

Supplementary Methods

Experiment 1

To ensure that participants in the two language conditions did not differ in dimensions that could independently affect their intentions to consume artificial meat, following the willingness to consume question we asked them: “Do you follow mostly a meatless diet?” (1 = No, not at all, 7 = Yes, absolutely). A one-way analysis of variance revealed no significant differences between the language conditions ($M_{\text{Foreign language}} = 3.47$, 95% CI [3.43, 4.40]; $M_{\text{Native language}} = 3.92$, 95% CI [2.93, 4.01]), $F(1, 146) = 1.49$, $P = 0.225$, $f = .10$.

Experiment 3

The disgust measure (“The thought of eating a mealworm cookie is disgusting”, 1 = Not at all disgusting to 9 = Very disgusting) was supplemented by red circles of increasing intensity (adapted from 1; Supplementary Figure 1). Such a visual measure has been used to neutralize the *anchor contraction effect* or rather the tendency to report more intense emotions when the anchors of the scale are labelled in a foreign versus the native language (21).

To ensure that participants in the two language conditions did not differ in dimensions that could independently affect their intentions to consume insect-based cookies, following the disgust scale we asked them (in their native language, German): “Do you think it is harmful to eat mealworm cookies?” (1 = Not at all harmful to 7 = Very harmful), “Have you ever heard of eating insects?” (1 = No, never to 7 = Yes, very often), “Would you describe yourself as a vegetarian or a vegan consumer?” (1 = No, not at all to 7 = Yes, absolutely), “How disgusting do you find insects in general?” (slider scale; 1 = Not at all disgusting to 101 = Very disgusting), “How much do you like or dislike cookies in general?” (slider scale; 1 = Like a great deal to = Dislike a great deal), and “When I buy foods, I try to consider how my use of them will affect the

environment.” (1 = Not true at all to 5 = Very true). Analyses revealed no significant differences in any of these dimensions between the language conditions (see Supplementary Table 4).

Experiment 4

To ensure that participants in the two language conditions did not differ in dimensions that could independently affect their willingness to consume recycled water, we presented them with the following questions (in their native language, Dutch): “When was the last time you drank water/soda/juice before the experiment?” (1 = Right before; 2 = 30 minutes before; 3 = An hour before; 4 = More than an hour before); “When you were asked to drink the recycled water, how thirsty were you?” (1 = Not at all thirsty to 7 = Extremely thirsty); “Have you heard about recycled water before?” (Yes/No); “Please indicate how much you like drinking water in general” (1 = Not at all to 7 = Very); “When you were asked to taste the recycled water, were you suspicious that it was not recycled water?” (Yes/No); “Do you like trying new products?” (1 = Not at all to 7 = Very much); and “How much do you care about the environment in your everyday life?” (1 = Not at all to 7 = Very much). Analyses revealed no language differences in any of these dimensions (see Supplementary Tables 5 and 6).

Supplementary Results

Experiment 2

Experiment 2 involved two samples of participants: Italian native speakers that studied English as a foreign language and Italian native speakers that studied German as a foreign language. Preliminary analyses showed that there were no statistically significant differences between the two foreign language conditions on the willingness to consume recycled water, $U = 1,324.0$, $P = 0.28$, $z = 1.08$, $r = .11$. Thus, we treated these conditions as a single foreign language condition and compared it to the native language. We present the results of this analysis in the main article. Here we present separate analyses by each foreign language sample.

For the Italian-English group ($n = 133$), the percentage of participants that selected each response option was as follows: Yes (foreign language: 50.0%, native language: 37.3%), No (foreign language: 10.3%, native language: 21.3%), Unsure (foreign language: 39.7%, native language: 41.3%), $U = 2,541.50$, $P = 0.071$, $z = 1.80$, $r = .16$. For the Italian-German group ($n = 72$), the percentage of participants that selected each response option was as follows: Yes (foreign language: 61.0%, native language: 54.8%), No (foreign language: 7.3%, native language: 12.9%), Unsure (foreign language: 31.7%, native language: 32.3%), $U = 685.50$, $P = 0.516$, $z = 0.65$, $r = .08$.

To examine whether the effect of language depends on the specific foreign language used, we conducted a logistic regression analysis with willingness to consume (Yes/No) as the dependent variable and language condition, foreign language group, and Language $\times$ Group interaction as predictors. Language was a marginally significant predictor of willingness to consume, while Group [$\chi^2(1, N = 128) = 1.93$, $P = 0.164$, OR = 2.43] and Language $\times$ Group interaction [$\chi^2(1, N = 128) = 0.12$, $P = 0.730$, OR = 0.71] were not. This latter finding suggests

that the effect of language on willingness to consume was independent of the specific foreign language used. The presence of the language effect in the larger Italian-English group and its absence in the smaller Italian-German group is likely due to differences in sample size.

Supplementary Tables

Supplementary Table 1 English descriptions of the target products

Description
Artificial meat (Experiment 1) Artificial meat is meat that is manufactured through "tissue-engineering" technology. The sources of artificial meat are starting cells from live animals, such as cells that are removed from cows' necks. These starting cells are placed in culture media where they start to proliferate and grow, independently from animals. All this happens without genetic manipulation. Artificial meat would be an improvement in terms of health, animal welfare, and ecology. Would you eat artificial meat? (Yes/Unsure/No).
Recycled water (Experiments 2 and 4) "Recycled water" is water that is separated from wastewater and highly treated so it can be used again. The sources of recycled water include wastewater from the shower, the sink, or even the toilet. Recycled water is also called "reclaimed water" and "water reuse." It has become an important political issue in many nations where there is a shortage of "natural" water. Recycled water has ecological and economic advantages over other sources of water, but some people object to its use as drinking water. Would you be willing to drink certified-safe recycled water? (Yes/Unsure/No).
Insect-based cookies (Experiment 3) A growing need for sustainable food sources has promoted the production of insect-based food. According to the United Nations, if edible insects become a part of the mainstream global diet, we can reduce greenhouse gases, and lower the average cost of food globally. Some food companies have started to produce cookies that are made with flour from mealworms. Mealworms are the larval form of the mealworm bug. Mealworm flour is produced from finely ground mealworms that are baked at 200°C for seven minutes. This production process ensures that no toxic molecules remain and that it is safe for human consumption. Would you eat mealworm cookies? (Yes/Unsure/No).

Supplementary Table 2 Results of moderation analysis (Exp. 4)

	Coefficient	S.E.	<i>t</i>	<i>P</i>	95% CIs
a: Constant	34.74	22.98	1.51	.132	−10.59, 80.08
b ₁ : Language (<i>F</i>)	69.20	32.99	2.10	.037	4.11, 134.29
b ₂ : Thirstiness (<i>M</i>)	35.13	8.35	4.21	.000	18.65, 51.61
b ₃ : <i>F</i> × <i>M</i>	−26.45	12.17	2.17	.031	−50.46, −2.44

Note. Complete model regression summary: $R^2 = .09$, $F(3, 182) = 6.22$, $P < 0.001$; Increase due to interaction: $\Delta R^2 = .02$, $\Delta F(1, 182) = 4.72$, $P = 0.031$.

Supplementary Table 3 Details of participant exclusions

	Reason for exclusion	Number of exclusions
Exp. 1	More than one year in an English-speaking country.	11
	Inadequate translation.	2
Exp. 2	Inadequate translation.	7
Exp. 3	Non-native speaker.	9
	Assigned to the foreign language condition but was a native speaker of that language (English).	1
	Inadequate translation.	3
Exp. 4	More than one year in an English-speaking country.	1
	Non-native speaker.	13
	Assigned to the foreign language condition but was a native speaker of that language (English).	1

Note. The exclusion criteria were adopted from previous research (21).

Supplementary Table 4 Effect of language condition on control variables (Exp. 3)

Variable	Foreign language		Native language		<i>F</i> (1, 127)	<i>P</i>	<i>Cohen's d</i>
	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>			
Do you think it is harmful to eat mealworm cookies?*	2.11	1.28	2.05	1.49	0.08	.785	0.04
Have you heard of eating insects?*	6.16	1.07	6.03	0.99	0.52	.475	0.13
Would you describe yourself as a vegetarian or vegan consumer?*	2.35	2.13	2.71	2.25	0.85	.359	−0.16
How disgusting do you find insects in general?*	53.52	28.84	56.15	28.27	0.52	.473	−0.09
How much do you like or dislike cookies in general?*	77.44	21.99	72.52	24.30	0.91	.341	0.21
When I buy foods, I try to consider how my use of them will affect the environment.***	3.11	1.15	3.14	1.11	0.01	.906	−0.03

Note. *7-point scale from 1 to 7, **slider scale from 1 to 101, ***5-point scale from 1 to 5; all questions were presented in German, here we include English translations. ¹Adopted from (22), ²adopted from (23), ³taken from (24).

Supplementary Table 5 Effect of language condition on control variables (Exp. 4)

Variable	Foreign language		Native language		<i>F</i> (1, 184)	<i>P</i>	<i>Cohen's d</i>
	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>			
When was the last time you drank water/soda/juice before the experiment?*	2.46	1.06	2.54	1.07	0.23	.630	0.07
When you were asked to drink recycled water, how thirsty were you?**	4.25	1.51	3.96	1.60	1.59	.209	0.19
Please indicate, how much you like drinking water in general?	5.74	1.12	5.57	1.31	0.95	.332	0.14
Do you like trying new products?	5.58	1.11	5.74	1.02	1.02	.313	0.15
How much do you care about the environment in your everyday life?	4.45	1.40	4.53	1.28	0.15	.697	0.06

Note. *1 = right before, 2 = 30 minutes before, 3 = an hour before, 4 = more than an hour before; **1 = Not at all to 7 = Extremely/Very much. All questions were presented in Dutch, here we present English translations.

Supplementary Table 6 Effect of language condition on binary control variables (Exp. 4)

Variable	χ^2	df	N	P	ϕ
Have you heard about recycled water before? (Yes/No)	1.80	1	186	.180	.10
When you were asked to taste the recycled water, were you suspicious that it was not recycled water? (Yes/No)	0.01	1	186	.924	-.01

Note. All questions were presented in Dutch, here we report English translations.

Supplementary Table 7 The text that participants had to translate.

	Text for translation
Exp. 1	The sources of artificial meat are starting cells from live animals, such as cells that are removed from cows' necks.
Exp. 2	"Recycled water" is water that is separated from wastewater and highly treated so it can be used again. The sources of recycled water include wastewater from the shower, the sink, or even the toilet. Recycled water is also called "reclaimed water" and "water reuse." It has become an important political issue in many nations where there is a shortage of "natural" water. Recycled water has ecological and economic advantages over other sources of water, but some people object to its use as drinking water.
Exp. 3	Mealworm flour is produced from finely ground meal worms that are baked at 200°C for seven minutes.
Exp. 4	Because Tilburg has high English proficiency requirements (all Masters and most Bachelor's programs are taught in English), no translations were required.

Supplementary Table 8 Age-of-acquisition and language proficiency details.

	<i>Mean, 95% CI</i>
Experiment 1: German native speakers.	
Age of acquisition of English (years)	9.15, [8.63, 9.67]
Reading and understanding (5-point scale)	4.48, [4.31, 4.66]
Experiment 2: Italian native speakers.	
a. German foreign language	
Age of acquisition of German (years)	17.30, [14.75, 19.85]
Reading and understanding (5-point scale)	3.19, [3.00, 3.38]
b. English foreign language	
Age of acquisition of English (years)	7.06, [6.33, 7.78]
Reading and understanding (5-point scale)	3.71, [3.47, 3.94]
Experiment 3: German native speakers.	
Age of acquisition of English (years)	9.77, [9.32, 10.23]
Reading and understanding (5-point scale)	5.08, [4.86, 5.30]
Experiment 4: Dutch native speakers.	
Age of acquisition of English (years)	10.26, [9.80, 10.72]
Reading and understanding (6-point scale)	1.61, [1.49, 1.74]

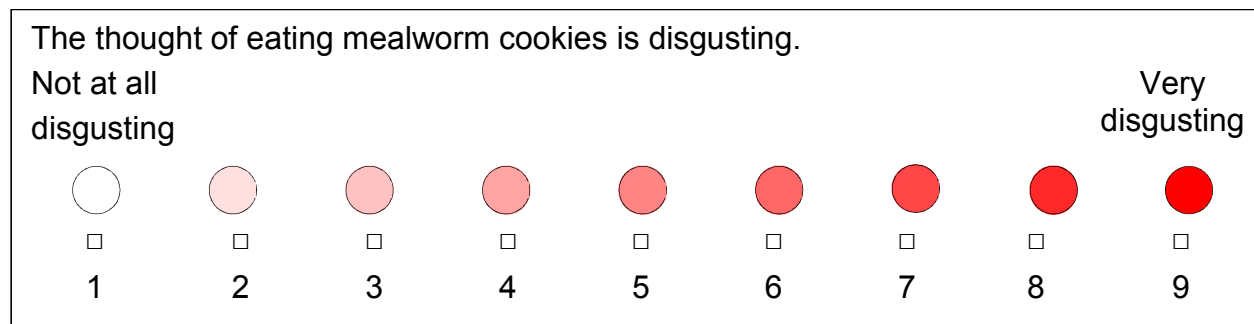
Note. Details of participants assigned to the foreign language condition. With regards to language proficiency, we asked participants to self-assess their foreign language skills in *reading* and *understanding*. Here, we report the mean score across the two items. In Experiments 1–3 we used a 5-point scale (1 = *almost none*, 2 = *poor*, 3 = *fair*, 4 = *good*, 5 = *very good*, scale was adapted from 26), while in Experiment 4 a 6-point scale (1 = *fluent*, 2 = *fairly fluent*, 3 = *moderately*, 4 = *with difficulties*, 5 = *only a few words*, 6 = *not at all*).

Supplementary Table 9 Effect of language on willingness to consume (Yes/No responses)

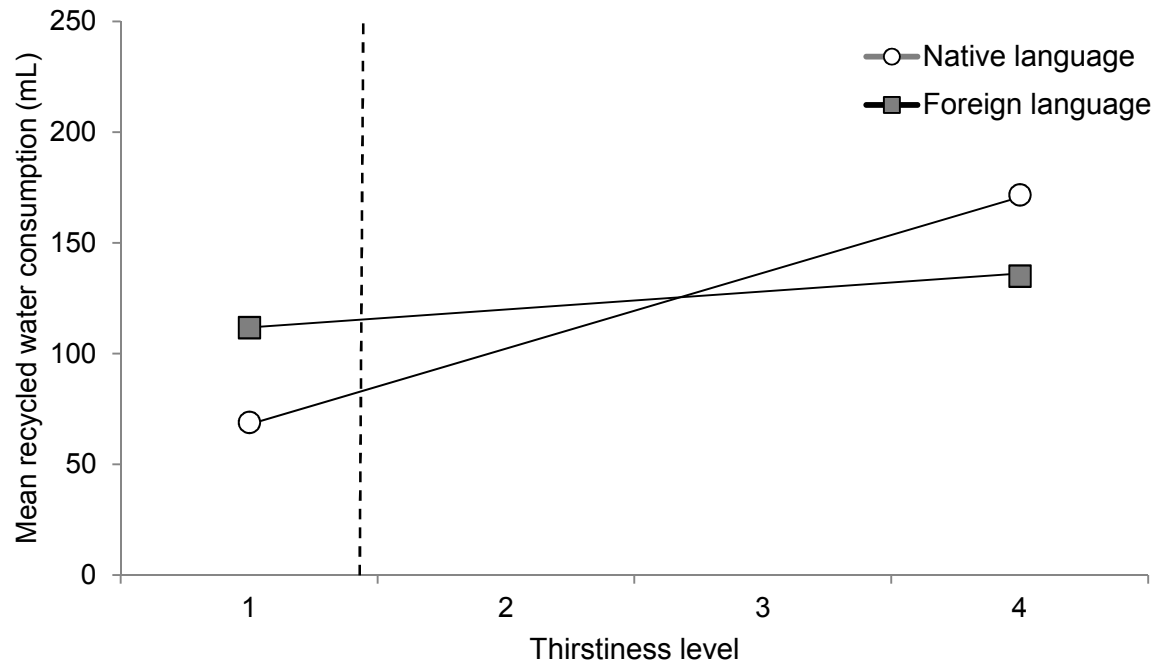
	χ^2	df	N	P	ϕ
Experiment 1	4.49	1	86	0.034	.23
Experiment 2	4.96	1	128	0.026	.20
Experiment 3	5.58	1	91	0.018	.25

Note. In these analyses, we omitted the Unsure answers and focused exclusively on the Yes/No responses.

Supplementary Figures



Supplementary Figure 1. The disgust rating scale used in Experiment 3.



Supplementary Figure 2. Mean recycled water consumption (mL) by language condition (native/foreign) and level of thirstiness (Experiment 4). The vertical line indicates the level of thirstiness below which the effect of language on the consumption of recycled water is marginally significant.

Supplementary References

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