Supplemental Materials:

Is Less of an Unhealthy Ingredient Healthy or Unhealthy?

Effects of Mere Co-occurrence and Quantitative Relations on Attribute Judgments

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Experiment S1

Method

Participants. We aimed to recruit 400 participants from Amazon's MTurk. The data collection was completed in April 2020. The same eligibility criteria for participation in Experiments 1-5 were used in Experiment S1. Of the 446 participants who started the assessment (472 submissions), 401 participants completed the assessment in full. Four participants had more than one complete submission, in which case only the first submission of each participant was retained. Of the 401 participants in the data set, 14 participants were excluded because they reported that they were inattentive or did not take their responses seriously, 25 participants were excluded for failing the attention check, 36 participants were excluded for failing the materials comprehension check, and 3 participants were excluded for failing to provide valid responses to at least 50% of the judgment trials, resulting in a final sample of 323 participants (39.63% female, 59.13% male, 0.62% prefer not to answer, 0.62% other; M_{age} = 36.10, SD_{age} = 11.01). Participants were compensated $2.00 for their time.

Procedure. The materials, learning task, judgment task, and additional measures of Experiment S1 were identical to Experiment 3, the only difference being that we added one additional block to the judgment task. With 5 blocks and 8 trials per block, the judgment task included a total of 40 trials (instead of 32), with each product being presented 5 times across blocks.

Results

Attribute judgments were aggregated in line with the procedures in Experiment 1. Means and 95% confidence intervals of the relative proportion of *healthy* (vs. *unhealthy*) judgments as a function of product information and repetition are presented in Table S1. The RCB model fit the data well with six free parameters (i.e., three per condition), $G^2(2) = 2.07$, $p = .355$, $w = .012$.

Parameter estimates obtained with the baseline model are presented in Table S2. Replicating the results of Experiment 3, the *R* parameter was significantly greater in the high-repetition condition compared to the low-repetition condition, $\Delta G^2(1) = 33.39$, $p < .001$, $w = .048$, indicating that relational information had a greater impact on attribute judgments when it was presented more frequently than when it was presented less frequently. Also replicating the results of Experiment 3, the *C* parameter did not significantly differ across repetition conditions, $\Delta G^2(1) = 0.37$, $p = .542$, $w = .005$. Different from Experiment 3, the *B* parameter did significantly differ across repetition conditions, $\Delta G^2(1) = 10.81$, $p = .001$, $w = .027$, indicating that participants had a stronger tendency to judge the products as healthy when they were presented more frequently than when they were presented less frequently.

Table S1. Mean proportions and 95% confidence intervals of *healthy* (vs. *unhealthy*) judgments of food products that include more or less of a healthy or unhealthy ingredient, Experiment S1. Higher scores reflect higher proportions of *healthy* (vs. *unhealthy*) judgments.

	Product has more of…				Product has less of			
	healthy ingredient		unhealthy ingredient		healthy ingredient		unhealthy ingredient	
	M	95% CI	*M*	95% CI	*M*	95% CI	*M*	95% CI
4 repetitions	.66	[.62, .69]	.38	[.34, .42]	.41	[.37, .45]	.66	[.63, .70]
24 repetitions	.73	[.70, .77]	.36	[.32, .40]	.38	[.35, .42]	.72	[.69, .76]

Table S2. Parameter estimates without model restrictions as a function of information repetition during encoding (4 repetitions vs. 24 repetitions), Experiment S1.

Parameter	Estimate (*SE*)	95% CI	Difference to reference point
R			
4 Repetitions	.28 (.01)	[.25, .30]	$\Delta G^2(1) = 557.33$, $p < .001$, $w = .279$
24 Repetitions	.37 (.01)	[.35, .39]	$\Delta G^2(1) = 1015.63$, $p < .001$, $w = .374$
C			
4 Repetitions	.02 (.02)	[-.01, .05]	$\Delta G^2(1) = 1.52$, $p = .217$, $w = .015$
24 Repetitions	.03 (.02)	[.00, .07]	$\Delta G^2(1) = 3.84$, $p = .050$, $w = .023$
B			
4 Repetitions	.54 (.01)	[.52, .56]	$\Delta G^2(1) = 24.92$, $p < .001$, $w = .059$
24 Repetitions	.58 (.01)	[.56, .60]	$\Delta G^2(1) = 79.57$, $p < .001$, $w = .105$

Note. The *R* parameter captures effects of relational information; the *C* parameter captures effects of co-occurrence; the *B* parameter captures general response biases. The neutral reference point for *R* and *C* is 0; the neutral reference point for *B* is 0.5, with scores higher than 0.5 reflecting a general bias toward positive responses and scores lower than 0.5 reflecting a general bias toward negative responses.