# Online Appendix: Measuring and Bounding Experimenter Demand

### Jonathan de Quidt Johannes Haushofer Christopher Roth

# A Online Appendix: Additional Tables

		Dictator			Risk	
	All	Compliers	Defiers	All	Compliers	Defiers
Positive - Neutral (z-score)	$0.512^{***}$ (0.044)	$0.772^{***}$ (0.055)	$-0.401^{**}$ (0.122)	$0.377^{***}$ (0.041)	$0.704^{***}$ (0.052)	$-0.601^{***}$ (0.100)
Observations	266	180	7	247	146	16
Negative - Neutral (z-score)	$-0.376^{***}$ (0.045)	$-0.795^{***}$ (0.059)	$1.027^{**}$ (0.328)	$-0.427^{***}$ (0.042)	$-0.721^{***}$ (0.049)	$0.529^{**}$ (0.199)
Observations	236	122	8	253	161	16

Table A.1: Results from the Within Design: Compliers and Defiers

Notes: This table uses data from the within design (experiment 7). We separately present the results for the whole sample, compliers as well as defiers. In this experiment we employ strong demand treatments in which the experimental objective is revealed to participants.

		0
	Risk	Dictator
	Х	Х
Panel A: Standard Bounds		
Interval	[0.318, 0.560]	[0.193, 0.383]
95% CI on interval	[0.286, 0.595]	[0.170, 0.411]
95% CI on parameter	[0.293,  0.587]	[0.175, 0.405]
Observations	500	502
Panel B: Adjusted Bounds		
Interval	[0.308, 0.571]	[0.184, 0.390]
95% CI on interval	[0.277, 0.606]	[0.161, 0.419]
95% CI on parameter	[0.284, 0.598]	[0.166, 0.412]

Table A.2: Bounds from Within Design

*Notes:* This table uses data from the within design (experiment 7). In Panel A we compute our standard bounds while in Panel B we compute the adjusted bounds which take into account defier behavior.

	Pov	ver effort co	Expon	ential e	$\frac{\text{ffort cost}}{(6)}$ $\frac{a(\zeta)}{1407}$			
	(1)	(2)	(3)	(4)	(5)	(6)		
	$\log(a^L(\zeta))$	$\log(a(\zeta))$	$\log(a(\zeta))$	$a^L(\zeta)$	$a(\zeta)$	$a(\zeta)$		
0 cents	6.93	7.12	7.07	1363	1495	1407		
$1  \mathrm{cent}$	7.40	7.41	7.42	1904	1860	1886		
4 cents	7.59	7.61	7.71	2114	2134	2376		

Table A.3: Predicted Values from Structural Model

Columns 1–3 present predicted values from the power effort cost model, and 4–6 for the exponential cost model. Column numbers correspond to those in table 4. Rows correspond to incentive treatments, in cents per 100 points. Therefore (1) and (4) are predicted values from the model without demand effects, equalling mean observed actions under the neutral treatments, and are potentially contaminated by latent demand. Columns (2) and (5) are predicted demand-free actions when latent demand is restricted to be equal in the 1 and 4 cent treatments. Columns (3) and (6) are predicted demand-free actions when latent demand is allowed to differ across all treatments.

	Time	Risk	Ambiguity	Effort	Effort	Lying	Dictator	Ultimatum	Ultimatum	Trust	Trust
			Aversion	0 cent bonus	1 cent bonus		Game	Game 1	Game 2	Game 1	Game 2
Panel A: Strong Demand											
Interval	[0.659, 0.792]	[0.373, 0.548]	[0.428, 0.583]	[0.254, 0.403]	[0.447,  0.492]	[0.447,  0.492]	[0.252, 0.433]	[0.404,  0.520]	[0.338, 0.474]	[0.350,  0.532]	[0.288, 0.470]
95% CI on interval	[0.612, 0.831]	[0.342, 0.581]	[0.391, 0.622]	[0.235, 0.422]	[0.429, 0.511]	[0.487, 0.625]	[0.228, 0.458]	[0.381, 0.541]	[0.314, 0.496]	[0.314, 0.571]	[0.263, 0.499]
95% CI on parameter	[0.622, 0.823]	[0.349, 0.574]	[0.399, 0.613]	[0.240, 0.418]	[0.433, 0.507]	[0.493, 0.621]	[0.233, 0.452]	[0.386, 0.536]	[0.319, 0.491]	[0.322, 0.562]	[0.269, 0.493]
Observations	730	730	404	735	717	366	773	409	425	383	373
Panel B: Weak Demand											
Interval	[0.768, 0.768]	[0.469, 0.524]	[0.501, 0.562]	[0.342, 0.329]	[0.468, 0.484]	[0.468, 0.484]	[0.316, 0.382]	[0.443, 0.473]	[0.362, 0.412]	[0.427, 0.453]	[0.346, 0.398]
95% CI on interval	[0.716, 0.820]	[0.436, 0.561]	[0.462, 0.601]	[0.315, 0.356]	[0.447, 0.504]	[0.511, 0.557]	[0.293, 0.405]	[0.422, 0.496]	[0.342, 0.435]	[0.385, 0.492]	[0.326, 0.426]
95% CI on parameter	[0.724, 0.812]	[0.443, 0.553]	[0.471, 0.593]	[0.320, 0.352]	[0.452, 0.500]	[0.514, 0.553]	[0.298, 0.400]	[0.427, 0.491]	[0.346, 0.430]	[0.393, 0.484]	[0.330, 0.420]
Observations	426	743	393	392	383	413	761	361	413	355	347

1 . 1 **—** 11 4 4  $\sim$ 0.1 . 1 C 1 1 .

Notes: This table uses data from all MTurk experiments with strong and weak demand treatments using real stakes. This table shows the 95 percent confidence interval for the parameter and the interval respectively. We provide a Stata package, demandbounds, which computes the upper and lower bound of confidence intervals for mean behavior and treatment effects using the method proposed by Imbens and Manski (2004). This bounding exercise is based on strong and weak demand treatments in which we manipulate our participants' beliefs about the experimental objective and hypothesis respectively.

ಲು

	Treatment Effect: Score in Effort Task
Interval 95% CI on interval 95% CI on parameter	[175.315, 952.811] [72.733, 1058.305] [95.390, 1035.004]
Observations	1452

Table A.5: Confidence intervals for treatment effects

Notes: In this table we use data from the real effort experiment using strong demand treatments (experiment 3). This table shows the 95 percent confidence interval for the parameter and the set respectively. Our estimates are based on a Stata package, demandbounds, which computes the upper and lower bound of confidence intervals for mean behavior and treatment effects using the method proposed by Imbens and Manski (2004). This bounding exercise is based on strong demand treatments in which we manipulate our participants' beliefs about the experimental objective.

	All Games	Time	Risk	Ambiguity Aversion	Effort 0 cent bonus	Effort 1 cent bonus	Lying	Dictator Game	Ultimatum Game 1	Ultimatum Game 2	Trust Game 1	Trust Game 2
Panel A: Design Characteristics												
Sensitivity $\times$ Incentive	0.026	-0.028	0.062					0.014				
Observations	(0.029) 3000	(0.051) 998	(0.039) 1000					(0.030) 1002				
Panel B: Respondent Characteristic	s											
Sensitivity $\times$ Male	-0.047***	-0.098	-0.041	-0.130**	0.007	0.005	-0.037	-0.056	-0.028	-0.031	0.023	-0.066
Observations	$(0.016) \\ 6013$	$(0.074) \\ 494$	(0.040) 1071	$(0.065) \\ 404$	(0.032) 495	(0.034) 475	(0.037) 366	(0.035) 1118	$(0.038) \\ 409$	(0.040) 425	$(0.065) \\ 383$	$(0.045) \\ 373$
Sensitivity $\times$ Attention	0.019	0.131	0.150***	-0.080			0.059	-0.001	-0.079	0.071	0.270**	-0.019
Observations	$(0.026) \\ 5043$	$(0.166) \\ 494$	(0.042) 1071	$(0.119) \\ 404$			$(0.084) \\ 366$	$(0.036) \\ 1118$	$(0.114) \\ 409$	(0.168) 425	(0.122) 383	$(0.070) \\ 373$
Sensitivity $\times$ Representative sample	0.015		-0.038					$0.053^{*}$				
Observations	(0.025) 2189		(0.039) 1071					(0.032) 1118				

Table A.6:	Heterogeneous	Reponse to	the strong	demand	treatment	(raw choices)	)
10010 11.0.	notorogeneous	recponde to	one outoing	aomana	01 0000110110	, ran onotoos	/

Notes: In Panel A we display heterogeneous treatment effects of the strong demand treatments by design characteristics, i.e. whether our respondents' choices are incentivized or hypothetical. In Panel B we display heterogeneous treatment effects by respondent characteristics, namely by gender, attention and whether our respondents come from MTurk or a representative sample. The variable male takes value one if our respondent is male and zero otherwise, attention takes value one if our respondent correctly completed the screener and zero otherwise. The variable representative sample takes value if our respondent come from a representative sample and zero when they come from the MTurk sample. In the strong demand treatments we reveal the experimental objective to our respondents. \* denotes significance at 10 pct., \*\* at 5 pct., and \*\*\* at 1 pct. level.

	All Games	Time	Risk	Ambiguity Aversion	Effort 0 cent bonus	Effort 1 cent bonus	Lying	Dictator Game	Ultimatum Game 1	Ultimatum Game 2	Trust Game 1	Trust Game 2
Panel A: Design Characteristics												
Sensitivity $\times$ Incentive	0.026 (0.027)		0.048 (0.042)					0.004 (0.028)				
Observations	(0.021) 1976		(0.042) 978					(0.028) 998				
Panel B: Respondent Characteristics												
Sensitivity $\times$ Male	0.000	-0.009	-0.022	0.020	0.057	0.006	0.011	-0.031	-0.023	0.003	0.085	-0.042
Observations	(0.016) 5618	(0.077) 426	(0.042) 1046	$(0.069) \\ 393$	$(0.039) \\ 392$	(0.037) 383	(0.033) 413	$(0.034) \\ 1089$	$(0.039) \\ 361$	(0.037) 413	$(0.069) \\ 355$	(0.044) 347
Sensitivity $\times$ Attention	0.007	-0.174	0.018	0.127			0.053	0.047	0.030	0.114	0.035	-0.087
Observations	(0.022) 4843	(0.167) 426	(0.043) 1046	$(0.145) \\ 393$			(0.072) 413	$(0.035) \\ 1089$	$(0.086) \\ 361$	(0.072) 413	(0.108) 355	$(0.068) \\ 347$
Sensitivity $\times$ Representative sample	0.007		0.009					0.006				
Observations	(0.027) 2135		(0.042) 1046					$(0.031) \\ 1089$				

6

#### Table A.7: Heterogeneous Reponse to the weak demand treatment (raw choices)

Notes: In Panel A we display heterogeneous treatment effects of the strong demand treatments by design characteristics, i.e. whether our respondents' choices are incentivized or hypothetical. In Panel B we display heterogeneous treatment effects by respondent characteristics, namely by gender, attention and whether our respondents come from MTurk or a representative sample. The variable male takes value one if our respondent is male and zero otherwise, attention takes value one if our respondent correctly completed the screener and zero otherwise. The variable representative sample takes value if our respondent come from a representative sample and zero when they come from the MTurk sample. In the strong demand treatments we reveal the experimental objective to our respondents. \* denotes significance at 10 pct., \*\* at 5 pct., and \*\*\* at 1 pct. level.

	All Games	Time	Risk	Ambiguity Aversion	Effort 0 cent bonus	Effort 1 cent bonus	Lying	Dictator Game	Ultimatum Game 1	Ultimatum Game 2	Trust Game 1	Trust Game 2
Sensitivity $\times$ High Education	0.015 (0.073)	-0.153 $(0.193)$	0.163 (0.173)	-0.213 (0.195)	0.100 (0.171)	$-0.334^{*}$ (0.187)	0.397 (0.247)	-0.057 $(0.168)$	-0.153 $(0.226)$	0.132 (0.221)	0.079 (0.206)	0.113 (0.266)
Observations	6330	998	1000	404	495	475	366	1002	409	425	383	373
Sensitivity $\times$ Experienced	0.114 (0.084)	0.087 (0.194)	0.018 (0.177)	0.049 (0.206)			$0.196 \\ (0.242)$	-0.139 (0.164)	0.128 (0.227)	0.105 (0.237)	0.160 (0.207)	0.032 (0.257)
Observations	5043	494	1071	404			<b>`</b> 366 ´	1118	409	425	<b>`</b> 383 ´	<b>`</b> 373 ´

Table A.8: Additional Heterogeneity: Strong demand treatment (z-scored)

Notes: Our outcome measures are normalized at the game level using the negative demand condition. We display heterogeneous treatment effects by respondent characteristics, namely by education and experience. High Education takes value one if a respondent has at least a bachelor degree. Experienced takes value one if a respondent has completed at least 4000 HITs on MTurk. \* denotes significance at 10 pct., \*\* at 5 pct., and \*\*\* at 1 pct. level.

-1

	All Games	Time	Risk	Ambiguity Aversion	Effort 0 cent bonus	Effort 1 cent bonus	Lying	Dictator Game	Ultimatum Game 1	Ultimatum Game 2	Trust Game 1	Trust Game 2
Sensitivity $\times$ High Education	-0.064 $(0.068)$	0.037 (0.192)	0.055 (0.185)	-0.009 $(0.210)$	-0.144 (0.210)	0.060 (0.201)	-0.137 (0.213)	$0.290^{*}$ (0.149)	-0.319 (0.221)	0.322 (0.204)	-0.191 (0.218)	-0.283 (0.243)
Observations	5459	426	978	393	392	383	413	998	361	413	355	347
Sensitivity $\times$ Experienced	-0.059 $(0.080)$	0.148 (0.205)	0.100 (0.226)	-0.142 (0.221)			-0.051 $(0.205)$	-0.214 (0.184)	-0.203 (0.231)	-0.304 $(0.208)$	-0.005 $(0.232)$	0.109 (0.250)
Observations	4843	426	1046	393			413	1089	361	413	355	347

Table A.9: Additional Heterogeneity: Weak demand treatment (z-scored)

Notes: Our outcome measures are normalized at the game level using the negative demand condition. We display heterogeneous treatment effects by respondent characteristics, namely by education and experience. High Education takes value one if a respondent has at least a bachelor degree. Experienced takes value one if a respondent has completed at least 4000 HITs on MTurk. \* denotes significance at 10 pct., \*\* at 5 pct., and \*\*\* at 1 pct. level.

	Belief: Time	Belief: Risk	Belief: Ambiguity Aversion		Belief: Effort 1 cent bonus	Belief: Lying	Belief: Dictator Game	Belief: Ult. Game 1	Belief: Ult. Game 2	Belief: Trust Game 1	Belief: Trus Game 2
Panel A: Unconditional Means											
Positive demand	$\begin{array}{c} 0.797 \\ (0.025) \end{array}$	$\begin{array}{c} 0.702 \\ (0.030) \end{array}$	$     \begin{array}{c}       0.701 \\       (0.032)     \end{array} $	0.773 (0.027)	$0.942 \\ (0.015)$	$\begin{array}{c} 0.811 \\ (0.029) \end{array}$	$0.648 \\ (0.029)$	$\begin{array}{c} 0.572 \\ (0.034) \end{array}$	$\begin{array}{c} 0.662 \\ (0.032) \end{array}$	$\begin{array}{c} 0.410 \\ (0.035) \end{array}$	$\begin{array}{c} 0.386 \\ (0.036) \end{array}$
No demand	$\begin{array}{c} 0.720 \\ (0.029) \end{array}$	$\begin{array}{c} 0.534 \\ (0.032) \end{array}$		0.733 (0.020)	0.888 (0.020)		$\begin{array}{c} 0.354 \\ (0.030) \end{array}$				
Negative demand	$\begin{array}{c} 0.622\\ (0.031) \end{array}$	$\begin{array}{c} 0.424 \\ (0.031) \end{array}$	$\begin{array}{c} 0.335 \ (0.033) \end{array}$	$0.294 \\ (0.029)$	$0.509 \\ (0.033)$	$\begin{array}{c} 0.562 \\ (0.037) \end{array}$	$0.243 \\ (0.028)$	$\begin{array}{c} 0.309 \\ (0.033) \end{array}$	$\begin{array}{c} 0.359 \\ (0.033) \end{array}$	$\begin{array}{c} 0.295 \\ (0.034) \end{array}$	$\begin{array}{c} 0.217 \\ (0.030) \end{array}$
Panel B: Sensitivity (Positive - Negative)											
Raw data	$0.175^{***}$ (0.040)	$0.278^{***}$ (0.043)	$0.366^{***}$ (0.046)	$\begin{array}{c} 0.479^{***} \\ (0.039) \end{array}$	$0.434^{***}$ (0.036)	$0.248^{***}$ (0.047)	$0.405^{***}$ (0.040)	$0.263^{***}$ (0.047)	$0.303^{***}$ (0.046)	$0.115^{**}$ (0.049)	$0.169^{***}$ (0.047)
Z-score	$0.360^{***}$ (0.083) [0.001]	$\begin{array}{c} 0.557^{***} \\ (0.087) \\ [0.001] \end{array}$	$0.773^{***}$ (0.098)	$1.051^{***}$ (0.086) [0.001]	$0.866^{***}$ (0.072) [0.001]	$0.499^{***}$ (0.095)	$0.899^{***}$ (0.089) [0.001]	$0.567^{***}$ (0.102)	$0.632^{***}$ (0.097)	$0.251^{**}$ (0.106)	$0.409^{***}$ (0.113)
Panel C: Monotonicity											
Positive - Neutral (z-score)	$\begin{array}{c} 0.157^{**} \\ (0.079) \\ [0.033] \end{array}$	$\begin{array}{c} 0.335^{***} \\ (0.088) \\ [0.001] \end{array}$		0.088 (0.073) [0.082]	$0.108^{**}$ (0.050) [0.011]		$0.653^{***}$ (0.092) [0.001]				
Negative - Neutral (z-score)	-0.202** (0.088) [0.022]	-0.222** (0.089) [0.004]		$-0.962^{***}$ (0.077) [0.001]	$-0.758^{***}$ (0.077) [0.001]		$-0.246^{***}$ (0.090) [0.002]				
Observations	730	730	404	982	717	366	773	409	425	383	373

Table A.10: Belief about the ex	perimental objective in res	sponse to the strong demand treatments

Notes: The outcome variables take value one of the respondents believed that the experimenter wanted a high action. In Panel A we display the unconditional means and standard errors of those means in the positive, negative and no-demand treatment arms respectively. In Panel B we present the raw and z-scored sensitivity of beliefs to our demand treatments. In Panel C we display the sensitivity of beliefs in the positive and negative demand condition compared to the no-demand condition. In the demand treatments we reveal the experimental objective to our respondents. \* denotes significance at 10 pct., \*\* at 5 pct., and \*\*\* at 1 pct. level.

	Belief: Time	Belief: Risk	Belief: Ambiguity Aversion		Belief: Effort 1 cent bonus	Belief: Lying	Belief: Dictator Game	Belief: Ult. Game 1	Belief: Ult. Game 2	Belief: Trust Game 1	Belief: Tru Game 2
Panel A: Unconditional Means											
Positive demand	$\begin{array}{c} 0.829 \\ (0.026) \end{array}$	$0.757 \\ (0.028)$	$0.763 \\ (0.030)$	$0.790 \\ (0.029)$	$0.979 \\ (0.010)$	$\begin{array}{c} 0.779 \\ (0.028) \end{array}$	$\begin{array}{c} 0.540 \\ (0.032) \end{array}$	$\begin{array}{c} 0.700 \\ (0.034) \end{array}$	$\begin{array}{c} 0.684 \\ (0.032) \end{array}$	$\begin{array}{c} 0.611 \\ (0.036) \end{array}$	$\begin{array}{c} 0.669 \\ (0.038) \end{array}$
No demand		$\begin{array}{c} 0.620 \\ (0.030) \end{array}$					$\begin{array}{c} 0.321 \\ (0.030) \end{array}$				
Negative demand	$\begin{array}{c} 0.602 \\ (0.033) \end{array}$	$\begin{array}{c} 0.372 \\ (0.031) \end{array}$	$0.328 \\ (0.034)$	$\begin{array}{c} 0.284 \\ (0.032) \end{array}$	$0.356 \\ (0.035)$	$\begin{array}{c} 0.464 \\ (0.036) \end{array}$	$0.231 \\ (0.026)$	$\begin{array}{c} 0.238 \\ (0.032) \end{array}$	$\begin{array}{c} 0.382 \\ (0.034) \end{array}$	$\begin{array}{c} 0.112 \\ (0.024) \end{array}$	$\begin{array}{c} 0.083 \\ (0.020) \end{array}$
Panel B: Sensitivity (Positive - Negative)											
Raw data	$0.227^{***}$ (0.042)	$0.386^{***}$ (0.042)	$0.434^{***}$ (0.045)	$0.505^{***}$ (0.044)	$0.623^{***}$ (0.036)	$0.315^{***}$ (0.046)	$0.309^{***}$ (0.041)	$0.462^{***}$ (0.047)	$0.303^{***}$ (0.047)	$0.499^{***}$ (0.043)	$0.586^{***}$ (0.043)
Z-score	$0.466^{***}$ (0.087)	$\begin{array}{c} 0.772^{***} \\ (0.084) \\ [0.001] \end{array}$	$0.918^{***}$ (0.096)	$1.109^{***}$ (0.095)	$\begin{array}{c} 1.244^{***} \\ (0.072) \end{array}$	0.633 <sup>***</sup> (0.092)	$0.685^{***}$ (0.090) [0.001]	$0.998^{***}$ (0.101)	$0.631^{***}$ (0.098)	$1.091^{***}$ (0.095)	$1.418^{***}$ (0.104)
Panel C: Monotonicity											
Positive - Neutral (z-score)		$\begin{array}{c} 0.274^{***} \\ (0.082) \\ [0.001] \end{array}$					$0.486^{***}$ (0.097) [0.001]				
Negative - Neutral (z-score)		$-0.497^{***}$ (0.086) [0.001]					$-0.199^{**}$ (0.088) [0.008]				
Observations	426	743	393	392	383	413	761	361	413	355	347

Table A.11: Belief about the e	movimental object	ive in response to	the most dom	and treatments
Table A.II: Dener about the e	kperimentai opiecu	ive in response to	пе weak den	iand treatments

Notes: The outcome variables take value one of the respondents believed that the experimenter wanted a high action. In Panel A we display the unconditional means and standard errors of those means in the positive, negative and no-demand treatment arms respectively. In Panel B we present the raw and z-scored sensitivity of beliefs to our demand treatments. In Panel C we display the sensitivity of beliefs in the positive and negative demand condition compared to the no-demand condition. In the demand treatments we reveal the experimental hypothesis to our respondents. \* denotes significance at 10 pct., \*\* at 5 pct., and \*\*\* at 1 pct. level.

	Belief: Time	Belief: Risk	Belief: Ambiguity Aversion	Belief: Effort 0 cent bonus	Belief: Effort 1 cent bonus	Belief: Lying	Belief: Dictator Game	Belief: Ult. Game 1	Belief: Ult. Game 2	Belief: Trust Game 1	Belief: Trust Game 2
Panel A: Unconditional Means											
Positive demand	$\begin{array}{c} 0.727 \\ (0.028) \end{array}$	$\begin{array}{c} 0.592 \\ (0.033) \end{array}$	$     \begin{array}{c}       0.593 \\       (0.034)     \end{array} $	$0.729 \\ (0.028)$	$0.934 \\ (0.016)$	$\begin{array}{c} 0.789 \\ (0.030) \end{array}$	$\begin{array}{c} 0.452 \\ (0.030) \end{array}$	$\begin{array}{c} 0.670 \\ (0.032) \end{array}$	$\begin{array}{c} 0.653 \\ (0.032) \end{array}$	$0.580 \\ (0.035)$	$\begin{array}{c} 0.587 \\ (0.036) \end{array}$
No demand	$\begin{array}{c} 0.682 \\ (0.030) \end{array}$	$\begin{array}{c} 0.482 \\ (0.032) \end{array}$		$0.700 \\ (0.021)$	$0.855 \\ (0.023)$		$     \begin{array}{c}       0.142 \\       (0.022)     \end{array} $				
Negative demand	$\begin{array}{c} 0.639 \\ (0.031) \end{array}$	$\begin{array}{c} 0.420 \\ (0.031) \end{array}$	$0.400 \\ (0.035)$	$0.266 \\ (0.028)$	0.573 (0.033)	$\begin{array}{c} 0.625 \\ (0.037) \end{array}$	$0.185 \\ (0.025)$	$\begin{array}{c} 0.284 \\ (0.032) \end{array}$	$\begin{array}{c} 0.440 \\ (0.034) \end{array}$	$\begin{array}{c} 0.290 \\ (0.034) \end{array}$	$\begin{array}{c} 0.243 \\ (0.031) \end{array}$
Panel B: Sensitivity (Positive - Negative)											
Raw data	$0.088^{**}$ (0.042)	$0.172^{***}$ (0.045)	$0.193^{***}$ (0.049)	$0.463^{***}$ (0.040)	$0.361^{***}$ (0.036)	$0.164^{***}$ (0.047)	$0.267^{***}$ (0.039)	$0.386^{***}$ (0.046)	$0.213^{***}$ (0.047)	$0.290^{***}$ (0.049)	$0.344^{***}$ (0.048)
Z-score	$0.181^{**}$ (0.086) [0.122]	$\begin{array}{c} 0.345^{***} \\ (0.090) \\ [0.001] \end{array}$	$0.393^{***}$ (0.100)	$1.051^{***}$ (0.091) [0.001]	$0.724^{***}$ (0.073) [0.001]	$0.339^{***}$ (0.097)	$\begin{array}{c} 0.624^{***} \\ (0.092) \\ [0.001] \end{array}$	$0.859^{***}$ (0.102)	$0.428^{***}$ (0.095)	$0.638^{***}$ (0.107)	$0.799^{***}$ (0.112)
Panel C: Monotonicity											
Positive - Neutral (z-score)	$\begin{array}{c} 0.091 \\ (0.085) \\ [0.268] \end{array}$	$0.221^{**}$ (0.091) [0.016]		$\begin{array}{c} 0.065 \\ (0.080) \\ [0.161] \end{array}$	$0.158^{***}$ (0.056) [0.001]		$0.724^{***}$ (0.087) [0.001]				
Negative - Neutral (z-score)	-0.090 (0.090) [0.268]	-0.124 (0.089) [0.057]		$-0.987^{***}$ (0.079) [0.001]	$-0.566^{***}$ (0.080) [0.001]		$0.100 \\ (0.077) \\ [0.069]$				
Observations	730	730	404	982	717	366	773	409	425	383	373

Table A.12: Belief about the experimental hypothesis in response to the strong demand treatments		· · · ·	11 .1			
Table 1.12, Dener about the experimental hypothesis in response to the strong demand treatments	Table A 12' Bellet about	the experimenta	I hypothesis i	n response to	the strong demand tre	patments
		une experimenta	i ilypoutosis i		the bulling demand the	

Notes: The outcome variables take value one of the respondents believed that the experimenter expected a high action. In Panel A we display the unconditional means and standard errors of those means in the positive, negative and no-demand treatment arms respectively. In Panel B we present the raw and z-scored sensitivity of beliefs to our demand treatments. In Panel C we display the sensitivity of beliefs in the positive and negative demand condition compared to the no-demand condition. In the demand treatments we reveal the experimental objective to our respondents. \* denotes significance at 10 pct., \*\* at 5 pct., and \*\*\* at 1 pct. level.

	Belief: Time	Belief: Risk	Belief: Ambiguity Aversion		Belief: Effort 1 cent bonus	Belief: Lying	Belief: Dictator Game	Belief: Ult. Game 1	Belief: Ult. Game 2	Belief: Trust Game 1	Belief: Trus Game 2
Panel A: Unconditional Means											
Positive demand	$\begin{array}{c} 0.790 \\ (0.028) \end{array}$	$0.749 \\ (0.028)$	$0.707 \\ (0.032)$	$0.779 \\ (0.030)$	$0.964 \\ (0.014)$	$\begin{array}{c} 0.871 \\ (0.023) \end{array}$	$\binom{0.464}{(0.032)}$	$0.728 \\ (0.033)$	$\begin{array}{c} 0.733 \\ (0.031) \end{array}$	$0.627 \\ (0.036)$	$\begin{array}{c} 0.682 \\ (0.038) \end{array}$
No demand		$\begin{array}{c} 0.534 \\ (0.031) \end{array}$					$0.160 \\ (0.024)$				
Negative demand	$\begin{array}{c} 0.454 \\ (0.034) \end{array}$	$0.260 \\ (0.028)$	$0.221 \\ (0.030)$	$0.239 \\ (0.030)$	$\begin{array}{c} 0.325 \\ (0.034) \end{array}$	$\begin{array}{c} 0.526 \\ (0.036) \end{array}$	$0.104 \\ (0.019)$	$\begin{array}{c} 0.354 \\ (0.036) \end{array}$	$\begin{array}{c} 0.362 \\ (0.033) \end{array}$	$\begin{array}{c} 0.294 \\ (0.035) \end{array}$	$\begin{array}{c} 0.181 \\ (0.028) \end{array}$
Panel B: Sensitivity (Positive - Negative)											
Raw data	$0.337^{***}$ (0.044)	$0.489^{***}$ (0.040)	$0.487^{***}$ (0.044)	$0.541^{***}$ (0.043)	$0.639^{***}$ (0.037)	$0.345^{***}$ (0.042)	$0.360^{***}$ (0.037)	$0.374^{***}$ (0.049)	$0.371^{***}$ (0.046)	$0.333^{***}$ (0.050)	$0.500^{***}$ (0.047)
Z-score	$0.693^{***}$ (0.091)	$0.978^{***}$ (0.080) [0.001]	$0.991^{***}$ (0.090)	$1.229^{***}$ (0.097)	$1.282^{***}$ (0.073)	$0.712^{***}$ (0.087)	$\begin{array}{c} 0.841^{***} \\ (0.086) \\ [0.001] \end{array}$	$0.832^{***}$ (0.108)	$0.746^{***}$ (0.092)	$0.732^{***}$ (0.110)	$1.163^{***}$ (0.109)
Panel C: Monotonicity											
Positive - Neutral (z-score)		$\begin{array}{c} 0.431^{***} \\ (0.084) \\ [0.001] \end{array}$					$0.710^{***}$ (0.092) [0.001]				
Negative - Neutral (z-score)		$-0.548^{***}$ (0.083) [0.001]					$-0.131^{*}$ (0.070) [0.021]				
Observations	426	743	393	392	383	413	761	361	413	355	347

Table A.13: Belief about the ex	perimental hypothesis in respo	onse to the weak demand treatments

Notes: The outcome variables take value one of the respondents believed that the experimenter expected a high action. In Panel A we display the unconditional means and standard errors of those means in the positive, negative and no-demand treatment arms respectively. In Panel B we present the raw and z-scored sensitivity of beliefs to our demand treatments. In Panel C we display the sensitivity of beliefs in the positive and negative demand condition compared to the no-demand condition. In the demand treatments we reveal the experimental hypothesis to our respondents. \* denotes significance at 10 pct., \*\* at 5 pct., and \*\*\* at 1 pct. level.

	Finished: Time	Finished: Risk	Finished: Ambiguity Aversion	Finished: Effort 0 cent bonus	Finished: Effort 1 cent bonus	Finished: Lying	Finished: Dictator Game	Finished: Ult. Game 1	Finished: Ult. Game 2	Finished: Trust Game 1	Finished: Trust Game 2
Panel A: Unconditional Means											
Positive demand	$0.996 \\ (0.004)$	$0.996 \\ (0.004)$	$0.995 \\ (0.005)$	$0.969 \\ (0.011)$	$0.968 \\ (0.011)$	$0.995 \\ (0.005)$	$     \begin{array}{r}       1.000 \\       (0.000)     \end{array} $	1.000 (0.000)	$0.991 \\ (0.006)$	$0.990 \\ (0.007)$	1.000 (0.000)
No demand	$0.996 \\ (0.004)$	$1.000 \\ (0.000)$		$0.938 \\ (0.015)$	$0.980 \\ (0.009)$		$0.996 \\ (0.004)$				
Negative demand	$0.992 \\ (0.006)$	$0.992 \\ (0.005)$	1.000 (0.000)	$0.980 \\ (0.009)$	$0.963 \\ (0.012)$	$0.994 \\ (0.006)$	$0.992 \\ (0.006)$	$0.985 \\ (0.009)$	$\begin{array}{c} 0.991 \\ (0.007) \end{array}$	1.000 (0.000)	1.000 (0.000)
Panel B: Differential attrition											
Positive - Negative	$0.004 \\ (0.007)$	$0.003 \\ (0.007)$	-0.005 (0.005)	-0.012 (0.014)	$0.005 \\ (0.017)$	$0.000 \\ (0.008)$	$0.008 \\ (0.006)$	$0.015^{*}$ (0.009)	$0.000 \\ (0.009)$	-0.010 (0.007)	0.000 (0.000)
Positive - Neutral	$0.000 \\ (0.006)$	-0.004 (0.004)		$0.031^{*}$ (0.019)	-0.012 (0.014)		$0.004 \\ (0.004)$				
Negative - Neutral	-0.004 (0.007)	-0.008 (0.005)		$0.043^{**}$ (0.018)	-0.017 (0.015)		-0.004 (0.007)				
Observations	734	733	405	764	739	368	776	412	429	385	373

Table A.14: Attrition overview by game in the strong demand experiments

Notes: In Panel A we present unconditional the proportion of respondents who completed the experiment in the positive, negative and no-demand treatment arms respectively. In Panel B we assess whether there was differential attrition across treatment arms by examining differences in completion rates across demand treatment arms. In the demand treatments we reveal the experimental objective to our respondents. \* denotes significance at 10 pct., \*\* at 5 pct., and \*\*\* at 1 pct. level.

	Finished: Time	Finished: Risk	Finished: Ambiguity Aversion	Finished: Effort 0 cent bonus	Finished: Effort 1 cent bonus	Finished: Lying	Finished: Dictator Game	Finished: Ult. Game 1	Finished: Ult. Game 2	Finished: Trust Game 1	Finished: Trus Game 2
Panel A: Unconditional Means											
Positive demand	$0.991 \\ (0.007)$	$0.987 \\ (0.007)$	0.985 (0.009)	$0.951 \\ (0.015)$	$0.937 \\ (0.017)$	$0.991 \\ (0.006)$	$0.992 \\ (0.006)$	0.994 (0.006)	1.000 (0.000)	1.000 (0.000)	1.000 (0.000)
No demand		$0.993 \\ (0.005)$					$0.980 \\ (0.009)$				
Negative demand	$0.986 \\ (0.008)$	$0.984 \\ (0.008)$	$0.990 \\ (0.007)$	$0.966 \\ (0.013)$	$0.955 \\ (0.015)$	$0.995 \\ (0.005)$	0.989 (0.006)	$0.989 \\ (0.008)$	$0.986 \\ (0.008)$	1.000 (0.000)	$0.980 \\ (0.010)$
Panel B: Differential attrition											
Positive - Negative	$0.004 \\ (0.010)$	$0.004 \\ (0.011)$	-0.005 (0.011)	-0.014 (0.020)	-0.018 (0.023)	-0.004 (0.008)	$0.003 \\ (0.008)$	$0.005 \\ (0.009)$	$0.014^{*}$ (0.008)	0.000 (0.000)	$0.020^{**}$ (0.010)
Positive - Neutral		-0.005 (0.009)					$0.012 \\ (0.011)$				
Negative - Neutral		-0.009 (0.010)					$0.009 \\ (0.011)$				
Observations	431	752	398	409	405	416	771	364	416	355	351

### Table A.15: Attrition overview by game in the weak demand experiments

Notes: In Panel A we present unconditional the proportion of respondents who completed the experiment in the positive, negative and no-demand treatment arms respectively. In Panel B we assess whether there was differential attrition across treatment arms by examining differences in completion rates across demand treatment arms. In the demand treatments we reveal the experimental objective to our respondents. \* denotes significance at 10 pct., \*\* at 5 pct., and \*\*\* at 1 pct. level.

# **B** Online Appendix: Additional Figures

Figure A.1: Response to weak demand treatments by Incentives

Notes: This figure uses data from experiment 2 on MTurk. This figure displays the response to our weak demand treatments separately for the incentivized sample and the sample completing hypothetical choices. We display the average sensitivity along with the 95 percent confidence interval of the sensitivity. In these demand treatments we reveal the experimental hypothesis to our respondents.

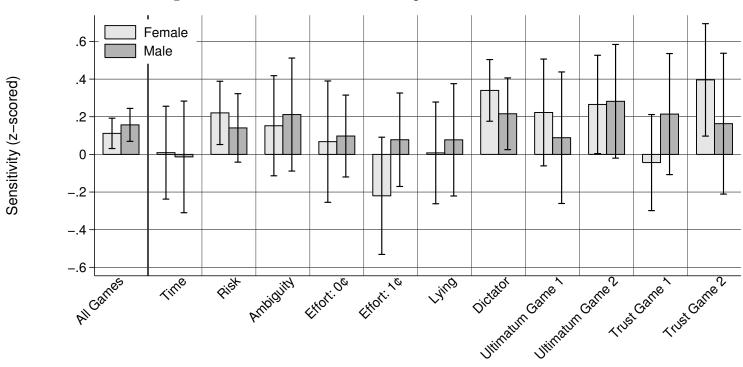


Figure A.2: Gender Differences in response to weak demand treatments

*Notes:* This figure uses data from all incentivized MTurk experiments with weak demand treatments. This figure displays the sensitivity to our weak demand treatments for males and females separately. We display the average sensitivity along with the 95 percent confidence interval of the sensitivity. In these demand treatments we reveal the experimental hypothesis to our respondents.

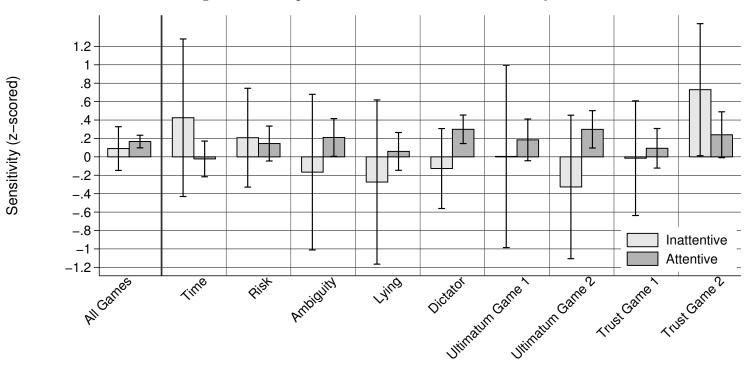
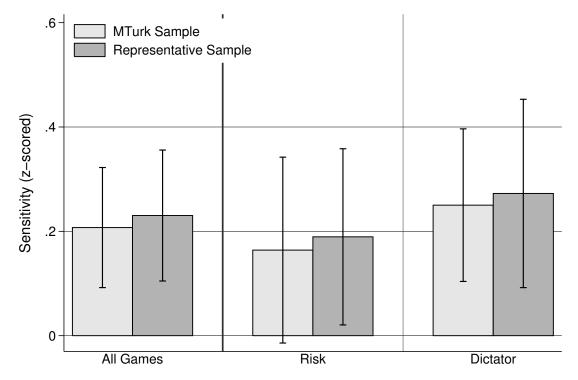


Figure A.3: Response to weak demand treatments by attention

*Notes:* This figure displays the response to our weak demand treatments by our respondents' level of attention. We display the average sensitivity along with the 95 percent confidence interval of the sensitivity. In these demand treatments we reveal the experimental hypothesis to our respondents.





*Notes:* This figure uses data from all incentivized MTurk experiments with weak demand treatments. This figure displays the response to our weak demand treatments separately for the MTurk sample and the representative online sample. We display the average sensitivity at the game level along with the 95 percent confidence interval of the sensitivity. In these demand treatments we reveal the experimental hypothesis to our respondents.

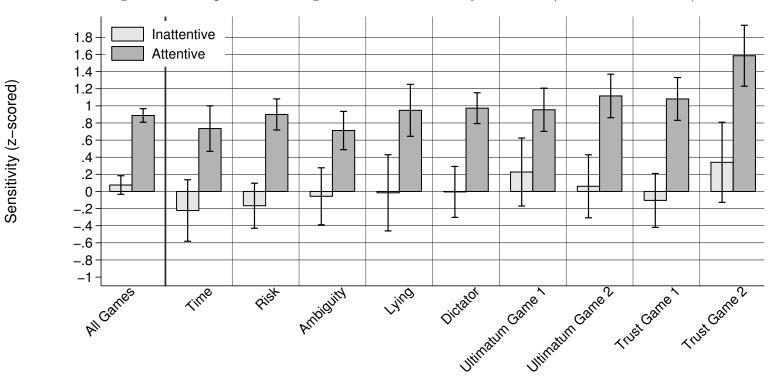
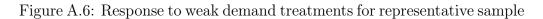
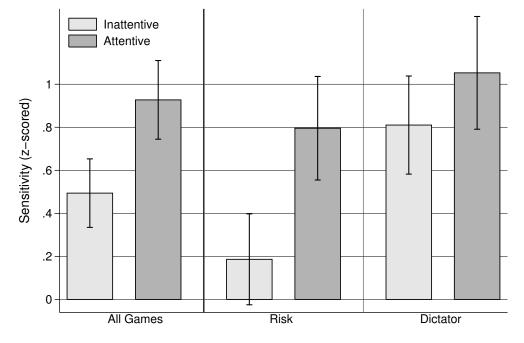


Figure A.5: Response to strong demand treatments by attention (alternative measure)

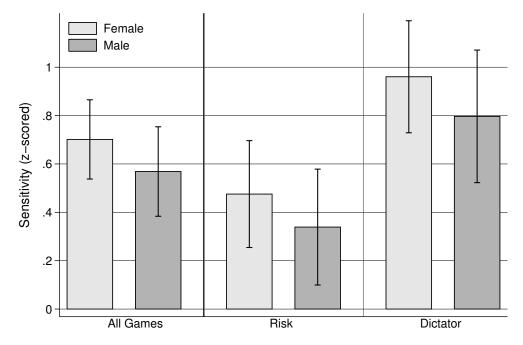
*Notes:* This figure displays the response to our strong demand treatments separately for attentive and inattentive participants. Attention takes value one for respondents in the positive demand condition who thought the experimenter wanted a high action or for respondents who are in the negative demand condition and thought that the experimenter wanted a low value.





*Notes:* This figure utilized data from the representative online panel using the strong demand treatments. It displays the response to our weak demand treatments separately for attentive and inattentive participants. Attentive participants are those who pass the attention screener.

Figure A.7: Response to strong demand treatments by gender using the representative sample



*Notes:* This figure utilized data from the representative online panel using the strong demand treatments. It displays the response to our weak demand treatments separately for attentive and inattentive participants. Attentive participants are those who pass the attention screener.

# C Theoretical Appendix

## C.1 Derivation of $E[h|h^L]$

We suppress dependence on  $\zeta$  to reduce clutter. After observing  $h^L$ , the decision-maker's posterior  $E[h|h^L]$  equals  $Pr(h = 1|h^L) \times 1 + Pr(h = -1|h^L) \times (-1)$  or

$$\begin{split} E[h|h^{L} = y] &= Pr(h = 1|h^{L} = y) - Pr(h = -1|h^{L} = y) \\ &= \frac{A}{B} \\ A &= Pr(h^{L} = y|h = 1)Pr(h = 1) - Pr(h^{L} = y|h = -1)Pr(h = -1) \\ B &= Pr(h^{L} = y|h = 1)Pr(h = 1) + Pr(h^{L} = y|h = -1)Pr(h = -1) \end{split}$$

Since  $Pr(h = j | h^L = y) = \frac{1}{2}(1 - p^L) + p^L \mathbb{I}[y = j]$  and  $Pr(h = j) = \frac{1}{2}$  we have

$$\begin{split} A &= \frac{1}{2} \left[ \left( \frac{1}{2} (1 - p^L) + p^L \mathbb{I}[y = 1] \right) - \left( \frac{1}{2} (1 - p^L) + p^L \mathbb{I}[y = -1] \right) \right] \\ &= \frac{1}{2} p^L \left( \mathbb{I}[y = 1] - \mathbb{I}[y = -1] \right) = \frac{1}{2} p^L h^L \\ B &= \frac{1}{2} \left[ \left( \frac{1}{2} (1 - p^L) + p^L \mathbb{I}[y = 1] \right) + \left( \frac{1}{2} (1 - p^L) + p^L \mathbb{I}[y = -1] \right) \right] \\ &= \frac{1}{2} \end{split}$$

Therefore we can write:

$$E[h|h^{L}(\zeta)] = h^{L}(\zeta)p^{L}(\zeta) \tag{16}$$

$$Pr(h = 1|h^{L}(\zeta)) = 0.5(1 + h^{L}p^{L}(\zeta))$$
(17)

where the latter follows from the fact that  $E[h|h^{L}(\zeta)] = 2Pr(h = 1|h^{L}(\zeta)) - 1.$ 

# C.2 Derivation of $E[h|h^T, h^L]$

We have assumed that when  $h^T = \emptyset$ ,  $E[h|h^T, h^L] = E[h|h^L]$ . After observing  $h^T \neq \emptyset$ , the participant forms a posterior:

$$\begin{split} E[h|h^{T}, h^{L}] &= Pr(h = 1|h^{T}, h^{L}) - Pr(h = -1|h^{T}, h^{L}) \\ &= \frac{A}{B} \\ A &= Pr(h^{T} = x|h = 1, h^{L} = y)Pr(h = 1|h^{L} = y) \\ &- Pr(h^{T} = x|h = -1, h^{L} = y)Pr(h = -1|h^{L} = y) \\ B &= Pr(h^{T} = x|h = 1, h^{L} = y)Pr(h = 1|h^{L} = y) \\ &+ Pr(h^{T} = x|h = -1, h^{L} = y)Pr(h = -1|h^{L} = y) \end{split}$$

Using the following

$$Pr(h^{T} = x|h = j, h^{L} = y) = \frac{1}{2}(1 - p^{T}) + p^{T}\mathbb{I}[x = j]$$
$$Pr(h = j|h^{L} = y) = \frac{1}{2}(1 - p^{L}) + p^{L}\mathbb{I}[y = j]$$

we have:

$$\begin{split} A &= \left(\frac{1}{2}(1-p^{T})+p^{T}\mathbb{I}[x=1]\right) \left(\frac{1}{2}(1-p^{L})+p^{L}\mathbb{I}[y=1]\right) \\ &- \left(\frac{1}{2}(1-p^{T})+p^{T}\mathbb{I}[x=-1]\right) \left(\frac{1}{2}(1-p^{L})+p^{L}\mathbb{I}[y=-1]\right) \\ &= \frac{1}{2}(1-p^{T})p^{L}(\mathbb{I}[y=1]-\mathbb{I}[y=-1]) \\ &+ \frac{1}{2}(1-p^{L})p^{T}(\mathbb{I}[x=1]-\mathbb{I}[x=-1]) \\ &+ p^{T}p^{L}(\mathbb{I}[x=1]\mathbb{I}[y=1]-\mathbb{I}[x=-1]\mathbb{I}[x=-1]) \\ &= \frac{1}{2}(1-p^{T})p^{L}h^{L} + \frac{1}{2}(1-p^{L})p^{T}h^{T} \\ &+ p^{T}p^{L}(\mathbb{I}[x=1]\mathbb{I}[y=1]-(1-\mathbb{I}[x=1])(1-\mathbb{I}[y=1])) \\ &= \frac{1}{2}(1-p^{T})p^{L}h^{L} + \frac{1}{2}(1-p^{L})p^{T}h^{T} \\ &+ p^{T}p^{L}\left(\mathbb{I}[x=1]-\frac{1}{2}\right) + p^{T}p^{L}\left(\mathbb{I}[y=1]-\frac{1}{2}\right) \\ &= \frac{1}{2}(1-p^{T})p^{L}h^{L} + \frac{1}{2}(1-p^{L})p^{T}h^{T} + \frac{1}{2}p^{T}p^{L}(h^{T}+h^{L}) \\ &= \frac{1}{2}\left(p^{T}h^{T}+p^{L}h^{L}\right) \end{split}$$

$$\begin{split} B &= \left(\frac{1}{2}(1-p^{T})+p^{T}\mathbb{I}[x=1]\right) \left(\frac{1}{2}(1-p^{L})+p^{L}\mathbb{I}[y=1]\right) \\ &+ \left(\frac{1}{2}(1-p^{T})+p^{T}\mathbb{I}[x=-1]\right) \left(\frac{1}{2}(1-p^{L})+p^{L}\mathbb{I}[y=-1]\right) \\ &= \frac{1}{2}(1-p^{T})(1-p^{L})+\frac{1}{2}(1-p^{T})p^{L}(\mathbb{I}[y=1]+\mathbb{I}[y=-1]) \\ &+ \frac{1}{2}(1-p^{L})p^{T}(\mathbb{I}[x=1]+\mathbb{I}[x=-1]) \\ &+ p^{T}p^{L}(\mathbb{I}[x=1]\mathbb{I}[y=1]+\mathbb{I}[x=-1]\mathbb{I}[y=-1]) \\ &= \frac{1}{2}(1-p^{T}p^{L})+2p^{T}p^{L}\mathbb{I}[x=1]\mathbb{I}[y=1] \\ &+ p^{T}p^{L}\left[\left(\frac{1}{2}-\mathbb{I}[x=1]\right)+\left(\frac{1}{2}-\mathbb{I}[y=1]\right)\right] \\ &= \frac{1}{2}(1-p^{T}p^{L})+2p^{T}p^{L}\left(\frac{1}{2}(h^{T}+1)\right)\left(\frac{1}{2}(h^{L}+1)\right)-\frac{1}{2}p^{T}p^{L}(h^{T}+h^{L}) \\ &= \frac{1}{2}(1+p^{T}h^{T}p^{L}h^{L}) \end{split}$$

Which uses the facts that  $\mathbb{I}[x=1] - \mathbb{I}[x=-1] = h^T$ ,  $\mathbb{I}[x=1] + \mathbb{I}[x=-1] = 1$ , and  $\mathbb{I}[x=1] = \frac{1}{2}(h^T+1)$ . Therefore we can write:

$$E[h|h^{T}, h^{L}(\zeta)] = \frac{h^{L}(\zeta)p^{L}(\zeta) + h^{T}p^{T}}{1 + h^{L}(\zeta)p^{L}(\zeta)h^{T}p^{T}}$$
(18)

$$Pr(h = 1|h^{T}, h^{L}(\zeta)) = 0.5 \left(1 + \frac{h^{L}(\zeta)p^{L}(\zeta) + h^{T}p^{T}}{1 + h^{L}(\zeta)p^{L}(\zeta)h^{T}p^{T}}\right)$$
(19)

where the latter follows from the fact that  $E[h|h^T, h^L(\zeta)] = 2Pr(h = 1|h^T, h^L(\zeta)) - 1.$ 

# C.3 Proof of Proposition 1 (Monotone demand treatment effects)

We are interested in the sign of  $\phi(E[h|h^T, h^L(\zeta)] - E[h|h^L(\zeta)])$ . We have:

$$\begin{split} \phi(E[h|h^{T}, h^{L}(\zeta)] - E[h|h^{L}(\zeta)]) &= \phi\left(\frac{h^{L}(\zeta)p^{L}(\zeta) + h^{T}p^{T}}{1 + h^{L}(\zeta)p^{L}(\zeta)h^{T}p^{T}} - h^{L}(\zeta)p^{L}(\zeta)\right) \\ &= \phi h^{T}p^{T}\frac{(1 - h^{L}(\zeta)^{2}p^{L}(\zeta)^{2})}{1 + h^{L}(\zeta)p^{L}(\zeta)h^{T}p^{T}} \end{split}$$

Because we assumed that  $p^L(\zeta) < 1$ , this expression has the same sign as  $\phi h^T p^T$ . We want to show that  $\phi(E[h|h^T = 1, h^L(\zeta)] - E[h|h^L(\zeta)]) \ge 0$ and  $\phi(E[h|h^T = -1, h^L(\zeta)] - E[h|h^L(\zeta)]) \le 0$ . This follows trivially when  $p^T = 0$ . When  $p^T > 0$  if follows if and only if  $\phi \ge 0$ .

### C.4 Conditions for Monotone Sensitivity

Assumption 3 (monotone sensitivity) assumes that sensitivity  $S(\zeta) = a^+(\zeta) - a^-(\zeta)$  is (strictly) monotone in the size of the latent demand effect  $|a^L(\zeta) - a(\zeta)|$ . Here we examine cases under which that is and is not the case. We assume throughout that Assumptions 1 and 2 hold.

#### C.4.1 Variation driven by $\phi$ .

We are interested in how  $\phi$  affects latent demand  $\left(d \left| a^{L}(\zeta) - a(\zeta) \right| / d\phi\right)$  and sensitivity  $\left(dS(\zeta)/d\phi\right)$ . From (5) we obtain:

$$\frac{d(a^L(\zeta) - a(\zeta))}{d\phi} = -\frac{h^L(\zeta)p^L(\zeta)}{v_{11}(a^L(\zeta),\zeta)}$$

which has the same sign as  $h^{L}(\zeta)$ , allowing us to write  $\frac{d[a^{L}(\zeta)-a(\zeta)]}{d\phi} = -\frac{p^{L}(\zeta)}{v_{11}(a^{L}(\zeta),\zeta)} \ge 0.$ 

Turning to sensitivity, we have:

$$\frac{dS(\zeta)}{d\phi} = \frac{da^+(\zeta)}{d\phi} - \frac{da^-(\zeta)}{d\phi} = -\frac{1}{v_{11}(a^+(\zeta),\zeta)} \frac{h^L(\zeta)p^L(\zeta) + p^T}{1 + h^L(\zeta)p^L(\zeta)p^T} + \frac{1}{v_{11}(a^-(\zeta),\zeta)} \frac{h^L(\zeta)p^L(\zeta) - p^T}{1 - h^L(\zeta)p^L(\zeta)p^T}$$

By Assumption 2,  $h^L(\zeta)p^L(\zeta)+p^T \ge 0$  and  $h^L(\zeta)p^L(\zeta)+p^T \le 0$ , so both terms are positive, i.e.  $\frac{dS(\zeta)}{d\phi} \ge 0$ . Therefore Monotone Sensitivity holds and any set of environments that differ only in  $\phi$  constitutes a comparison class, i.e. for such environments, sensitivity is informative about the magnitude of latent demand effects.

**Example 3.** Suppose participant pool A is more concerned for pleasing the experimenter than participant pool B. Then latent demand effects and sensitivity will be larger in magnitude in participant pool A.

#### C.4.2 Variation driven by v.

Suppose that  $\zeta$  can be separated into a parameter, z, and a remainder term,  $\zeta'$ , that v is differentiable in z and that  $\phi$ ,  $h^L$  and  $p^L$  do not depend on z. z could be a preference parameter (e.g. risk aversion) or a design parameter (e.g. the scale of incentives). We write  $U(a, \zeta', z) = v(a, \zeta', z) + a\phi(\zeta')E[h|\zeta']$  and modify the first-order conditions accordingly.

$$\frac{d(a^{L}(\zeta',z) - a(\zeta',z))}{dz} = \frac{da^{L}(\zeta',z)}{dz} - \frac{da(\zeta',z)}{dz}$$
$$= -\left[\frac{v_{13}(a^{L}(\zeta',z),\zeta',z)}{v_{11}(a^{L}(\zeta',z),\zeta',z)} - \frac{v_{13}(a(\zeta',z),\zeta',z)}{v_{11}(a(\zeta',z),\zeta',z)}\right]$$
$$\frac{dS(\zeta',z)}{dz} = -\left[\frac{v_{13}(a^{+}(\zeta',z),\zeta',z)}{v_{11}(a^{+}(\zeta',z),\zeta',z)} - \frac{v_{13}(a^{-}(\zeta',z),\zeta',z)}{v_{11}(a^{-}(\zeta',z),\zeta',z)}\right]$$

It is clear from inspecting these conditions that we need to know how  $v_{13}/v_{11}$  varies with a, i.e.:

$$\frac{d\frac{v_{13}(a,\zeta',z)}{v_{11}(a,\zeta',z)}}{da} = \frac{v_{11}(a,\zeta',z)v_{113}(a,\zeta',z) - v_{111}(a,\zeta',z)v_{13}(a,\zeta',z)}{v_{11}(a,\zeta',tz)}$$

It is difficult to make general statements about these objects for general utility functions, so we focus attention on two special cases of interest.

Multiplicative separability. Suppose that  $v(a, \zeta', z) = \nu(a, \zeta')f(z)$  and define z such that f'(z) > 0. Then

$$\frac{d\left(a^{L}(\zeta',z) - a(\zeta',z)\right)}{dz} = -f'(z) \left[\frac{\nu_{1}(a^{L}(\zeta',z),\zeta')}{\nu_{11}(a^{L}(\zeta',z),\zeta')} - \frac{\nu_{1}(a(\zeta',z),\zeta')}{\nu_{11}(a(\zeta',z),\zeta')}\right]$$
$$= -f'(z)\frac{\nu_{1}(a^{L}(\zeta',z),\zeta')}{\nu_{11}(a^{L}(\zeta',z),\zeta')}$$

Since by concavity  $\nu_1(a,\zeta') > 0$  for  $a < a(\zeta',z)$  and  $\nu_1(a,\zeta') < 0$  for  $a > a(\zeta',z)$ , we have  $\frac{d|a^L(\zeta',z)-a(\zeta',z)|}{dz} \leq 0$ . Similarly

$$\frac{dS(\zeta)}{dz} = -f'(z) \left[ \frac{\nu_1(a^+(\zeta', z), \zeta')}{\nu_{11}(a^+(\zeta', z), \zeta')} - \frac{\nu_1(a^-(\zeta', z), \zeta')}{\nu_{11}(a^-(\zeta', z), \zeta')} \right]$$

Since  $\nu_1(a^+(\zeta', z), \zeta') \leq 0$  and  $\nu_1(a^-(\zeta', z), \zeta') \geq 0$ , we have  $\frac{dS(\zeta)}{dz} \leq 0$ . Therefore Monotone Sensitivity holds and any set of environments that varies only in z is a valid comparison set.

Intuitively, this case captures changes in the slope of payoffs that leave the optimal natural action unchanged. For example, an increase in the scale of incentives that makes the payoff function "more concave" around the natural action makes deviating from the natural action more costly and so decreases the magnitude of latent demand and sensitivity.

**Example 4** (Belief scoring). Consider a belief-reporting task rewarded by a quadratic scoring rule. A risk-neutral participant reports a belief, a, which is the probability of an event A. He is paid  $\frac{z}{2} [1-(\mathbb{I}[A]-a)^2]$ where  $\mathbb{I}[A] = 1$  if A is true and 0 otherwise. The utility function is  $U(a, \zeta', z) = \frac{z}{2} [1-\mu(1-a)^2 - (1-\mu)(-a)^2] + a\phi(\zeta')E[h|\zeta']$ , so f(z) = z. The optimal action solves  $z [\mu(1-a^*) - (1-\mu)a^*] + \phi(\zeta')E[h|\zeta'] = 0$  or  $a^* = \mu + \frac{\phi(\zeta')E[h|\zeta']}{z}$ . Increases in z are equivalent to decreases in  $\phi$  and decrease both the magnitude of latent demand effects, and sensitivity.

Additive separability. Suppose that  $v(a, \zeta', z) = v(a, \zeta') + af(z)$  and define z such that f'(z) > 0. Then:

$$\frac{d(a^L(\zeta',z) - a(\zeta',z))}{dz} = -f'(z) \left[ \frac{1}{\nu_{11}(a^L(\zeta',z),\zeta')} - \frac{1}{\nu_{11}(a(\zeta',z),\zeta')} \right]$$

and

$$\frac{dS(\zeta)}{dz} = -f'(z) \left[ \frac{1}{\nu_{11}(a^+(\zeta', z), \zeta')} - \frac{1}{\nu_{11}(a^-(\zeta', z), \zeta')} \right]$$

What matters in this case is how the concavity of v (and therefore  $\nu$ ) with respect to a varies with a. Suppose  $\nu_{111} < 0$ , so  $\nu_{11}$  is decreasing in a, i.e. concavity is increasing. Then  $\frac{dS(\zeta)}{dz} < 0$ , i.e. increases in z decrease sensitivity. If  $a^L(\zeta', z) > a(\zeta', z)$  then  $\frac{d(a^L(\zeta', z) - a(\zeta', z))}{dz} < 0$  and if  $a^L(\zeta', z) < a(\zeta', z)$  then  $\frac{d(a^L(\zeta', z) - a(\zeta', z))}{dz} > 0$ , so  $\frac{d|a^L(\zeta', z) - a(\zeta', z)|}{dz} < 0$  and Monotone Sensitivity holds. Monotone sensitivity also holds (with the inequalities reversed) for  $\nu_{111} > 0$ .

**Example 5** (Effort provision). A participant performs a real-effort task for piece rate z with cost of effort C(a), C' > 0, C'' > 0, C''' > 0.  $U(a, \zeta', z) =$ 

 $za - C(a) + a\phi(\zeta')E[h|\zeta']$ . The optimal action  $a^*$  solves  $z - C'(a^*) + \phi(\zeta')E[h|\zeta'] = 0$ . As z increases,  $a^*$  increases and responsiveness to latent demand or demand treatments decreases.

#### C.4.3 Variation driven by inattention.

Suppose that with some probability  $\xi$  the participant is an attentive type who pays careful attention to the decision-making environment, and with probability  $1 - \xi$ , he is inattentive. When inattentive, he takes some action  $a^{I}(\zeta)$ .  $a^{I}(\zeta)$  might be equal to  $a(\zeta)$ , in which case the participant is only inattentive to experimenter demand, but it might differ if the participant is also inattentive to other design features.

While until now we have treated the actions as those of a representative agent, for this analysis it is more natural to work with expected or average actions over a sample. Denote by  $\bar{a}(\zeta) = \xi a(\zeta) + (1 - \xi)a^{I}(\zeta)$ the expected natural action, define  $\bar{a}^{L}(\zeta), \bar{a}^{+}(\zeta), \bar{a}^{-}(\zeta)$  equivalently and let  $\bar{S}(\zeta) = \bar{a}^{+}(\zeta) - \bar{a}^{-}(\zeta)$ . The latent demand effect is now equal to  $|\bar{a}^{L}(\zeta) - \bar{a}(\zeta)| = \xi |a^{L}(\zeta) - a(\zeta)|$ , while  $\bar{S}(\zeta) = \xi S(\zeta)$ . Hence, if the variation in latent demand effects is driven by variation in attention,  $\xi$ , Monotone Sensitivity will hold, and any set of environments that varies only in participant attentiveness is a valid comparison set. Note that since we have assumed the participant is inattentive to both latent demand and the demand treatment, bounding will hold if  $p^{T} \geq p^{L}$  as before.

#### C.4.4 Variation driven by beliefs.

Consider changes to the environment that influence behavior only by altering participants' beliefs about the experimenter's objective, i.e. we consider variation in  $h^L(\zeta)p^L(\zeta)$ . Call this term  $H. a(\zeta)$  is unaffected, so:

$$\frac{d(a^L(\zeta) - a(\zeta))}{dH} = -\frac{\phi(\zeta)}{v_{11}(a^L(\zeta), \zeta)} \ge 0$$

and therefore  $\frac{d|a^{L}(\zeta)-a(\zeta)|}{dH} = -\frac{\phi(\zeta)}{v_{11}(a^{L}(\zeta),\zeta)} \times \operatorname{sign}(a^{L}(\zeta)-a(\zeta)) = -\frac{\phi(\zeta)h^{L}(\zeta)}{v_{11}(a^{L}(\zeta),\zeta)}$ which is positive when  $h^{L}(\zeta) = 1$  (because an increase in H means the participant's beliefs are shifting toward certainty that the experimenter wants a high action) and negative when  $h^L(\zeta) = -1$  (because the participant is becoming more uncertain about the experimenter's wishes).

Next we turn to demand treatment effects. First we derive the response of the participant's posterior:

$$\frac{d\frac{H+h^{T}p^{T}}{1+Hh^{T}p^{T}}}{dH} = \frac{\left(1+Hh^{T}p^{T}\right) - \left(H+h^{T}p^{T}\right)h^{T}p^{T}}{\left(1+Hh^{T}p^{T}\right)^{2}}$$
$$= \frac{1-\left(h^{T}p^{T}\right)^{2}}{\left(1+Hh^{T}p^{T}\right)^{2}} = \frac{1-p^{T2}}{\left(1+Hh^{T}p^{T}\right)^{2}}$$

So:

$$\frac{dS(\zeta)}{dH} = -\phi(\zeta)(1-p^{T_2}) \left[ \frac{1}{(1+Hp^T)^2 v_{11}(a^+(\zeta),\zeta)} - \frac{1}{(1-Hp^T)^2 v_{11}(a^-(\zeta),\zeta)} \right]$$

The sign of this expression depends on the sign of H and how  $v_{11}$  changes with a. However, it is straightforward to see that Monotone Sensitivity will not hold in general, and in fact sensitivity will tend to be higher when latent demand is weaker. To see this, consider the simple case where  $v_{11}$  is constant. Then we have:

$$\frac{dS(\zeta)}{dH} = -\frac{\phi(\zeta)(1-p^{T2})}{v_{11}} \left[ \frac{\left(1-Hp^{T}\right)^{2} - \left(1+Hp^{T}\right)^{2}}{\left(1+Hp^{T}\right)^{2}\left(1-Hp^{T}\right)^{2}} \right]$$
$$= -\frac{\phi(\zeta)(1-p^{T2})}{v_{11}} \left[ \frac{-4Hp^{T}}{\left(1+Hp^{T}\right)^{2}\left(1-Hp^{T}\right)^{2}} \right]$$

which is positive when  $h^L = -1$  and negative when  $h^L = 1$ , i.e. it has the opposite sign to  $\frac{d|a^L(\zeta)-a(\zeta)|}{dH}$ . The reason is that as H approaches zero, the participant becomes more uncertain about the experimenter's wishes and is therefore very responsive to the new information in the demand treatments. Meanwhile as H approaches 1 or -1, the participant is very confident about the value of h. Although his confidence can be undermined by a demand treatment in the opposite direction, he responds little to a demand treatment that confirms his beliefs, so sensitivity is low.

### C.5 Extension: learning about $\phi$

An interpretation of our demand treatments is that they signal not only the direction of the experimenter's objective, but the salience or intensity of her preference over objectives. For instance "do me a favor" suggests that the choice is important. We now assume that the decision-maker's preferences are:

$$U(a,\zeta) = v(a,\zeta) + a\phi(\zeta)E[gh|\zeta]$$

where  $g \in \{0, 1\}$  captures whether conforming to h is important (1) or unimportant (0) to the experimenter.  $\phi$  remains the decision-maker's preference for pleasing the experimenter, which is now scaled by g, i.e. the decision-maker internalizes the perceived importance of the objective. We assume that g and h are believed independent (i.e. direction and importance are independent), so  $E[gh|\zeta] = E[g|\zeta]E[h|\zeta]$ . We also assume for simplicity is that the decision-maker's prior E[g] = 0.5.

Now,  $\zeta$  contains two signals,  $h^L(\zeta)$ , defined as before, and  $g^L(\zeta) \in \{0,1\}$ , where  $E[g|g^L(\zeta)] = E[g|g^L(\zeta),\zeta]$  (i.e.  $g^L$  is a sufficient statistic).  $g^L$  is believed to equal g with probability  $q^L(\zeta) < 1$  and pure independent noise otherwise. We show below that  $E[g|g^L(\zeta)] = \frac{1}{2} + q^L \left(g^L - \frac{1}{2}\right)$ .

Similarly, a demand treatment is now two signals  $(h^T, g^T)$ , where  $h^T$  is defined as before and  $g^T \in \{0, 1, \emptyset\}$ .  $g^T = \emptyset$  corresponds to the case where no treatment is used,  $g^T = 0$  signals to the participant that their action is not important to the experimenter, and  $g^T = 1$  signals that it is.

Conditional on sending a demand treatment,  $g^T$  is believed to equal g with probability  $q^T$  and otherwise be pure noise independent of all other signals. We show below that the Bayesian posterior is:

$$E[g|g^{T}, g^{L}(\zeta)] = \frac{\frac{1}{2} + q^{L}(\zeta) \left(g^{L}(\zeta) - \frac{1}{2}\right) + q^{T} \left(g^{T} - \frac{1}{2}\right) + q^{T} q^{L}(\zeta) \left(\mathbb{I}[g^{T} = g^{L}(\zeta)] - \frac{1}{2}\right)}{1 + 2q^{T} q^{L}(\zeta) \left(\mathbb{I}[g^{T} = g^{L}(\zeta)] - \frac{1}{2}\right)}$$

We assume that  $g^T$  can be varied independently of  $h^T$  and will be held constant within a typical pair of positive and negative demand treatments.

For bounding to hold, we now need:

$$\phi(\zeta)E[g|g^T, g^L(\zeta)]E[h|h^T = 0, h^L(\zeta)] \le 0 \le \phi(\zeta)E[g|g^T, g^L(\zeta)]E[h|h^T = 1, h^L(\zeta)]$$

Since  $E[g|g^T, g^L(\zeta)] \ge 0$  our bounding condition does not depend on how the demand treatments affect beliefs about g, all we require is  $\phi(\zeta) \ge 0$ and  $p^T \ge p^L(\zeta)$  as before.<sup>1</sup>

However, beliefs about g do affect the width of the bounds: sensitivity is increasing in  $E[g|g^T, g^L(\zeta)]$ . The tightest bounds are obtained when  $E[g|g^T, g^L(\zeta)] = 0$ , which obtains when  $g^T = 0$  and  $q^T = 1$ . More generally, the bounds are tightened by signaling that acting according to the experimenter's objective is not important  $(g^T = 0)$ , or if  $g^T = 1$  by minimizing  $q^T$ . We suspect that it may be difficult in practice to both strongly signal the direction of the objective (large  $p^T$ ), which is required for bounding, and that the objective is not important  $(g^T = 0)$ , so reasonable demand treatments are likely to be those that strongly signal a directional objective while keeping salience low, i.e. large  $p^T$  and small  $q^T$  with  $g^T = 1$ .

### C.5.1 Derivation of $E[g|g^L(\zeta)]$ and $E[g|g^T, g^L(\zeta)]$

Let the prior belief be  $\frac{1}{2}$ .

$$\begin{split} E[g|g^{L} = y] &= Pr(g = 1|g^{L} = y) \\ &= \frac{A}{B} \\ A &= Pr(g^{L} = y|g = 1)Pr(g = 1) \\ B &= Pr(g^{L} = y|g = 1)Pr(g = 1) + Pr(g^{L} = y|g = 0)Pr(g = 0) \end{split}$$

<sup>1</sup>For monotone demand treatment effects to hold, we require

$$\begin{split} \phi(\zeta)E[g|g^T,g^L(\zeta)]E[h|h^T=0,h^L(\zeta)] &\leq \phi(\zeta)E[g|g^L(\zeta)]E[h|h^L(\zeta)] \leq \phi(\zeta)E[g|g^T,g^L(\zeta)]E[h|h^T=1,h^L(\zeta)] \end{split}$$
 We can write

$$\phi(\zeta) \frac{E[h|h^{T} = 0, h^{L}(\zeta)]}{E[h|h^{L}(\zeta)]} \leq \phi(\zeta) \frac{E[g|g^{L}(\zeta)]}{E[g|g^{T}, g^{L}(\zeta)]} \leq \phi(\zeta) \frac{E[h|h^{T} = 1, h^{L}(\zeta)]}{E[h|h^{L}(\zeta)]}$$

We see that  $\phi(\zeta) \geq 0$  is necessary but not sufficient for monotone demand treatment effects, we also need that  $E[g|g^T, g^L(\zeta)]$  is neither "too big" nor "too small" relative to  $E[g|g^L(\zeta)]$ . Intuitively, if  $g^T = 1$  the demand treatments shift all actions further away from the natural action, while if  $g^T = 0$ . all actions are shifted toward the natural action.  $g^T = 1$  and  $p^T \geq p^L$  are sufficient for monotone demand treatments to hold.

Since  $Pr(g = j | g^L = y) = \frac{1}{2}(1 - q^L) + q^L \mathbb{I}[y = j]$  and  $Pr(g = j) = \frac{1}{2}$  we have

$$\begin{split} A &= \frac{1}{2} \left( \frac{1}{2} (1 - q^L) + q^L \mathbb{I}[y = 1] \right) \\ &= \frac{1}{2} \left( \frac{1}{2} + q^L \left( g^L - \frac{1}{2} \right) \right) \\ B &= \frac{1}{2} \left[ \left( \frac{1}{2} (1 - q^L) + q^L \mathbb{I}[y = 1] \right) + \left( \frac{1}{2} (1 - q^L) + q^L \mathbb{I}[y = 0] \right) \right] \\ &= \frac{1}{2} \end{split}$$

Therefore,  $E[g|g^{L}(\zeta)] = \frac{1}{2} + q^{L} \left(g^{L} - \frac{1}{2}\right).$ 

Turning to  $E[g|g^T, g^L(\zeta)]$ , we have assumed that when  $g^T = \emptyset$ ,  $E[g|g^T, g^L] = E[g|g^L]$ . After observing  $g^T \neq \emptyset$ , the participant forms a posterior:

$$\begin{split} E[g|g^{T},g^{L}] &= Pr(g=1|g^{T},g^{L}) \\ &= \frac{A}{B} \\ A &= Pr(g^{T}=x|g=1,g^{L}=y)Pr(g=1|g^{L}=y) \\ B &= Pr(g^{T}=x|g=1,g^{L}=y)Pr(g=1|g^{L}=y) \\ &+ Pr(g^{T}=x|g=0,g^{L}=y)Pr(g=0|g^{L}=y) \end{split}$$

Using the following

$$Pr(g^{T} = x|g = j, g^{L} = y) = \frac{1}{2}(1 - q^{T}) + q^{T}\mathbb{I}[x = j]$$
$$Pr(g = j|g^{L} = y) = \frac{1}{2}(1 - q^{L}) + q^{L}\mathbb{I}[y = j]$$

we have:

$$\begin{split} A &= \left(\frac{1}{2}(1-q^T) + q^T \mathbb{I}[x=1]\right) \left(\frac{1}{2}(1-q^L) + q^L \mathbb{I}[y=1]\right) \\ &= \left(\frac{1}{2}(1-q^T) + q^T g^T\right) \left(\frac{1}{2}(1-q^L) + q^L g^L\right) \\ &= \frac{1}{2}(1-q^T)q^L g^L + \frac{1}{2}(1-q^L)q^T g^T \\ &+ \frac{1}{4}(1-q^T)(1-q^L) + q^T g^T q^L g^L \\ &= \frac{1}{2}(1+q^T (g^T-1))q^L g^L + \frac{1}{2}(1+q^L (g^L-1))q^T g^T \\ &+ \frac{1}{4}(1-q^T)(1-q^L) \\ &= \frac{1}{2}q^L g^L + \frac{1}{2}q^T g^T - \frac{1}{2}q^T q^L \left(g^L (1-g^T) + g^T (1-g^L)\right) \\ &+ \frac{1}{4}(1-q^T)(1-q^L) \\ &= \frac{1}{2}q^L g^L + \frac{1}{2}q^T g^T - \frac{1}{2}q^T q^L \left(\mathbb{I}[g^L \neq g^T]\right) \\ &+ \frac{1}{4} - \frac{1}{4}q^T - \frac{1}{4}q^L + \frac{1}{4}q^T q^L \\ &= \frac{1}{2}q^L \left(g^L - \frac{1}{2}\right) + \frac{1}{2}q^T \left(g^T - \frac{1}{2}\right) - \frac{1}{2}q^T q^L \left(1 - \mathbb{I}[g^L = g^T]\right) \\ &+ \frac{1}{4} + \frac{1}{4}q^T q^L \\ &= \frac{1}{4} + \frac{1}{2}q^L \left(g^L - \frac{1}{2}\right) + \frac{1}{2}q^T \left(g^T - \frac{1}{2}\right) \\ &+ \frac{1}{2}q^T q^L \left(\mathbb{I}[g^T = g^L] - \frac{1}{2}\right) \end{split}$$

$$\begin{split} B &= \left(\frac{1}{2}(1-q^{T})+q^{T}\mathbb{I}[x=1]\right) \left(\frac{1}{2}(1-q^{L})+q^{L}\mathbb{I}[y=1]\right) \\ &+ \left(\frac{1}{2}(1-q^{T})+q^{T}\mathbb{I}[x=0]\right) \left(\frac{1}{2}(1-q^{L})+q^{L}\mathbb{I}[y=0]\right) \\ &= \left(\frac{1}{2}(1-q^{T})+q^{T}g^{T}\right) \left(\frac{1}{2}(1-q^{L})+q^{L}g^{L}\right) \\ &+ \left(\frac{1}{2}(1-q^{T})+q^{T}(1-g^{T})\right) \left(\frac{1}{2}(1-q^{L})+q^{L}(1-g^{L})\right) \\ &= \frac{1}{2}(1-q^{T})q^{L}g^{L}+\frac{1}{2}(1-q^{L})q^{T}g^{T} \\ &+ \frac{1}{2}(1-q^{T})q^{L}(1-g^{L})+\frac{1}{2}(1-q^{L})q^{T}(1-g^{T}) \\ &+ \frac{1}{2}(1-q^{T})(1-q^{L}) \\ &+ q^{T}q^{L}g^{T}g^{L}+q^{T}q^{L}(1-g^{T})(1-g^{L}) \\ &= \frac{1}{2}(1-q^{T})q^{L}+\frac{1}{2}(1-q^{L})q^{T}+\frac{1}{2}(1-q^{T})(1-q^{L}) \\ &+ q^{T}q^{L}\mathbb{I}[g^{T}=g^{L}] \\ &= \frac{1}{2}+q^{T}q^{L}\left(\mathbb{I}[g^{T}=g^{L}]-\frac{1}{2}\right) \end{split}$$

Therefore,

$$E[g|g^{T}, g^{L}] = \frac{\frac{1}{2} + q^{L}\left(g^{L} - \frac{1}{2}\right) + q^{T}\left(g^{T} - \frac{1}{2}\right) + q^{T}q^{L}\left(\mathbb{I}[g^{T} = g^{L}] - \frac{1}{2}\right)}{1 + 2q^{T}q^{L}\left(\mathbb{I}[g^{T} = g^{L}] - \frac{1}{2}\right)}$$

### C.6 Richer beliefs and correlated signals

In this section we extend the model to allow h to take three values:  $\{-1, 0, 1\}$ , where h = 0 captures the case where the experimenter wants the participant to choose the natural action. We call the action following  $h^T = 0$ ,  $a^0(\zeta)$ .

For simplicity we assume that the participant's prior belief is that each possibility is equally likely (i.e. is true with probability 1/3), so E[h] = 0.  $\epsilon$  and  $\eta$  are also believed to take each value with probability 1/3 and are independent.  $h^L \in \{-1, 0, 1\}$  and  $h^T \in \{-1, 0, 1, \emptyset\}$  and  $p^L$  and  $p^T$  are defined as before. We maintain the assumption that the participant infers nothing when the experimenter does not send a demand treatment  $(h^T = \emptyset)$ . We show below that the beliefs can be written as:

$$E[h|h^L] = p^L h^L \tag{20}$$

$$E[h|h^T = \emptyset, h^L] = p^L h^L \tag{21}$$

$$E[h|h^{T}, h^{L}] = \frac{\frac{1}{3}(1-p^{T})p^{L}h^{L} + \frac{1}{3}(1-p^{L})p^{T}h^{T} + p^{T}p^{L}h^{T}\mathbb{I}[h^{T} = h^{L}]}{\frac{1}{3}(1-p^{T}p^{L}) + p^{T}p^{L}\mathbb{I}[h^{T} = h^{L}]}$$
(22)

Bounding holds if  $E[h|h^T = 1, h^L] \ge 0$  and  $E[h|h^T = -1, h^L] \le 0$ . It is straightforward to check that the condition is the same as before:  $p^T \ge p^L$ .

What purpose, then, do  $h^T = 0$  treatments serve? It is natural to think that demanding participants to take the natural action will eliminate demand effects, but under our assumptions,  $h^T = 0$  does not in general elicit the natural action. Instead latent demand still influences the participant's action. We have:

$$E[h|h^{T} = 0, h^{L}] = \frac{\frac{1}{3}(1 - p^{T})p^{L}h^{L}}{\frac{1}{3}(1 - p^{T}p^{L}) + p^{T}p^{L}\mathbb{I}[h^{L} = 0]}$$

This expression equals zero if  $p^T = 1$  (the demand treatment is perfectly informative), or  $p^L h^L = 0$  (no latent demand), otherwise it has the same sign as  $p^L h^L$ . One interpretation is that while the participant takes at face value the experimenter's demand to choose the natural action, she might be unaware of the influence of other design features that nudge her in one direction or another.

Despite this negative result,  $h^T = 0$  treatments can still be useful. First, they are informative about the sign of the bias due to latent demand. This is because  $E[h|h^T = 0, h^L] \in [\min\{E[h|h^L], 0\}, \max\{E[h|h^L], 0\}]$  and therefore  $a^0(\zeta) \in [\min\{a^L(\zeta), a(\zeta)\}, \max\{a^L(\zeta), a(\zeta)\}]$ .<sup>2</sup> The action taken when  $h^T = 0$  lies between the natural action and the action induced by latent demand, because the demand treatment shifts the participant's posterior toward zero.

Second, they can be used to obtain tighter bounds on  $a(\zeta)$  if we know the direction of the latent demand effect. Suppose for example we know

To see this, note that  $|E[h|h^{L}] - E[h|h^{T} = 0, h^{L}]| \ge 0$  and both have the same sign.

that  $a^{L}(\zeta) \geq a(\zeta)$  (either from prior information or because we ran a treatment with  $h^{T} = 0$  and verified that  $a^{0}(\zeta) \leq a^{L}(\zeta)$ ). Then, the interval  $[a^{-}(\zeta), a^{0}(\zeta)]$  gives a valid and tighter bound on  $a(\zeta)$  than  $[a^{-}(\zeta), a^{+}(\zeta)]$ . Formally  $a(\zeta) \in [a^{-}(\zeta), a^{0}(\zeta)] \subseteq [a^{-}(\zeta), a^{+}(\zeta)]$ .<sup>3</sup>

Finally, there is one important case in which  $h^T = 0$  perfectly recovers the natural action, i.e.  $a^0(\zeta) = a(\zeta)$ . Suppose that instead of assuming that the signals  $h^T$  and  $h^L$  contain independent shocks, the participant perceives that  $h^L$  is a noisy signal of  $h^T$ . Formally, he believes that with probability  $p^L < 1$ ,  $h^L = h^T$  and with probability  $(1 - p^L)$ ,  $h^L = \epsilon$ . Then, when  $h^T$  and  $h^L$  disagree, he knows that  $h^L$  is pure noise, when they agree  $h^L$  contains no more information than  $h^T$ . Hence, the participant disregards  $h^L$  after observing  $h^T$  and  $E[h|h^T, h^L] = p^T h^T$ . Then, sending  $h^T = 0$  recovers the natural action:  $E[h|h^T = 0, h^L] = 0, \forall h^L$ . An advantage of our bounds is that they are valid whether or not  $h^T$  or  $h^L$  are perceived as independent, in other words they are conservative relative to the approach of simply measuring  $a^0(\zeta)$ .

#### C.6.1 Derivation of beliefs with ternary signals

Recall that now  $h \in \{-1, 0, 1\}, h^L \in \{-1, 0, 1\}$  and  $h^T \in \{-1, 0, 1, \emptyset\}$ .

To avoid clutter we suppress dependence on  $\zeta$ . After observing  $h^L$ , the participant forms a posterior  $E[h|h^L] = Pr(h = 1|h^L) \times 1 + Pr(h = -1|h^L) \times (-1)$ . We can write this as:

$$\begin{split} E[h|h^{L} = y] &= Pr(h = 1|h^{L} = y) - Pr(h = -1|h^{L} = y) \\ &= \frac{A}{B} \\ A &= Pr(h^{L} = y|h = 1)Pr(h = 1) - Pr(h^{L} = y|h = -1)Pr(h = -1) \\ B &= Pr(h^{L} = y|h = 1)Pr(h = 1) + Pr(h^{L} = y|h = 0)Pr(h = 0) \\ &+ Pr(h^{L} = y|h = -1)Pr(h = -1) \end{split}$$

Since  $Pr(h = j | h^L = y) = \frac{1}{3}(1 - p^L) + p^L \mathbb{I}[y = j]$  and  $Pr(h = j) = \frac{1}{3}$  we

<sup>&</sup>lt;sup>3</sup>We thank Liad Weiss for pointing this out to us.

have

$$\begin{split} A &= \frac{1}{3} \left[ \left( \frac{1}{3} (1 - p^L) + p^L \mathbb{I}[y = 1] \right) - \left( \frac{1}{3} (1 - p^L) + p^L \mathbb{I}[y = -1] \right) \right] \\ &= \frac{1}{3} p^L \left[ \mathbb{I}[y = 1] - \mathbb{I}[y = -1] \right] = \frac{1}{3} p^L h^L \\ B &= \frac{1}{3} \left[ \left( \frac{1}{3} (1 - p^L) + p^L \mathbb{I}[y = 1] \right) + \left( \frac{1}{3} (1 - p^L) + p^L \mathbb{I}[y = 0] \right) \\ &+ \left( \frac{1}{3} (1 - p^L) + p^L \mathbb{I}[y = -1] \right) \right] \\ &= \frac{1}{3} \end{split}$$

 $\operatorname{So}$ 

$$E[h|h^L = y] = p^L h^L \tag{23}$$

just as before. Turning to beliefs following the demand treatments, as before we assume that when  $h^T = \emptyset$ ,  $E[h|h^T, h^L] = E[h|h^L]$ . We have:

$$\begin{split} E[h|h^{T},h^{L}] &= Pr(h = 1|h^{T},h^{L}) - Pr(h = -1|h^{T},h^{L}) \\ &= \frac{A}{B} \\ A &= Pr(h^{T} = x|h = 1,h^{L} = y)Pr(h = 1|h^{L} = y) \\ &- Pr(h^{T} = x|h = -1,h^{L} = y)Pr(h = -1|h^{L} = y) \\ B &= Pr(h^{T} = x|h = 1,h^{L} = y)Pr(h = 1|h^{L} = y) \\ &+ Pr(h^{T} = x|h = 0,h^{L} = y)Pr(h = 0|h^{L} = y) \\ &+ Pr(h^{T} = x|h = -1,h^{L} = y)Pr(h = -1|h^{L} = y,h^{L} = y) \end{split}$$

Using

$$\begin{aligned} Pr(h^{T} = x | h = j, h^{L} = y) &= \frac{1}{3}(1 - p^{T}) + p^{T}\mathbb{I}[x = j] \\ Pr(h = j | h^{L} = y) &= \frac{1}{3}(1 - p^{L}) + p^{L}\mathbb{I}[y = j] \end{aligned}$$

we have:

$$\begin{split} &A = \left(\frac{1}{3}(1-p^{T}) + p^{T}\mathbb{I}[x=1]\right) \left(\frac{1}{3}(1-p^{L}) + p^{L}\mathbb{I}[y=1]\right) \\ &- \left(\frac{1}{3}(1-p^{T}) + p^{T}\mathbb{I}[x=-1]\right) \left(\frac{1}{3}(1-p^{L}) + p^{L}\mathbb{I}[y=-1]\right) \\ &= \frac{1}{3}(1-p^{T})p^{L}\mathbb{I}[y=1] + \frac{1}{3}(1-p^{L})p^{T}\mathbb{I}[x=1] + p^{T}p^{L}\mathbb{I}[x=1]\mathbb{I}[y=1] \\ &- \frac{1}{3}(1-p^{T})p^{L}\mathbb{I}[y=-1] - \frac{1}{3}(1-p^{L})p^{T}\mathbb{I}[x=-1] - p^{T}p^{L}\mathbb{I}[x=-1]\mathbb{I}[y=-1] \\ &= \frac{1}{3}(1-p^{T})p^{L}h^{L} + \frac{1}{3}(1-p^{L})p^{T}h^{T} + p^{T}p^{L}h^{T}\mathbb{I}[h^{T} = h^{L}] \\ &B = \left(\frac{1}{3}(1-p^{T}) + p^{T}\mathbb{I}[x=1]\right) \left(\frac{1}{3}(1-p^{L}) + p^{L}\mathbb{I}[y=1]\right) \\ &+ \left(\frac{1}{3}(1-p^{T}) + p^{T}\mathbb{I}[x=0]\right) \left(\frac{1}{3}(1-p^{L}) + p^{L}\mathbb{I}[y=0]\right) \\ &+ \left(\frac{1}{3}(1-p^{T}) + p^{T}\mathbb{I}[x=-1]\right) \left(\frac{1}{3}(1-p^{L}) + p^{L}\mathbb{I}[y=-1]\right) \\ &= \frac{1}{3}(1-p^{T})(1-p^{L}) + \frac{1}{3}p^{T}(1-p^{L}) \left(\mathbb{I}[x=1] + \mathbb{I}[x=0] + \mathbb{I}[x=-1]\right) \\ &+ \frac{1}{3}p^{L}(1-p^{T}) \left(\mathbb{I}[y=1] + \mathbb{I}[y=0] + \mathbb{I}[y=-1]\right) \\ &+ p^{T}p^{L} \left(\mathbb{I}[x=1]\mathbb{I}[y=1] + \mathbb{I}[x=0]\mathbb{I}[y=0] + \mathbb{I}[x=-1]\mathbb{I}[y=-1]\right) \\ &= \frac{1}{3}\left(1-p^{T}p^{L}\right) + p^{T}p^{L}\mathbb{I}[h^{T}=h^{L}] \end{split}$$

 $\operatorname{So}$ 

$$E[h|h^{T}, h^{L}] = \frac{\frac{1}{3}(1-p^{T})p^{L}h^{L} + \frac{1}{3}(1-p^{L})p^{T}h^{T} + p^{T}p^{L}h^{T}\mathbb{I}[h^{T} = h^{L}]}{\frac{1}{3}(1-p^{T}p^{L}) + p^{T}p^{L}\mathbb{I}[h^{T} = h^{L}]}$$
(24)

### C.7 Computing confidence intervals

#### C.7.1 Confidence intervals for actions

Imbens and Manski (2004) show that asymptotically the probability that the estimate for the upper (lower) bound is lower (higher) than the true value can be ignored when making inference. Thus, one can construct one-sided intervals with confidence level  $\alpha$  around both the upper and the lower bound. The 95 percent confidence interval for the true demand-free behavior is thus given by:

$$CI() = [a^{-}(\zeta) - \overline{C_N} \frac{\widehat{\sigma^{-}}}{\sqrt{N}}, a^{+}(\zeta) + \overline{C_N} \frac{\widehat{\sigma^{+}}}{\sqrt{N}}]$$
  
Here,  $\widehat{\sigma^{-}} = \sqrt{Var(a^{-}(\zeta))}$  and  $\widehat{\sigma^{+}} = \sqrt{Var(a^{+}(\zeta))}$ , and  $\overline{C_N}$  satisfies  
 $\Phi\left(\overline{C_N} + \sqrt{N} \frac{a^{+}(\zeta) - a^{-}(\zeta)}{\max(\widehat{\sigma^{-}}, \widehat{\sigma^{+}})}\right) - \Phi(-\overline{C_N}) = 0.90.$ 

The 95 percent confidence interval for the set  $[a^{-}(\zeta), a^{+}(\zeta)]$  is given by:

$$CI() = [a^{-}(\zeta) - \overline{C_N} \frac{\widehat{\sigma^{-}}}{\sqrt{N}}, a^{+}(\zeta) + \overline{C_N} \frac{\widehat{\sigma^{+}}}{\sqrt{N}}],$$

where  $\overline{C_N}$  satisfies

$$\Phi\left(\overline{C_N} + \sqrt{N}\frac{a^+(\zeta) - a^-(\zeta)}{\max(\widehat{\sigma^-}, \widehat{\sigma^+})}\right) - \Phi(-\overline{C_N}) = 0.95.$$

### C.7.2 Confidence intervals for treatment effects

We also outline how one can compute confidence intervals for the treatment effects  $[a(\zeta_1) - a(\zeta_0)]$  and for the set defined by the upper and lower bounds for treatment effects as given by our demand treatments:<sup>4</sup>  $[a(\zeta_1) - a(\zeta_0)] \in [a^-(\zeta_1) - a^+(\zeta_0), a^+(\zeta_1) - a^-(\zeta_0)]$ 

For simplicity we denote the lower bound,  $[a^-(\zeta_1) - a^+(\zeta_0)]$ , as  $T^-$  and the upper bound,  $[a^+(\zeta_1) - a^-(\zeta_0)]$ , as  $T^+$ . The 95 percent confidence interval for the true demand-free treatment effect is given by:

$$CI() = [T^{-} - \overline{C_N} \frac{\widehat{\sigma^{T-}}}{\sqrt{N}}, T^{+} + \overline{C_N} \frac{\widehat{\sigma^{T+}}}{\sqrt{N}}].$$

 $<sup>^4 \</sup>rm We$  provide a Stata package, demand bounds, which computes the upper and lower bound of confidence intervals for mean behavior and treatment effects.

Here, 
$$\widehat{\sigma^{T^-}} = \sqrt{Var(T^-)}$$
 and  $\widehat{\sigma^{T^+}} = \sqrt{Var(T^+)}$ , and  $\overline{C_N}$  satisfies  

$$\Phi\left(\overline{C_N} + \sqrt{N}\frac{T^+ - T^-}{\max(\widehat{\sigma^{T^-}}, \widehat{\sigma^{T^+}})}\right) - \Phi(-\overline{C_N}) = 0.90.$$

The 95 percent confidence interval for the set  $[a^-(\zeta_1) - a^+(\zeta_0), a^+(\zeta_1) - a^-(\zeta_0)]$  is as follows:

$$CI() = [T^{-} - \overline{C_N} \frac{\widehat{\sigma^{T-}}}{\sqrt{N}}, T^{+} + \overline{C_N} \frac{\widehat{\sigma^{T+}}}{\sqrt{N}}],$$

where

$$\Phi\left(\overline{C_N} + \sqrt{N}\frac{T^+(\tau) - T^-(\tau)}{\max(\widehat{\sigma^{T-}}, \widehat{\sigma^{T+}}}\right) - \Phi(-\overline{C_N}) = 0.95.$$

## **D** Structural estimation appendix

This section outlines step by step how the parameters are constructed in our NLLS estimation of the structural model in section 4.5.

### D.1 Data and parameter adjustments

First, we follow DP exactly in rounding effort scores to the nearest 100 (except for those in range [1, 49] which we round to 25). This is because incentives were paid per 100 points, and we wish to avoid modeling effort choices that lie between two 100 point thresholds. We refer the reader to DP for further details.

Second, we make a couple of adjustments pre and post-estimation. First, we divide the rounded scores by 100. In other words, if effort a is measured in points, we compute a' = a/100 which is measured in hundreds of points. Second, we multiply the incentive,  $\zeta$ , which is measured in cents per point, by 100 to express it as  $\zeta' = 100\zeta$  which is measured in cents per 100 points. These transformations were helpful in achieving convergence of the estimator, which otherwise occasionally suffered from underflow problems. However they change the interpretation of the parameters. Specifically, the intrinsic motivation parameter s and the preference for pleasing the experimenter,  $\phi$ , will both be measured in units equivalent to cents per 100 points, while the cost function parameters will be expressed for effort measured in hundreds of points.

To aid comparability with DP we therefore re-transform the parameters after estimation. DP present their estimates of incentive parameters (which in our case are s and  $\phi$ ) in the same units, cents per 100 points, so we do not need to correct them. k and  $\gamma$  are reported for effort measured in points, so we transform our estimates for comparability. We derive the adjustments as follows. First, for the power cost function, we have:

$$U = (s + \zeta + \phi E[h|h^T, h^L])a - \frac{ka^{1+\gamma}}{1+\gamma}$$

Let  $a' = \frac{a}{100}$  and  $\zeta' = 100\zeta$ . Then:

$$\begin{aligned} U &= \left(s + \frac{\zeta'}{100} + \phi E[h|h^T, h^L]\right) 100a' - \frac{k(100a')^{1+\gamma}}{1+\gamma} \\ &= \left(100s + \zeta' + 100\phi E[h|h^T, h^L]\right)a' - \frac{k(100a')^{1+\gamma}}{1+\gamma} \end{aligned}$$

giving rise to first-order condition:

$$0 = \left(100s + \zeta' + 100\phi E[h|h^{T}, h^{L}]\right) - ka'^{\gamma}100^{1+\gamma}$$
$$a' = \left(\frac{100s + \zeta' + 100\phi E[h|h^{T}, h^{L}]}{k100^{1+\gamma}}\right)^{\frac{1}{\gamma}}$$
$$\log(a') = \frac{1}{\gamma}\log\left(\frac{s^{*} + \zeta' + \phi^{*}E[h|h^{T}, h^{L}]}{k^{*}}\right)$$

where  $s^* = 100s$ ,  $\phi^* = 100\phi$  and  $k^* = 100^{1+\gamma}k$ . We leave  $s^*$  and  $\phi^*$ , (which are in equivalent units to cents per 100 points) untransformed for comparability with DP. In the tables we report  $k = k^*/100^{1+\gamma}$  and its standard error, computed via the delta method.

For the exponential cost function we have:

$$U = (s + \zeta + \phi E[h|h^T, h^L])a - \frac{k}{\gamma} \exp(\gamma a)$$
$$= (s^* + \zeta' + \phi^* E[h|h^T, h^L])a' - \frac{k}{\gamma} \exp(100\gamma a')$$

implying first-order condition:

$$0 = s^{*} + \zeta' + \phi^{*} E[h|h^{T}, h^{L}] - 100k \exp(100\gamma a')$$
$$a' = \frac{1}{100\gamma} \log\left(\frac{s^{*} + \zeta' + \phi^{*} E[h|h^{T}, h^{L}]}{100k}\right)$$
$$= \frac{1}{\gamma^{*}} \log\left(\frac{s^{*} + \zeta' + \phi^{*} E[h|h^{T}, h^{L}]}{k^{*}}\right)$$

where  $s^* = 100s$ , and  $\phi^* = 100\phi$  as before, while  $\gamma^* = 100\gamma$ ,  $k^* = 100k$ . In the tables we report  $\gamma = \gamma^*/100$  and  $k = k^*/100$ .

### D.2 Error term

To allow for the observed heterogeneity in effort, we follow DP in assuming heterogeneous effort costs, as follows. Let the cost of effort under power utility equal  $ka^{1+\gamma}(1+\gamma)^{-1}\exp(-\gamma\epsilon)$  where  $\epsilon \sim N(0, \sigma_{\epsilon}^2)$ . Then our FOC becomes

$$0 = \left(100s + \zeta' + 100\phi E[h|h^{T}, h^{L}]\right) - ka'^{\gamma}100^{1+\gamma}\exp(-\gamma\epsilon)$$
$$a' = \left(\frac{100s + \zeta' + 100\phi E[h|h^{T}, h^{L}]}{k100^{1+\gamma}}\right)^{\frac{1}{\gamma}}\exp(\epsilon)$$
$$\log(a') = \frac{1}{\gamma}\log\left(\frac{100s + \zeta' + 100\phi E[h|h^{T}, h^{L}]}{k100^{1+\gamma}}\right) + \epsilon$$

where  $\epsilon$  becomes the error term in our NLLS routine. For the exponential cost, we follow DP and assume effort cost is  $k\gamma^{-1} \exp(\gamma a) \exp(-\gamma \epsilon)$ . Then our FOC becomes

$$0 = s^{*} + \zeta' + \phi^{*} E[h|h^{T}, h^{L}] - 100k \exp(100\gamma a') \exp(-\gamma\epsilon)$$
$$a' = \frac{1}{100\gamma} \log\left(\frac{s^{*} + \zeta' + \phi^{*} E[h|h^{T}, h^{L}]}{100k}\right) + \frac{\epsilon}{100}$$
$$= \frac{1}{\gamma^{*}} \log\left(\frac{s^{*} + \zeta' + \phi^{*} E[h|h^{T}, h^{L}]}{k^{*}}\right) + \epsilon^{*}$$

where  $\epsilon^* = \epsilon/100$  forms the error term in our estimation.

### D.3 Estimating equation

Finally, in our estimation we sometimes need to estimate the product  $\phi^* E[h|h^L]$ . We estimate this product directly, then transform by dividing by  $\phi^*$ . Specifically, we estimate the following:

$$\begin{split} y_i &= \frac{1}{\beta_0} \log \left[ \zeta'_i + \beta_1 + \beta_2 (\text{pos\_demand}_i - \text{neg\_demand}_i) \right. \\ &+ \beta_3 \times \text{no\_demand}_i \times \text{incentive\_0c}_i + \beta_4 \times \text{no\_demand}_i \times \text{incentive\_1c}_i \\ &+ \beta_5 \times \text{no\_demand}_i \times \text{incentive\_4c}_i \right] - \frac{1}{\beta_0} \log(\beta_6) + \varepsilon_i \end{split}$$

where  $y = \log(a')$  or a' respectively, pos\_demand, neg\_demand and no\_demand are dummies for our positive, negative and no demand treatments, while incentive\_Xc is a dummy for the treatment with X cents per 100 points. Parameters are as follows:  $\beta_0 = \gamma$  or  $\gamma^*$  respectively,  $\beta_1 = s^*$ ,  $\beta_2 = \phi^*$ ,  $\beta_3 = \phi^* E[h|h^L(\zeta = 0)], \beta_4 = \phi^* E[h|h^L(\zeta = 1)], \beta_5 = \phi^* E[h|h^L(\zeta = 4)]$  and  $\beta_6 = k^*$ . We then compute the three values for  $E[h|h^L]$  by dividing by  $\beta_2$ , i.e.  $\beta_3/\beta_2, \beta_4/\beta_2$  and  $\beta_5/\beta_2$ .  $\gamma$  and k are computed by the transformations outlined above. Standard errors are computed by the delta method. In the specification where we restrict latent demand to be equal for the 1 cent and 4 cent treatments we impose  $\beta_4 = \beta_5$ .

### D.4 Predicted values

One use of our structural estimates is to compute predicted effort when latent demand is shut down, i.e. when  $\phi E[h|h^L] = 0$ . To do this we need to make one more adjustment, namely to express intrinsic motivation in units of cents per point by dividing the estimates of  $s^*$  by 100, and to express  $\zeta$  in cents per point (i.e. 0, 0.01 or 0.04 respectively). So, in terms of our estimated parameters, predicted effort (or log effort in the power cost case) is:

$$\frac{1}{\gamma} \log \left( \frac{s+\zeta}{k} \right)$$

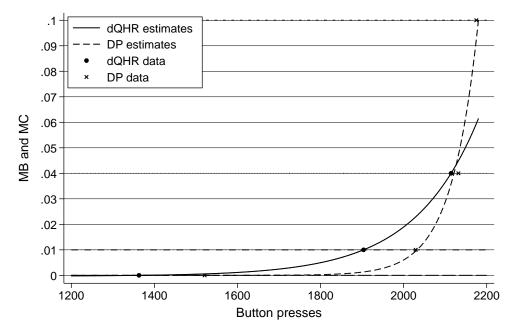
### D.5 Comparison with DP

Our parameter estimates are quite different from DP's, so we briefly explore why. DP (Figure 2) provide a graphical representation of their estimates in terms of marginal cost and marginal benefit of effort, which we can replicate here to compare our estimates. We focus on the exponential cost case, comparing our specification (4) (which assumes no latent demand and uses only the no demand treatment groups) with theirs from Table 5, panel A specification (4).<sup>5</sup>

<sup>&</sup>lt;sup>5</sup>DP's Figure 2 shows the comparison between predicted and observed mean effort, and is computed from their minimum distance estimation (MDE) parameters. Since we focus on NLLS estimation, the figure for the power cost is not very informative, because the estimation matches mean log effort (MDE matches mean effort). We therefore focus on the exponential case.

Figure A.8 plots, for our estimates and theirs, the marginal cost function, minus intrinsic motivation: c'(a) - s. By the first-order condition, optimal effort is the point at which this function equals  $\zeta$ , which takes values in  $\{0, 0.01, 0.04, 0.1\}$ . We also plot mean effort under each no demand treatment in our experiment and in DPs. It is immediately clear that the differences in the parameter estimates are driven by lower effort under the 0c and 1c treatments in our experiment than in DPs.<sup>6</sup>

Figure A.8: Marginal cost and benefit of effort (exponential), comparison with DellaVigna and Pope (2016)



<sup>&</sup>lt;sup>6</sup>By construction our estimated function exactly equals mean effort at the treatment values. DP's marginal cost function does not pass through the 4 cent point because it was estimated from the 0, 1 and 10 cent treatments with the 4 cent treatment included for out-of-sample evaluation. Other small differences due to rounding in their reported parameters.

## E Online Appendix: Pre-specified Tables

## E.1 Pre-analysis Plan 1

	(1)	(2)	(3)	(4)	(5)
Positive Demand	0.240***	0.196***	0.278***	0.016	0.453***
	(0.035)	(0.049)	(0.048)	(0.190)	(0.058)
Negative Demand	-0.248***	-0.257***	-0.269***	-0.208	-0.203***
	(0.036)	(0.051)	(0.048)	(0.176)	(0.055)
Positive demand $\times$ interactant		0.089	-0.073	0.235	
		(0.070)	(0.070)	(0.193)	
Negative demand $\times$ interactant		0.019	0.041	-0.043	
		(0.072)	(0.072)	(0.179)	
Interactant		-0.091	-0.044	-0.083	
		(0.051)	(0.051)	(0.141)	
Positive Demand $\times$ Risk					$-0.255^{**}$
					(0.084)
Negative Demand $\times$ Risk					-0.033
					(0.083)
Positive Demand $\times$ Time					-0.392***
					(0.085)
Negative Demand $\times$ Time					-0.116
		0.4.0.044	0 4 0 0 4 4 4		(0.087)
Constant	-0.145***	-0.100**	-0.122***	-0.065	-0.335***
	(0.025)	(0.035)	(0.034)	(0.139)	(0.040)
Interactant		Monetary Incentive	Male	Attention	
Adjusted $R^2$	0.040	0.041	0.041	0.040	0.051
Positive demand $\leq 0$	0.000	0.000	0.000	0.466	0.000
Adjusted p-value	0.010	0.001	0.001	0.307	0.001
Negative demand $\geq 0$	0.000	0.000	0.000	0.118	0.000
Adjusted p-value	0.010	0.001	0.001	0.307	0.001
Positive demand $=$ negative demand	0.000	0.000	0.000	0.182	0.000
Adjusted p-value	0.010	0.001	0.001	0.307	0.001
(Positive demand - negative demand)* interaction = $0$		0.319	0.105	0.105	
Adjusted p-value		0.086	0.027	0.307	
$Risk^*(pos - neg) = Time^*(pos - neg)$					0.533
Adjusted p-value					0.179
$\operatorname{Risk}^*(\operatorname{positive demand} - \operatorname{negative demand}) = 0$					0.007
Adjusted p-value					0.005
Time*(positive demand - negative demand) = $0$					0.001
Adjusted p-value					0.001
Joint F-test					.001
Observations	4495	4495	4495	4495	4495

Table A.16:	Strong Demand	(Experiment 1)

*Notes:* This table summarizes the results from experiment 1. The outcome variable is normalized at the game-level using the mean and standard deviation of the negative demand group. Robust standard errors are in parentheses. False-discovery rate adjusted p-values are in brackets. \* denotes significance at 10 pct., \*\* at 5 pct., and \*\*\* at 1 pct. level.

	Belief:	Belief:
	Want High	Expect High
Positive - Negative	$0.275^{***}$	$0.180^{***}$
	(0.017)	(0.018)
Adjusted p-value	[0.001]	[0.001]
Positive - Neutral	0.160***	0.143***
	(0.017)	(0.018)
Adjusted p-value	[0.001]	[0.001]
Negative - Neutral	-0.115***	-0.037**
-	(0.018)	(0.018)
Adjusted p-value	[0.001]	[0.007]
Mean (No Demand)	0.542	0.450
Observations	4495	4495

Table A.17: Beliefs about the experimental objective and hypothesis: Strong Demand

Notes: The outcome variables take value one if the respondents believed that the experimenter wanted (column 1) or expected (column 2) a high action. \* denotes significance at 10 pct., \*\* at 5 pct., and \*\*\* at 1 pct. level.

## E.2 Pre-analysis Plan 2

Table A.18: Weak Demand (Experiment 2)					
	(1)	(2)	(3)	(4)	(5)
Positive Demand	0.126**	$0.151^{*}$	0.083	0.067	0.203***
	(0.043)	(0.060)	(0.056)	(0.116)	(0.054)
Negative Demand	-0.040	0.031	-0.035	-0.023	-0.042
	(0.042)	(0.060)	(0.055)	(0.109)	(0.054)
Pos. demand $\times$ interactant		-0.053	0.091	0.069	-0.149
		(0.085)	(0.086)	(0.124)	(0.085)
Neg. demand $\times$ interactant		-0.142	-0.011	-0.019	0.007
		(0.083)	(0.084)	(0.118)	(0.083)
Interactant		-0.063	-0.029	$-0.218^{**}$	$0.193^{**}$
		(0.060)	(0.061)	(0.081)	(0.060)
Interactant		Monetary Incentive	Male	Attention	Risk
Adjusted R-squared	0.005	0.010	0.005	0.009	0.012
Pos. demand $\leq 0$	0.002	0.006	0.068	0.280	0.000
Adjusted p-value	0.010	0.020	0.150	0.970	0.010
Neg. demand $\geq 0$	0.168	0.700	0.264	0.415	0.221
Adjusted p-value	0.050	0.530	0.150	0.970	0.080
Pos. demand $=$ neg. demand	0.000	0.043	0.034	0.448	0.000
Adjusted p-value	0.010	0.060	0.150	0.970	0.010
(Pos neg.) $\timesinteractant=0$		0.283	0.222	0.493	0.062
Adjusted p-value		0.230	0.150	0.970	0.040
Observations	2964	2964	2964	2964	2964

### Table A.18: Weak Demand (Experiment 2)

Notes: This table summarizes the results from experiment 2. The outcome variable is normalized at the game-level using the mean and standard deviation of the negative demand group. Robust standard errors are in parentheses. False-discovery rate adjusted p-values are in brackets. \* denotes significance at 10 pct., \*\* at 5 pct., and \*\*\* at 1 pct. level.

Table A.19: Difference in response to demand between experiment 1 and experiment 2  $\,$ 

	(1)	(2)	(3)
Positive Demand=1	$0.126^{**}$	0.203***	0.054
	(0.043)	(0.054)	(0.065)
Experiment 1=1	$-0.135^{**}$	$-0.140^{*}$	-0.125
	(0.043)	(0.056)	(0.064)
Positive Demand= $1 \times \text{Experiment } 1=1$	0.202***	$0.251^{**}$	0.145
	(0.060)	(0.079)	(0.090)
Negative Demand=1	-0.040	-0.042	-0.035
	(0.042)	(0.054)	(0.063)
Negative Demand= $1 \times \text{Experiment } 1=1$	-0.175**	-0.161*	-0.202*
	(0.059)	(0.077)	(0.088)
Constant	-0.097**	$-0.195^{***}$	-0.003
	(0.030)	(0.039)	(0.046)
Sample	All	Dictator Game	Investment
Adjusted $R^2$	0.034	0.056	0.020
$H_0$ : (Positive Demand - Negative Demand)*Interaction = 0	0.000	0.000	0.000
Adjusted p-value	0.001	0.001	0.001
Observations	5971	2990	2981

Notes: This table uses data from the investment game and dictator game in experiments 1 and 2. The dummy experiment 1 takes value 1 for respondents from experiment 1. \* denotes significance at 10 pct., \*\* at 5 pct., and \*\*\* at 1 pct. level.

	Belief:	Belief:
	Want High	Expect High
Positive - Negative	$0.334^{***}$	$0.403^{***}$
	(0.021)	(0.020)
Adjusted p-value	[0.001]	[0.001]
Positive - Neutral	0.172***	0.217***
i ositive - neutrai	(0.022)	(0.022)
Adjusted p-value	[0.022]	[0.001]
Trajastea p varae		
Negative - Neutral	-0.162***	-0.186***
	(0.022)	(0.020)
Adjusted p-value	[0.001]	[0.001]
Mean (No Demand)	0.485	0.392
Observations	2964	2964

Table A.20: Beliefs about the experimental objective and hypothesis: Weak Demand (Experiment 2)

Notes: This table uses data from all respondents who completed experiment 2. The outcome variables take value one if the respondents believed that the experimenter wanted (column 1) or expected (column 2) a high action. \* denotes significance at 10 pct., \*\* at 5 pct., and \*\*\* at 1 pct. level.

	(1)
	Belief: Real Money
Monetary Incentive	0.368***
	(0.016)
Control Mean	0.138
$\mathbb{R}^2$	0.154
Observations	2964

Table A.21: Beliefs about whether the experiment is incentivized

Notes: This table uses data from all respondents who completed experiment 2. The outcome variable takes value one if the respondent believes that the tasks in the experiment involve real money and value zero otherwise. Notes go here. \* denotes significance at 10 pct., \*\* at 5 pct., and \*\*\* at 1 pct. level.

Table A.22: Attr	ition
	(1) Finished
Positive Demand	0.00285 (0.004)
Negative Demand	0.00115 (0.004)
Mean (no demand) R <sup>2</sup> Observations	$\begin{array}{r} 0.988 \\ 0.000141 \\ 2993 \end{array}$

Notes: This table uses data from all respondents who started experiment 2. The outcome variable takes value one if the respondent completed the experiment. Finished takes value one for all respondents who completed the experiment. \* denotes significance at 10 pct., \*\* at 5 pct., and \*\*\* at 1 pct. level.

Table A.23: Effort (Z-scored) with strong demand				
	(1)	(2)	(3)	
Positive Demand	0.206***	0.328***	0.319**	
	(0.061)	(0.085)	(0.107)	
Negative Demand	-0.309***	-0.447***	-0.197	
	(0.061)	(0.084)	(0.103)	
Positive demand $\times$ interactant		-0.243*	-0.197	
		(0.123)	(0.129)	
Negative demand $\times$ interactant		$0.288^{*}$	-0.200	
		(0.121)	(0.126)	
Interactant		0.091	0.143	
		(0.088)	(0.093)	
Constant	0.069	0.023	-0.012	
	(0.044)	(0.061)	(0.078)	
Interactant		1-cent incentive	Male	
Adjusted $R^2$	0.047	0.060	0.047	
Positive demand $\leq 0$	0.000	0.000	0.001	
Adjusted p-value	0.010	0.001	0.002	
Negative demand $\geq 0$	0.000	0.000	0.028	
Adjusted p-value	0.010	0.001	0.018	
Positive demand $=$ negative demand	0.000	0.000	0.000	
Adjusted p-value	0.010	0.001	0.001	
(Positive demand - negative demand)* interaction = $0$		0.000	0.975	
Adjusted p-value		0.001	0.322	
Observations	1452	1452	1452	

## E.3 Pre-analysis Plan 3

Table A.23: Effort (z-scored) with strong demand

Notes: This table summarizes the results from experiment 3. The outcome variable is normalized at the game level using the mean and standard deviation of the negative demand group. \* denotes significance at 10 pct., \*\* at 5 pct., and \*\*\* at 1 pct. level.

Table A.24: Beliefs:	Table A.24: Beliefs: Effort with strong demand					
	Belief:	Belief:				
	Want High	Expect High				
Positive - Negative	$0.459^{***}$	$0.416^{***}$				
	(0.027)	(0.028)				
Adjusted p-value	[0.001]	[0.001]				
<b>.</b>						
Positive - Neutral	0.168***	0.192***				
	(0.026)	(0.028)				
Adjusted p-value	[0.001]	[0.001]				
	0.001***	0.00.4***				
Negative - Neutral	-0.291***	-0.224***				
	(0.031)	(0.031)				
Adjusted p-value	[0.001]	[0.001]				
Mean (No Demand)	0.689	0.639				
Observations	1452	1452				

Table A.24: Beliefs: Effort with strong demand

Notes: The outcome variables take value one if the respondents believed that the experimenter wanted (column 1) or expected (column 2) a high action. \* denotes significance at 10 pct., \*\* at 5 pct., and \*\*\* at 1 pct. level.

Table A.25: Attrition		
	(1) Finished	
Positive Demand	0.000252	
Negative Demand	$(0.010) \\ 0.00353 \\ (0.010)$	
$\begin{array}{l} \text{Mean (no demand)} \\ \text{R}^2 \\ \text{Observations} \end{array}$	$0.988 \\ 0.0000802 \\ 1753$	

Notes: The outcome variable takes value one if the respondent completed the experiment. Finished takes value one for all respondents who completed the experiment. \* denotes significance at 10 pct., \*\* at 5 pct., and \*\*\* at 1 pct. level.

### E.4 Pre-analysis Plan 4

Table A.26: Demand: Representative Sample with strong and weak demand treatments (Experiment 4)

	(1)	(2)	(3)	(4)	(5)
Positive Demand	$0.284^{***}$	0.196**	0.325***	0.247***	0.554***
	(0.055)	(0.063)	(0.063)	(0.061)	(0.064)
Negative Demand	-0.157**	-0.034	-0.221***	-0.082	-0.034
	(0.055)	(0.064)	(0.061)	(0.060)	(0.064)
Pos. demand $\times$ interactant		$0.175^{**}$	-0.084	0.112	$-0.538^{***}$
		(0.064)	(0.064)	(0.064)	(0.062)
Neg. demand $\times$ interactant		-0.238***	$0.136^{*}$	$-0.219^{***}$	$-0.251^{***}$
		(0.063)	(0.064)	(0.063)	(0.063)
Interactant		Strong Demand	Male	Attention	Risk
Adjusted R-squared	0.031	0.038	0.033	0.035	0.060
Pos. demand $\leq 0$	0.000	0.001	0.000	0.000	0.000
Adjusted p-value	0.010	0.010	0.010	0.010	0.010
Neg. demand $\geq 0$	0.002	0.297	0.000	0.086	0.297
Adjusted p-value	0.010	0.080	0.010	0.020	0.080
Pos. $=$ neg. demand	0.000	0.000	0.000	0.000	0.000
Adjusted p-value	0.010	0.010	0.010	0.010	0.010
(Pos neg.) $\times$ interactant = 0		0.000	0.015	0.000	0.001
Adjusted p-value		0.010	0.010	0.010	0.010
Observations	2941	2941	2941	2941	2941

*Notes:* This table summarizes the results from experiment 4. The outcome variable is normalized at the game level using the mean and standard deviation of the negative demand group. \* denotes significance at 10 pct., \*\* at 5 pct., and \*\*\* at 1 pct. level.

	(1)	(2)	(3)
Positive Demand=1	0.256***	0.419***	0.091
	(0.043)	(0.057)	(0.064)
Representative Sample=1	$0.517^{***}$	$0.848^{***}$	$0.201^{**}$
	(0.054)	(0.075)	(0.075)
Positive Demand=1 $\times$ Representative Sample=1	0.028	-0.076	0.124
	(0.070)	(0.097)	(0.097)
Negative Demand=1	$-0.153^{***}$	-0.046	$-0.256^{***}$
	(0.042)	(0.056)	(0.061)
Negative Demand= $1 \times \text{Representative Sample}=1$	-0.004	-0.200*	0.169
	(0.069)	(0.096)	(0.096)
Constant	$-0.216^{***}$	$-0.335^{***}$	$-0.099^{*}$
	(0.031)	(0.041)	(0.045)
Sample	All	Dictator Game	Investment
Adjusted $R^2$	0.093	0.165	0.041
$H_0$ : (Positive Demand - Negative Demand)*Repres. Sample = 0	0.593	0.149	0.597
Adjusted p-value	0.805	0.805	0.805
Observations	5948	3004	2944

Table A.27: Demand Sensitivty by game: Representative vs. MTurk Sample

*Notes:* This table uses data from the incentivized MTurk respondents from experiments 1 and 2 and the representative online panel (experiment 4). Representative Sample is a dummy variable taking value 1 for respondents from the representative online panel and value zero for the MTurk respondents. \* denotes significance at 10 pct., \*\* at 5 pct., and \*\*\* at 1 pct. level.

Belief:	Belief:
Want High	Expect High
$0.207^{***}$	$0.205^{***}$
(0.020)	(0.020)
[0.001]	[0.001]
0 060***	0.092***
	(0.092)
( )	(0.025) [0.001]
[0.001]	[0.001]
-0.139***	-0.114***
(0.025)	(0.025)
[0.001]	[0.001]
0.601	0.510
2939	2941
	Want High $0.207^{***}$ (0.020) [0.001] $0.068^{***}$ (0.024) [0.001] $-0.139^{***}$ (0.025) [0.001] 0.601

Table A.28: Beliefs about the experimental objective and hypothesis: Representative Sample

Notes: The outcome variables take value one if the respondents believed that the experimenter wanted (column 1) or expected (column 2) a high action. \* denotes significance at 10 pct., \*\* at 5 pct., and \*\*\* at 1 pct. level.

Table A.29: Attrition					
	(1) Finished				
Positive Demand	0.00148 (0.005)				
Negative Demand	(0.003) -0.00223 (0.005)				
$\begin{array}{c} \text{Mean (no demand)} \\ \text{R}^2 \\ \text{Observations} \end{array}$	$\begin{array}{c} 0.988 \\ 0.000329 \\ 2966 \end{array}$				

Notes: The outcome variable takes value one if the respondent completed the experiment. Finished takes value one for all respondents who completed the experiment. \* denotes significance at 10 pct., \*\* at 5 pct., and \*\*\* at 1 pct. level.

## E.5 Pre-analysis Plan 5

	(1)	(2)
Sensitivity=1	1.024***	0.288*
	(0.127)	(0.120)
Ambiguity	0.129	0.018
	(0.107)	(0.100)
DG	0.079	0.037
	(0.090)	(0.078)
Effort: incentive	$0.316^{**}$	0.104
	(0.101)	(0.098)
Effort: no incentive	-0.063	0.067
	(0.102)	(0.099)
Lying	$0.240^{*}$	0.040
	(0.121)	(0.100)
Risk	0.108	0.042
	(0.090)	(0.078)
Time	0.076	0.036
	(0.098)	(0.097)
Trust	0.126	0.033
	(0.106)	(0.104)
UG 1	0.129	0.032
	(0.115)	(0.102)
UG 2	$0.233^{*}$	0.041
	(0.115)	(0.098)
Sensitivity= $1 \times \text{Ambiguity}$	$-0.565^{***}$	-0.110
	(0.160)	(0.157)
Sensitivity= $1 \times DG$	$-0.309^{*}$	-0.022
	(0.138)	(0.130)
Sensitivity=1 $\times$ Effort: incentive	$-0.781^{***}$	-0.204
	(0.153)	(0.153)
Sensitivity= $1 \times$ Effort: no incentive	-0.250	$-0.357^{*}$
	(0.152)	(0.157)
Sensitivity= $1 \times \text{Lying}$	$-0.427^{*}$	-0.248
	(0.173)	(0.157)
Sensitivity= $1 \times \text{Risk}$	$-0.593^{***}$	-0.157
	(0.136)	(0.131)
Sensitivity= $1 \times \text{Time}$	$-0.644^{***}$	-0.288
	(0.144)	(0.154)
Sensitivity= $1 \times \text{Trust}$	$-0.470^{**}$	-0.209
	(0.160)	(0.159)
Sensitivity= $1 \times \text{UG } 1$	$-0.338^{*}$	-0.113
	(0.168)	(0.165)
Sensitivity= $1 \times \text{UG } 2$	-0.277	-0.014
	(0.168)	(0.157)
Constant	$-0.361^{***}$	-0.033
	(0.083)	(0.070)
Treatment	Strong	Weak
Adjusted $R^2$	0.084	0.007
P-value(Omnibus F-Test)	0.000	0.063
Adjusted p-values	0.001	0.043
P-value(Omnibus F-Test): without effort tasks	0.000	0.166
Adjusted p-values	0.001	0.090

Table A.30: Differences in response to demand across games

Notes: We pool all observations across all experiments. \* denotes significance at 10 pct., \*\* at 5 pct., and \*\*\* at 1 pct. level.

Table A.31: Differences in response to strong vs. weak demand treatments

	(1) Z-scored behavior
Strong Demand $\times$ Sensitivity	0.421***
Sensitivity	(0.035) $0.153^{***}$
	(0.025)
$\mathbb{R}^2$	0.0429
Observations	14122

Notes: We pool all observations across all experiments. \* denotes significance at 10 pct., \*\* at 5 pct., and \*\*\* at 1 pct. level.

# F Online Appendix: Balance Tables and Summary statistics

				P	(~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		
	No demand	Pos. demand	Neg. demand	P-value(Pos. demand - no demand)	P-value(Neg. demand - no demand)	P-value(Pos. demand - neg. demand)	Observations
Male	0.511	0.520	0.497	0.641	0.432	0.209	4495
Income	51545.455	52414.421	53387.833	0.402	0.072	0.344	4008
Age	36.195	36.434	36.382	0.557	0.655	0.898	4495
Household Size	3.714	3.649	3.625	0.205	0.087	0.639	4495
White	0.773	0.785	0.773	0.444	0.983	0.434	4495
Black	0.070	0.066	0.072	0.669	0.867	0.553	4495
Hispanic	0.053	0.057	0.055	0.597	0.821	0.766	4495
Asian	0.080	0.064	0.076	0.105	0.709	0.216	4495
Full-time employment	0.484	0.507	0.521	0.208	0.049	0.464	4495
Part-time employment	0.127	0.121	0.114	0.607	0.283	0.569	4495
Unemployed	0.143	0.133	0.129	0.402	0.272	0.785	4495
Bachelor Degree	0.353	0.371	0.389	0.300	0.043	0.313	4495
Conservative	0.232	0.238	0.241	0.689	0.535	0.822	4457
Number of HITs	9366.555	9202.861	8642.955	0.777	0.212	0.324	4495
Joint							

Table A.32: Balance Table: Experiment 1 (Strong Demand)

Notes: In this table we present evidence on the experimental integrity in experiment 1. The p-value of the joint F-test when comparing covariates in the positive and negative demand condition is 0.9091. The p-value of the joint F-test when comparing covariates in the positive and no-demand demand condition is 0.7123. The p-value of the joint F-test when comparing covariates in the negative and no-demand demand condition is 0.2543.

				T	(	/	
	No demand	Pos. demand	Neg. demand	P-value(Pos. demand - no demand)	P-value(Neg. demand - no demand)	P-value(Pos. demand - neg. demand)	Observations
Male	0.466	0.466	0.478	0.984	0.577	0.592	2964
Income	51010.333	51307.604	52093.679	0.815	0.384	0.526	2625
Age	35.897	35.856	35.168	0.935	0.142	0.166	2964
Household Size	3.696	3.688	3.761	0.900	0.314	0.258	2964
White	0.784	0.760	0.748	0.203	0.055	0.526	2964
Black	0.070	0.076	0.077	0.593	0.557	0.963	2964
Hispanic	0.054	0.051	0.057	0.827	0.760	0.600	2964
Asian	0.066	0.070	0.089	0.714	0.056	0.124	2964
Full-time employment	0.494	0.464	0.468	0.185	0.249	0.854	2964
Part-time employment	0.130	0.099	0.125	0.032	0.735	0.069	2964
Unemployed	0.101	0.140	0.127	0.009	0.065	0.417	2964
Bachelor Degree	0.367	0.353	0.377	0.503	0.642	0.256	2964
Conservative	0.273	0.253	0.243	0.328	0.128	0.594	2941
Number of HITs	5849.696	5629.887	5403.884	0.693	0.415	0.673	2964

Table A.33: Balance Table: Experiment 2 (Weak Demand)

*Notes:* In this table we present evidence on the experimental integrity in experiment 2. The p-value of the joint F-test when comparing covariates in the positive and negative demand condition is 0.6464. The p-value of the joint F-test when comparing covariates in the positive and no-demand demand condition is 0.2297. The p-value of the joint F-test when comparing covariates in the negative and no-demand demand condition is 0.4443.

	No demand	Pos. demand	Neg. demand	P-value(Pos. demand - no demand)	P-value(Neg. demand - no demand)	P-value(Pos. demand - neg. demand)	Observations
Male	0.557	0.576	0.535	0.521	0.463	0.209	1699
Income	33600.823	32204.082	32458.333	0.164	0.261	0.814	1699
Age	37.449	37.378	36.556	0.922	0.213	0.300	1699
Household Size	3.750	3.780	3.763	0.724	0.879	0.847	1699
White	0.752	0.784	0.760	0.193	0.730	0.389	1699
Black	0.110	0.084	0.083	0.127	0.124	0.985	1699
Hispanic	0.055	0.024	0.046	0.006	0.479	0.072	1699
Asian	0.064	0.071	0.075	0.638	0.485	0.831	1699
Full-time employment	0.508	0.496	0.540	0.691	0.275	0.174	1699
Part-time employment	0.125	0.127	0.106	0.930	0.320	0.325	1699
Unemployed	0.106	0.122	0.106	0.368	0.972	0.428	1699
Bachelor Degree	0.395	0.355	0.371	0.157	0.396	0.611	1699
Republican	0.251	0.288	0.271	0.158	0.445	0.557	1699

Table A.34: Balance Table: Experiment 3 (Effort Experiment with strong demand)

Notes: In this table we present evidence on the integrity of the randomization in experiment 3. The p-value of the joint F-test when comparing covariates in the positive and negative demand condition is 0.8777. The p-value of the joint F-test when comparing covariates in the positive and no-demand demand condition is 0.0966. The p-value of the joint F-test when comparing covariates in the negative and no-demand demand condition is 0.4331.

			-	(	*	- /	
	No demand	Pos. demand	Neg. demand	P-value(Pos. demand - no demand)	P-value(Neg. demand - no demand)	P-value(Pos. demand - neg. demand)	Observations
Male	0.487	0.485	0.470	0.937	0.497	0.467	2941
Income	68432.773	65257.447	67142.857	0.233	0.632	0.393	2890
Age	47.923	46.922	47.853	0.226	0.933	0.168	2941
Household Size	3.335	3.311	3.335	0.694	0.998	0.648	2934
White	0.799	0.772	0.784	0.188	0.483	0.468	2935
Black	0.073	0.069	0.061	0.781	0.376	0.453	2935
Hispanic	0.051	0.064	0.061	0.262	0.373	0.794	2935
Asian	0.043	0.061	0.062	0.086	0.077	0.938	2935
Full-time employment	0.500	0.484	0.495	0.522	0.848	0.590	2941
Part-time employment	0.076	0.079	0.092	0.802	0.238	0.267	2941
Unemployed	0.067	0.050	0.052	0.136	0.191	0.822	2941
Bachelor Degree	0.329	0.352	0.329	0.326	1.000	0.238	2941
Conservative	0.350	0.351	0.351	0.958	0.980	0.974	2804

Table A.35: Balance Table: Experiment 4 (Representative Sample)

*Notes:* In this table we present evidence on the integrity of the randomization in experiment 4. The p-value of the joint F-test when comparing covariates in the positive and negative demand condition is 0.7723. The p-value of the joint F-test when comparing covariates in the positive and no-demand demand condition is 0.4676. The p-value of the joint F-test when comparing covariates in the negative and no-demand demand condition is 0.6403.

	Pos. demand	Neg. demand	P-value(Pos. demand - neg. demand)	Observations
Male	0.452	0.473	0.135	5068
Income	53223.655	52705.464	0.507	4500
Age	37.314	37.181	0.685	5068
Household Size	3.710	3.651	0.149	5068
White	0.769	0.774	0.626	5068
Black	0.077	0.072	0.479	5068
Hispanic	0.048	0.049	0.978	5068
Asian	0.077	0.078	0.880	5068
Full-time employment	0.513	0.517	0.785	5068
Part-time employment	0.116	0.113	0.748	5068
Unemployed	0.125	0.140	0.129	5068
Bachelor Degree	0.376	0.371	0.764	5068
Conservative	0.262	0.256	0.642	5042
Number of HITs	9341.149	8553.308	0.069	5068

 Table A.36: Balance Table: Experiment 5 (Many Task experiment)

Notes: In this table we present evidence on the integrity of the randomization in experiment 5. The p-value of the joint F-test when comparing covariates in the positive and negative demand condition is 0.2164.

	Pos. demand	Neg. demand	P-value(Pos. demand - neg. demand)	Observations
Male	0.545	0.557	0.748	775
Income	32235.142	32474.227	0.845	775
Age	37.323	37.668	0.685	775
Household Size	3.729	3.683	0.663	775
White	0.757	0.732	0.423	775
Black	0.083	0.082	0.991	775
Hispanic	0.054	0.072	0.306	775
Asian	0.080	0.075	0.780	775
Full-time employment	0.548	0.528	0.588	775
Part-time employment	0.129	0.093	0.107	775
Unemployed	0.127	0.124	0.903	775
Bachelor Degree	0.432	0.379	0.136	775
Conservative	0.264	0.325	0.066	770

 Table A.37: Balance Table: Experiment 6 (Effort Experiment with weak demand treatments)

Notes: In this table we present evidence on the integrity of the randomization in experiment 6. The p-value of the joint F-test when comparing covariates in the positive and negative demand condition is 0.2556.

	Pos. demand	Neg. demand	P-value(Pos. demand - neg. demand)	Observations
Male	0.542	0.609	0.040	
Income	53445.783	55169.713	0.345	
Age	34.642	34.672	0.967	
Household Size	3.510	3.557	0.608	
White	0.730	0.737	0.814	
Black	0.079	0.079	0.974	
Hispanic	0.069	0.054	0.358	
Asian	0.090	0.110	0.311	
Full-time employment	0.520	0.587	0.045	
Part-time employment	0.137	0.092	0.033	
Unemployed	0.141	0.117	0.271	
Bachelor Degree	0.409	0.391	0.580	
Conservative	0.234	0.224	0.709	

 Table A.38: Balance Table: Experiment 7 (Within-Experiment)

Notes: In this table we present evidence on balance for experiment 7. The p-value of the joint F-test when comparing covariates in the positive and negative demand condition is 0.025.

Table A.39: Summary Statistics: Pooled across all experiments

	Mean	SD	Median	Min.	Max.	Obs.
Male	0.49	0.50	0.00	0.00	1.00	17942
Income	51960.66	33091.17	45000.00	5000.00	225000.00	16497
Age	38.44	13.10	35.00	17.00	116.00	17942
Household Size	3.63	1.40	3.00	2.00	13.00	17935
White	0.77	0.42	1.00	0.00	1.00	17936
Black	0.07	0.26	0.00	0.00	1.00	17936
Hispanic	0.05	0.22	0.00	0.00	1.00	17936
Asian	0.07	0.26	0.00	0.00	1.00	17936
Full-time employment	0.50	0.50	1.00	0.00	1.00	17942
Part-time employment	0.11	0.32	0.00	0.00	1.00	17942
Unemployed	0.12	0.32	0.00	0.00	1.00	17942
Bachelor Degree	0.37	0.48	0.00	0.00	1.00	17942
Conservative	0.27	0.44	0.00	0.00	1.00	16014
Number of HITs	8209.03	14913.36	2500.00	750.00	75000.00	12527

 $\it Notes:$  This table summarizes the main covariates of all respondents across all 6 experiments.

Table A.40: Summary Statistics: Experiment 1 (Strong demand)

	Mean	SD	Median	Min.	Max.	Obs.
Male	0.51	0.50	1.00	0.00	1.00	4495
Income	52447.60	26624.13	55000.00	5000.00	100000.00	4008
Age	36.34	11.26	33.00	19.00	88.00	4495
Household Size	3.66	1.40	3.00	2.00	11.00	4495
White	0.78	0.42	1.00	0.00	1.00	4495
Black	0.07	0.25	0.00	0.00	1.00	4495
Hispanic	0.05	0.23	0.00	0.00	1.00	4495
Asian	0.07	0.26	0.00	0.00	1.00	4495
Full-time employment	0.50	0.50	1.00	0.00	1.00	4495
Part-time employment	0.12	0.33	0.00	0.00	1.00	4495
Unemployed	0.14	0.34	0.00	0.00	1.00	4495
Bachelor Degree	0.37	0.48	0.00	0.00	1.00	4495
Conservative	0.24	0.43	0.00	0.00	1.00	4457
Number of HITs	9075.19	15743.81	2500.00	750.00	75000.00	4495

*Notes:* This table summarizes the main covariates of all respondents in experiment 1.

Table A.41: Summary Statistics: Experiment 2 (Weak demand)

	Mean	SD	Median	Min.	Max.	Obs.
Male	0.47	0.50	0.00	0.00	1.00	2964
Income	51474.29	26146.68	55000.00	5000.00	100000.00	2625
Age	35.64	11.08	33.00	19.00	81.00	2964
Household Size	3.72	1.43	3.00	2.00	13.00	2964
White	0.76	0.42	1.00	0.00	1.00	2964
Black	0.07	0.26	0.00	0.00	1.00	2964
Hispanic	0.05	0.23	0.00	0.00	1.00	2964
Asian	0.07	0.26	0.00	0.00	1.00	2964
Full-time employment	0.48	0.50	0.00	0.00	1.00	2964
Part-time employment	0.12	0.32	0.00	0.00	1.00	2964
Unemployed	0.12	0.33	0.00	0.00	1.00	2964
Bachelor Degree	0.37	0.48	0.00	0.00	1.00	2964
Conservative	0.26	0.44	0.00	0.00	1.00	2941
Number of HITs	5626.60	12144.69	1500.00	750.00	75000.00	2964

*Notes:* This table summarizes the main covariates of all respondents in experiment 2.

Table A.42: Summary Statistics: Experiment 3 (Effort Experiment: Strong demand)

	Mean	SD	Median	Min.	Max.	Obs.
Male	0.56	0.50	1.00	0.00	1.00	1699
Income	32875.22	17276.75	35000.00	5000.00	85000.00	1699
Age	37.18	12.33	36.00	21.00	70.00	1699
Household Size	3.76	1.39	4.00	2.00	12.00	1699
White	0.76	0.43	1.00	0.00	1.00	1699
Black	0.09	0.29	0.00	0.00	1.00	1699
Hispanic	0.04	0.20	0.00	0.00	1.00	1699
Asian	0.07	0.25	0.00	0.00	1.00	1699
Full-time employment	0.51	0.50	1.00	0.00	1.00	1699
Part-time employment	0.12	0.33	0.00	0.00	1.00	1699
Unemployed	0.11	0.31	0.00	0.00	1.00	1699
Bachelor Degree	0.38	0.48	0.00	0.00	1.00	1699
Republican	0.27	0.44	0.00	0.00	1.00	1699

Notes: This table summarizes the main covariates of all respondents in experiment 3.

Table A.43: Summary Statistics: Experiment 4 (Representative sample)

	Mean	SD	Median	Min.	Max.	Obs.
Male	0.48	0.50	0.00	0.00	1.00	2941
Income	66641.87	52841.78	62500.00	7500.00	225000.00	2890
Age	47.49	16.38	47.00	17.00	116.00	2941
Household Size	3.33	1.25	3.00	2.00	13.00	2934
White	0.78	0.41	1.00	0.00	1.00	2935
Black	0.07	0.25	0.00	0.00	1.00	2935
Hispanic	0.06	0.24	0.00	0.00	1.00	2935
Asian	0.06	0.23	0.00	0.00	1.00	2935
Full-time employment	0.49	0.50	0.00	0.00	1.00	2941
Part-time employment	0.08	0.28	0.00	0.00	1.00	2941
Unemployed	0.05	0.23	0.00	0.00	1.00	2941
Bachelor Degree	0.34	0.47	0.00	0.00	1.00	2941
Conservative	0.35	0.48	0.00	0.00	1.00	2804

Notes: This table summarizes the main covariates of all respondents in experiment 4.

Table A.44: Summary Statistics: Experiment 5 (Many task experiment)

	Mean	SD	Median	Min.	Max.	Obs.
Male	0.46	0.50	0.00	0.00	1.00	5068
Income	52964.44	26194.53	55000.00	5000.00	100000.00	4500
Age	37.25	11.71	34.00	17.00	88.00	5068
Household Size	3.68	1.44	3.00	2.00	13.00	5068
White	0.77	0.42	1.00	0.00	1.00	5068
Black	0.07	0.26	0.00	0.00	1.00	5068
Hispanic	0.05	0.21	0.00	0.00	1.00	5068
Asian	0.08	0.27	0.00	0.00	1.00	5068
Full-time employment	0.51	0.50	1.00	0.00	1.00	5068
Part-time employment	0.11	0.32	0.00	0.00	1.00	5068
Unemployed	0.13	0.34	0.00	0.00	1.00	5068
Bachelor Degree	0.37	0.48	0.00	0.00	1.00	5068
Conservative	0.26	0.44	0.00	0.00	1.00	5042
Number of HITs	8951.11	15446.87	2500.00	750.00	75000.00	5068

Notes: This table summarizes the main covariates of all respondents in experiment 5.

Table A.45: Summary Statistics: Experiment 6 (Effort Experiment:Weak demand)

Mean	SD	Median	Min.	Max.	Obs.
0.55	0.50	1.00	0.00	1.00	775
32354.84	16969.25	35000.00	5000.00	85000.00	775
37.50	11.79	35.00	21.00	70.00	775
3.71	1.46	3.00	2.00	10.00	775
0.74	0.44	1.00	0.00	1.00	775
0.08	0.28	0.00	0.00	1.00	775
0.06	0.24	0.00	0.00	1.00	775
0.08	0.27	0.00	0.00	1.00	775
0.54	0.50	1.00	0.00	1.00	775
0.11	0.31	0.00	0.00	1.00	775
0.13	0.33	0.00	0.00	1.00	775
0.41	0.49	0.00	0.00	1.00	775
0.29	0.46	0.00	0.00	1.00	770
	$\begin{array}{c} 0.55\\ 32354.84\\ 37.50\\ 3.71\\ 0.74\\ 0.08\\ 0.06\\ 0.08\\ 0.54\\ 0.11\\ 0.13\\ 0.41\\ \end{array}$	$\begin{array}{ccc} 0.55 & 0.50 \\ 32354.84 & 16969.25 \\ 37.50 & 11.79 \\ 3.71 & 1.46 \\ 0.74 & 0.44 \\ 0.08 & 0.28 \\ 0.06 & 0.24 \\ 0.08 & 0.27 \\ 0.54 & 0.50 \\ 0.11 & 0.31 \\ 0.13 & 0.33 \\ 0.41 & 0.49 \end{array}$	0.55         0.50         1.00           32354.84         16969.25         35000.00           37.50         11.79         35.00           3.71         1.46         3.00           0.74         0.44         1.00           0.08         0.28         0.00           0.06         0.24         0.00           0.54         0.50         1.00           0.11         0.31         0.00           0.13         0.33         0.00           0.41         0.49         0.00	0.55         0.50         1.00         0.00           32354.84         16969.25         35000.00         5000.00           37.50         11.79         35.00         21.00           3.71         1.46         3.00         2.00           0.74         0.44         1.00         0.00           0.08         0.28         0.00         0.00           0.08         0.27         0.00         0.00           0.54         0.50         1.00         0.00           0.11         0.31         0.00         0.00           0.13         0.33         0.00         0.00           0.41         0.49         0.00         0.00	0.55         0.50         1.00         0.00         1.00           32354.84         16969.25         3500.00         5000.00         8500.00           37.50         11.79         35.00         21.00         70.00           3.71         1.46         3.00         2.00         10.00           0.74         0.44         1.00         0.00         1.00           0.08         0.28         0.00         0.00         1.00           0.06         0.24         0.00         0.00         1.00           0.08         0.27         0.00         0.00         1.00           0.54         0.50         1.00         0.00         1.00           0.11         0.31         0.00         0.00         1.00           0.13         0.33         0.00         0.00         1.00

Notes: This table summarizes the main covariates of all respondents in experiment 6.

Table A.46: Summary Statistics: Experiment 7 (Within-Design)

	Mean	SD	Median	Min.	Max.	Obs.
Male	0.57	0.49	1.00	0.00	1.00	1824
Income	54273.18	25704.58	55000.00	5000.00	100000.00	1596
Age	34.66	10.81	32.00	19.00	83.00	1824
Household Size	3.53	1.40	3.00	2.00	13.00	1824
White	0.73	0.44	1.00	0.00	1.00	1824
Black	0.08	0.27	0.00	0.00	1.00	1824
Hispanic	0.06	0.24	0.00	0.00	1.00	1824
Asian	0.10	0.30	0.00	0.00	1.00	1824
Full-time employment	0.55	0.50	1.00	0.00	1.00	1824
Part-time employment	0.12	0.32	0.00	0.00	1.00	1824
Unemployed	0.13	0.34	0.00	0.00	1.00	1824
Bachelor Degree	0.40	0.49	0.00	0.00	1.00	1824
Conservative	0.23	0.42	0.00	0.00	1.00	1814

Notes: This table summarizes the main covariates of all respondents in experiment 7.