------|------------------|
|  |                 |                  |                  | FE              | FE                | FE               |
| p>0.2                                  | -.0953<br>(0.2) | -.875**<br>(0.3) | -.107<br>(0.2)   | -.113<br>(0.2)  | -.884***<br>(0.3) | -.123<br>(0.2)   |
| FN costs                               | -.514<br>(0.4)  | -.755<br>(0.5)   | -.128<br>(0.2)   | -.488<br>(0.5)  | -.805*<br>(0.5)   | -.196<br>(0.2)   |
| p>0.2 × FN costs                       | .836**<br>(0.3) | 1.24***<br>(0.3) | .743***<br>(0.2) | .826**<br>(0.4) | 1.27***<br>(0.3)  | .794***<br>(0.2) |
| Risk-loving × p>0.2 × FN costs         | .245<br>(0.2)   | -.733**<br>(0.3) |                  | .164<br>(0.3)   | -.633*<br>(0.3)   |                  |
| Risk-averse × p>0.2 × FN costs         | .174<br>(0.2)   | -.526<br>(0.3)   |                  | .125<br>(0.3)   | -.498<br>(0.3)    |                  |
| No risk av. measure × p>0.2 × FN costs | .135<br>(0.2)   | -.531<br>(0.5)   |                  | .158<br>(0.3)   | -.655<br>(0.4)    |                  |
| FP costs                               | .506*<br>(0.3)  | .334<br>(0.3)    | .395***<br>(0.1) | .492*<br>(0.3)  | .27<br>(0.2)      | .687***<br>(0.2) |
| p>0.2 × FP costs                       | -.758*<br>(0.4) | -.189<br>(0.6)   | -.605**<br>(0.3) | -.734<br>(0.5)  | -.191<br>(0.6)    | -.466<br>(0.3)   |
| Risk-loving × p>0.2 × FP costs         | -.239<br>(0.4)  | -.613<br>(0.6)   |                  | .204<br>(0.8)   | -.459<br>(0.7)    |                  |
| Risk-averse × p>0.2 × FP costs         | -.152<br>(0.4)  | -.986<br>(0.6)   |                  | -.262<br>(0.7)  | -.978<br>(0.6)    |                  |
| No risk av. measure × p>0.2 × FP costs | .158<br>(0.7)   | -.92<br>(0.6)    |                  | -.453<br>(0.7)  | -1.09<br>(0.7)    |                  |
| Risk-loving × p>0.2                    |                 | .846<br>(0.5)    |                  |                 | .837<br>(0.5)     |                  |
| Risk-averse × p>0.2                    |                 | .982**<br>(0.4)  |                  |                 | .967**<br>(0.4)   |                  |
| No risk av. measure × p>0.2            |                 | .771<br>(0.6)    |                  |                 | .797<br>(0.6)     |                  |
| Risk-loving × FN costs                 |                 | .807<br>(0.5)    |                  |                 | .659<br>(0.5)     |                  |
| Risk-averse × FN costs                 |                 | .507<br>(0.5)    |                  |                 | .47<br>(0.5)      |                  |
| No risk av. measure × FN costs         |                 | .489<br>(0.7)    |                  |                 | .681<br>(0.6)     |                  |
| Risk-loving × FP costs                 |                 | -.0496<br>(0.4)  |                  |                 | .314<br>(0.3)     |                  |
| Risk-averse × FP costs                 |                 | .34<br>(0.4)     |                  |                 | .317<br>(0.3)     |                  |
| No risk av. measure × FP costs         |                 | .638<br>(0.5)    |                  |                 | .306<br>(0.4)     |                  |
| p>0.2 × (sum) bp × FN costs            |                 |                  | -.0523<br>(0.0)  |                 |                   | -.056<br>(0.0)   |
| p>0.2 × (sum) bp × FP costs            |                 |                  | -.0494<br>(0.1)  |                 |                   | -.217*<br>(0.1)  |
| Constant                               | -.0858<br>(0.2) | .207<br>(0.5)    | -.0902<br>(0.2)  | -.0449<br>(0.1) | -.0454<br>(0.1)   | -.0458<br>(0.1)  |
| Risk pref dummies                      | No              | Yes              | No               | No              | Yes               | No               |
| Observations                           | 624             | 624              | 624              | 624             | 624               | 624              |
| Adjusted $R^2$                         | 0.07            | 0.06             | 0.08             | 0.41            | 0.41              | 0.42             |

Standard errors in parentheses

## C Summary

Table 6: Comparing Findings across the Tasks

| Design           | Beliefs | IP | WTP  |
|------------------|---------|----|------|
| White, FN only   | >       | <> | <> * |
| Black, FN only   | <       | <> | <>   |
| White, FP only   | >       | >  | >    |
| Black, FP only   | >       | <> | >    |
| White, FN and FP | >>      | >  | >    |
| Black, FN and FP | >       | <> | >    |

\*-WTP estimates do not depend on signals.

## D Classification: Honest vs. Bayesian

Table 7: Latent Class Multinomial Choice Model Estimates (FP and FN rates by hint)

|    | lc_results |       |          |          |          |           |          |           |             |
|----|------------|-------|----------|----------|----------|-----------|----------|-----------|-------------|
|    | Model      | Class | Alt      | Hint     | FN0      | FN1       | FP0      | FP1       | Class share |
| r1 | 1          | 1     | -2.86694 | 4.392251 | 4.834518 | -.1919326 | 4.35168  | -.8676941 | 1           |
| r2 | 2          | 1     | -2.91958 | 1.881626 | 7.980388 | -.3599557 | 1.725487 | 6.632253  | .2198715    |
| r3 | 2          | 2     | -2.91958 | 6.699559 | 3.838407 | .4707898  | 5.285504 | -8.229022 | .7801285    |

Table 8: IP response by class

|                         | (1)             | (2)                |
|-------------------------|-----------------|--------------------|
|                         | Honesty Seekers | Cautious Bayesians |
| S=Black                 | .142*           | -.0232             |
|                         | (1.7)           | (-0.5)             |
| Prop. of lying gremlins | .593***         | .215***            |
|                         | (4.2)           | (4.3)              |
| Posterior prob.         | .229**          | .945***            |
|                         | (2.1)           | (7.4)              |
| N                       | 408             | 840                |
| Pseudo R-squared        | .136            | .654               |
| Log-likelihood          | -241            | -194               |

*t* statistics in parentheses

Errors are clustered by subject, average marginal treatment effects

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

ALEX:

- Do this distinction between number of false gremlin vs. black/white gremlin for belief calculation (other columns)
- Alex: Let me know if you need it to join into one table, but it need manual work so we can reserve it for later.

ALEX:

- BE Table:
  - Keep Cols 4-6
  - We won't need this if we have the above version for belief.

END TABLE

Table 9: Belief Elicitation by Class

|                         | (1)<br>Simpletons | (2)<br>Cautious Bayesians |
|-------------------------|-------------------|---------------------------|
| Posterior prob.         | .492***<br>(0.1)  | .583***<br>(0.1)          |
| S=Black                 | -.00445<br>(0.0)  | .167***<br>(0.0)          |
| Prop. of lying gremlins | .181***<br>(0.1)  | .158***<br>(0.0)          |
| Constant                | .143***<br>(0.0)  | .0842***<br>(0.0)         |
| Observations            | 408               | 840                       |
| Adjusted $R^2$          | 0.36              | 0.69                      |

Standard errors in parentheses

Dep. variable: beliefs, errors clustered by subject

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ 

Table 10: Expected IP losses by strategy

|                 | p=0.1,0.2 |              |            | p>0.2     |              |            |
|-----------------|-----------|--------------|------------|-----------|--------------|------------|
|                 | Mean loss | % of optimal | Loss prob. | Mean loss | % of optimal | Loss prob. |
| Baseline (all)  | 1.166304  | 156.7689     | .0190281   | 2.11717   | 140.6088     | .0508233   |
| Honesty seekers | 1.526998  | 205.2517     | .0435806   | 3.095308  | 205.5705     | .1163925   |
| Bayesians       | 1.050706  | 141.2308     | .0112388   | 1.806053  | 119.9464     | .0300237   |
| Optimal         | .7439637  | 1            | .0136432   | 1.505716  | 1            | .0190598   |

Table 11: Belief Elicitation: When Mistakes Happen

|                | (1)<br>All         | (2)<br>S=White   | (3)<br>S=Black    |
|----------------|--------------------|------------------|-------------------|
| FP rate        | .6***<br>(0.1)     | .292***<br>(0.1) | .908***<br>(0.1)  |
| FN rate        | .0108<br>(0.1)     | .273***<br>(0.1) | -.251***<br>(0.1) |
| Constant       | -.0784***<br>(0.0) | .314***<br>(0.0) | -.47***<br>(0.0)  |
| Subject FE     | Yes                | Yes              | Yes               |
| Observations   | 1248               | 624              | 624               |
| Adjusted $R^2$ | 0.15               | 0.41             | 0.52              |

Standard errors in parentheses

Dep. variable: reported belief - posterior probability

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

## E Tables

Table 12: List of Treatments

| Gremlins composition         |        |            |            |         |         |
|------------------------------|--------|------------|------------|---------|---------|
| Prop. of black balls ( $p$ ) | Honest | Black-eyed | White-eyed | FP rate | FN rate |
| 0.1, 0.2, 0.3, 0.5           | 2      | 0          | 0          | 0       | 0       |
| 0.1, 0.2, 0.3, 0.5           | 3      | 1          | 0          | 0.33    | 0       |
| 0.1, 0.2, 0.3, 0.5           | 3      | 0          | 1          | 0       | 0.33    |
| 0.1, 0.2, 0.3, 0.5           | 3      | 1          | 1          | 0.33    | 0.33    |
| 0.1, 0.2, 0.3, 0.5           | 5      | 1          | 0          | 0.2     | 0       |
| 0.1, 0.2, 0.3, 0.5           | 5      | 0          | 1          | 0       | 0.2     |
| 0.1, 0.2, 0.3, 0.5           | 5      | 1          | 1          | 0.2     | 0.2     |

Table 13: Demographic Characteristics of Subjects

|                        | All |     | $p \in \{0.1, 0.3\}$ |     | $p \in \{0.2, 0.5\}$ |     |
|------------------------|-----|-----|----------------------|-----|----------------------|-----|
|                        | N   | %   | N                    | %   | N                    | %   |
| Male                   | 43  | 41  | 22                   | 41  | 21                   | 41  |
| Age>23yrs old          | 14  | 13  | 6                    | 11  | 8                    | 16  |
| Students               | 88  | 84  | 46                   | 85  | 42                   | 82  |
| Had statistics classes | 63  | 60  | 37                   | 69  | 26                   | 51  |
| Total                  | 105 | 100 | 54                   | 100 | 51                   | 100 |

Table 14: Risk Aversion Measurement

| Switching Probability ( $\pi^*$ ) | $\theta$ | $N$ |
|-----------------------------------|----------|-----|
| Always protect                    | >2       | 1   |
| 0.1                               | 2        | 10  |
| 0.15                              | 1.216    | 13  |
| 0.2                               | 0.573    | 29  |
| 0.25                              | 0        | 16  |
| 0.3                               | -0.539   | 15  |
| Never protect                     | <-0.539  | 14  |

Table 15: Informed protection response: logistic regression

|                           | (1)              | (2)               | (3)              | (4)              | (5)              | (6)             |
|---------------------------|------------------|-------------------|------------------|------------------|------------------|-----------------|
|                           | All              | S=White           | S=Black          | All              | S=White          | W=Black         |
| FP rate                   | .279***<br>(3.0) | .47***<br>(4.1)   | .027<br>(0.2)    | .245**<br>(2.3)  | .854***<br>(4.4) | -.114<br>(-0.3) |
| FN rate                   | .614***<br>(7.7) | 1.02***<br>(11.4) | .00398<br>(0.0)  | .306***<br>(3.1) | .801***<br>(4.5) | -.127<br>(-0.4) |
| p>0.2                     | .118***<br>(7.1) | .137***<br>(6.2)  | .101***<br>(4.0) | .04*<br>(1.7)    | .0922<br>(1.4)   | .128*<br>(1.7)  |
| FP rate x (p>0.2)         |                  |                   |                  | .0983<br>(0.8)   | -.331*<br>(-1.7) | .694<br>(1.6)   |
| FN rate x (p>0.2)         |                  |                   |                  | .62***<br>(4.4)  | .786***<br>(2.9) | .223<br>(0.7)   |
| Subject FE                | No               | No                | No               | Yes              | Yes              | Yes             |
| P(FP rate $\neq$ FN rate) | .00338           | .00143            | .895             | .642             | .806             | .979            |
| N                         | 1248             | 624               | 624              | 1224             | 450              | 252             |
| Pseudo R-squared          | .0403            | .211              | .0236            | .122             | .54              | .191            |
| Log-likelihood            | -824             | -278              | -257             | -741             | -130             | -134            |

*t* statistics in parentheses

Errors are clustered by subject, average marginal treatment effects

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Table 16: Correlates of Strategies Used

|                | (1)              | (2)              | (3)              |
|----------------|------------------|------------------|------------------|
| Seek honest    | .462***<br>(0.1) |                  |                  |
| Other          | .356***<br>(0.1) |                  |                  |
| Female         |                  | .0782<br>(0.1)   |                  |
| Age            |                  | -.00845<br>(0.0) |                  |
| Stat. classes  |                  | -.0674<br>(0.1)  |                  |
| Accur. beliefs |                  |                  | .135*<br>(0.1)   |
| RA measure0    |                  |                  | -.00705<br>(0.0) |
| IP quiz        |                  |                  | -.0635<br>(0.0)  |
| Constant       | .433***<br>(0.1) | .975***<br>(0.1) | 1.03***<br>(0.2) |
| Observations   | 104              | 104              | 104              |
| Adjusted $R^2$ | 0.15             | 0.02             | 0.01             |

Standard errors in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$



Table 17: Latent Class Multinomial Choice Model Estimates

| lc_results |       |       |           |           |            |           |             |          |
|------------|-------|-------|-----------|-----------|------------|-----------|-------------|----------|
|            | Model | Class | Alt       | Hint      | False_prob | Posterior | Class share | BIC      |
| r1         | 1     | 1     | -2.558866 | 5.518452  | -2.179902  | -5.647592 | 1           | 599.1649 |
| r1         | 2     | 1     | -2.535444 | 1.90032   | 3.500951   | 1.732533  | .2750615    | 581.0222 |
| r1         | 2     | 2     | -2.535444 | .1317798  | 2.727107   | 8.918563  | .7249385    | 581.0222 |
| r1         | 3     | 1     | -2.738694 | 1.552418  | 4.89195    | 1.063685  | .2025011    | 587.5337 |
| r1         | 3     | 2     | -2.738694 | 3.413443  | -.8342289  | 6.007274  | .4550624    | 587.5337 |
| r1         | 3     | 3     | -2.738694 | -3.203437 | 5.474852   | 16.56628  | .3424365    | 587.5337 |

Table 18: WTP for Information: heterogeneity by IP class

|                              | (1)               | (2)               | (3)               | (4)               |
|------------------------------|-------------------|-------------------|-------------------|-------------------|
|                              | p<0.3             | p<0.3             | All               | All               |
| model                        |                   |                   |                   |                   |
| FN costs                     | -.261***<br>(0.1) | -.496***<br>(0.1) | -.261***<br>(0.1) | -.496***<br>(0.1) |
| FP costs                     | -1.04***<br>(0.2) | -1.31***<br>(0.2) | -1.04***<br>(0.2) | -1.31***<br>(0.2) |
| Simpletons                   |                   | -.876***<br>(0.2) |                   | -.876***<br>(0.2) |
| Simpletons $\times$ FN costs |                   | .622***<br>(0.2)  |                   | .622***<br>(0.2)  |
| Simpletons $\times$ FP costs |                   | .799**<br>(0.3)   |                   | .799**<br>(0.3)   |
| Constant                     | 2.39***<br>(0.1)  | 2.69***<br>(0.1)  | 2.39***<br>(0.1)  | 2.69***<br>(0.1)  |
| sigma                        |                   |                   |                   |                   |
| Constant                     | 1.94***<br>(0.1)  | 1.91***<br>(0.1)  | 1.94***<br>(0.1)  | 1.91***<br>(0.1)  |
| Observations                 | 624               | 624               | 624               | 624               |
| Adjusted $R^2$               |                   |                   |                   |                   |

Standard errors in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Table 19: WTP minus Value of Information, connection to self-reported protection strategy

|                               | (1)<br>All        | (2)<br>p=0.1      | (3)<br>p=0.2      | (4)<br>All      | (5)<br>All        | (6)<br>All        |
|-------------------------------|-------------------|-------------------|-------------------|-----------------|-------------------|-------------------|
| Seek honest                   | .534***<br>(0.2)  | .94***<br>(0.3)   |                   | 1.18**<br>(0.5) |                   | 1.4**<br>(0.6)    |
| Other                         | .154<br>(0.2)     | .36<br>(0.3)      |                   | .324<br>(0.5)   |                   | .594<br>(0.5)     |
| FN costs                      | .352***<br>(0.1)  | .739***<br>(0.2)  | -1.11***<br>(0.4) | -.563<br>(1.0)  | -.558***<br>(0.2) | .602<br>(0.6)     |
| FP costs                      | .231*<br>(0.1)    | .261<br>(0.3)     | -.424**<br>(0.2)  | .578<br>(0.4)   | -.415**<br>(0.2)  | .631<br>(0.6)     |
| Seek honest $\times$ FN costs |                   | -.583***<br>(0.2) |                   | -.389<br>(1.1)  |                   | -.616<br>(0.7)    |
| Other $\times$ FN costs       |                   | -.334<br>(0.2)    |                   | .216<br>(1.1)   |                   | -.355<br>(0.7)    |
| Seek honest $\times$ FP costs |                   | -.0827<br>(0.4)   |                   | -.222<br>(0.5)  |                   | -.155<br>(0.7)    |
| Other $\times$ FP costs       |                   | .00283<br>(0.4)   |                   | -.144<br>(0.5)  |                   | .0513<br>(0.7)    |
| Constant                      | -.479***<br>(0.2) | -.733***<br>(0.2) | 1.88***<br>(0.2)  | -.123<br>(0.4)  | 2.28***<br>(0.2)  | -1.56***<br>(0.5) |
| Observations                  | 624               | 624               | 159               | 159             | 153               | 153               |
| Adjusted $R^2$                | 0.06              | 0.07              | 0.08              | 0.08            | 0.07              | 0.08              |

Standard errors in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

## F Figures

Figure 3: Average Informed Protection Response

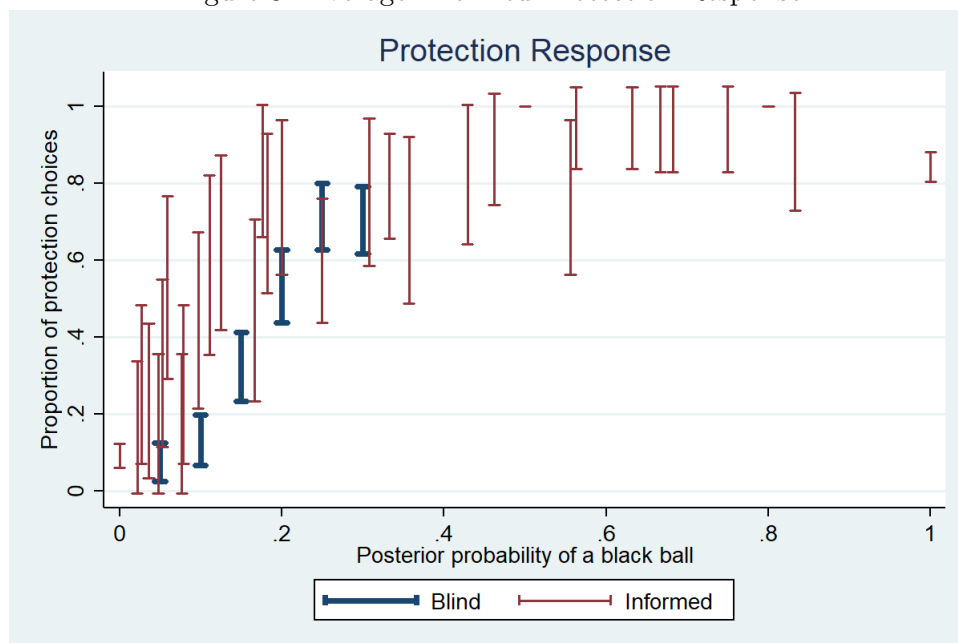


Figure 4: Average Informed Protection Response (Smoothed)

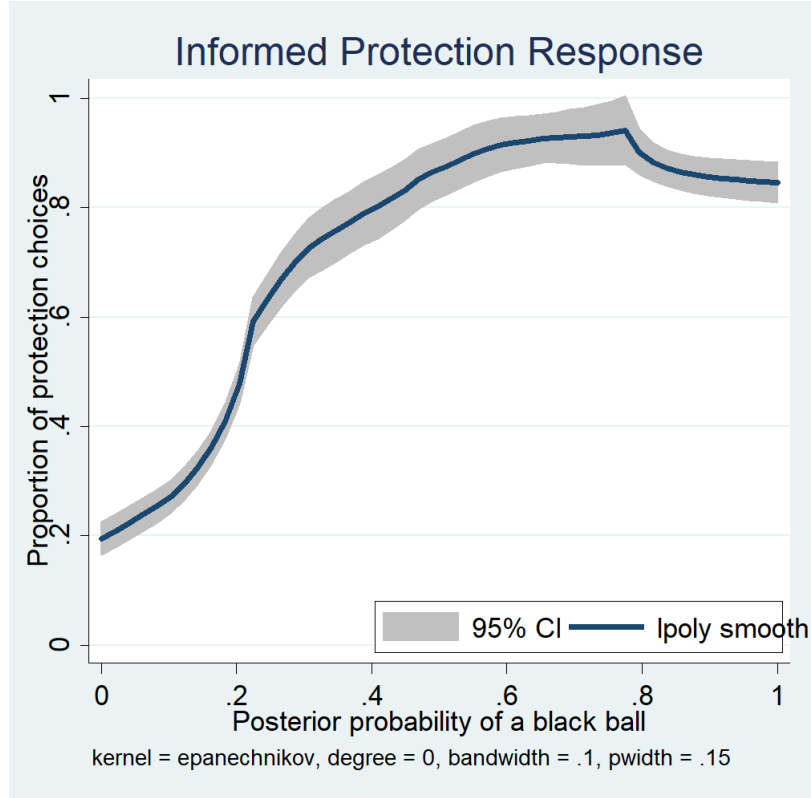


Figure 5: Belief Updating

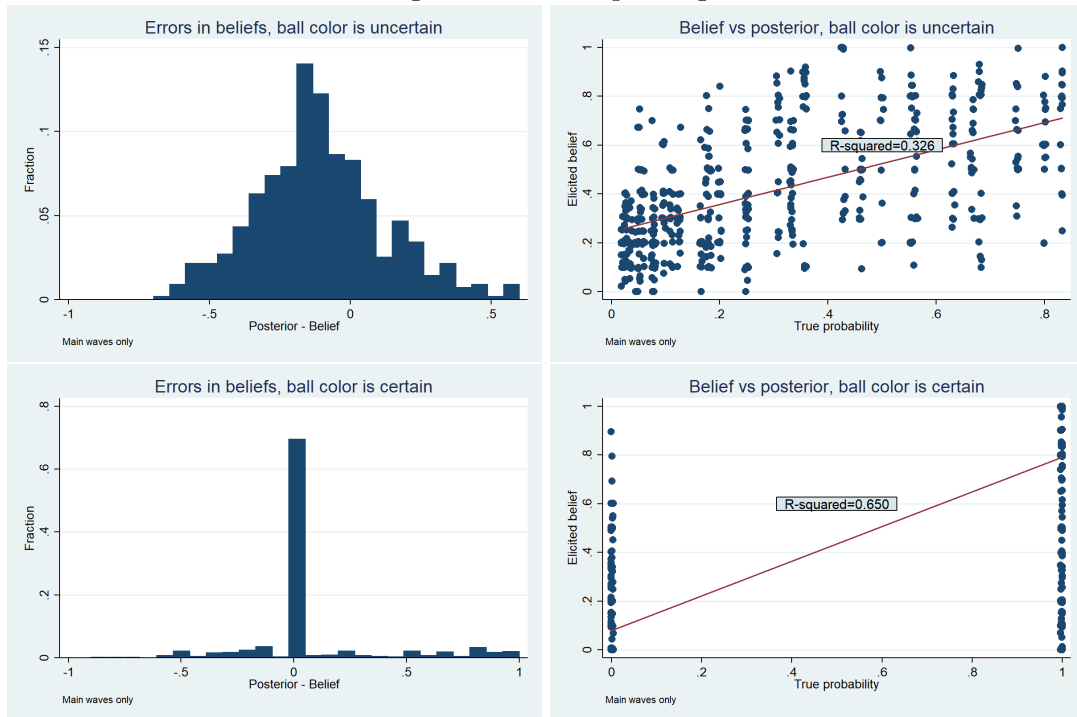


Figure 6: Theoretical vs actual WTP

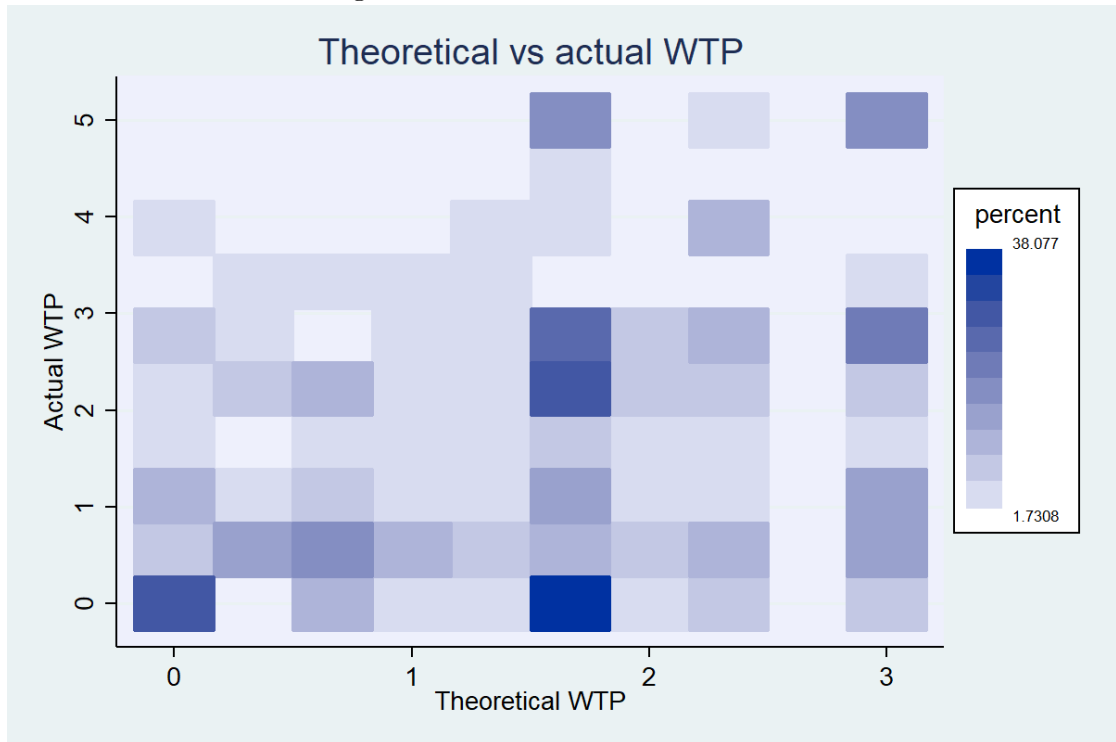


Figure 7: WTP discrepancy

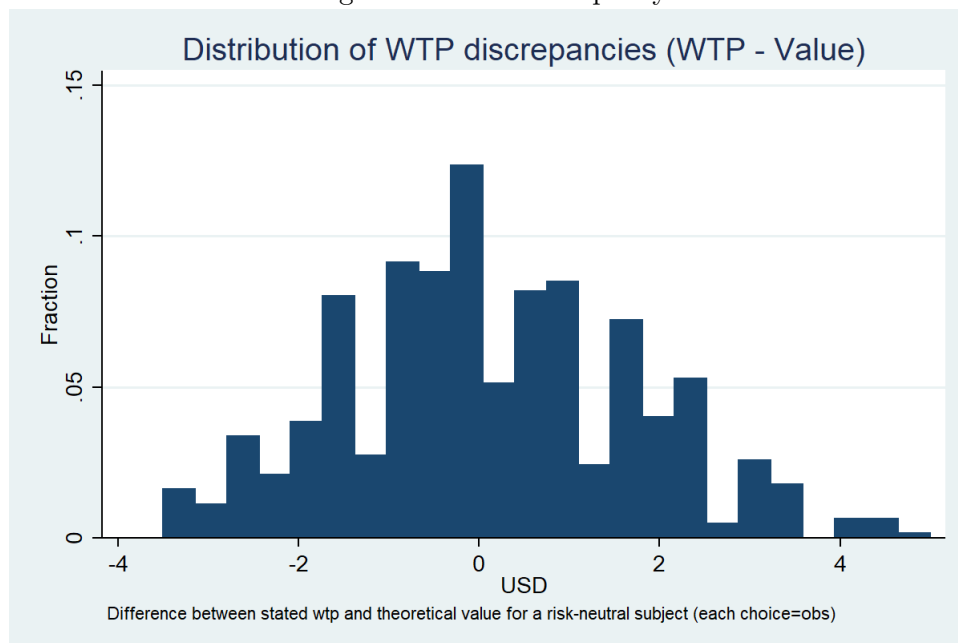
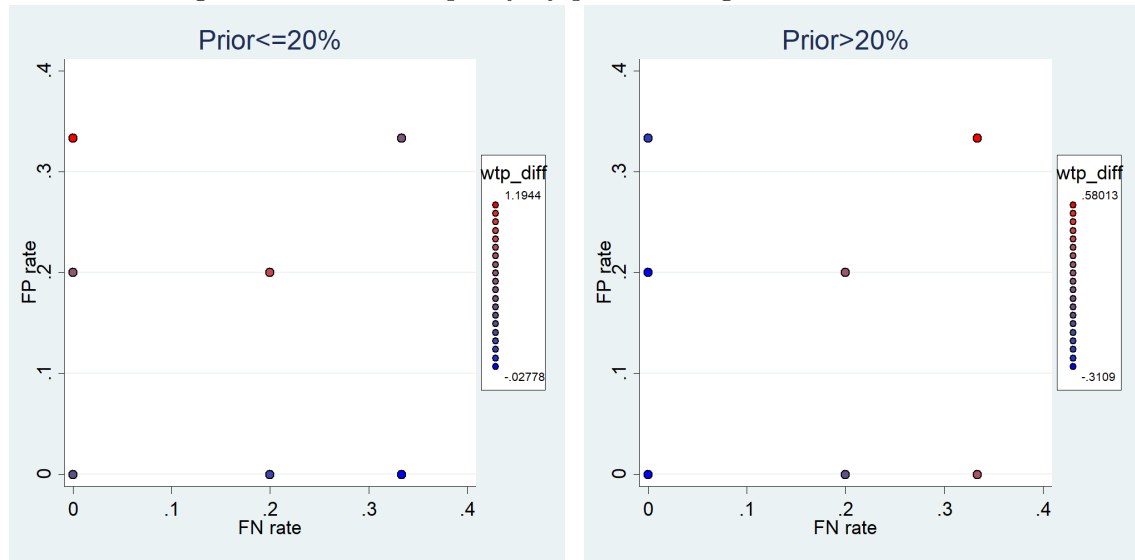


Figure 8: WTP discrepancy by prior and signal characteristics





## G Appendix Tables

Table 20: Informed protection response: linear probability regression

|                           | (1)               | (2)              | (3)               | (4)               | (5)               | (6)               |
|---------------------------|-------------------|------------------|-------------------|-------------------|-------------------|-------------------|
|                           | All               | S=White          | S=Black           | All               | S=White           | W=Black           |
| FP rate                   | .284***<br>(2.9)  | .496***<br>(3.8) | .0725<br>(0.5)    | .259**<br>(2.2)   | .613***<br>(4.3)  | -.0949<br>(-0.5)  |
| FN rate                   | .596***<br>(7.2)  | 1.21***<br>(8.9) | -.0213<br>(-0.2)  | .322***<br>(3.0)  | .7***<br>(4.0)    | -.0564<br>(-0.3)  |
| p>0.2                     | .119***<br>(6.7)  | .138***<br>(5.6) | .0994***<br>(3.7) | .0475**<br>(2.0)  | .0438<br>(1.3)    | .0512<br>(1.4)    |
| FP rate x (p>0.2)         |                   |                  |                   | .0508<br>(0.4)    | -.233<br>(-1.3)   | .335*<br>(1.7)    |
| FN rate x (p>0.2)         |                   |                  |                   | .548***<br>(4.0)  | 1.03***<br>(4.4)  | .0703<br>(0.4)    |
| Constant                  | .759***<br>(47.1) | .57***<br>(24.3) | .948***<br>(43.4) | .794***<br>(43.0) | .617***<br>(23.9) | .972***<br>(37.1) |
| Subject FE                | Yes               | Yes              | Yes               | Yes               | Yes               | Yes               |
| P(FP rate $\neq$ FN rate) | .00659            | .000758          | .631              | .0025             | .0000292          | .495              |
| Observations              | 1248              | 624              | 624               | 1248              | 624               | 624               |
| Adjusted $R^2$            | .                 | .                | .                 | .                 | .                 | .                 |

*t* statistics in parentheses

Errors are clustered by subject

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Table 21: Informed Protection Response: flexible control for posteriors and beliefs

|                     | (1)             | (2)            | (3)              | (4)              | (5)             | (6)            |
|---------------------|-----------------|----------------|------------------|------------------|-----------------|----------------|
|                     |                 | FE             |                  |                  | S=White         | S=Black        |
| FP rate             | .226**<br>(2.0) | .252*<br>(1.8) | .367**<br>(2.5)  | .256*<br>(1.8)   | .273**<br>(2.3) | .129<br>(0.3)  |
| FN rate             | .0783<br>(0.8)  | .014<br>(0.2)  | .000825<br>(0.0) | .0677<br>(0.4)   | .0615<br>(0.4)  | .0738<br>(0.6) |
| p>0.2               |                 |                | .0325<br>(1.2)   |                  |                 |                |
| FP rate x (p>0.2)   |                 |                | -.18<br>(-1.4)   |                  |                 |                |
| FN rate x (p>0.2)   |                 |                | .0778<br>(0.6)   |                  |                 |                |
| S=Black             |                 |                |                  | .164<br>(1.1)    |                 |                |
| FP rate x (S=Black) |                 |                |                  | -.481<br>(-1.0)  |                 |                |
| FN rate x (S=Black) |                 |                |                  | -.0587<br>(-0.3) |                 |                |
| Observations        | 1248            | 1224           | 1224             | 1224             | 624             | 624            |
| Adjusted $R^2$      |                 |                |                  |                  |                 |                |

$t$  statistics in parentheses

With flexible controls of posterior probability and beliefs

Errors are clustered by subject, average marginal treatment effects

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Table 22: Informed protection response: semiparametric control for posteriors

|                       | (1)              | (2)              | (3)              | (4)              |
|-----------------------|------------------|------------------|------------------|------------------|
| FP rate               | .414***<br>(4.2) | .541***<br>(4.3) | .449***<br>(4.2) | .322**<br>(2.4)  |
| FN rate               | .0152<br>(0.1)   | -.0371<br>(-0.3) | -.0771<br>(-0.3) | .0573<br>(0.4)   |
| p>0.2                 |                  | .0376<br>(1.2)   |                  |                  |
| FP rate x (p ≥ 0.2)   |                  | -.233<br>(-1.4)  |                  |                  |
| FN rate x (p ≥ 0.2)   |                  | .132<br>(0.8)    |                  |                  |
| S=Black               |                  |                  | .0801<br>(0.5)   |                  |
| FP rate x (S=Black)   |                  |                  | -.41<br>(-1.0)   |                  |
| FN rate x (S=Black)   |                  |                  | .12<br>(0.5)     |                  |
| Stat. class           |                  |                  |                  | -.0101<br>(-0.3) |
| FP rate x Stat. class |                  |                  |                  | .163<br>(1.1)    |
| FN rate x Stat. class |                  |                  |                  | -.0696<br>(-0.5) |
| Observations          | 1248             | 1248             | 1248             | 1248             |
| Adjusted $R^2$        | 0.01             | 0.01             | 0.01             | 0.01             |

*t* statistics in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Table 23: WTP - Value of Information, by prior with order effects

|                                    | (1)              | (2)              | (3)               | (4)              | (5)              | (6)              |
|------------------------------------|------------------|------------------|-------------------|------------------|------------------|------------------|
|                                    | p=0.1,0.2        | p=0.3,0.5        | p=0.1,0.2         |                  |                  |                  |
| FP rate                            | 2.23***<br>(0.5) | -.249<br>(0.7)   | 2.12***<br>(0.7)  | 1.21*<br>(0.7)   | -.249<br>(0.7)   | -.325<br>(0.8)   |
| FN rate                            | -.254<br>(0.4)   | 2.64***<br>(0.5) | -1.22**<br>(0.5)  | .169<br>(0.5)    | 2.64***<br>(0.5) | 1.33***<br>(0.5) |
| Starts with p=0.2                  |                  |                  | -1.13***<br>(0.3) | .256<br>(0.3)    |                  |                  |
| Starts with p=0.2 $\times$ FP rate |                  |                  | .215<br>(1.0)     | -.444<br>(1.0)   |                  | .157<br>(0.7)    |
| Starts with p=0.2 $\times$ FN rate |                  |                  | 1.99***<br>(0.7)  | 2.11***<br>(0.8) |                  | 2.71***<br>(0.6) |
| First prior                        |                  |                  |                   |                  | .0367<br>(0.2)   | .0367<br>(0.2)   |
| First prior $\times$ FP rate       |                  |                  |                   |                  | 2.48***<br>(0.7) | 2.48***<br>(0.7) |
| First prior $\times$ FN rate       |                  |                  |                   |                  | -2.9***<br>(0.3) | -2.9***<br>(0.3) |
| Constant                           | -.135<br>(0.2)   | -.172<br>(0.2)   | .412*<br>(0.2)    | -.278<br>(0.2)   | -.172<br>(0.2)   | -.172<br>(0.2)   |
| Observations                       | 315              | 315              | 315               | 630              | 630              | 630              |
| Adjusted $R^2$                     | 0.04             | 0.04             | 0.12              | 0.04             | 0.04             | 0.06             |

Standard errors in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ 

Table 24: WTP - Value of Information, by prior

|                | (1)             | (2)               | (3)               | (4)               | (5)              |
|----------------|-----------------|-------------------|-------------------|-------------------|------------------|
|                | All             | 0.1               | 0.2               | 0.3               | 0.5              |
| FP rate        | .822*<br>(0.5)  | 1.96***<br>(0.7)  | 2.3***<br>(0.7)   | -.121<br>(0.9)    | -.865<br>(0.9)   |
| FN rate        | 1.2***<br>(0.4) | -1.24***<br>(0.4) | .783<br>(0.5)     | 1.57***<br>(0.6)  | 3.79***<br>(0.7) |
| Constant       | -.134<br>(0.1)  | .435***<br>(0.1)  | -.713***<br>(0.1) | -.921***<br>(0.1) | .677***<br>(0.2) |
| Observations   | 630             | 162               | 153               | 162               | 153              |
| Adjusted $R^2$ | 0.36            | 0.64              | 0.49              | 0.42              | 0.48             |

Standard errors in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Table 25: Belief Elicitation: Discrepancy

|                              | (1)                | (2)              | (3)                | (4)              | (5)               | (6)              |
|------------------------------|--------------------|------------------|--------------------|------------------|-------------------|------------------|
| FN rate                      | .0136<br>(0.1)     | .0136<br>(0.1)   | -.05<br>(0.1)      | -.05<br>(0.1)    | -.0886<br>(0.1)   | -.0876<br>(0.1)  |
| FP rate                      | .605***<br>(0.1)   | .605***<br>(0.1) | .75***<br>(0.1)    | .749***<br>(0.1) | .664***<br>(0.1)  | .66***<br>(0.1)  |
| Good quiz                    |                    |                  | .0292<br>(0.0)     | .056<br>(0.0)    |                   |                  |
| Good quiz $\times$ FN rate   |                    |                  | .111<br>(0.1)      | .111<br>(0.1)    |                   |                  |
| Good quiz $\times$ FP rate   |                    |                  | -.272**<br>(0.1)   | -.27**<br>(0.1)  |                   |                  |
| Stat. class                  |                    |                  |                    |                  | -.0213<br>(0.0)   | -.0386<br>(0.0)  |
| Stat. class $\times$ FN rate |                    |                  |                    |                  | .18*<br>(0.1)     | .179*<br>(0.1)   |
| Stat. class $\times$ FP rate |                    |                  |                    |                  | -.106<br>(0.1)    | -.102<br>(0.1)   |
| Constant                     | -.0621***<br>(0.0) | -.0272<br>(0.0)  | -.0779***<br>(0.0) | -.0566<br>(0.0)  | -.0499**<br>(0.0) | -.00222<br>(0.0) |
| Prior prob dummies           | No                 | Yes              | No                 | Yes              | No                | Yes              |
| Observations                 | 1248               | 1248             | 1248               | 1248             | 1248              | 1248             |
| Adjusted $R^2$               | 0.09               | 0.10             | 0.09               | 0.10             | 0.09              | 0.09             |

Standard errors in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Table 26: WTP minus Value of Information: demographic determinants

|                               | (1)     | (2)     | (3)     | (4)     | (5)     | (6)     | (7)     | (8)     | (9)   |
|-------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|-------|
| FP costs                      | .237*   | .283    | .352*   | .117    | .215    | .248*   | .291**  | .479**  | .515* |
|                               | (0.1)   | (0.2)   | (0.2)   | (0.2)   | (0.2)   | (0.1)   | (0.1)   | (0.2)   | (0.2) |
| FN costs                      | .353*** | .322*** | .247*** | .395*** | .303*** | .303*** | .249*** | .493*** | .453* |
|                               | (0.1)   | (0.1)   | (0.1)   | (0.1)   | (0.1)   | (0.1)   | (0.1)   | (0.1)   | (0.1) |
| Male                          |         | -.193   | -.157   |         |         |         |         |         |       |
|                               |         | (0.3)   | (0.4)   |         |         |         |         |         |       |
| Male $\times$ FP costs        |         | -.153   | -.193   |         |         |         |         |         |       |
|                               |         | (0.2)   | (0.2)   |         |         |         |         |         |       |
| Male $\times$ FN costs        |         | .0791   | .114    |         |         |         |         |         |       |
|                               |         | (0.1)   | (0.1)   |         |         |         |         |         |       |
| Stat. class                   |         |         |         | -.24    | -.142   |         |         |         |       |
|                               |         |         |         | (0.3)   | (0.4)   |         |         |         |       |
| Stat. class $\times$ FP costs |         |         |         | .198    | .124    |         |         |         |       |
|                               |         |         |         | (0.3)   | (0.3)   |         |         |         |       |
| Stat. class $\times$ FN costs |         |         |         | -.0834  | -.0226  |         |         |         |       |
|                               |         |         |         | (0.1)   | (0.1)   |         |         |         |       |
| >23 yrs                       |         |         |         |         |         | -.366   | -.647*  |         |       |
|                               |         |         |         |         |         | (0.4)   | (0.4)   |         |       |
| >23 yrs $\times$ FP costs     |         |         |         |         |         | -.0679  | .0238   |         |       |
|                               |         |         |         |         |         | (0.3)   | (0.3)   |         |       |
| >23 yrs $\times$ FN costs     |         |         |         |         |         | .35     | .277    |         |       |
|                               |         |         |         |         |         | (0.2)   | (0.2)   |         |       |
| Good quiz                     |         |         |         |         |         |         |         | .544*   | .527  |
|                               |         |         |         |         |         |         |         | (0.3)   | (0.4) |
| Good quiz $\times$ FP costs   |         |         |         |         |         |         |         | -.468*  | -.437 |
|                               |         |         |         |         |         |         |         | (0.3)   | (0.3) |
| Good quiz $\times$ FN costs   |         |         |         |         |         |         |         | -.26*   | -.299 |
|                               |         |         |         |         |         |         |         | (0.1)   | (0.1) |
| Constant                      | -.207   | -.126   | .391    | -.0579  | .419    | -.157   | .397*   | -.5**   | .045  |
|                               | (0.2)   | (0.2)   | (0.3)   | (0.3)   | (0.4)   | (0.2)   | (0.2)   | (0.3)   | (0.3) |
| Prior dummies                 | No      | No      | Yes     | No      | Yes     | No      | Yes     | No      | Yes   |
| Observations                  | 624     | 624     | 624     | 624     | 624     | 624     | 624     | 624     | 624   |
| Adjusted $R^2$                | 0.05    | 0.05    | 0.21    | 0.05    | 0.21    | 0.05    | 0.21    | 0.06    | 0.22  |

Standard errors in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$