Willingness-to-pay for Warnings: Pilot Results

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Summary

- Subjects put too much weight on the signal and too little weight on prior probabilities both in informed protection and belief elicitation
- Reported beliefs have less predictive power for protection choices than posterior probabilities
- Both the theoretical value of information and the value based on subject's choices are strong predictor of WTP for information
- WTP is overly sensitive to false positive and false negative rates

Informed Protection: Correlation

Table: Informed Protection

	(1) All	(2) All	(3) Good quiz	(4) Good quiz
Informed protection				
Posterior prob.	2.15***	.662***	2.26***	.638***
	(19.1)	(3.3)	(17.7)	(3.0)
Prior prob.		1.13***		1.17***
		(4.1)		(3.8)
Gremlin says Black		1.34***		1.46***
		(8.8)		(8.8)
Constant	-.662***	-1.03***	-.717***	-1.1***
	(-14.2)	(-11.2)	(-14.2)	(-10.9)
Observations	1487	1487	1259	1259
AIC	1467.25	1394.01	1211.48	1137.59

t statistics in parentheses

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

Informed Protection: Determinants

Table: Informed Protection: Response to Reported Beliefs

	(1) All	(2) All	(3) Good quiz
Informed protection			
Belief	2.18***	2.62***	2.8***
	(18.5)	(18.2)	(17.0)
Belief error		1.52***	1.41***
		(11.5)	(9.3)
Constant	-.762***	-.881***	-.963***
	(-14.3)	(-15.7)	(-15.9)
Observations	1487	1487	1259
AIC	1566.82	1413.23	1146.78

t statistics in parentheses

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

Informed Protection: Do Subject's Beliefs Matter?

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Belief Updating: Correlation

Table: Belief Elicitation: Belief vs Posterior

	(1) All	(2) Good quiz	(3) Dishonest greml
Posterior prob.	.644***	.693***	.524***
	(37.5)	(39.2)	(21.8)
Constant	.175***	.15***	.236***
	(21.7)	(19.8)	(23.4)
Observations	1488	1260	992
Adjusted R^2	0.53	0.60	0.38

t statistics in parentheses

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What Affects Beliefs?

Table: Belief Elicitation: Discrepancy

	(1)	(2)	(3)	(4)	(5)
False neg. rate	-.0101	-.0101	.05	.05	.0886
	(0.0)	(0.0)	(0.1)	(0.1)	(0.1)
False pos. rate	-.606***	-.606***	-.75***	-.749***	-.664***
	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)
Good quiz			-.0299	-.0538	
			(0.0)	(0.0)	
Good quiz × False neg. rate			-.102	-.102	
			(0.1)	(0.1)	
Good quiz × False pos. rate			.269**	.266**	
			(0.1)	(0.1)	
Stat. class					.0203
					(0.0)
Stat. class × False neg. rate					-.172*
					(0.1)
Stat. class × False pos. rate					.104
					(0.1)
Constant	.0616***	.0279	.0779***	.0566	.0499**
	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)
Prior prob dummies	No	Yes	No	Yes	No

Belief Updating: Decomposition

- Posterior probability $\mu = P(B|S = x)$ that the ball is black conditional on a hint $S = x$ can be written as:

$$\ln\left(\frac{\mu}{1-\mu}\right) = \lambda_0 + S_B + S_W$$

- With $\lambda_0 \equiv \ln(p/(1-p))$ representing (transformed) prior beliefs
- And S_B, S_W describing the effect of new evidence:

$$S_B \equiv I(S = B)\ln(P(s = B|B)/P(s = B|W))$$

$$S_W \equiv I(S = W)\ln((1 - P(s = B|B))/(1 - P(s = B|W))$$

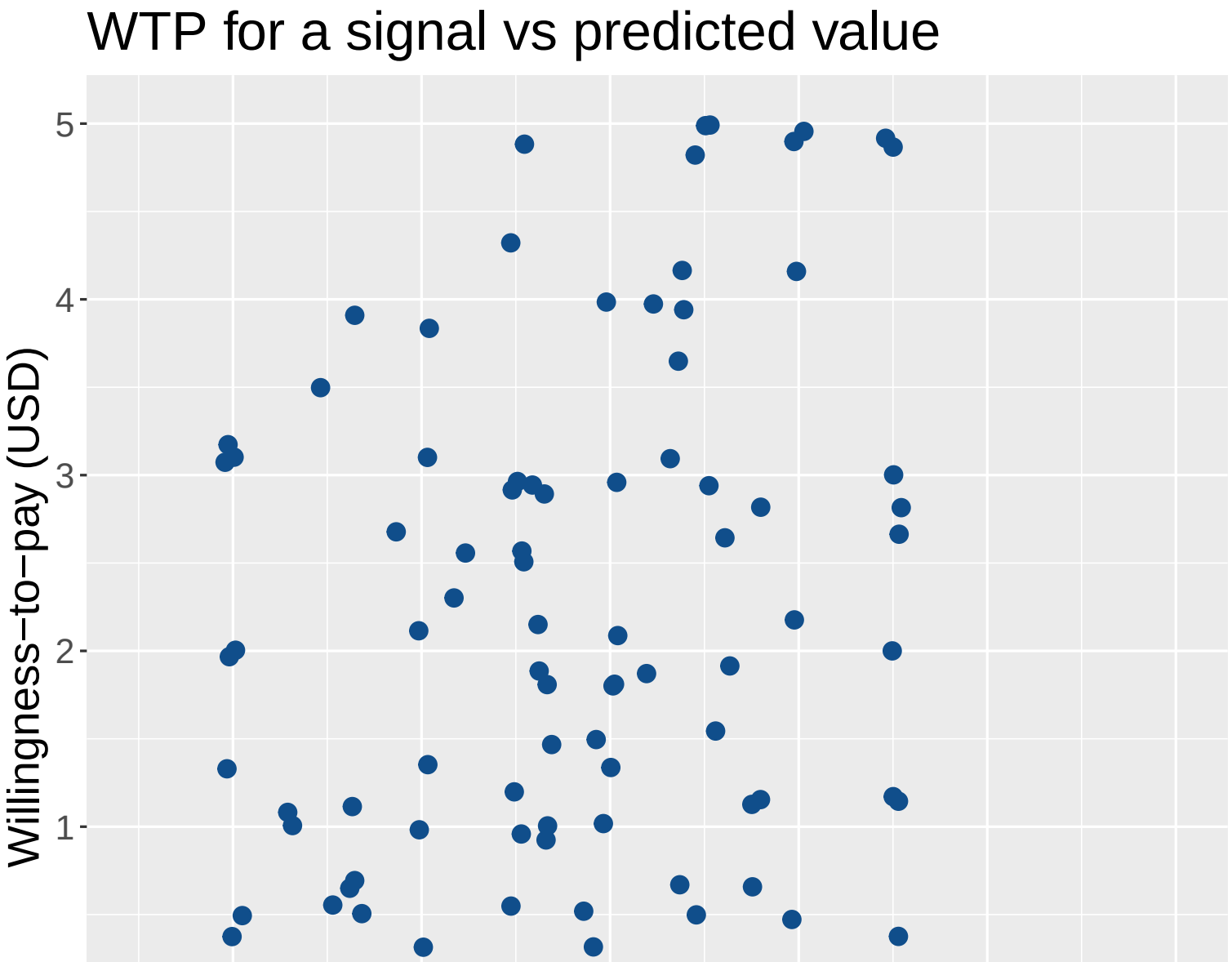
Belief Updating: Decomposition

Table: Belief Elicitation: Decomposition

	(1) OLS	(2) FE	(3) OLS	(4) FE	(5) OLS
lt_prior	.257***	.202***	.15*	.191**	.0946
	(3.8)	(4.0)	(1.9)	(2.5)	(1.3)
signalB	.447***	.86***	.388	.654***	.905***
	(4.1)	(6.3)	(1.4)	(3.2)	(5.4)
signalW	.413***	0	.266	0	.174
	(4.6)	(.)	(1.2)	(.)	(1.0)
>2 wrong answers			0	0	
			(.)	(.)	
Good quiz			-.367	0	
			(-1.3)	(.)	
>2 wrong answers × lt_prior			0	0	
			(.)	(.)	
Good quiz × lt_prior			.134	.0207	
			(1.2)	(0.2)	
>2 wrong answers × signalB			0	0	
			(.)	(.)	
Good quiz × signalB			.528	.387	
			(1.5)	(1.4)	
>2 wrong answers × signalW			0	0	

WTP for signals

- Higher average WTP for more valuable signals



WTP for signals: Determinants

Table: WTP for Information

	(1) OLS	(2) OLS	(3) OLS	(4) OLS
value	.443***	.406***	.158	.0734
	(6.0)	(5.6)	(1.6)	(0.7)
Prior prob.		2.15***		2.44***
		(4.0)		(4.6)
False neg. rate			-1.91***	-2.22***
			(-3.3)	(-4.0)
False pos. rate			-2.08***	-2.37***
			(-3.6)	(-4.2)
Constant	.998***	.473***	1.97***	1.52***
	(7.6)	(2.8)	(6.7)	(5.1)
Observations	390	390	390	390
Adjusted R^2	0.09	0.12	0.12	0.17

t statistics in parentheses

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