

## Appendix A

**Table A1. Interviewer Evaluations and Distributions Before Recoding**

Measures	Operationalization	Percentage
Cooperativeness	Interviewer: Please rate the respondent's cooperation:	
	1 Very Good	63.28
	2 Good	29.10
	3 Fair	6.70
	4 Poor	0.92
	5 Very Poor	0.00
	Recoded: 1 "Fair and below", 2 "Good", 3 "Very good"	
Interest	Overall, how great was the respondent's interest in the interview?	
	1 Very High	25.17
	2 Above Average	33.49
	3 Average	39.03
	4 Below Average	2.31
	5 Very Low	0.00
	Recoded: 1 "Average and below", 2 "Above average", 3 "Very high"	
Friendliness	In general, what was the respondent's attitude towards the interview?	
	1 Friendly and eager	59.82
	2 Cooperative but not particularly eager	38.34
	3 Indifferent and bored	1.62
	4 Hostile	0.23
	Recoded: 0 "Cooperative but not particularly eager and below", 1 "Friendly and eager"	
Talkativeness	How talkative was the respondent during the interview?	
	1 Very untalkative	3.00
	2 Somewhat untalkative	12.01
	3 Neither talkative nor untalkative	45.27
	4 Somewhat talkative	30.95
	5 Very talkative	8.78

## Appendix B

**Table B1. Multilevel Ordered Logistic Regression (Cooperativeness, Interest)**

	Cooperativeness			Interest		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Respondent answering behaviors						
Adequate answer with elaboration			-0.04 (0.05)			0.05 (0.04)
Adequate answer w/o elaboration			-0.03 (0.03)			-0.01 (0.02)
Qualified answer with elaboration			-0.12 (0.10)			0.07 (0.09)
Qualified answer w/o elaboration			-0.03 (0.05)			-0.04 (0.04)
Uncodable answer with elaboration			-0.05 (0.04)			0.01 (0.03)
Uncodable answer w/o elaboration			-0.09* (0.04)			-0.08* (0.04)
Don't know			-0.17 (0.10)			-0.33*** (0.09)
Refusal			-0.37*** (0.10)			-0.26*** (0.09)
'Other' answer			0.24 (0.27)			0.07 (0.24)
Nonverbal utterances						
Laughter			0.06 (0.03)			0.08** (0.02)
Disfluency			0.04** (0.02)			0.03** (0.01)
Personal involvement and rapport						
Agrees with interviewer			-0.08 (0.08)			-0.03 (0.07)
Affirmative feedback			0.14*** (0.04)			-0.03 (0.03)

Acknowledging feedback		0.04 (0.05)		0.04 (0.03)
Task-related feedback		-0.04 (0.22)		-0.03 (0.19)
Digression		0.11 (0.06)		0.03 (0.05)
Personal disclosure		-0.02 (0.03)		-0.03 (0.03)
'Other' feedback		0.06 (0.11)		-0.02 (0.09)
Clarification behaviors				
Interrupts Interviewer		-0.04 (0.02)		0.01 (0.02)
Clarification - repeat		-0.02 (0.07)		0.02 (0.06)
Clarification - definition		-0.03 (0.15)		-0.08 (0.12)
Clarification - what		-0.17* (0.07)		-0.21** (0.07)
Clarification - unit		-0.13 (0.12)		-0.04 (0.11)
Respondent characteristics				
Age (cent.)	-0.01 (0.01)	0.00 (0.01)	-0.00 (0.01)	-0.00 (0.01)
Female (ref. Male)	-0.00 (0.24)	-0.07 (0.27)	-0.12 (0.21)	-0.23 (0.23)
Nonwhite (ref. White)	-0.20 (0.35)	0.03 (0.40)	0.13 (0.31)	0.25 (0.34)
High school or less	-0.35 (0.28)	-0.39 (0.32)	-0.67** (0.25)	-0.63* (0.27)
Income	0.00 (0.07)	-0.04 (0.08)	-0.01 (0.06)	-0.07 (0.07)
Interviewer characteristics				
Female (ref. Male)	0.50 (0.77)	0.35 (0.86)	-0.82 (0.77)	-1.08 (0.86)

Nonwhite (ref. White)		-0.51 (0.68)	-0.47 (0.76)		-0.25 (0.68)	-0.09 (0.76)
Interviewer experience 1+ year(s)		-1.08 (0.85)	-1.18 (0.94)		-1.03 (0.85)	-1.02 (0.94)
Cooperation rate		0.12 (0.79)	-0.04 (0.88)		0.51 (0.80)	0.48 (0.89)
Respondent control variables						
Married (ref. Unmarried)		0.17 (0.25)	0.19 (0.29)		-0.16 (0.22)	-0.10 (0.25)
Computer user		1.12*** (0.31)	0.88* (0.36)		0.80** (0.30)	0.68* (0.33)
# of Questions asked (cent.)		0.00 (0.04)	0.02 (0.05)		0.03 (0.03)	0.04 (0.04)
Intercept 1	-3.30*** (0.38)	-3.50*** (1.04)	-4.77*** (1.18)	-0.48 (0.32)	-1.35 (1.01)	-1.81 (1.11)
Intercept 2	-0.77* (0.33)	-0.76 (1.02)	-1.50 (1.14)	1.47*** (0.33)	0.72 (1.00)	0.55 (1.11)
Interviewer level variance	1.72* (0.69)	1.65* (0.67)	2.03* (0.84)	1.72** (0.65)	1.75** (0.66)	2.16** (0.82)
Model Fit:						
AIC	640.09	625.24	595.57	821.64	811.22	790.28
Observations	433	433	433	433	433	433

Note: All behaviors are respondent behaviors. Standard errors in parentheses; \* p<0.05, \*\* p<0.01, \*\*\* p<0.001

**Table B2. Multilevel Ordered Logistic Regression (Friendliness, Talkativeness)**

	Friendliness			Talkativeness		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Respondent answering behaviors						
Adequate answer with elaboration			0.02 (0.06)			0.17*** (0.04)
Adequate answer w/o elaboration			0.00 (0.03)			0.04 (0.02)
Qualified answer with elaboration			0.40** (0.13)			0.10 (0.08)
Qualified answer w/o elaboration			0.03 (0.05)			0.02 (0.04)
Uncodable answer with elaboration			-0.07 (0.04)			0.08* (0.03)
Uncodable answer w/o elaboration			-0.03 (0.04)			-0.03 (0.03)
Don't know			-0.38*** (0.11)			-0.17* (0.08)
Refusal			-0.30** (0.11)			-0.07 (0.08)
'Other' answer			0.00 (0.27)			-0.03 (0.21)
Nonverbal utterances						
Laughter			0.14*** (0.04)			-0.03 (0.02)
Disfluency			0.02 (0.02)			0.02 (0.01)
Personal involvement and rapport						
Agrees with interviewer			0.08 (0.10)			-0.03 (0.07)
Affirmative feedback			0.05 (0.04)			-0.05 (0.03)
Acknowledging feedback			0.09 (0.05)			0.04 (0.03)

Task-related feedback		-0.27		-0.07
		(0.24)		(0.17)
Digression		0.08		0.07
		(0.07)		(0.05)
Personal disclosure		-0.05		0.08**
		(0.04)		(0.03)
'Other' feedback		0.02		-0.06
		(0.11)		(0.08)
Clarification behaviors				
Interrupts Interviewer		-0.00		0.01
		(0.02)		(0.02)
Clarification - repeat		0.08		-0.00
		(0.08)		(0.06)
Clarification - definition		0.04		0.08
		(0.18)		(0.13)
Clarification - what		-0.14		-0.02
		(0.08)		(0.06)
Clarification - unit		-0.18		0.02
		(0.13)		(0.10)
Respondent characteristics				
Age (cent.)	0.00	0.00	0.02**	0.00
	(0.01)	(0.01)	(0.01)	(0.01)
Female (ref. Male)	0.12	0.09	0.47*	0.76***
	(0.24)	(0.29)	(0.20)	(0.23)
Nonwhite (ref. White)	0.21	-0.15	-0.02	-0.53
	(0.36)	(0.43)	(0.30)	(0.34)
High school or less	-0.48	-0.58	0.56*	0.67**
	(0.28)	(0.34)	(0.23)	(0.26)
Income	0.01	-0.04	0.01	0.01
	(0.07)	(0.08)	(0.06)	(0.06)
Interviewer characteristics				
Female (ref. Male)	0.47	0.19	0.62	0.59
	(0.67)	(0.82)	(0.70)	(0.84)
Nonwhite (ref. White)	-0.01	0.23	-0.89	-0.74
	(0.60)	(0.73)	(0.62)	(0.75)

Interviewer experience 1+ year(s)		0.39 (0.75)	0.85 (0.92)		-0.41 (0.77)	-0.25 (0.93)
Cooperation rate		-0.21 (0.70)	-0.65 (0.86)		-0.36 (0.72)	-0.62 (0.87)
Respondent control variables						
Married (ref. Unmarried)		-0.19 (0.25)	-0.24 (0.30)		-0.35 (0.21)	-0.37 (0.23)
Computer user		0.39 (0.33)	0.12 (0.39)		0.05 (0.27)	0.03 (0.30)
# of Questions asked (cent.)		0.06 (0.04)	0.05 (0.06)		0.09** (0.03)	0.04 (0.04)
Intercept 1	-0.47 (0.28)	0.14 (0.93)	0.41 (1.13)	-4.39*** (0.45)	-4.79*** (0.97)	-5.24*** (1.15)
Intercept 2				-2.28*** (0.35)	-2.61** (0.92)	-2.99*** (1.10)
Intercept 3				0.54 (0.33)	0.32 (0.91)	0.45 (1.09)
Intercept 4				2.93*** (0.37)	2.77** (0.93)	3.66** (1.12)
Interviewer level variance	1.24* (0.51)	1.26* (0.52)	1.89* (0.80)	1.76** (0.65)	1.43** (0.54)	2.15** (0.80)
Model Fit:						
AIC	522.51	529.29	492.03	1013.78	1011.11	937.98
Observations	433	433	433	433	433	433

Note: All behaviors are respondent behaviors. Standard errors in parentheses; \* p<0.05, \*\* p<0.01, \*\*\* p<0.001

## Appendix C

**Table C1. Adjusted Predictions for Significant Systematic Processing Indicators (Cooperativeness, Interest)**

	Cooperativeness								
	Fair and Below			Good			Very Good		
	-1 SD	Mean	+1 SD	-1 SD	Mean	+1 SD	-1 SD	Mean	+1 SD
Respondent answering behaviors									
Uncodable answer w/o elaboration	0.05	0.06*	0.08	0.26	0.30*	0.34*	0.69	0.64*	0.58*
Refusal	0.05	0.06**	0.09**	0.28	0.30**	0.35**	0.67	0.64***	0.56***
Nonverbal utterances									
Disfluency	0.09	0.06*	0.04**	0.35	0.30**	0.24**	0.56	0.64**	0.72**
Personal involvement and rapport									
Affirmative feedback	0.10	0.06*	0.04**	0.37	0.29**	0.22**	0.53	0.64**	0.74***
Clarification behaviors									
Clarification - what	0.05	0.06*	0.08*	0.27	0.30*	0.33*	0.68	0.64*	0.59*
	Interest								
	Average and below			Above Average			Very High		
	-1 SD	Mean	+1 SD	-1 SD	Mean	+1 SD	-1 SD	Mean	+1 SD
Respondent answering behaviors									
Uncodable answer w/o elaboration	0.36	0.41*	0.47*	0.35	0.34	0.33	0.29	0.24*	0.20*
Don't know	0.37	0.41***	0.47***	0.35	0.35	0.33	0.28	0.24**	0.20***
Refusal	0.39	0.41**	0.46**	0.35	0.34	0.33	0.26	0.25**	0.21**
Nonverbal utterances									
Laughter	0.47	0.41**	0.34***	0.33	0.35	0.35	0.20	0.24**	0.30**
Disfluency	0.48	0.41**	0.34**	0.33	0.35	0.36	0.19	0.24**	0.30*
Clarification behaviors									
Clarification - what	0.35	0.41**	0.48**	0.35	0.34	0.33	0.30	0.24**	0.20**

Note: Model 3. All behaviors are respondent behaviors. Models also include all indicators of heuristic processing and controls. \* p<0.05, \*\* p<0.01, \*\*\* p<0.001 indicate differences between -1 SD and mean (Mean) and +1SD and mean (+1 SD).



**Table C2. Adjusted Predictions for Significant Systematic Processing Indicators (Friendliness, Talkativeness)**

	Friendliness														
	Cooperative but not particularly eager			Friendly and eager											
	-1 SD	Mean	+1 SD	-1 SD	Mean	+1 SD									
Respondent answering behaviors															
Qualified answer with elaboration	0.46	0.40**	0.31**	0.54	0.60**	0.69**									
Don't know	0.35	0.41***	0.48***	0.65	0.59***	0.52***									
Refusal	0.38	0.41**	0.47**	0.62	0.59**	0.53**									
Nonverbal utterances															
Laughter	0.51	0.40***	0.29***	0.49	0.60***	0.71***									
	Talkativeness														
	Very untalkative			Somewhat untalkative			Neither Nor			Somewhat talkative			Very talkative		
	-1 SD	Mean	+1 SD	-1 SD	Mean	+1 SD	-1 SD	Mean	+1 SD	-1 SD	Mean	+1 SD	-1 SD	Mean	+1 SD
Respondent answering behaviors															
Adequate answer with elaboration	0.04	0.02*	0.01*	0.14	0.10**	0.07***	0.49	0.46*	0.41*	0.28	0.34**	0.39**	0.05	0.08**	0.11**
Uncodable answer with elaboration	0.03	0.03	0.02	0.13	0.11*	0.08*	0.47	0.45	0.42	0.29	0.33*	0.37*	0.07	0.08*	0.11*
Don't know	0.02	0.03	0.03	0.10	0.11*	0.13	0.44	0.45	0.46	0.34	0.32*	0.30*	0.10	0.09	0.08*
Personal involvement and rapport															
Personal disclosure	0.03	0.02	0.02*	0.12	0.10*	0.08**	0.47	0.46*	0.41*	0.31	0.34*	0.39*	0.06	0.08**	0.11*

Note: Model 3. All behaviors are respondent behaviors. Models also include all indicators of heuristic processing and controls. \* p<0.05, \*\* p<0.01, \*\*\* p<0.001 indicate differences between -1 SD and mean (Mean) and +1 SD and mean (+1 SD).

## Appendix D

Investigating validity and reliability is not straightforward for ordinal measures. In order to assess validity and reliability, we use a two-level hierarchical linear model that allows us to separate interviewer- from respondent-level variances of our measures at each stage for each dependent variable (see Model 1, Model 2, and Model 3 in the paper). Despite violating central modeling assumptions contrary to the multilevel ordered logit analysis presented in the paper, this allows us to have an estimate of the residual error variance (variance due to respondents), variance that is constrained in the categorical models.

Table D.1 displays Cohen's  $f^2$ , a measure capturing the proportion of variance uniquely attributable to indicators of either heuristic or systematic processing while controlling for the other group of indicators (Selya et al. 2012). Effect sizes are considered moderate when  $f^2 \geq 0.15$  and large when  $f^2 \geq 0.35$  (Cohen 1988).

Cohen's  $f^2$  at the interviewer level ranges from 0.06 to 0.19 for the heuristic indicators and from -0.10 to 0.15 for the systematic indicators. Cooperativeness, interest, and friendliness ratings follow similar patterns, whereas talkativeness differs at the interviewer level. The proportion of variance uniquely attributable to heuristic processing at the respondent level is small and ranges between 0.01 and 0.06 whereas the proportion of variance explained by indicators of systematic processing is substantially larger and ranges from 0.14 to 0.31. The comparatively smaller effect of heuristic processing at the respondent level compared to the interviewer level is plausible given that the heuristic processing model contains both respondent and interviewer characteristics.

**Table D.1. Cohen's  $f^2$  at the interviewer and respondent level**

	<b>Cooperativeness</b>		<b>Interest</b>		<b>Friendliness</b>		<b>Talkativeness</b>	
	Heur.	Syst.	Heur.	Syst.	Heur.	Syst.	Heur.	Syst.
Interviewer-level Cohen's $f^2$	0.193	0.152	0.127	0.115	0.057	0.103	0.191	-0.105
Respondent-level Cohen's $f^2$	0.033	0.192	0.036	0.141	0.015	0.193	0.061	0.307
N	433	433	433	433	433	433	433	433

Overall, our results suggest that the remaining residual variance components are still considerable (although this is typical with social science research; Cohen et al. 2003, p. 92) and that interviewer assessments of respondent engagement vary by interviewer. Nonetheless, decomposing the explained variance in the multilevel models supports our findings that a large share of the explained variance is uniquely due to our indicators of systematic processing and to a lesser extent to heuristic processing. First, analyses not presented here show that the interviewer variance components in these models are generally smaller than the respondent-level variance components. Systematic processing uniquely explains a moderate to (approaching) large share of the variance at the respondent level (which is the primary level of interest) compared to both the interviewer level and the indicators of heuristic processing. The uniquely explained variance at the interviewer level for both heuristic processing indicators and systematic processing indicators is similar in magnitude, generally falling in the small to moderate range.

Overall, these results suggest that our measures of systematic processing are valid – they reflect actual behaviors more than heuristic decisions – and the variability across respondents is greater than the variability across interviewers. The size of the effects indicate that the evaluations are moderately reliable measures of the behaviors, but that further research can be done to explain the unexplained variance at both the interviewer and respondent level.

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