Appendix 1: Comparison of the Entropy and Dispersion of Standard Deviation (DSD) measures of task difficulty

Table. Comparison of models with different measures of choice task difficulty

	Model #1			Model #2			Model #3		
	MLE	**SE**	**P**	**MLE**	**SE**	**P**	**MLE**	**SE**	**P**
1. Model parameters									
Constant	6.256	0.060	< 0.001	6.071	0.068	< 0.001	6.204	0.063	< 0.001
LEFT	0.146	0.015	< 0.001	0.146	0.015	< 0.001	0.146	0.015	< 0.001
POSITION (Top)	0.259	0.018	< 0.001	0.259	0.018	< 0.001	0.259	0.018	< 0.001
POSITON (Bottom)	-0.169	0.019	< 0.001	-0.170	0.019	< 0.001	-0.170	0.019	< 0.001
LEVEL (Best)	0.094	0.021	< 0.001	0.092	0.021	< 0.001	0.090	0.021	< 0.001
LEVEL (Worst)	-0.032	0.017	0.054	-0.042	0.017	0.012	-0.037	0.017	0.026
TRIAL	-0.039	0.009	< 0.001	-0.040	0.009	< 0.001	-0.039	0.009	< 0.001
TRIAL x TRIAL	0.002	0.001	< 0.001	0.002	0.001	< 0.001	0.002	< 0.001	< 0.001
EXPERIMENT	0.182	0.071	0.011	0.182	0.071	0.010	0.182	0.071	0.010
DIFFICULTY (Entropy)	0.088	0.028	0.001	0.282	0.045	0.001	-	-	-
DIFFICULTY (DSD)	-	-	-	-	-	-	0.336	0.091	0.001
Individual error	0.264	-	-	0.264	-	-	0.264	-	-
Observation error	0.680	-	-	0.679	-	-	0.680	-	-
2. Model statistics									
# Observations		8,421			8,421			8,421	
# Parameters		11			11			11	
Log-likelihood		8,819.7			8,805.1			8,816.8	

MLE: Maximum Likelihood Estimate; SE: Standard Error; P: P-value

Model #1: Entropy coefficient is computed with preference estimates from Ryan et al (2015).

Model #2: The entropy coefficient is based on preference estimates for the study sample (N=58).

Model #3: The choice tasks difficulty is approximated by the dispersion of standard deviation (DSD) measure.

Appendix 2: Behaviour of the SM measure

Here we visually analyse the behaviour of the Search Measure (SM) index when changing parameters. The SM index depends on both the dimension of the choice problem (number of choice options (J) and number of attributes (K)) and transitions between Regions of Interest (ROI). The index is especially interested in attribute-wise (TR_k) and option-wise (TR_j) transitions. An individual is more likely to search the content horizontally (attribute-wisely) when the proportion of attribute-wise transitions is greater than the proportion of option-wise transitions. However, this could be a misleading conclusion if the dimensions of the choice problem are ignored. More specifically, when the number of attributes is larger than the number of choice options (and assuming the content is presented vertically), ceteris paribus, a random transition is more likely to be attribute-wise. The SM index addresses this. The reference level for SM is 0, indicating a search behaviour that is dominated neither by attribute-wise nor option-wise transitions. In the seminal paper, this type of search behaviour was described as "random". In Figure A2 we describe how the SM index evolves when we change: (i) the proportion of attribute-wise transition; (ii) the proportion of option-wise transitions, and (iii) the total number of transitions (GREEN=10 transitions; RED=100 transitions; BLUE=1,000 transitions; BLACK=2,000 transitions). For all four cases, an increase in the % of option-wise transitions increases the SM value. The changes in the SM values become steeper with a larger number of transitions.

Figure A2 Visual representation of the SM variable