Online Appendix: The Effectiveness of Carbon Labels *

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Contents

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Appendix A Experiments 1 and 3: Additional tables and figures

A.1 Randomization checks

Table A.1 shows a randomization check for participants of Experiment 1. Participants are computer assigned into one of the following three groups: 1) Label condition in the second round and Offset condition in the third round, 2) Control condition in the second round and Label condition in the third round, 3) Control condition in the second round and Control condition in the third round. Table A.1 tests whether there are significant differences between these three groups in age, gender, student status, employment, vegetarianism, and hunger at the time of the experiment. There is a higher proportion of non-vegetarians in the group "Control, then Control" (significant at the 5% level), but the groups do not significantly vary otherwise.

To test whether the higher proportion of non-vegetarians impacts results, I perform the main analysis separately for vegetarian and non-vegetarian participants. These analyses should not be influenced by the higher proportion of non-vegetarians in the control group. Results are shown in Table A.10 and Table A.11. Results only including non-vegetarians are similar in coefficient size to the main results. I thus do not believe that the higher proportion of non-vegetarians in the "Control, then Control" group poses a reason for concern.

Table A.1. Randomization Experiment 1

	Average value					
	(1)	(2)	(3)	(4)	(5)	(6)
	Age	Male	Student	Working	Non-veg.	Hungry
Control, then Control	-0.59	-0.00	0.08	0.05	-0.15**	0.02
	(1.09)	(0.07)	(0.06)	(0.07)	(0.06)	(0.38)
Control, then Label	-0.80	-0.01	0.01	0.10	-0.08	-0.05
	(1.08)	(0.07)	(0.06)	(0.07)	(0.06)	(0.38)
Constant	24.60***	0.33***	0.78***	0.58***	0.80***	5.16***
	(0.62)	(0.04)	(0.03)	(0.04)	(0.04)	(0.21)
Control, then Control	60	70	70	70	70	70
Control, then Label	62	69	69	69	69	69
Label, then Offset	126	148	148	148	148	148
Observations	248	287	287	287	287	287

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: The analysis checks whether there are significant differences in any of the six variables between treatment groups. The group "Label, then Offset" is the baseline category. I do not have full observations for the variable "age", since some participants reported unrealistic numbers Summary statistics for each variable are shown in Table A.3.

Table A.2. Randomization Experiment 3

	Average value					
	(1)	(2)	(3)	(4)	(5)	(6)
	Age	Male	Student	Working	Non-veg.	Hungry
Attention+Offset, then Attention+Labels	0.04	-0.01	-0.00	0.00	0.03	0.27
	(0.88)	(0.06)	(0.05)	(0.05)	(0.05)	(0.29)
Attention+Labels, then Attention+Offset	-0.53	0.02	0.01	-0.04	0.04	0.10
	(0.89)	(0.06)	(0.05)	(0.05)	(0.05)	(0.30)
Constant	25.93^{***}	0.45^{***}	0.69^{***}	0.75^{***}	0.74^{***}	4.73^{***}
	(0.63)	(0.04)	(0.04)	(0.04)	(0.03)	(0.21)
Attention, then Attention	124	151	151	151	151	151
Attention+Label, then Attention+Offset	126	144	144	144	144	144
Attention+Offset, then Attention+Label	131	149	149	149	149	149
Observations	381	444	444	444	444	444

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: The analysis checks whether there are significant differences in any of the six variables between treatment groups. The group “Attention, then Attention” is the baseline category. I do not have full observations for the variable “age”, since some participants reported unrealistic numbers Summary statistics for each variable are shown in Table A.4.

A.2 Representativeness of the sample

Tables A.3 and A.4 report descriptive statistics for experiments 1 and 3. Table A.5 reports descriptive statistics elicited in a survey among student canteen guests, as described in section D.8. I use this survey data to assess the similarity of Experiment 1 and 3 participants to the relevant student canteen guest population. In terms of age, participants of experiments 1 and 3 are slightly older than the student canteen guests in my survey (average age of 24 and 26 vs. an average age of 23 in the survey). The proportion of males is slightly lower in Experiment 1 (33%) and slightly higher in Experiment 3 (45%) than in the survey (41%). The proportion of students is higher in the survey (93%)than in experiments 1 and 3 (80% and 69%). However, it is likely that my survey over-proportionally surveyed student canteen guests who are students. In the student canteen purchase data analyzed in Experiment 2, 12% of guests paying with an individualized payment card are employees, 86% are students and 2% are non-student and non-employee.[1] Participants in Experiments 1 and 3 are less likely to be vegetarian than the average student canteen guest: While 75% and 76% of participants in Experiments 1 and 3, respectively, are non-vegetarian, only 66% of student canteen guests are non-vegetarian.

The largest differences between the experiment sample and survey and student canteen data are thus the proportion of non-students and the proportion of non-vegetarians. Section A.7 thus repeats the main

1. This is the only demographic characteristic reported in the student canteen purchase data. I thus rely on the survey data for the other characteristics.

analyses from experiments 1 and 3 splitting by whether participants are students or employees. Results seem broadly similar across students and non-students. However, compared to students, non-students seem to react less precisely to emission amounts, but react relatively uniformly to all high-emission meals (Table A.13), and labels seem to have no additional effect once participants have been made attentive of emissions (Table A.21), again suggesting a more rigid reaction by non-students. Comparing vegetarians and non-vegetarians, a similar picture emerges, with non-vegetarians reacting less precisely to emission amounts and previous understimation than vegetarians (Tables A.10 and A.14).

Table A.3. Socio-economic summary statistics for Experiment 1

Variable	Explanation	Mean	Std. Dev.
Age	Age of participant	24.27	6.9
Male	Dummy: 1 if participant is a man	0.33	–
Student	Dummy: 1 if participant is a student	0.80	–
Working	Dummy: 1 if participant is working in some form	0.62	–
Non-vegetarian	Dummy: 1 if participant eats meat	0.75	–
Hungry	Hunger on scale of 1 to 10 beginning experiment	5.16	2.58
N	288		

Notes: Table shows average socio-economic summary statistics for participants of Experiment 1.

Table A.4. Socio-economic summary statistics for Experiment 3

Variable	Explanation	Mean	Std. Dev.
Age	Age of participant	25.77	7.02
Male	Dummy: 1 if participant is a man	0.45	–
Student	Dummy: 1 if participant is a student	0.69	–
Working	Dummy: 1 if participant is working in some form	0.74	–
Non-vegetarian	Dummy: 1 if participant eats meat	0.76	–
Hungry	Hunger on scale of 1 to 10 beginning experiment	4.85	2.54
N	444		

Notes: Table shows average socio-economic summary statistics for participants of Experiment 3.

Table A.5. Socio-economic summary statistics for student canteen guests - survey data

Variable	Explanation	Mean	Std. Dev.
Age	Age of participant	22.90	–
Male	Dummy: 1 if participant is a man	0.41	–
Student	Dummy: 1 if guest is a student	0.94	–
Non-vegetarian	Dummy: 1 if guest eats meat	0.66	–
N	1,451		

Notes: Statistics are based on the surveys I conducted among student canteen guests in April and June. I include only survey respondents who visited a student canteen at least once in the 14-week study period and paid with their individual payment cards. See D.8 for details on the survey design. To preserve anonymity (since I also asked these survey participants about their study field), I elicited age in intervals. To reach an estimation of the mean age, I set the age equal to the midpoint of each interval. For 13% of respondents, I have the information that they are below 20. For the calculation, I estimate their age at 18. For 54% of respondents, I have the information that they are between 20 and 23 (which I set to 21.5 for the estimation), 21% of respondents are between 24 and 27 (set to 25.5), 6% of respondents are between 28 and 31 (set to 30), and 4% of respondents are 32 or older (set to 35). I did not directly elicit vegetarianism, but I elicited how much of a role animal rights play in participants' consumption decisions. I code participants reporting the highest degree of importance as vegetarians.

Table A.6. Socio-economic summary statistics for student canteen guests - consumption data

Variable	Explanation	Mean	Std. Dev.
Student	Dummy: 1 if guest is a student	0.85	–
Non-vegetarian	Dummy: 1 if guest eats meat	0.66	–
N	10,131		

Notes: Statistics are based on canteen purchases made with individual payment cards in the 14-week study period.

A.3 Descriptive statistics on baseline WTP for meals

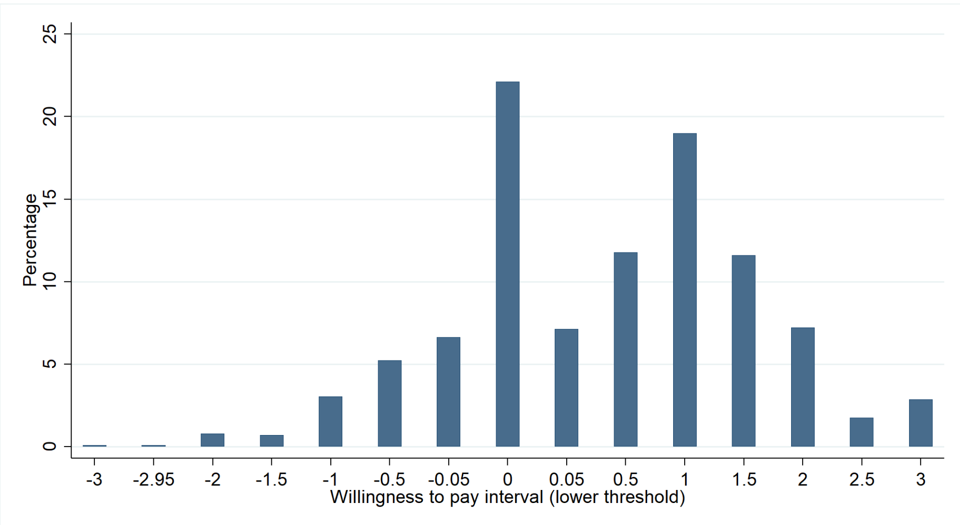


Figure A.1. WTP indicated for meals in the baseline purchase decisions in Experiment 1

Notes: $N = 1,148$ (287 participants making 4 baseline decisions each).

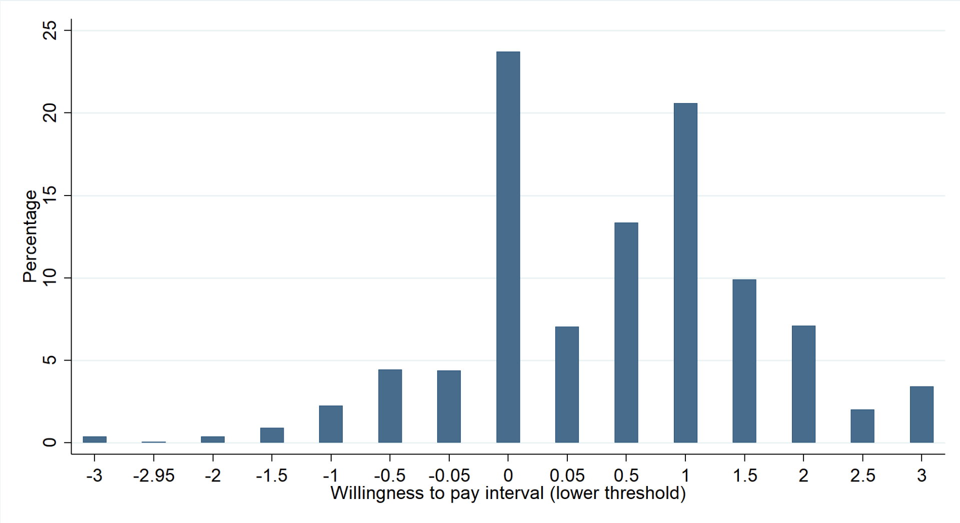


Figure A.2. WTP indicated for meals in the baseline purchase decisions in Experiment 3

Notes: $N = 1,776$ (444 participants making 4 baseline decisions each).

A.4 Simulation to calculate emission savings in Exp. 1

To estimate the emission savings conveyed by the data collected in Experiment 1, I simulate how experiment participants would have chosen on four days with a typical canteen offer. The offer on each of these exemplary days is as follows:

- Day 1: Canteen offers Filled courgettes with potato croquettes or Chicken Schnitzel with rice at a price of €3.05 each, as well as a cheese sandwich at a price of €1.50
- Day 2: Canteen offers Filled courgettes with potato croquettes or Beef ragout with potatoes at a price of €3.05 each, as well as a cheese sandwich at a price of €1.50
- Day 3: Canteen offers Italian vegetable ragout with pasta (€2.75) or Chicken Schnitzel with rice (€3.05), as well as a cheese sandwich at a price of €1.50
- Day 4: Canteen offers Italian vegetable ragout with pasta (€2.75) or Beef ragout with potatoes (€3.05), as well as a cheese sandwich at a price of €1.50

I chose the meals because these are the four meals I use in the baseline purchase decisions in Experiment 1 and I know participants' taste preferences for these meals accordingly. The student canteen in Bonn always offers one meat meal and one vegetarian meal, so I designed the four days to cover all possible combinations of the four meals. The four meals are regularly offered in the student canteen, and I use the student canteen's prices for these meals in the simulations. Further, the student canteen always offers cheese sandwiches and prices these at €1.50, so this is included on all days as a third option.

I then simulate in the following manner how each participant would have chosen between the three available options:

- For non-vegetarians: For each of the two warm meal options, I calculate the difference between the WTP participants indicated for this option relative to the cheese sandwich, and compare it to the true price difference between warm meal and sandwich. I assume the participant chooses the meal option for which this difference is the largest, i.e. consumer surplus is the highest. If the difference is negative, I assume they choose the cheese sandwich. For example, on Day 3, if a participant indicates a relative WTP of €2.00 both for the Chicken Schnitzel and the Italian vegetable ragout, I would compare the respective consumer surplus of €2.00 - €1.55 = €0.45 and €2.00 - €1.25 = €0.75, and assume that the participant would have chosen the Italian vegetable ragout on Day 3.
- For vegetarian participants, there is only one warm meal option offered in the canteen every day. Thus, I compare whether reported WTP relative to the cheese sandwich is higher than the relative price. For example, for Day 3, I would check whether relative WTP for the pasta is at least €1.25 and assume the participant then eats pasta, and assume they eat the cheese sandwich otherwise.

I include only participants in this condition who experience the LABEL condition during Exp. 1, and simulate these participants' choices once based on the WTP values they indicate at baseline, and then again based on the WTP they indicate when they see carbon labels. For each condition, I calculate and compare aggregate emission savings. Average emissions per lunch are 0.904 kg at baseline, and 0.861 kg with labels. The difference in emissions is thus 43 gram, or 4.8% of baseline emissions.

A.5 Distribution of individual treatment effects in Exp. 1

Using only observations from the 217 participants who experienced carbon labels in Experiment 1 (868 observations), I can run spec. (2) in Table 1 at the individual level. 59% of individual-level coefficients estimated are negative, 12% are zero, and 29% are positive. Estimated coefficients range between -6.2 and 2.4. Coefficients are plotted in Figure A.3 below. I truncate the 10% most extreme coefficient estimations for better readability.

Individual-level coefficients are largely in line with the coefficient estimated in the main analysis in Table 1 (-0.12). This suggests that the main result is not driven by few particular individuals, but reflected in the behavior of a majority of the sample.

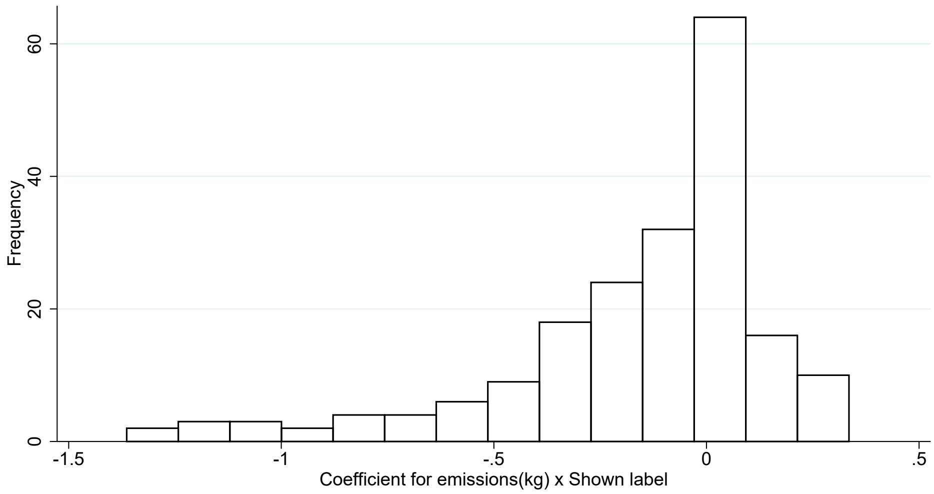


Figure A.3. Individual-level coefficients estimated in Experiment 1

Notes: Individual-level coefficients for "Emissions(kg) x Shown label" in Spec. (2) of Table 1. $N = 197$ (10% most extreme coefficients truncated).

A.6 Pre-registered main effects Exp. 1 and Exp. 3

Experiments 1 and 3 were pre-registered on #AEARCTR-0007858 and #AEARCTR-0008435.

For Experiment 1, besides the analysis shown in the main text, I pre-registered an analysis pooling all data from Experiments 1 and 3. I include a description of results and respective results below. Results are in line with those described in the main text and included here for completeness.

Table A.7 pools all data from Experiments 1 and 3. The baseline condition is the Control condition from Experiment 1, and rows 1 and 2 show that there is generally no effect of asking participants twice for their WTP, regardless of low- or high-emission meal. Rows 3 and 4 capture effects of participants seeing a carbon label, regardless of whether they are in a Label treatment, Attent+Label treatment, or an offset condition. I consider the offsetting notice participants in the offset conditions see to also be a carbon label and thus include them in this category. Rows 5 and 6 pick up differential effects of the offsetting treatments relative to the other labeling treatments. This is an increase in WTP for high-emission meals, in line with the labels removing some environmental guilt. Rows 7 and 8 pick up effects of being in an Attent condition (including Attent+Label and Attent+Offset, which decreases WTP for high-emission meals. Rows 9 and 10 test whether the Attent+Label condition is more or less than "the sum of its parts", since the Attent+Label treatment is captured both in the Attent and Label coefficients. With a negative coefficient on low-emission and a positive coefficient on high-emission meals, it is clearly less than the sum of its parts. Comparing effect sizes shows that increasing attention additionally to providing carbon labels even has zero additional effect, since coefficients in rows 9 and 10 more than cancel out coefficients in rows 7 and 8. Rows 11 and 12 capture any differential effect of the Attent+Offset treatment relative to Offset. There is no significant difference.

Table A.7. Experiments 1 and 3: Comparison of treatment effects

	Change in WTP compared to baseline
	(1)
Low	−0.05*
	(0.03)
High	0.02
	(0.02)
Low x Label	0.14***
	(0.04)
High x Label	−0.31***
	(0.05)
Low x Label x Offset	−0.03
	(0.04)
High x Label x Offset	0.23***
	(0.05)
Low x Attent	0.04
	(0.04)
High x Attent	−0.10***
	(0.03)
Low x Attent x Label	−0.12**
	(0.05)
High x Attent x Label	0.11**
	(0.05)
Low x Attent x Label x Offset	0.01
	(0.06)
High x Attent x Label x Offset	0.04
	(0.07)
Control for third round	0.00
	(0.01)
Participants control	139
Participants label	217
Participants offset	148
Participants attent	151
Participants attent+offset	293
Participants attent+label	293
Observations	5,848

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: This analysis was pre-registered in Schulze Tilling (2021b). Regression combines data from Experiments 1 and 3. Dependent variable: within-subject change in WTP for a meal, compared to baseline. Effects are split into effects for meals with low emissions (defined as meals with emissions lower than that of the alternative option, the cheese sandwich) and meals with high emissions (meals with emissions higher than the sandwich). The baseline condition is Control. "Low" and "High" respectively turn 1 for low-emission and high-emission meals. "Low x Label" and "High x Label" respectively turn 1 for low-emission and high-emission meals in the Label, Attent+Label, Attent+Offset and Offset conditions. I consider participants in the Offset condition as having received a labeling treatment, since they are shown a label indicating the emissions of each of the meal options (zero). Differing effects relative to the Label condition are captured by "Low x Label x Offset" and "High x Label x Offset", which respectively turn 1 for low-emission and high-emission meals in the Offset condition. "Low x Attent" and "High x Attent" respectively turn 1 for low-emission and high-emission meals in the Attention and Attention+Labels and Attention+Offset conditions. "Low x Attent+Label" and "High x Attent+Label" respectively turn 1 for low-emission and high-emission meals in the Attention+Labels condition. "Low x Attent+Offset" and "High x Attent+Offset" respectively turn 1 for low-emission and high-emission meals in the Attention+Offset condition. Standard errors are clustered at the individual level.

Tables A.8 and A.9 show the additional analyses I pre-registered for Experiment 3. I pre-registered to examine WTP for meals as the dependent variable, while including participant × meal fixed effects. As shown in section A.9 this is econometrically equivalent to using the change in WTP as the outcome variable, as I do in the main text analyses. I chose to use the change in WTP as the outcome variable in the main text for exposition reasons. Col. (1) of Table A.8 directly examines the effect of providing labels additionally to directing attention to carbon emissions, and the effect of offsetting relative to directing attention and providing labels. Similarly, Col. (2) performs a similar analysis interacting the emissions of each meal with treatments rather than using the Low and High indicators. Table A.9 further examines the effect of carbon offsetting relative to making participants attentive, excluding data from the ATTENT+LABEL condition. Col. (2) examines the effect of directing attention and offsetting as a function of emissions guessed by participants.

Table A.8. Experiment 3: Analysis label and offsetting effects

	WTP	
	(1)	(2)
Low x Attent x Label	−0.02	
	(0.03)	
High x Attent x Label	-0.10^{***}	
	(0.04)	
Low x Attent x Label x Offset	0.02	
	(0.02)	
High x Attent x Label x Offset	0.16^{***}	
	(0.02)	
Low x Attent	−0.03	
	(0.04)	
High x Attent	-0.08^{***}	
	(0.03)	
Emissions(kg) x Attent x Label		−0.01
		(0.03)
Emissions(kg) x Attent x Label x Offset		0.07^{***}
		(0.02)
Emissions(kg) x Attent		-0.07^{***}
		(0.02)
Attent x Label		-0.07^{**}
		(0.03)
Attent x Label x Offset		0.06^{***}
		(0.02)
Attent		−0.00
		(0.02)
Control for third round	−0.00	−0.00
	(0.01)	(0.01)
Participant x Meal FE	Yes	Yes
Participants attent	151	151
Participants attent+offset	293	293
Participants attent+label	293	293
Observations	5,328	5,328

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: This analysis was pre-registered in Schulze Tilling (2021a). Dependent variable: WTP for a meal. Regression specifications is similar to Equation 5, but additionally includes interactions for the Offset condition, and uses an approach with individual times meal fixed effects and WTP as the dependent variable (see section A.9 for details). Effects are split into effects for meals with low emissions (defined as meals with emissions lower than that of the alternative option, the cheese sandwich) and meals with high emissions (meals with emissions higher than the sandwich). All participants in this sample are attent. "Low x Attent" and "High x Attent" respectively turn 1 for low-emission and high-emission meals for all decisions in rounds 2 and 3. "Low x Attent x Label" and "High x Attent x Label" respectively turn 1 for low-emission and high-emission meals in the Attention+Labels, and Attention+Offset conditions. "Low x Attent x Label x Offset" and "High x Attent x Label x Offset" turns 1 for low-emission and high-emission meals in the Attention+Offset condition. Variables in Col. (2) are defined similarly, with a general indicator for each condition and an interaction between treatment indicator and the difference in emissions between meal and cheese sandwich. Includes only data from Experiment 3. Standard errors are clustered at the individual level.

Table A.9. Experiment 3: Analysis offseting effects based on participants' emission guesses

	WTP	
	(1)	(2)
Low x Attent x Label x Offset	−0.07	
	(0.07)	
High x Attent x Label x Offset	0.07**	
	(0.03)	
Low x Attent	0.04	
	(0.05)	
High x Attent	−0.07***	
	(0.02)	
Guessed emissions x Attent x Label x Offset		0.08*
		(0.04)
Guessed emissions x Attent		−0.08***
		(0.03)
Attent x Label x Offset		−0.00
		(0.04)
Attent		0.00
		(0.03)
Control for third round	−0.01	−0.01
	(0.02)	(0.02)
Participant x Meal FE	Yes	Yes
Participants attent	151	138
Participants attent+offset	293	267
Observations	4,156	3,751

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: This analysis was pre-registered in Schulze Tilling (2021a). Dependent variable: WTP for a meal. Here, the definition of low- and high-emission meals is based on participants' guesses for the meals and the cheese sandwich. This analysis excludes participants in the Attent+Label condition. Low-emission meals are meals for which the respective participant guessed lower emissions than for the cheese sandwich, and vice versa. Similarly, Col. (2) uses the guessed difference in emissions. In this analysis, I exclude, for each meal, those observations with the 10% most extreme guesses to avoid results being driven by outliers. Standard errors are clustered at the individual level.

A.7 Results split by (non-) vegetarians and (non-) students

Experiment 1.

	Change in WTP compared to baseline	
	(1)	(2)
High emission meal x Shown label	-0.26***	
	(0.05)	
Low emission meal x Shown label	0.17***	
	(0.06)	
High emission meal	0.00	
	(0.02)	
Low emission meal	-0.10**	
	(0.05)	
Emissions(kg) x Shown label		-0.12***
		(0.03)
Emissions(kg)		0.03**
		(0.01)
label		-0.04
		(0.04)
Control for third round	0.01	0.01
	(0.04)	(0.04)
Constant		-0.05*
		(0.03)
Participants control	96	96
Participants treated	169	169
Observations	1,244	1,244

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.10. Replication of Table 1 including only non-vegetarians

	Change in WTP compared to baseline	
	(1)	(2)
High emission meal x Shown label	-0.53***	
	(0.11)	
Low emission meal x Shown label	0.11	
	(0.07)	
High emission meal	0.06	
	(0.05)	
Low emission meal	-0.02	
	(0.04)	
Emissions(kg) x Shown label		-0.75***
		(0.18)
Emissions(kg)		0.08
		(0.08)
label		-0.08
		(0.05)
Control for third round	0.04	0.04
	(0.04)	(0.04)
Constant		0.00
		(0.02)
Participants control	43	43
Participants treated	48	48
Observations	460	460

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.11. Replication of Table 1 including only vegetarians

	Change in WTP compared to baseline	
	(1)	(2)
High emission meal x Shown label	-0.29***	
	(0.05)	
Low emission meal x Shown label	0.15***	
	(0.05)	
High emission meal	-0.01	
	(0.02)	
Low emission meal	-0.08**	
	(0.03)	
Emissions(kg) x Shown label		-0.13***
		(0.03)
Emissions(kg)		0.01
		(0.01)
label		-0.05
		(0.04)
Control for third round	0.01	0.01
	(0.03)	(0.03)
Constant		-0.04**
		(0.02)
Participants control	114	114
Participants treated	169	169
Observations	1,372	1,372

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.12. Replication of Table 1 including only students

	Change in WTP compared to baseline	
	(1)	(2)
High emission meal x Shown label	-0.41***	
	(0.09)	
Low emission meal x Shown label	0.03	
	(0.07)	
High emission meal	0.12**	
	(0.06)	
Low emission meal	0.08	
	(0.07)	
Emissions(kg) x Shown label		-0.08
		(0.08)
Emissions(kg)		0.02
		(0.03)
label		-0.22***
		(0.07)
Control for third round	0.05	0.05
	(0.09)	(0.09)
Constant		0.10*
		(0.06)
Participants control	25	25
Participants treated	48	48
Observations	332	332

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.13. Replication of Table 1 including only non-students

Experiment 3.

	Change in WTP compared to baseline	
	(1)	(2)
Underestimated emissions	-0.11**	
	(0.04)	
Underestimation (in kg)		-0.06**
		(0.03)
Control for third round	0.05	0.05
	(0.05)	(0.05)
Constant	-0.12***	-0.16***
	(0.04)	(0.04)
Participants	227	220
Obs. underestimate	451	420
Obs. overestimate	418	367
Observations	869	787

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.14. Replication of Table 4.3 including only non-vegetarians

	Change in WTP compared to baseline	
	(1)	(2)
Underestimated emissions	-0.21***	
	(0.07)	
Underestimation (in kg)		-0.14**
		(0.06)
Control for third round	0.05	0.13
	(0.10)	(0.09)
Constant	-0.02	-0.18**
	(0.09)	(0.07)
Participants	66	64
Obs. underestimate	104	96
Obs. overestimate	144	130
Observations	248	226

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.15. Replication of Table 4.3 including only vegetarians

	Change in WTP compared to baseline	
	(1)	(2)
Underestimated emissions	-0.18***	
	(0.04)	
Underestimation (in kg)		-0.10***
		(0.03)
Control for third round	0.10*	0.11**
	(0.05)	(0.06)
Constant	-0.12**	-0.21***
	(0.05)	(0.04)
Participants	203	198
Obs. underestimate	383	361
Obs. overestimate	391	340
Observations	774	701

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.16. Replication of Table 4.3 including only students

	Change in WTP compared to baseline	
	(1)	(2)
Underestimated emissions	-0.00	
	(0.05)	
Underestimation (in kg)		-0.02
		(0.04)
Control for third round	-0.06	-0.06
	(0.08)	(0.09)
Constant	-0.05	-0.05
	(0.06)	(0.05)
Participants	90	86
Obs. underestimate	172	158
Obs. overestimate	171	153
Observations	343	311

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.17. Replication of Table 4.3 including only non-students

	Change in WTP compared to baseline
	(1)
High emission meal x Shown label	-0.10**
	(0.04)
Low emission meal x Shown label	-0.06
	(0.05)
High emission meal	-0.11***
	(0.03)
Low emission meal	-0.01
	(0.04)
Control for third round	0.04
	(0.03)
Participants attent	112
Participants label	227
Observations	1,804

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.18. Replication of Table 5 including only non-vegetarians

	Change in WTP compared to baseline
	(1)
High emission meal x Shown label	-0.12
	(0.08)
Low emission meal x Shown label	0.03
	(0.06)
High emission meal	-0.05
	(0.04)
Low emission meal	-0.04
	(0.04)
Control for third round	0.02
	(0.04)
Participants attent	39
Participants label	66
Observations	576

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.19. Replication of Table 5 including only vegetarians

	Change in WTP compared to baseline
	(1)
High emission meal x Shown label	-0.17***
	(0.04)
Low emission meal x Shown label	-0.02
	(0.05)
High emission meal	-0.08***
	(0.03)
Low emission meal	-0.03
	(0.03)
Control for third round	0.05*
	(0.03)
Participants attent	104
Participants label	203
Observations	1,644

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.20. Replication of Table 5 including only students.

	Change in WTP compared to baseline
	(1)
High emission meal x Shown label	0.04
	(0.08)
Low emission meal x Shown label	-0.03
	(0.08)
High emission meal	-0.14**
	(0.06)
Low emission meal	-0.00
	(0.06)
Control for third round	-0.01
	(0.04)
Participants attent	47
Participants label	90
Observations	736

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.21. Replication of Table 5 including only non-students

A.8 Replication excluding round 3 observations

Table A.22. Replication of Table 1 excluding round 3 observations

	Change in WTP compared to baseline	
	(1)	(2)
High emission meal x Shown label	−0.34***	
	(0.06)	
Low emission meal x Shown label	0.15**	
	(0.06)	
High emission meal	0.02	
	(0.02)	
Low emission meal	−0.05	
	(0.03)	
Emissions(kg) x Shown label		−0.15***
		(0.04)
Emissions(kg)		0.03**
		(0.01)
Shown label		−0.07*
		(0.04)
Control for third round		
Constant		−0.02
		(0.02)
Participants control	139	139
Participants treated	148	148
Observations	1, 148	1, 148

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.23. Replication of Table 4.3 excluding round 3 observations

	Change in WTP compared to baseline	
	(1)	(2)
Underestimated emissions	-0.12^{**}	
	(0.05)	
Underestimation (in kg)		-0.06^{*}
		(0.03)
Constant	-0.10^{**}	-0.17^{***}
	(0.04)	(0.03)
Participants	144	140
Obs. underestimate	269	248
Obs. overestimate	281	248
Observations	550	496

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.24. Replication of Table 5 excluding round 3 observations

	Change in WTP compared to baseline
	(1)
High emission meal x Shown label	-0.11^{**}
	(0.05)
Low emission meal x Shown label	-0.06
	(0.05)
High emission meal	-0.09^{***}
	(0.03)
Low emission meal	-0.01
	(0.03)
Control for third round	
Participants attent	151
Participants label	144
Observations	1,180

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

A.9 Exp. 1: Alternative econometric specifications

Alternatively to the estimation approach described in Section 2.2, one could instead estimate the following specification:

$$WTP_{ijm} = \alpha_{im} + \beta_1(High_m \times Post_j) + \beta_2(Low_m \times Post_j) + \delta_1(High_m \times Post_j \times Label_{ij}) + \delta_2(Low_m \times Post_j * Label_{ij}) + ThirdRound_j + \varepsilon_{ijm} \quad \text{(A.1)}$$

This specification is more similar to a classic diff-in-diff approach. Instead of directly using the difference between indicated WTP for a meal and baseline WTP as the dependent variable (as in 1), I use raw WTP of individual i in round j for meal m as the dependent variable. Accordingly, I also include observations from the baseline elicitation round in the regression.

α_{im} are individual and meal-specific fixed effects. These are 1156 fixed effects in total: 289 participants × 4 meals. These fixed effects control for individual-specific baseline tastes. Note that it would not make much sense to include merely a single fixed effect for each individual. A single fixed effect would capture the average WTP of each individual across the four meals. However, I expect the effect of the carbon labels to differ across meals. WTP for low-emission meals should increase as a result of the label, while WTP for high-emission meals should decrease. It is thus insufficient to control for individuals' WTP averaged across meals. To illustrate with an example, imagine I only had two meals, one low-emission and one high-emission meal. An individual has a WTP of €1.00 for the low-emission meal and a WTP of €3.00 for the high-emission meal. When the individual sees the carbon labels, he adjusts his WTP for the low-emission meal upward to €2.00 euros, and his WTP for the high-emission meal downward to €2.00 euros. Treatment effects are thus sizable. However, his average WTP for the two meals did not change, and a regression including a single individual fixed effect term would falsely not identify a treatment effect.

$(High_m \times Post_j)$ is an indicator variable for whether the meal causes higher emissions than the sandwich, and interacted with the elicitation round $j > 1$, i.e. it being the second or third round of elicitations and not the baseline round. $(Low_m \times Post_j)$ is the equivalent indicator for low-emission meals. Note that all meals classified are classified either as Low_m or $High_m$. The two variables thus together capture the $Post_j$ effect, and a separate $Post_j$ indicator would be dropped due to collinearity. I also do not include separate controls for Low_m and $High_m$ since meal characteristics are captured by the α_{im} fixed effects.

$(High_m \times Post_j \times Label_{ij})$ interacts the high-emission and $Post_j$ indicator with an indicator for whether individual i saw carbon labels in round j. This describes the average causal effect of carbon labels on WTP for a meal that is high in carbon emissions. $(Low_m \times Post_j \times Label_{ij})$ describes the average causal effect of carbon labels on WTP for a meal that is low in carbon emissions. $ThirdRound_j$ is an indicator of whether it was the third round of decisions. Standard errors are clustered at the individual level.

Spec. (1) in Table A.25 shows regression results. They are very similar to those reported in the main text. Spec. (2) replicates Spec. (2) of Table 1 with a fixed effect approach and also finds similar results as reported in the main text.

Table A.25. Replication of Experiment 1 results with fixed effects approach

	WTP	
	(1)	(2)
High x Post x Label	-0.30^{***}	
	(0.04)	
Low x Post x Label	0.09^{**}	
	(0.04)	
High x Post	0.01	
	(0.02)	
Low x Post	−0.03	
	(0.04)	
Emissions(kg) x Post x Label		-0.12^{***}
		(0.03)
Emissions(kg) x Post		0.01
		(0.01)
Post x Label		-0.08^{***}
		(0.03)
Post		−0.02
		(0.02)
Control for third round	0.01	0.01
	(0.03)	(0.03)
Constant	0.65^{***}	0.65^{***}
	(0.01)	(0.01)
Participant x Meal FE	Yes	Yes
Participants control	139	139
Participants treated	217	217
Observations	2,852	2,852

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: Table replicates the estimation in Table 1 using WTP for meals directly as the outcome variable, instead of taking the difference. Spec. (1) corresponds to Equation A.1 and includes individual× meal fixed effects. It does not include a "Post" or a "Post× Label" variable, because "Low emissions meal" and "High emissions meal" are mutually exclusive. In spec. (2), emissions (kg) are defined as the emissions caused by the meal relative to the cheese sandwich. This is positive for "high-emission" and negative for "low-emission" meals. Standard errors are clustered at the individual level.

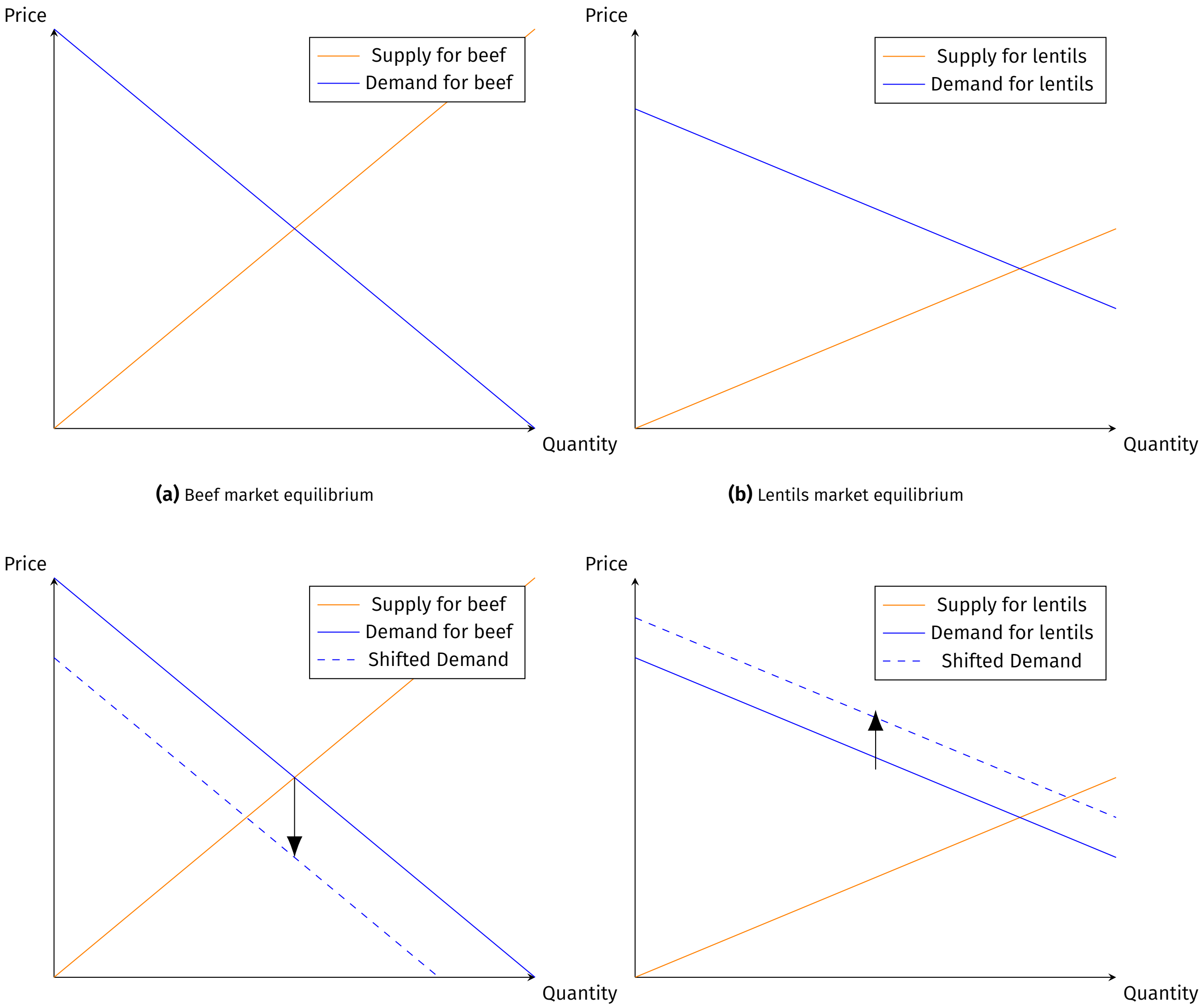
A.10 Exp. 1: Intuition behind expressing effect sizes in terms of a carbon tax

One of the main results shown in section 2.3 is that carbon labels in Experiment 1 produce a similar impact as would result from a carbon tax of €0.12 per kg or €120 per tonne. The underlying assumption for this comparison is that a shift in the demand curve due to the installation of carbon labels affects total quantity similarly as a would a shift in the demand curve due to the installation of a carbon tax.

To illustrate this point, I first show in Figure A.4 how carbon labels and a carbon tax would affect price and quantity purchased in two specific product markets: beef and lentils. Images (a) and (b) show a stylized illustration of how the current market equilibrium in the beef market and the lentils market might look like. In each market, the equilibrium price and quantity is determined by the intersection of the supply and demand curves. Image (c) shows how the beef market would be affected by a downward shift in the demand curve. This shift in the demand curve could either result from consumers being willing to pay less for beef due to carbon labels, or consumers being willing to pay less because a carbon tax will be added to their purchase. The downward shift in the demand curve leads to the demand curve and supply curve now intersecting at a lower price and a lower quantity. Image (d) shows how the lentils market would be affected by an upward shift in the demand curve. This shift could again either result from consumers being willing to pay more for lentils as they recognize their good environmental performance on the carbon labels, or consumers being willing to pay more because there will be no carbon tax added to their purchase. The upward shift in the demand curve leads to the demand curve and supply curve now intersecting at a higher price and a higher quantity.

More generally, one could think of demand for emission-heavy goods in a more abstract sense, with there being some demand curve describing consumer demand for different items as a function of how much emissions result from their production. A carbon tax would shift this demand curve downward, just as would carbon labels. My analysis in section 2.3 quantifies the shift occurring through the labels in terms of which height of a carbon tax would be required to shift this demand curve downward by the same extent. Note that my estimate of €0.12 per kg averages over all participants, i.e. it already incorporates that some consumers might be reacting to the labels more strongly than other consumers.

Importantly, my €120 per tonne equivalence result describes participant behavior in Experiment 1, i.e. it is specific to a certain population group and consumption context. To reach a carbon tax equivalence estimate for e.g. the entire German or European market, data from other population groups and consumption contexts is needed.



(a) Beef market equilibrium

(b) Lentils market equilibrium

(c) Shifted demand in beef market

(d) Shifted demand in lentils market

Figure A.4. Comparison of supply and demand in beef and lentils markets

A.11 Exp. 3: Descriptives on under- and over-estimation

Table A.26. Under- and over-estimation of meal emissions

Meal	Relative emissions	No. underestimated	No. overestimated	No. correct	Total
Vegetable pasta	-0.2 kg	31	249	13	293
Chicken w. rice	0.7 kg	47	163	17	227
Courgettes w. fries	0.7 kg	249	33	11	293
Cheese pasta	0.5 kg	31	24	11	66
Beef w. potatoes	2.7 kg	193	32	2	227
Stir-fried veg.	-0.3 kg	4	61	1	66
Total	654	459	59	55	1.172

Notes: Based on participants in the ATTENT+LABEL treatment. I show under- and overestimation of the emissions caused by those meals that are also used in the experiment decisions. Relative emissions are emissions relative to the cheese sandwich (0.7 kg). I classify a participant as underestimating this amount if their guess for the meal's emissions minus their guess for the cheese sandwich is lower than the actual relative emissions. I classify a participant as overestimating this amount if their guess for the meal's emissions minus their guess for the cheese sandwich is higher than the actual relative emissions.

Table A.27. Number of under- and over-estimations per participant

No. overestimated	0	1	2	3	4	Total
No. underestimated						
0	0	0	0	2	10	12
1	0	1	21	54	0	76
2	1	24	128	0	0	153
3	4	31	0	0	0	35
4	17	0	0	0	0	17
Total	22	56	149	56	10	293

Notes: Relative emissions are emissions relative to the cheese sandwich (0.7 kg). I classify a participant as underestimating this amount if their guess for the meal's emissions minus their guess for the cheese sandwich is lower than the actual relative emissions. I classify a participant as overestimating this amount if their guess for the meal's emissions minus their guess for the cheese sandwich is higher than the actual relative emissions. Each cell shows the number of participants with the respective number of under- or over-estimations.

Table A.28. Number of participants who correctly guessed how the four decision meals rank relative to each other

No. of correctly ranked meals	No. participants
0	11
2	88
3	188
4	6
Total	293

Notes: If a participant indicated emission values for the four decision meals such that the value he indicates for the lowest-ranking meal is the lowest in his ranking, the second-lowest-ranking meal is the second-lowest in his ranking, the third-lowest-ranking meal is the third-lowest, etc. I count him as getting all four relative ranks right. This is true for six participants. 188 participants got three relative ranks right, and 88 got two relative ranks right (i.e. two meals stood in the correct relationship to each other).

A.12 Exp. 3: Results using alternative definitions

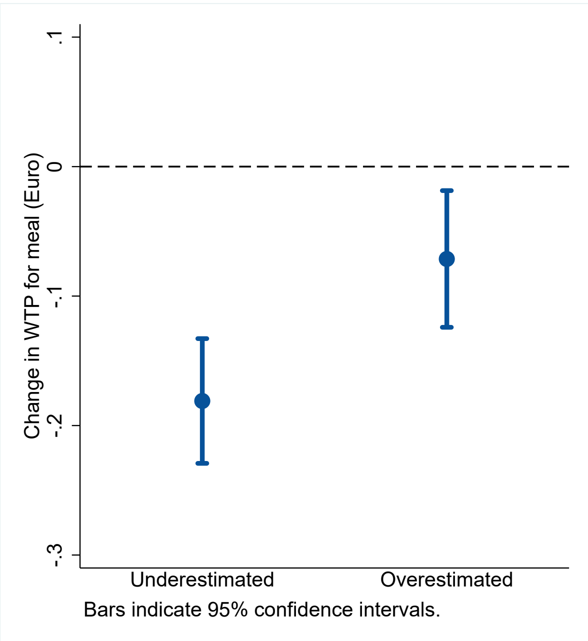


Figure A.5. Replication of Figure 12 based on under- or over-estimation of the meal. Notes: Figure based on under- or over-estimation of the meal instead of under- or over-estimation of the difference in emissions between the meal and the cheese sandwich. Bars indicate 95% confidence intervals.

	Change in WTP compared to baseline	
	(1)	(2)
Underestimated emissions	-0.11^{***}	
	(0.04)	
Underestimation (in kg)		-0.04
		(0.03)
Control for third round	0.05	0.07
	(0.04)	(0.05)
Constant	-0.10^{***}	-0.17^{***}
	(0.03)	(0.03)
Participants	293	269
Obs. underestimate	701	690
Obs. overestimate	471	375
Observations	1,172	1,065

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.29. Replication of Table 4.3 based on under- or over-estimation of the meal. Notes: Regression based on under- or over-estimation of the emissions caused by the meal instead of under- or overestimation of the difference in emissions between the meal and the cheese sandwich. Bars indicate 95% confidence intervals. For each meal, the 10% most extreme guesses (in terms of deviation from the true emission difference) are dropped.

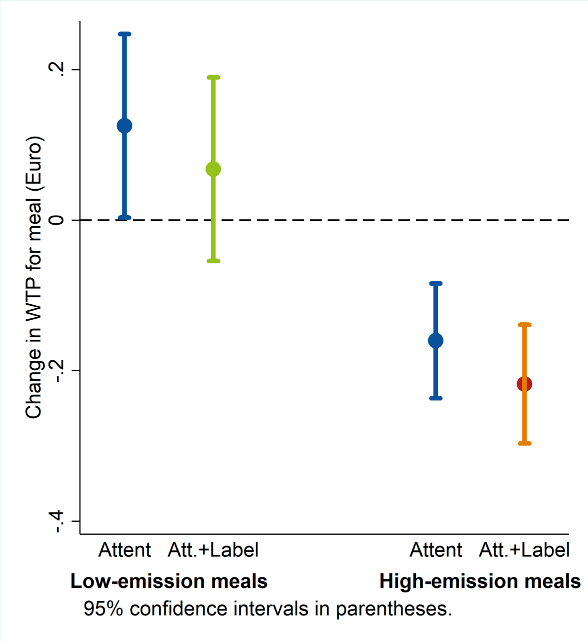


Figure A.6. Replication of Figure 13 with only accurate guesses, Notes: Includes only participant-meal combinations where emissions were guessed accurately enough to receive a bonus payment (guess within 20% of true value, 543 observations). Bars indicate 95% confidence intervals.

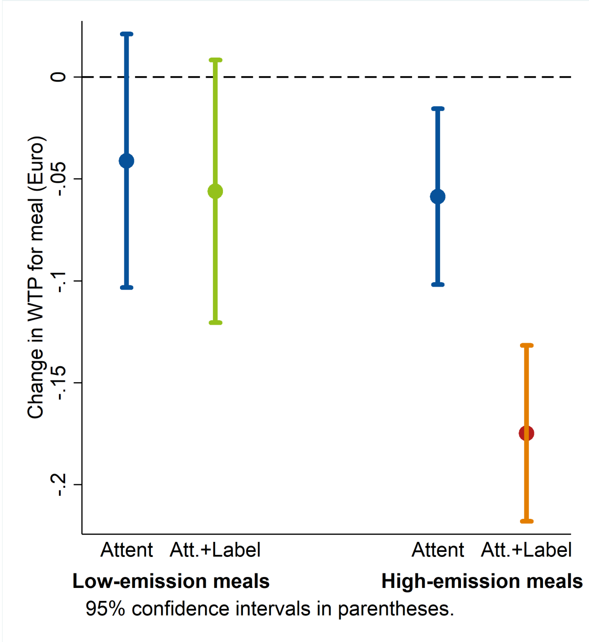


Figure A.7. Replication of Figure 13 with only inaccurate guesses. Notes: Includes only participant-meal combinations where emissions were not guessed accurately enough to receive a bonus payment (guess not within 20% of true value, 1,837 observations)

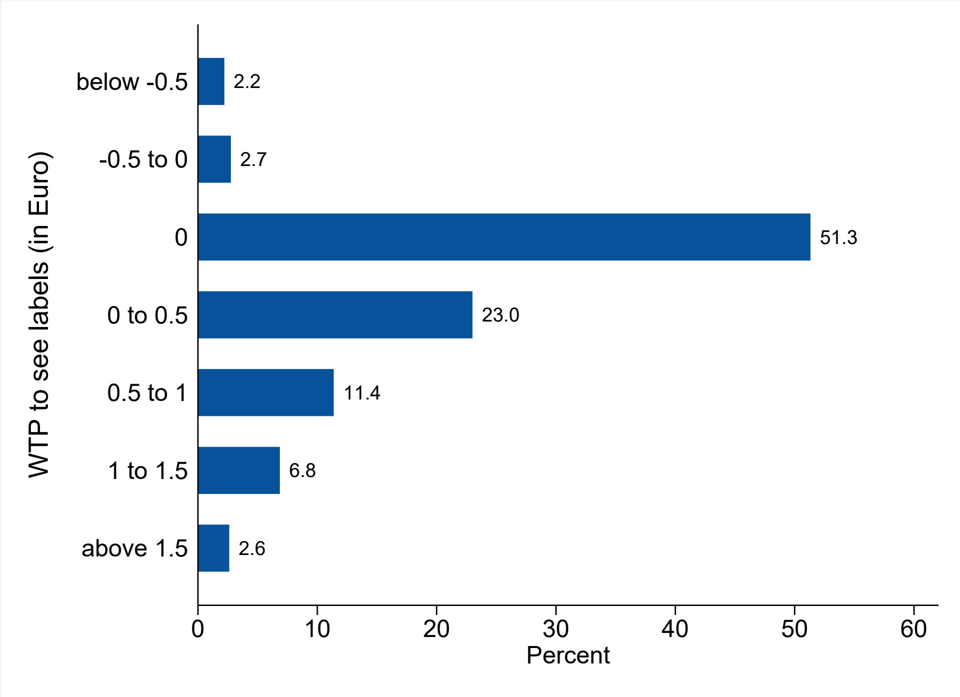


Figure A.8. Distribution of WTP indicated to see carbon labels on the final three consumption decisions

Notes: In Euro. Based on Experiments 1 and Experiment 3. Includes data from all 731 participants.

A.13 Participants' WTP for the presence of carbon labels

Table A.30. WTP for seeing carbon labels by treatment group

	WTP for labels
	(1)
Control, then Labels	−0.13
	(0.08)
Labels, then Offset	−0.11
	(0.08)
Attent, then Attent	−0.08
	(0.07)
Attent+Label, then Offset	−0.07
	(0.07)
Attent+Offset, then Labels	−0.04
	(0.07)
Constant	0.28***
	(0.06)
Participants control, then Control	70
Participants Control, then Labels	69
Participants Labels, then Offset	148
Participants Attent, then Attent	151
Participants Attent+Offset, then Labels	149
Participants Attent+Label, then Offset	144
Observations	731

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: Average deviation from the average WTP to see emission labels for the final three consumption decisions, by treatment group. “Control, then Control” is the baseline condition.

Table A.31. Correlation between WTP for seeing carbon labels and individual characteristics

	WTP for the presence of carbon labels				
	(1)	(2)	(3)	(4)	(5)
Perceived strength of social norms	0.01**				
	(0.01)				
In favor of labels in student restaurant		0.03***			
		(0.01)			
Self-reported willingness to use info			0.03***		
			(0.01)		
Self-reported confidence in own knowledge				−0.01	
				(0.01)	
Eating self-control					0.00
					(0.01)
Constant	0.15***	−0.03	0.03	0.18***	0.21***
	(0.03)	(0.06)	(0.04)	(0.02)	(0.02)
Observations	731	731	731	731	731

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: Notes: Dependent variable: WTP for seeing labels (in Euro) for the final three consumption decisions. “In favor of labels in student canteen” is measuring using approval of the statement “I would appreciate if the student canteen would introduce such a measure”. “Self-reported willingness to use info” is measured using approval of the statement “I would include this information in my decision.”. “Self-reported confidence in own knowledge” is measured with two questions: (1) approval of the statement “I already know without labels which emissions are caused by different meals.”, and (2) “I think this information will partially surprise me.” The perceived strength of social norms is measured using the procedure developed by Krupka and Weber (2013). Eating self-control is measured using the questions developed by Haws, Davis, and Dholakia (2016).

Table A.32. Correlation between WTP for seeing carbon labels and treatment effect

	WTP for labels	
	(1)	(2)
Estimate of individual's reaction to kg emissions	−0.06	
	(0.08)	
Estimate of individual's fixed reaction		−0.16
		(0.10)
Constant	0.19***	0.18***
	(0.02)	(0.02)
Participants Control, then Labels		69
Participants Labels, then Offset		148
Participants Attent+Offset, then Labels		149
Participants Attent+Label, then Offset		144
Observations	510	510

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: Dependent variable: WTP for seeing labels for the final three consumption decisions. Independent variables: I perform the analysis shown in Col. (2) of Table 1 separately for each individual shown carbon labels during the experiment. Col. (1) regresses individual's WTP for carbon labels on the coefficient I estimated for the individual for "Emissions(kg) x Shown label", i.e. the person's reaction dependent on emissions caused by the meal. Col. (2) regresses individual's WTP for carbon labels on the coefficient I estimated for the fixed effect of "Shown label", i.e. the fixed reaction I estimate for this individual independent of meal emissions. The coefficients suggest that there is a correlation between showing a stronger reaction to carbon labels and being willing to pay a higher amount to be shown the labels.

A.14 Details of structural estimation and simulations

A.14.1 Estimation of basic model. To estimate the parameters of the structural model presented in section 6, I rewrite equations 11 to 14 as follows:

For equation A.2, I subtract equation 11 from equation 13:

$$WTP^{A+L} - WTP^{B} \;=\; \gamma(e_{im}^{prior} - e_{io}^{prior})(\kappa - \theta) + \gamma(e_{im} - e_{io})(1-\kappa) \tag{A.2}$$

For equation A.3, I subtract equation 11 from equation 12:

$$WTP^{A} - WTP^{B} \;=\; \gamma(e_{im}^{prior} - e_{io}^{prior})(1-\theta) \tag{A.3}$$

For equation A.4, I subtract equation 13 from equation 14:

$$WTP^{A+O} - WTP^{A+L} \;=\; -\gamma(e_{im}^{true} - e_{io}^{true})(1-\kappa) - \gamma(e_{im}^{prior} - e_{io}^{prior})\kappa \tag{A.4}$$

I then use data from Experiment 3 to estimate the parameters. To reduce the effect of outliers, I drop, for each meal, the 10% of observations pertaining to the 10% most extreme guesses. This leaves me with 1.056 observations from 284 participants to estimate equation A.2, 1.1104 observations from 146 participants to estimate equation A.3, and 1.056 observations from 284 participants to estimate equation A.4. For a better understanding of these observation and participant numbers, see Figure 9 that illustrates how experiment participants are allocated to the different treatment conditions in Experiment 3. I estimate the three equations simultaneously using GMM in Stata, from the starting values Gamma=0.107, Theta=0.038, and Kappa=0.168.

A.14.2 Estimation of model extended to welfare impact. To additionally estimate the effect of the labels on consumer welfare, I include an adapted version of equation 10 in the estimation. Specifically, I adapt it in two ways to reflect the experiment setting:

- I use participants' WTP to see or avoid carbon labels as a proxy for $u(P=1) - u(P=0)$. However, the mere act of asking participants whether they would like to see carbon labels makes them attentive of emissions. Thus, the counterfactual they will compare their choice under carbon labels, m^L, to will be the choice they make when attentive of carbon emissions, m^A.
- Participants indicate their WTP for meals relative to the cheese sandwich. I thus adapt equation 9 to be expressed relative to the consumption utility obtained from the outside option (cheese sandwich), o_m, the emissions caused by the outside option, e_o^{true}, and price of the outside option, p_o.

Then, the difference in utility consumers' experience in the presence of carbon labels, $u(P=1)$ relative to utility in the absence of labels, $u(P=0)$, is

$$u(P \;=\; 1) - u(P \;=\; 0) \;=\; u^{True}(m^{*L}) - u^{True}(m^{*A}) + F \tag{A.5}$$

and the true utility the consumer reaps from meal m in the experiment context is

$$u^{True}(m) \;=\; v_m - o_m - \gamma(e_m^{\text{true}} - e_o^{\text{true}}) - p_m - p_o \tag{A.6}$$

In the experiment setting, there are only two possible cases in which $u^{True}(m^{*L}) - u^{True}(m^{*A}) \neq 0$:

(1) The WTP which the participant indicates when seeing labels, WTP^{A+L} is higher than the price $p_m - p_o$ to receive meal m rather than the outside option o, but $WTP^{A} < p_m - p_o$

(2) The WTP which the participant indicates merely attentive, WTP^{A} is higher than the price $p_m - p_o$ to receive meal m rather than the outside option o, but $WTP^{A+L} < p_m - p_o$

In the experiment context, equation A.5 thus further transforms to:

$$
\begin{aligned}
u(P = 1) - u(P = 0) &= \mathbb{1}\Big(WTP^{A+L} \geq p_m - p_o\Big) \\
&\Big(v_m - o_m - \gamma(e_m^{\text{true}} - e_o^{\text{true}}) - E[p_m - p_o | WTP^{A+L} \geq p_m - p_o]\Big) \\
-\mathbb{1}\Big(WTP^{A} \geq p_m - p_o\Big)&\Big(v_m - o_m - \gamma(e_m^{\text{true}} - e_o^{\text{true}}) - E[p_m - p_o | WTP^{A} \geq p_m - p_o]\Big) + F
\end{aligned} \tag{A.7}
$$

When the participant indicates her WTP for the presence of labels, she weights each event with the probability of it occurring:

$$
\begin{aligned}
WTP^{P} &= Prob\Big(WTP^{A+L} \geq p_m - p_o\Big)\Big(v_m - o_m - \gamma(e_m^{\text{true}} - e_o^{\text{true}}) - E[p_m - p_o | \hat{V}_m^{L} \geq p_m - p_o]\Big) \\
&-Prob\Big(WTP^{A} \geq p_m - p_o\Big)\Big(v_m - o_m - \gamma(e_m^{\text{true}} - e_o^{\text{true}}) - E[p_m - p_o | \hat{V}_m^{A} \geq p_m - p_o]\Big) \\
&+F
\end{aligned} \tag{A.8}
$$

In the experiment, relative meal prices $p_m - p_o$ are drawn from a uniform distribution, with each value between -3 and 3 being equally likely, in five-step intervals. Thus, $Prob(p \leq x) = (x+3)/6$. Similarly, $E[p | p \leq x] = (x-3)/2$. Inserting this above:

$$
\begin{aligned}
WTP^{P} &= \Big((WTP^{A+L} + 3)/6\Big)\Big(v_m - o_m - \gamma(e_m^{\text{true}} - e_o^{\text{true}}) - (WTP^{A+L} - 3)/2\Big) \\
&-\Big((WTP^{A} + 3)/6\Big)\Big(v_m - o_m - \gamma(e_m^{\text{true}} - e_o^{\text{true}}) - (WTP^{A} - 3)/2\Big) + F
\end{aligned} \tag{A.9}
$$

For the estimation including welfare impact, I add equation A.9 to the estimation of equations A.2 to A.4, as well as participants' WTP for the presence of labels, and estimate the four equations simultaneously. In Col. (6), I use only observations from those having experienced the ATTENT+LABEL condition to estimate equation A.9, since those participants who experienced only the ATTENT condition might not be able to form accurate expectations over the items in equation A.9. This leaves 1.056 observations from 284 participants to estimate equation A.2, 1.104 observations from 146 participants to estimate equation A.3, 1.056 observations from 284 participants to estimate equation A.4, and 1.056 observations from 284 participants to estimate equation A.9 in Col. (6), and 2.160 observations from 430 participants in Col. (7).

I estimate equation A.9 for every meal I observe participants' choices on, using the same WTP^{P} for a single individual (as each participants only indicates his WTP to see carbon labels once), but using participant and meal-specific baseline WTP, emission values, and emission guesses. By using this estimation method, I essentially assume that participants form their valuation for the presence of carbon labels based on the emission labels to the meals they were shown beforehand. When I ask experiment participants for their WTP for the presence of labels on their three final meals, I do not tell them in advance which meals these will be, and only tell them that these will be three new meals which they have not seen in the experiment previously. It would thus be natural that participants extrapolate from the meal choices they made previously in the experiment.

A.14.3 Estimation results. Table A.33 shows estimation results. Col. (1) - (5) estimate the basic model, while Col. (6) and (7) estimate the extension of the model to consumer welfare. Column (1) shows the main basic specification,and col. (2)-(5) show that estimates are similar in alternative specifications of the basic model. In column (2), I re-estimate the model imposing that $\kappa = 0$, i.e. that individuals completely trust the emissions information. In column (3), I re-estimate the model imposing that $\theta = 0$, i.e. that individuals are completely inattentive to carbon emissions in the absence of an intervention. In column (4), I impose $\theta = \kappa = 0$. In column (5), I impose $\theta = 1$, assuming that consumers are fully attentive to carbon emissions, even in the absence of labels.

Estimated parameters are similar in the extended model. Participants in the ATTENTION condition have not seen emission labels before indicating their WTP for the presence of labels, and would thus have to form a less informed expectation over the first two terms in A.9. I thus do not include them in the main estimation of F (Col.(6) in Table A.33. Col. (7) in Table A.33 includes these observations and estimates similar to the previous specification. Table A.30 shows that the average WTP indicated for the presence of carbon labels does not differ across treatments.

Table A.33. Structural estimates of model parameters including data on WTP for the presence of carbon labels

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Theta	0.16	0.03				0.18	0.18
	(0.18)	(0.17)				(0.17)	(0.17)
Gamma	-0.12^{***}	-0.10^{***}	-0.10^{***}	-0.10^{***}	-0.12^{***}	0.12^{***}	0.12^{***}
	(0.02)	(0.01)	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)
Kappa	0.21		0.12		0.12	0.23	0.23
	(0.20)		(0.19)		(0.21)	(0.20)	(0.20)
F						0.21^{***}	0.20^{***}
						(0.01)	(0.01)
Observations	3,216	3,216	3,216	3,216	3,216	3,216	3,216

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: Analysis is based on data from Experiment 3. For each meal, the observations corresponding to the 10% most extreme guesses of the difference in emissions to the cheese sandwich (in terms of deviation from the true emission value) are dropped. Regression does not include a constant, since the estimation follows the model outlined in Section 2. Column (1) shows the main estimation, based on equations A.3, A.2, A.4. Columns (2)–Column (5) each modify the model in Column (1) as follows: Column (2) imposes $\kappa = 0$. Column (3) imposes $\theta = 0$. Column (4) imposes $\theta = \kappa = 0$. Column (5) imposes $\theta = 1$. Column (6) shows values estimated for the model extended to consumer welfare. Column (2) includes values for WTP for the presence of labels indicated by participants in the ATTENTION treatment.

A.14.4 Simulation of the effects of different interventions. In the model described in Section 6, introducing carbon labels affects consumers by making them both informed and attentive. Using estimated parameters, I can compare the importance of each of these two effects in driving consumers' responses to carbon labels. I simulate how experiment participants would react to different interventions in the student canteen context: 1) a KNOWLEDGE intervention making them informed, but not attentive, 2) an ATTENTION intervention making them attentive, but not informed, 3) a LABEL intervention making them both attentive and informed, 4) a carbon tax of €120 per ton, and 5) a ban on meat. The revenue from the carbon tax is redistributed lump-sum to student canteen guests.

This simulation is based on participants' tastes for different student canteen meals as elicited in Experiment 3, participants' prior estimates of emissions as elicited in Experiment 3, my estimates of θ, γ, and κ which I assume are homogeneous across participants, the model specification shown in Section 6, and some assumptions on what constitutes a typical student canteen offer and pricing structure.

I use Experiment 3 data to predict how experiment participants would make typical student canteen choices in the absence of any intervention, as well as under different interventions. Based on the WTP which participants indicated for each of the four meals at baseline, I can predict how experiment participants would make their consumption choice in a typical canteen setting, i.e. with a meal offer and pricing structure typical at the university of Bonn.

I assume the following meal offer and pricing structure for the simulations. Specifically, I simulate how participants would choose on the following four exemplary days:

- Day 1: Canteen offers Filled courgettes with potato croquettes or Chicken Schnitzel with rice at a price of €3.05 each, as well as a cheese sandwich at a price of €1.50
- Day 2: Canteen offers Filled courgettes with potato croquettes or Beef ragout with potatoes at a price of €3.05 each, as well as a cheese sandwich at a price of €1.50
- Day 3: Canteen offers Italian vegetable ragout with pasta (€2.75) or Chicken Schnitzel with rice (€3.05), as well as a cheese sandwich at a price of €1.50
- Day 4: Canteen offers Italian vegetable ragout with pasta (€2.75) or Beef ragout with potatoes (€3.05), as well as a cheese sandwich at a price of €1.50

I chose these meals because these are the four meals I use in the baseline purchase decisions in Experiment 3 and I know participants' taste preferences for these meals accordingly. The student canteen in Bonn almost always offers one meat meal and one vegetarian meal, so I designed the four days to cover all possible combinations of the four meals. The four meals are regularly offered in the student canteen, and I use the student canteen's prices for these meals in the simulations. Further, the student canteen always offers cheese sandwiches and prices these at €1.50, so this is included on all days as a third option.

I then simulate in the following manner how each participant would choose between the three available options:

- For non-vegetarians: For each of the two warm meal options, I calculate the difference between the utility a participant perceives for this option relative to the cheese sandwich, and compare it to the true price difference between warm meal and sandwich. I assume the participant chooses the meal option for which this difference is the largest, i.e. consumer surplus is the highest. If the difference is negative, I assume they choose the cheese sandwich. For example, on Day 3, if I calculate a participant's perceived utility to be €2.00 both for the Chicken Schnitzel and the Italian vegetable ragout, I would compare the respective consumer surplus of €2.00 - €1.55 = €0.45 and €2.00 - €1.25 = €0.75, and assume that the participant chooses the Italian vegetable ragout on Day 3.

- For vegetarian participants, there is only one warm meal option offered in the canteen every day. Thus, I compare whether perceived utility relative to the cheese sandwich is higher than the relative price. For example, for Day 3, I would check whether relative WTP for the pasta is at least €1.25 and assume the participant then eats pasta, and assume they eat the cheese sandwich otherwise.

Participant's choices at baseline are straight-forward to calculate: I simply compare the WTP participants indicated at baseline with the prices charged by the different options and assume the participant chooses the option generating the highest consumer surplus.

To calculate choices with an intervention solely increasing attention, I first calculate participant's perceived WTP for a meal if only attention is raised, based on equations 11 and 12.

$$WTP^A = v_m - v_o - \gamma(e_{im}^{prior} - e_{io}^{prior}) \tag{A.10}$$

Based on this equation, I use participants' baseline WTP and prior emission estimates as well as the estimated model parameters to calculate participants' perceived WTP in the ATTENTION condition, and then simulate meal choices as in the previous calculation.

A KNOWLEDGE treatment is assumed to lead to the consumer updating her emissions estimate according to 8 without directing attention.

$$WTP^K = v_m - v_o - \theta\gamma(1-\kappa)(e_m^{true} - e_o^{true}) - \theta\gamma\kappa(e_m^{prior} - e_o^{prior}) \tag{A.11}$$

I calculate perceived WTP and simulate meal choices as in the previous calculation.

A LABEL treatment combines both of the previous effects

$$WTP^L = v_m - v_o - \gamma(1-\kappa)(e_m^{true} - e_o^{true}) - \gamma\kappa(e_m^{prior} - e_o^{prior}) \tag{A.12}$$

I calculate perceived WTP and simulate meal choices as in the previous calculation.

Finally, perceived WTP with a CARBON TAX and MEAT BAN is as at baseline. However, I increase prices in the CARBON TAX treatment to incorporate a carbon tax of €120 per ton, and in MEAT BAN I modify the four exemplary days shown above to exclude the meat option. Table 6 in the main text shows simulation results.

A.14.5 Robustness: Analysis assuming interventions impose additional psychological cost. One might be concerned that the ATTENT and LABEL condition impose additional psychological cost on the consumer. As a robustness check, I redo the above structural estimation and simulation assuming that the LABEL condition additionally imposes a psychological cost of $\gamma\left(\kappa e_m^{\text{true}} + (1-\kappa)e_m^{\text{prior}}\right)$, while the ATTENT condition imposes an additional psychological cost of $\gamma(e_m^{\text{prior}} - e_o^{\text{prior}})$. Participants' *true utility* as shown in Equation 9 is unaffected by these additional costs, i.e. these are additional psychological costs created by the interventions. One can also think of this scenario as the interventions not setting salience θ to 1 (full salience), but instead to 2 (overly attentive).

Table A.34 shows simulation results of this scenario. The effect on consumer welfare is now negative for all of the interventions. This is in part a direct result of the assumption that the two interventions now set $\theta = 2$. From this, it mechanically follows that the structural estimation estimates only half as high of a psychological cost γ as in the previous estimation (see section 6). Correspondingly, individuals do not benefit as much from moving towards items lower in emissions in their consumption. Further, there is naturally a visible decrease in consumer welfare in the Attention and Label condition due to the additional psychological cost imposed on the consumer.

The average decrease in consumer welfare caused by the labels is estimated at 5¢ per choice. Contrasting this with the 21¢ psychological benefit estimated based on consumers' WTP for the presence of labels, the overall impact of the labels on consumer welfare is still positive, but smaller compared to the former scenario. For carbon taxes, I estimate a slight decrease (0.05 ¢) in consumer welfare in this scenario. This is explicable with the structural estimation by construction yielding a lower environmental guilt per perceived emissions γ, due to which a change to less emission-intense food has a less positive impact on consumer welfare than in the baseline estimation.

One potential concern is that the Attent and Label conditions impose additional psychological costs on consumers. As a robustness check, I re-estimate the model assuming the Label condition adds a psychological cost of $\gamma\Big(\kappa e_m^{\text{true}} + (1-\kappa)e_m^{\text{prior}}\Big)$, while the Attent condition imposes $\gamma(e_m^{\text{prior}} - e_o^{\text{prior}})$. These costs do not affect consumers' true utility (Equation 9), but rather reflect intervention-induced psychological burdens. One can think of this scenario as the interventions not setting salience θ to 1 (full salience), but instead to 2 (overly attentive).

Table A.34 presents the results. Under this assumption, consumer welfare decreases for all interventions, partly due to the mechanical effect of $\theta = 2$, which leads to lower estimated psychological costs γ. Consequently, the benefits of shifting to lower-emission meals are reduced, and additional psychological costs further decrease welfare in the Attention and Label conditions. The average decrease in consumer welfare caused by the labels is estimated at 5¢ per choice. Contrasting this with the 21¢ psychological benefit estimated based on consumers' WTP for the presence of labels, the overall impact of the labels on consumer welfare is still positive, but smaller compared to the former scenario. Carbon taxes, in this scenario, slightly reduce consumer welfare (−0.05¢), driven by a lower estimated environmental guilt per perceived emissions γ, reducing the welfare impact of shifts to lower-emission foods.

Table A.34. Estimated effect of different policies in the student canteen assuming additional psychological cost

	# of choices			Δ GHGE	Δ consumer welfare			
Intervention	sandwich	veg.	meat	Average	Average	SD	Min	Max
None	73.1%	18.1%	8.8%					
Attention	74.4%	18.1%	7.4%	-.0267	-.04847	.1130	-1.737	.0670
Knowledge	73.5%	18.4%	8.1%	-.0041	-.0001	.0026	-.0659	.0184
Labels	74.1%	18.6%	7.3%	-.0337	-.0491	.0374	-.4030	.0515
Carbon tax	72.4%	19.9%	7.7%	-.0310	-.0005	.0652	-.3125	.1062
Meat ban	78.3%	21.7%		-.1473	-.0435	.1898	-1.4333	.0870

Notes: Notes: Estimated change in consumption choices, consumption utility, and greenhouse gas emissions which would be caused by different types of interventions, assuming that the carbon labels and attention treatment additionally double any psychological cost incurred by the labels. In this scenario, Gamma is estimated at -0.06***, Theta at 0.31, and Kappa at 0.21. Change in utility is in Euro per meal, and change in greenhouse gas emissions is in kg per meal. Simulations are based on estimated model parameters, experiment data, and canteen offer and price structure.

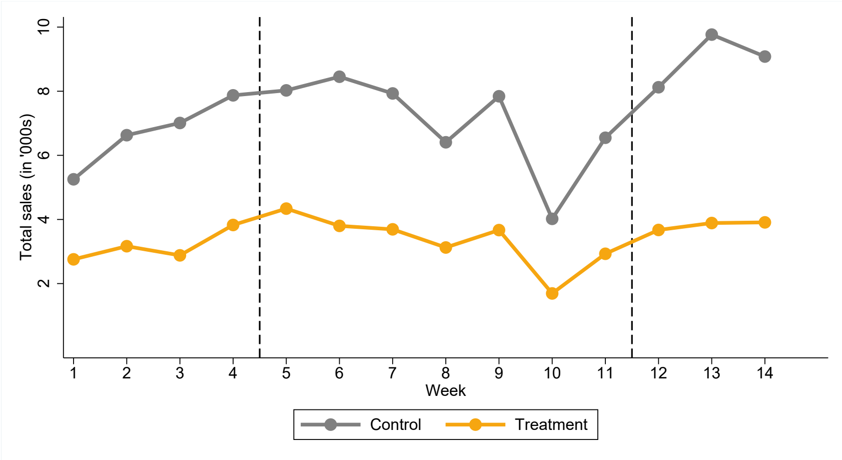


Figure B.1. Weekly student canteen sales of main meal components

Notes: Raw aggregate sales of main meal components, excluding sales to Ukrainian refugees $N = 150{,}320$. Weeks 1–4 are the pre-intervention period (April 2022), weeks 5–11 are the intervention period (May to Mid-June 2022), and weeks 12–14 are the post-intervention period (last week of June and two weeks of July 22). The drop in sales in week 10 is likely due to the one-week Pentecost holidays, during which no classes took place.

Appendix B Experiment 2: Additional tables and figures

B.1 Time trends

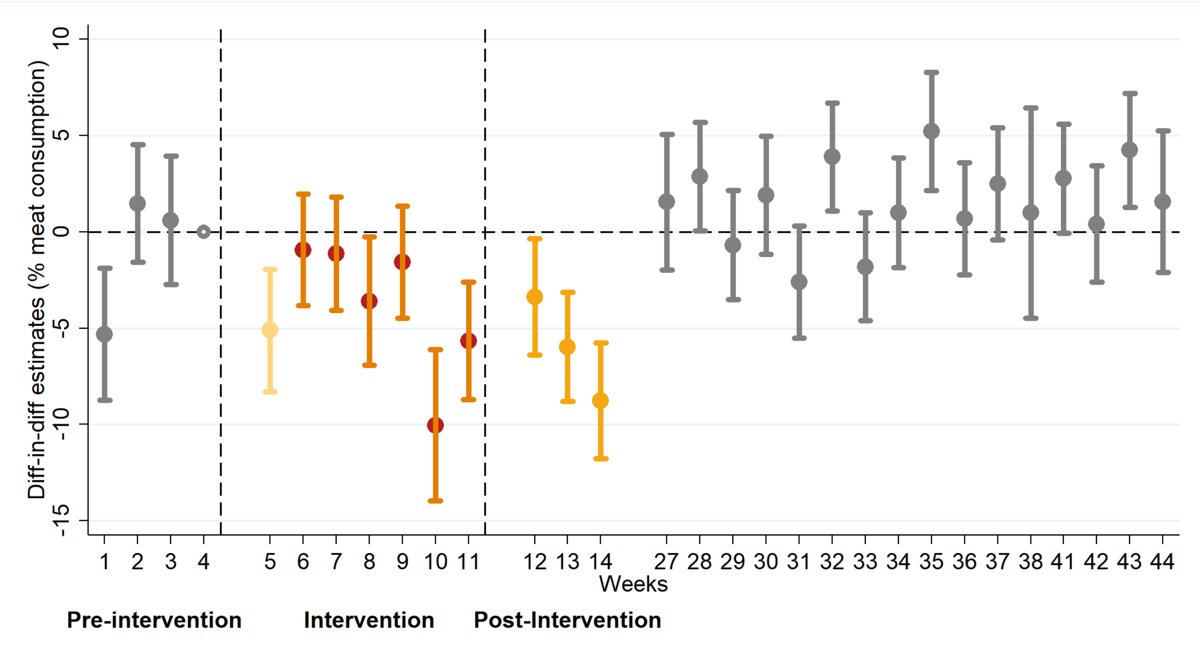


Figure B.2. Event study including data from the following semester

Notes: Difference in difference estimates of the likelihood of consuming the meat option (in percentage points), using week 4 of the pre-intervention phase as a baseline. Weeks 1–4 constitute the pre-intervention phase, while weeks 6–11 constitute the intervention phase, and weeks 12–14 the post-intervention phase. Weeks 27 onwards are the new semester. The regression specification closely follows specification (2) in Table 2. An ITT analysis and inclusion of guest fixed effects is not possible in this data set, since individuals' anonymized ID numbers differ between the study period and the following semester. Weeks 25 to 26 are excluded due to the semester break. Weekly time controls and day-of-the-week controls are included. Bars indicate 95% confidence intervals.

Table B.1. Regression coefficients for the event plot in Figure 8

	(1) Choice of meat
Treated × Week 1	-4.88*
	(2.63)
Treated × Week 2	-1.66
	(2.26)
Treated × Week 3	2.71
	(2.49)
Treated × Week 5	-6.62***
	(2.48)
Treated × Week 6	-1.32
	(2.14)
Treated × Week 7	-5.17**
	(2.30)
Treated × Week 8	-4.47
	(2.75)
Treated × Week 9	-4.29*
	(2.28)
Treated × Week 10	-4.79
	(3.56)
Treated × Week 11	-3.57
	(2.48)
Treated × Week 12	-3.55
	(2.44)
Treated × Week 13	-7.29***
	(2.38)
Treated × Week 14	-7.68***
	(2.53)
Guests control	1,016
Guests treated	347
Observations	29,401

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: Dependent variable: 0/1 indicator for consumption of the meat option, multiplied by 100 to enable the interpretation of coefficients as percentage points. Regression additionally includes weekly controls, day-of-the-week controls,guest fixed effects, and canteen-level controls for whether a second vegetarian or second meat option is offered. These are assigned according to ITT classification. Standard errors are clustered at the guest level.

B.2 Additional pre-registered main effects Experiment 2

The pre-registration to Experiment 2 can be found under Aspredicted #95108). I pre-registered to examine:

(1) The effect of the labels on meat consumption, during and after the intervention. This analysis is shown in the main text.

(2) The effect of the labeling intervention on canteen guests' likelihood of choosing a green-labeled, yellow-labeled, or red-labeled meal. However, the canteen usually only offers two meals (usually one green meal and one yellow or red-labeled meal), and the type of meal offered might also influence the groups of students deciding whether or not to go to the canteen. This makes a standard difference-in-difference analysis questionable, as it might also pick up changes in the guest composition. Below tables show results nevertheless. Table A.7 uses all data, but restricts observations in the respective columns to days on which e.g. green-labeled and yellow-labeled meals were on offer, vs. green vs red. labeled meals, etc. Table B.3 uses the ITT sample and includes guest fixed effects. This specification controls for the composition of canteen guests differing between the different offer days. It suggests that canteen guests move away from red-labeled meals towards green-labeled meals (Yellow meals and red labeled meals are never offered together during the study period). Table B.2 using all data additionally suggests that guests might consume less green meals in favor of more yellow-labeled meals, but this pattern does not repeat in the ITT sample analysis.

(3) The effect of the labeling intervention on greenhouse gas emissions. As detailed in section B.3 below, this is also not straight-forward to examine due to differences in meat consumption between treatment and control group pre-intervention, paired with a change in the greenhouse gas emissions of the meals on offer between pre-intervention and intervention period. Table B.4 performs Spec. (1) of the main results table 2 on the full and on the ITT sample. Col. (1) and (3) do not use any additional controls and find no evidence of a decrease in greenhouse gas emissions caused by the labels. Col. (2) and (4) additionally controls for the emissions caused by the respective meat meal and vegetarian meal on offer on a given day. These meals influence the total greenhouse gas emissions of the control and treatment meals differently, since the meat emissions matter less, and the vegetarian emissions matter more for the treatment canteen, since the proportion of veg. meals consumed at baseline is higher. I thus additionally include an interaction between meat and vegetarian option and treatment canteen as controls. Col. (4) includes the same controls, but assigns the interaction on an ITT basis. Col. (2) suggests that emissions decreased by 70 gram per meal, while Col. (4) suggests a decrease of 50 gram. An alternative way to analyze the effect of the treatment on greenhouse gas emissions is shown in section B.3.

(4) The effect of the labels on guest numbers. Figure B.1 shows that sales developed similarly in the two canteens throughout the sample period. As an additional analysis, Table B.5 expands the ITT sample such that it becomes a panel data set, filling in zeros for days on which an individual guest did not visit the canteen. In Table B.5 I then repeat the main ITT analysis from Column (4) and (5) Table 2 using a canteen guest's decision to visit or not visit the canteen as the outcome variable. The coefficient during the labeling intervention period is positive and insignificant, suggesting no effect of the intervention on guests' likelihood of frequenting the canteens. The coefficient for the post-intervention period is significant and

negative. However, it seems unlikely that the labeling intervention caused a decrease in canteen visits during the post-intervention period. Instead, this coefficient might be picking up differences in canteen guests' likelihood of frequenting the canteens as the semester fades out. Specifically, treatment canteen guests might have been less present on campus during the last weeks of the semester. Note that the main ITT analysis including individual fixed effects should not be influenced by changes in canteen frequenting behaviors.

Table B.2. Pre-registerd binary outcomes, using all data

	Full sample					
	Green vs. Yellow	Green vs. Red	Yellow	Red	Fish/Meat	Veg.
Treatment restaurant x Label period	-0.05**	0.02*	0.05***	-0.02*	-0.02***	0.02***
	(0.02)	(0.01)	(0.02)	(0.01)	(0.01)	(0.01)
Treatment restaurant x Post period	-0.19***	0.05***	0.19***	-0.05***	-0.06***	0.06***
	(0.02)	(0.01)	(0.02)	(0.01)	(0.01)	(0.01)
Treatment restaurant	0.12***	0.09***	-0.12***	-0.09***	-0.10***	0.10***
	(0.02)	(0.01)	(0.02)	(0.01)	(0.01)	(0.01)
Label period	0.04***	-0.01	0.08***	0.01	0.01**	-0.01**
	(0.01)	(0.01)	(0.01)	(0.01)	(0.00)	(0.00)
Post period	0.09***	0.02***	0.07***	-0.02***	-0.00	0.00
	(0.01)	(0.01)	(0.01)	(0.01)	(0.00)	(0.00)
Constant	0.46***	0.51***	0.54***	0.49***	0.51***	0.49***
	(0.01)	(0.00)	(0.01)	(0.00)	(0.00)	(0.00)
Guests control	1,161	4,381	1,472	4,381	7,003	7,003
Guests treated	488	1,798	591	1,798	2,746	2,746
Observations	22,220	76,134	28,159	76,134	121,371	121,371

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table B.3. Pre-registered binary outcomes, using individual guest data

	ITT sample					
	Green vs. Yellow	Green vs. Red	Yellow	Red	Fish/Meat	Veg.
Treatment restaurant x Label period	0.05	0.03*	-0.03	-0.03*	-0.03***	0.03***
	(0.03)	(0.01)	(0.04)	(0.01)	(0.01)	(0.01)
Treatment restaurant x Post period	-0.19***	0.04**	0.15***	-0.04**	-0.05***	0.05***
	(0.06)	(0.02)	(0.05)	(0.02)	(0.01)	(0.01)
Label period	0.04**	-0.00	0.08***	0.00	-0.01*	0.01*
	(0.02)	(0.01)	(0.02)	(0.01)	(0.01)	(0.01)
Post period	0.14***	0.02**	0.03	-0.02**	-0.02**	0.02**
	(0.03)	(0.01)	(0.02)	(0.01)	(0.01)	(0.01)
Guest fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Guests control	150	614	188	614	980	980
Guests treated	48	215	57	215	319	319
Observations	5,134	17,189	6,413	17,189	27,640	27,640

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: Dependent variable: 0/1 indicator for consumption of the meat option, multiplied by 100 to enable the interpretation of coefficients as percentage points.

Table B.4. Average greenhouse gas emissions (in kg) as outcome variable

	Full sample		ITT sample	
	Basic spec.	With controls	Basic spec.	With controls
Treatment restaurant x Label period	0.02	-0.07***		
	(0.02)	(0.02)		
Treatment restaurant x Post period	0.03	-0.07***		
	(0.02)	(0.01)		
ITT guest × Label period			-0.03	-0.05*
			(0.04)	(0.03)
ITT guest × Post period			-0.01	-0.03
			(0.04)	(0.03)
Label period	-0.27***	0.01	-0.31***	-0.04***
	(0.01)	(0.01)	(0.02)	(0.01)
Post period	-0.31***	-0.02***	-0.32***	-0.05***
	(0.01)	(0.01)	(0.02)	(0.01)
Treatment restaurant	-0.15***	0.12***		
	(0.02)	(0.03)		
Emissions meat meal		0.55***		0.52***
		(0.01)		(0.02)
Emissions veg. meal		0.50***		0.44***
		(0.01)		(0.03)
Treatment restaurant × Emissions veg. meal		0.09***		
		(0.02)		
Treatment restaurant × Emissions meat meal		-0.16***		
		(0.02)		
ITT guest × Emissions veg. meal				0.15***
				(0.06)
ITT guest × Emissions meat meal				-0.06*
				(0.03)
Constant	1.25***	-0.07***	1.25***	0.02
	(0.01)	(0.02)	(0.01)	(0.03)
Week fixed effects	No	No	Yes	Yes
Guest fixed effects	No	No	Yes	Yes
Guests control	6,928	6,928	975	975
Guests treated	2,821	2,821	324	324
Observations	121,371	121,371	27,640	27,640

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: Dependent variable: 0/1 indicator for consumption of the meat option, multiplied by 100 to enable the interpretation of coefficients as percentage points.

Table B.5. Decision to visit one of the student canteens as outcome variable

	Likelihood of visiting canteen	
	Guest FE	Date+Guest FE
Treat x Inter period	0.56	0.71
	(1.38)	(1.38)
Treat x Post period	-4.55**	-4.32**
	(1.80)	(1.80)
ITT control for second veg. offered	-0.70	0.79
	(0.59)	(0.83)
ITT control for second meat offered	2.87***	0.95
	(0.95)	(1.20)
Constant	41.90***	36.70***
	(1.00)	(1.36)
Week fixed effects	Yes	Yes
Guest fixed effects	Yes	Yes
Guests control	1,022	1,022
Guests treated	341	341
Observations	42,253	42,253

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: Dependent variable differs by column. Column 1: 0/1 indicator for whether guest visited canteen. Column 2: 0/1 indicator for whether guest visited canteen and consumed meat. Column 3: 0/1 indicator for whether guest visited the canteen and consumed the vegetarian option. Dependent variables are multiplied by 100 to enable the interpretation of coefficients as percentage points.

B.3 Effect on carbon footprint

The average emissions of the meals on offer indeed varied substantially between the pre-intervention and intervention period, due to a changing offer (see Figures D.4 and D.3 for a comparison of daily variations in meat consumption vs. daily variation in average emissions). As vegetarian consumption is, at baseline, higher in the treated than in the control restaurants, an unrestricted difference-in-difference would pick up changes in emissions due to changes in offer, and falsely attribute these to the label.

To illustrate this problem: Imagine there is only one pre-intervention and one intervention day. On the pre-intervention day, the offer is a vegetarian meal with emissions of 0.3 kg and a meat meal with 1 kg of emissions per meal. In the treated restaurant, 59% of visitors consume vegetarian at baseline, so average emissions are 0.59 kg. In the control restaurant, 50% consume vegetarian at baseline, so average emissions are 0.65 kg. On the intervention day, the vegetarian offer still has 0.3 kg, but the meat meal now has 1.2 kg. Assuming no change in behavior, average emissions in the treated restaurant are 0.67 kg and 0.75 kg in the control restaurant. A naive difference-in-difference analysis would then identify a differential 0.02 decrease in emissions in the treated restaurant compared to the control restaurant, although consumer behavior did not change. The opposite is the case in a scenario in which the emissions of the meat meal on offer decrease, i.e. the meat meal with 1.2 kg of emissions is offered on the first and the meat meal with 1 kg of emissions is offered on the second day. The analysis then identifies an increase in emissions caused by the carbon labels, although again consumer behavior did not change.

The situation in the student canteens in the study context is similar to the second case: In the pre-intervention period, emissions of the average meat meal are 2.1 kg, while they are 1.5 kg in the intervention period. Emissions of the average vegetarian meal are similar. At the same time, there are large differences in meat consumption between canteens, with on average 41% of meals consumed in the treatment canteen pre-intervention containing meat and 50% of meals consumed in the control canteen pre-intervention containing meat.

I approach this problem in different ways: The main text (section 3.1.3) includes a back-of-the-envelope calculation approximating emission savings in the absence of any changes in meal offer. Table B.4 includes controls for student canteen offer. To provide an additional check to the back-of-the-envelope calculation above, I additionally perform an analysis on a subset of the data set. I restrict the main sample such that it only includes days in the intervention period for which there is a "gastronomic twin" in the pre-intervention period: a day in the pre-intervention period where the same two main meal components were served. Further, for any day I assign the emissions caused by the main meal components sold in the treated canteen to any additional sales outside of the the main meal components. The restricted sample contains 36,198 observations. As shown in Table B.6, I estimate that labels reduce average emissions per meal by 90 grams or around 8% of the emissions of a baseline meal.

Table B.6. Effect of labels on average emissions per meal

	Full sample		
	Base	Week FE	Date FE
Treatment restaurant × Label period	-0.07*	-0.05	-0.09**
	(0.04)	(0.04)	(0.03)
Treatment restaurant	-0.17***	-0.22***	-0.21***
	(0.03)	(0.02)	(0.02)
Label period	-0.12***		
	(0.02)		
Constant	1.36***	0.42***	1.23***
	(0.02)	(0.03)	(0.02)
Date fixed effects	No	Yes	Yes
Guest fixed effects	No	No	No
Guests control	5,157	5,157	5,157
Guests treated	2,058	2,058	2,058
Observations	36,198	36,198	36,198

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: Dependent variable: Emissions caused by main meal component, in gram. The sample is restricted to days in the intervention period for which there is a "gastronomic twin" in the pre-intervention period. Regression follows Spec. (1) and (2) in Table 2, using greenhouse gas emissions instead of the choice of the meat meal as the outcome variable. Spec. (2) exchanges the "Label period" indicator for week and day-of-the-week controls. Spec. (3) includes date-specific controls.

B.4 Field survey results

Below I describe the results of surveys conducted in the control and treatment canteens pre- and post-intervention, as described in section D.8.

Did canteen guests see the labels? Of the post-survey respondents, 373 went to the treated student canteen at least once during the intervention period. 70% of these report having seen the labels. 425 respondents did not go to the treated canteen during the intervention period, according to their individual student canteen cards. However, they might have in fact still gone, but not paid with their individual cards. Of these respondents, 8% report having seen the labels. 214 respondents went to the treated restaurant at least four times during the intervention period. 80% of these guests report having seen the labels.

Do canteen guests feel they reacted to the labels? Of the post-survey respondents who noticed the labels and visited the treated student canteen at least once during the intervention period, 18% report having incorporated the labels in their decisions (agreement of 4 or 5 on a 5-point scale asking how strongly participants incorporated the labels in their choices). Of those who visited the canteen more frequently and saw the labels (172 participants), 16% report having incorporated the labels in their decisions.

How do canteen guests make their consumption choices? 34% of guests report making their choice mainly using the information given on the canteen website. 30% mainly use the digital billboards. 36% report mainly deciding by looking at the food counters. Figure 7 shows how the carbon labels were shown in each of these decision contexts.

B.5 Additional estimation of price effects

Table B.7 estimates the specifications from Table 3 in the absence of any control variables as well as purely with time controls. Comparing with estimates from Table 3, the effect of prices on demand is less pronounced, supporting the idea that meal price correlates with meal attractiveness. Table 3 thus controls for meal characteristics.

Table B.7. Comparison of effects: labels vs. "carbon tax"

	Likelihood of consuming meat			
	(1)	(2)	(3)	(4)
	Grouping all meat	By meat type	Grouping all meat	By meat type
Price difference (in €)	-0.01***		-0.07***	
	(0.00)		(0.00)	
Price difference (in €) x Chicken		0.01*		-0.03***
		(0.01)		(0.01)
Price difference (in €) x Pork		-0.08***		-0.19***
		(0.00)		(0.01)
Price difference (in €) x Beef		0.01		-0.06***
		(0.01)		(0.02)
Price difference (in €) x Fish		0.10***		0.05***
		(0.01)		(0.01)
Chicken meal		0.00		0.00
		(0.00)		(0.01)
Pork meal		-0.00		0.04***
		(0.00)		(0.01)
Beef meal		-0.05***		-0.02**
		(0.01)		(0.01)
Constant	0.46***	0.46***	0.51***	0.52***
	(0.00)	(0.00)	(0.01)	(0.01)
Weekly time controls	No	No	Yes	Yes
Control for exact meat meal	No	No	No	No
Control for veg. meal type	No	No	No	No
Observations	360,699	360,699	360,699	360,699

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: Dependent variable: 0/1 indicator for consumption of the meat option. Linear probability regression drawing on student canteen data from April 2022–March 2023. The variable "Price difference" describes the price difference between the main meat and the main vegetarian meal component on offer. Columns (3) and (4) additionally include a set of binary variables to control for the week and day-of-the-week. Col. (2) and (4) do not include a "Price difference" variable because I include an interaction with all four meat types which are mutually exclusive and collectively exhaustive. The baseline category in Col. (2) and (4) is "Fish meal". The notes under the table indicate the emissions caused by each meat type relative to those of the average emissions of a vegetarian meal (0.4 kg), as well as the average tax on this type of meat assuming a carbon tax of €120 per tonne. See Table B.7 for an estimation without control variables. Standard errors are robust.

Appendix C Experiments 1 and 3: Details on the experimental set-up

C.1 Pre-registration

I pre-registered Experiment 3 on June 21st 2021 under #AEARCTR-0007858 and Experiment 1 on October 24th 2021 under #AEARCTR-0008435.

C.2 Meals used for elicitation

In the purchasing decisions in experiments 1 and 3, participants make decisions on the same four student canteen meals. These are all meals which are regularly offered in the student canteen. Participants who indicate that they are not vegetarian decide on two vegetarian and two meat meals: Filled courgettes with potato croquettes (1.4 kg of emissions, colored yellow in the labels), Italian vegetable ragout with pasta (0.5 kg of emissions, colored green in the labels), Chicken Schnitzel with rice (1.4 kg of emissions, colored yellow in the labels), and beef ragout with potatoes (3.4 kg of emissions, colored red in the labels). Participants who indicate they are vegetarian decide on four vegetarian meals: Filled courgettes with potato croquettes (1.4 kg of emissions, colored yellow in the labels), Italian vegetable ragout with pasta (0.5 kg of emissions, colored green in the labels), Cheese "Spätzle" with mushrooms (1.2 kg of emissions, colored yellow in the labels), and stir-fried vegetables with rice (0.4 kg of emissions, colored green in the labels). The cheese sandwich is the outside option to every choice and causes 0.7 kg of emissions and is colored green on the labels.

I randomized the order in which meals appear (both in the decision and the emission estimating screens) to avoid order effects. Further, I changed the left-right positioning of the warm meal vs. the cheese roll to right-left for half of the experiment sessions to avoid positioning effects.

C.3 Incentivization of elicitations

The elicitation of participants' **WTP for consuming the meals** is incentivized with an adapted BDM mechanism: There is a 50% probability that the specific meal and a 50% probability that the cheese sandwich is randomly drawn as the default meal. If the default meal and the preferred meal indicated in the first part of the decision (e.g. Figure 2) coincide, the participant is given the preferred meal at zero price. If the two do not coincide, a price is randomly drawn at which the two options can be exchanged. Each value between €0.00 and €3.00 can be drawn with equal probability, in five-cent steps. If the WTP indicated by the participant in the second part of the decision (e.g. Figure 3) is equal to or above the price drawn, the price is deducted from the participants' payment and participants are provided with the preferred option. If WTP is below the price drawn, participants are provided with the less preferred option, and no amount is deducted from participants' payments. The outcome lunch is provided to participants directly after the experiment, together with participants' payment in cash. The pay-out station is shown in Figure C.1. For this purpose, experiment participants are required to travel to the university campus immediately after completing the experiment. Less than 4% did not pick up their cash payment and meal. The incentivization structure was explained to participants and

Figure C.1. Gazebo set-up on University campus

they were required to pass an extensive comprehension check, which less than 4% of participants did not pass.

This **WTP for seeing labels elicitation** is incentivized with a similar BDM mechanism. There is a 50% probability that the default option is that choices are displayed with, and a 50% probability that the default option is that choices are displayed without labels. If the default display option and the preferred display option coincide, the preferred display option is implemented at zero price. If the two do not coincide, a price is randomly drawn at which the display option can be changed. Each value between €0.00 and €3.00 can be drawn with equal probability, in five-cent steps. If the WTP indicated by the participant in the second part of the decision (similar to Figure 3, with display options instead of meals) is equal to or higher than the price drawn, the preferred display option is implemented. The price drawn is only deducted from participants' payment if one of the final three meals is relevant for pay-out. If the WTP is lower than the price drawn, the less-preferred display option is implemented.

C.4 Decisions under carbon offsetting

In the Attention+Offset condition in Experiment 3 and the Offset condition in Experiment 1, participants are informed that, if one of the decisions made in this treatment is implemented, the emissions of the meal provided to them (regardless of whether it is the warm meal or the cheese sandwich) are offset by the experimenter with a donation to Atmosfair. The example screens in Subsection C.5 show how this is communicated to experiment participants.

Towards the end of the experiment, after participants have completed all meal decisions, I elicit participants' attitudes towards the effectiveness of carbon offsetting and ask for participants' prior experiences with carbon offsetting. Tables C.1 and C.2 show descriptives pooled across Experiments 1 and 3. Table C.1 shows that 75% of participants had heard of carbon offsetting previously, while 34% have used carbon offsetting themselves.

Table C.2 shows that participants broadly agree with carbon offsetting being effective (Measured as agreement to the statement "Voluntary carbon offsetting is an effective climate protection measure"). They disagree with them replacing other climate protection measures (Measured as agreement to the statement "If I offset emissions for a carbon-intensive activity such as a flight, it is okay to book another flight."). They agree with carbon offsetting not replacing other climate protection activities (Measured as agreement to the statement "Carbon offsetting cannot replace personal efforts to protect the climate."). Interestingly, having experienced the Attention+Offset or the Offset condition earlier in the experiment increases support for the second and decreases support for the third statement.

These descriptive statistics convey that carbon offsetting likely removes a part of environmental guilt, but may not be removing it entirely.

Table C.1. Familiarity with carbon offsetting

	Familiarity with offsetting	
	(1)	(2)
	Heard of	Have used
In offset condition earlier in exp.	-0.04	-0.01
	(0.03)	(0.04)
Constant	0.75***	0.34***
	(0.03)	(0.03)
Observations	731	731

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table C.2. Beliefs on carbon offsetting effectiveness

	Familiarity with offsetting		
	(1)	(2)	(3)
	Effective	Can replace	Cannot replace
In offset condition earlier in exp.	0.15	0.44***	-0.50***
	(0.18)	(0.15)	(0.17)
Constant	5.55***	2.86***	8.14***
	(0.14)	(0.12)	(0.12)
Observations	731	731	731

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

C.5 Experiment screens (English translation)

Survey start screen

Welcome to the BonnEconLab online study. Please note that you may only take part in this study once. Furthermore, you may only take part if you have registered for the study in our participation database. Please complete this survey on your computer. Participation with mobile devices such as smartphones or tablets is not possible. The payout for this experiment will be done using your personal participant code: 12pI2q5vh Please write down your code! You will need approximately 45 minutes to process this survey. After fully completing the survey, you can collect your payout at our location at the Hofgartenwiese (see map below) until 2 p.m. today. You will not be able to receive your payout at any other time! In this experiment, your payout consists of several components:

- You receive exactly one dish (your lunch).
- You receive an expense compensation of €9.00 in cash.
- You may receive an additional payout of up to €1.60 in addition to the expense compensation. This depends on your answers in the marked part of the study.
- In addition, chance determines whether, depending on your answers in another (also clearly marked) part of the study, you will receive another additional payout of up to €1.10.

Payment will be made in the BonnEconLab pavilion on the Hofgartenwiese (Regina-Pacis-Weg). You will find us at the place marked with a blue arrow under a pavilion.

Decision description screen - Screenshot 1/4

Description of upcoming decisions | Comprehension questions

The second part of the study is about to begin. Your decisions in this part of the study will affect your expense compensation and the dish you receive.

On this page you will find explanations and examples. On the following page we will check your understanding of these explanations. By clicking on the tab above you can switch between the two pages.

Once the comprehension questions have been answered correctly, you can proceed with further work on the survey.

How do your decisions affect your payout?

- In this experiment, your payout consists of three components:
  - You receive exactly one dish (your lunch).
  - You receive an expense compensation. At the moment, the expense compensation is €9.00. You will make a total of 15 decisions over the course of this study. For each of these decisions, you have the option of waiving part of the expense compensation (maximum €3.00). For that, you will receive a court you prefer.
  - In two other parts of the study, you may receive an additional amount of up to €1.60 in addition to the expense compensation, depending on your answers. In addition, depending on your answers in a third part of the study, chance will determine whether you will receive an additional amount of up to €1.10. The relevant parts of the study are clearly marked.
- For each of the 15 decisions, indicate which of the two courts you prefer. Then specify the maximum amount of your expense compensation you would like to forgo in order to receive the preferred court.

The decision that is implemented shall be subject to the following:

- Chance decides whether you will receive your favourite dish for free:
  - Case 1 (50% probability): You will receive your favourite dish for free.
  - Case 2 (50% probability): You will be assigned the non-preferred dish first. In this case, specify the maximum amount of your expense compensation you would like to forgo in order to receive your favourite dish instead.
- If case 2 occurs, it is again a matter of chance:
  - A **surcharge** is determined at random. Any value between €0 and €3 (in 5 cent increments) is equally probable.
  - If the amount you have declared is more than the surcharge, you will receive your preferred dish. For this, the surcharge will be deducted from your expense compensation.
  - If the amount you specify is less than the surcharge, you will receive the non-preferred dish free of charge.

For the other 14 decisions which are not being implemented, the following rules apply:

- These decisions have no effect on the dish you receive.
- These decisions have no effect on your compensation.

You will not know which of the 15 decisions will be implemented until the end of the study. It is therefore in your best interest to make every decision carefully.

Example decision

You can receive either a cheese roll or the 'Baked Feta Cheese with Rice' dish.

Which dish do you prefer? Click on one of the two buttons. Try it!

Baked Feta Cheese with Rice	oder	Cheese Roll
vegetarian		Details: vegetarian
[Baked Feta Cheese with Rice]		[Cheese Roll]

Example scenario 1

Assuming you made the following decision:

Which dish do you prefer? Click on one of the two buttons.

Baked Feta Cheese with Rice vegetarian	oder	Cheese Roll Details: vegetarian
Baked Feta Cheese with Rice		Cheese Roll

If you are given the cheese roll: What is the maximum amount of your expense compensation you would be willing to give up in exchange for stir-fry sweet and sour with rice?

(Click on the grey bar to make the slider visible).

0.00€ 1.00€ 2.00€ 3.00€

You would like to give up a maximum of **€1.20** of your allowance to receive the dish **Baked Feta Cheese with Rice** instead of the cheese roll.

Here's what happens in this example (which you have no control over):

- You are first assigned your **less preferred dish**, the cheese roll.
- A **surcharge of €0.60** is randomly determined.

This means for you:

The surcharge with the amount of 0,60 € is lower than the maximum amount of 1,20 € you specified. You will receive the dish 'Baked feta cheese with rice'. For this, € 0.60 will be deducted from your expense compensation.

Decision description screen - Screenshot 3/4

Example scenario 2

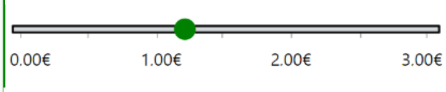
Assuming you made the following decision:

Which dish do you prefer? Click on one of the two buttons.

Baked Feta Cheese with Rice vegetarian	oder	Cheese Roll Details: vegetarian
Baked Feta Cheese with Rice		Cheese Roll

If you are given the cheese roll: What is the maximum amount of your expense compensation you would be willing to give up in exchange for stir-fry sweet and sour with rice?

(Click on the grey bar to make the slider visible).



You would like to give up a maximum of **€1.20** of your allowance to receive the dish **Baked Feta Cheese with Rice** instead of the cheese roll.

Here's what happens in this example (which you have no control over):

- You are first assigned your **less preferred dish**, the cheese roll.
- A **surcharge of 2.00 €** is randomly determined.

This means for you:

The surcharge with the amount of 2.00 € is higher than the maximum amount of 1,20 € you specified. You will receive the cheese roll. Therefore, nothing will be deducted from your expense compensation.

Example scenario 3

Assuming you made the following decision:

Which dish do you prefer? Click on one of the two buttons.

Baked Feta Cheese with Rice

vegetarian

oder

Cheese Roll

Details: vegetarian

Baked Feta Cheese with Rice

Cheese Roll

If you are given the cheese roll: What is the maximum amount of your expense compensation you would be willing to give up in exchange for stir-fry sweet and sour with rice?

(Click on the grey bar to make the slider visible).

0.00€ 1.00€ 2.00€ 3.00€

You would like to give up a maximum of **€1.20** of your allowance to receive the dish **Baked Feta Cheese with Rice** instead of the cheese roll.

u

Here's what happens in this example (which you have no control over):

- You are assigned your **preferred dish**, 'Baked feta cheese with rice', for free.

This means for you:

You receive the dish 'Baked feta cheese with rice'. Nothing will be deducted from your expense compensation.

Continue to the questions

You can always return to this page while answering the questions.

Comprehension questions - Screenshot 1/3

Description of upcoming decisions | Comprehension questions

Comprehension questions

Please answer the following comprehension questions. If you want to look at the description of the survey again, you can switch back and forth between this page and the previous page by clicking on the tab at the top.

After correctly answering the comprehension questions, you can continue with the further processing of the survey.

Question 1

Assuming you made the following decision:

Which dish do you prefer? Click on one of the two buttons.

Baked Feta Cheese with Rice		Cheese Roll
vegetarian	oder	Details: vegetarian
[Baked Feta Cheese with Rice]		[Cheese Roll]

If you are given the cheese roll: What is the maximum amount of your expense compensation you would be willing to give up in exchange for stir-fry sweet and sour with rice?

(Click on the grey bar to make the slider visible).

0.00€ 1.00€ 2.00€ 3.00€

You would like to give up a maximum of **€1.30** of your allowance to receive the dish **Cheese Roll** instead of the Baked Feta Cheese with Rice.

Here's what happens in this example (which you have no control over):

- The decision was carried out.
- You are first assigned your **less preferred dish**, the Baked Feta Cheese with Rice.
- A **surcharge of 0.70 €** is randomly determined.

What do you receive?

- ○ The baked feta cheese with rice and your full expense compensation.
- ○ The baked feta cheese with rice and 0.70 euros will be deducted from your expense compensation.
- ○ The cheese roll and 0.70 euros will be deducted from your expense compensation.
- ○ The cheese roll and your full expense compensation.

Comprehension questions - Screenshot 2/3

Question 2

Assuming you made the following decision:

Which dish do you prefer? Click on one of the two buttons.

Baked Feta Cheese with Rice		Cheese Roll
vegetarian	oder	Details: vegetarian
Baked Feta Cheese with Rice		Cheese Roll

If you are given the cheese roll: What is the maximum amount of your expense compensation you would be willing to give up in exchange for stir-fry sweet and sour with rice?

(Click on the grey bar to make the slider visible).

0.00€ 1.00€ 2.00€ 3.00€

You would like to give up a maximum of **€1.30** of your allowance to receive the dish **Cheese Roll** instead of the Baked Feta Cheese with Rice.

Here's what happens in this example (which you have no control over):

- The decision was carried out.
- You are assigned your **preferred dish**, the cheese roll.

What do you receive?

- ○ The baked feta cheese with rice and your full expense compensation.
- ○ The baked feta cheese with rice and 0.70 euros will be deducted from your expense compensation.
- ○ The cheese roll and 0.70 euros will be deducted from your expense compensation.
- ○ The cheese roll and your full expense compensation.

Comprehension questions - Screenshot 3/3

Question 3

Assuming you made the following decision:

Which dish do you prefer? Click on one of the two buttons.

Baked Feta Cheese with Rice vegetarian	or	Cheese Roll Details: vegetarian
Baked Feta Cheese with Rice		Cheese Roll

If you are given the cheese roll: What is the maximum amount of your expense compensation you would be willing to give up in exchange for stir-fry sweet and sour with rice?

(Click on the grey bar to make the slider visible).

0.00€ 1.00€ 2.00€ 3.00€

You would like to give up a maximum of **€1.30** of your allowance to receive the dish **Cheese Roll** instead of the Baked Feta Cheese with Rice.

Here's what happens in this example (which you have no control over):

- The decision was carried out.
- You are first assigned your **less preferred dish**, the Baked Feta Cheese with Rice.
- A **surcharge of 2.70 €** is randomly determined.

What do you receive?

- ◯ The baked feta cheese with rice and your full expense compensation.
- ◯ The baked feta cheese with rice and 2.70 euros will be deducted from your expense compensation.
- ◯ The cheese roll and 2.70 euros will be deducted from your expense compensation.
- ◯ The cheese roll and your full expense compensation.

Question 4

How many of the 15 decisions actually have an impact on the dish you are handed and your expense compensation?

- ◯ All the 15 decisions have an impact.
- ◯ Five of the 15 decisions have an impact.
- ◯ One of the 15 decisions has an impact.
- ◯ One of the 15 decisions has an influence.

Back to the explanation | Continue with the rest of the survey

Example baseline decision

You can receive either a cheese roll or the dish ‘Stir-fry sweet and sour with rice’ with your payout.

Which dish do you prefer? Click on one of the two buttons.

Stir-fry sweet and sour with rice

vegetarian

or

Cheese Roll

vegetarian

Stir-fry sweet and sour with rice

Cheese Roll

If you are given the Stir-fry sweet and sour with rice: What is the **maximum** amount of your expense compensation you would be willing to give up in exchange for the cheese roll?

(Click on the grey bar to make the slider visible).

0.00€ 1.00€ 2.00€ 3.00€

You would like to give up a maximum of **€0.75** of your allowance to receive the dish **cheese roll** instead of the Stir-fry sweet and sour with rice.

Continue

You will now guess for a total of eleven meals how high the CO2 emissions are which are caused by the respective meal.

- You have **60 seconds** to answer each question.
- For each question in which your guess does not deviate from the correct value by more than 30%, **0.10 Euro is added to your payout**.

During each guessing question you will be shown the emissions caused by the meal “Red Thai Curry with Pork and Rice” **as a reference value**.

Your reference value:

Red Thai-Curry with Pork and Rice


Pork

Which assumptions should be taken for the guessing questions?

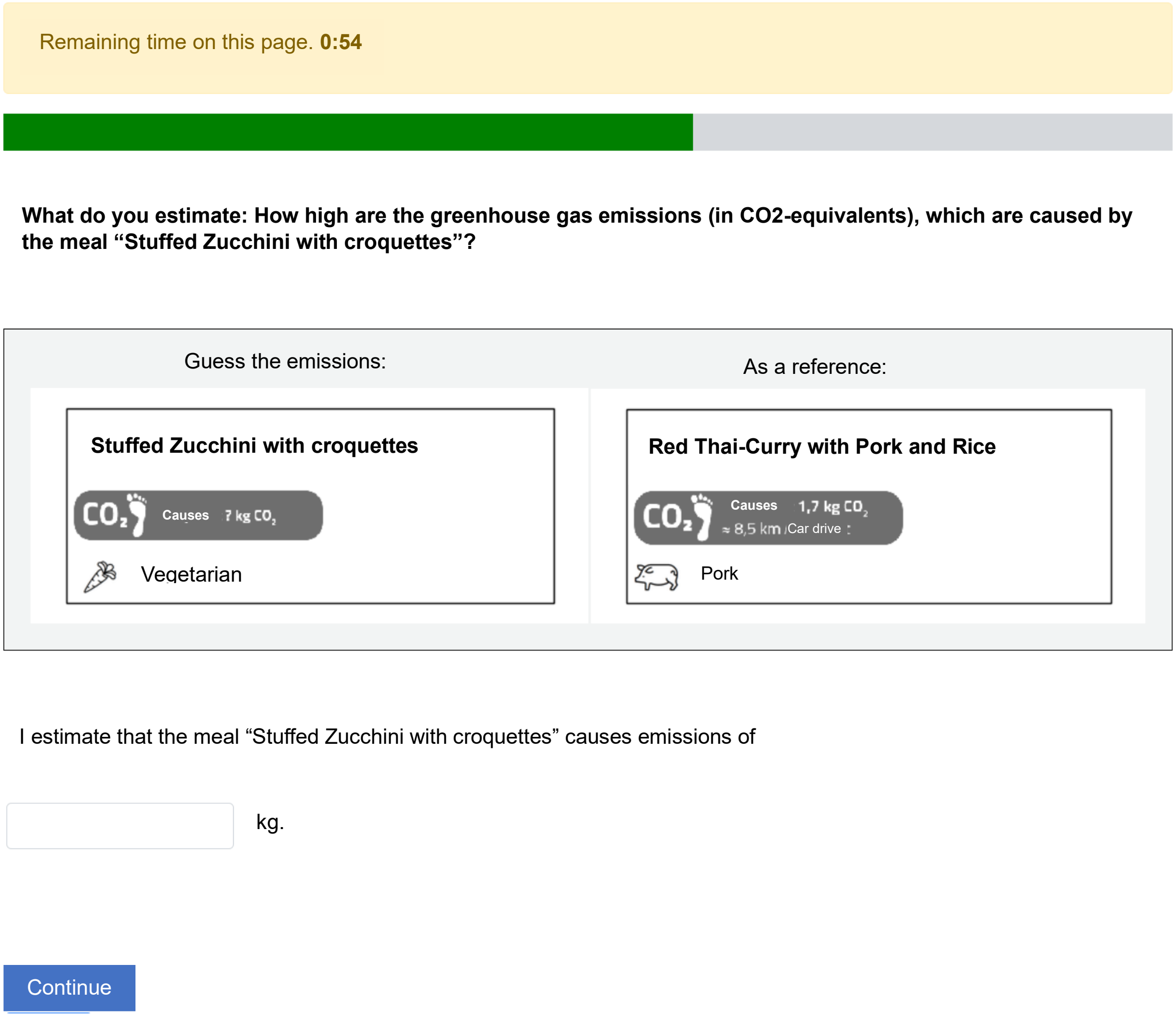
For the following questions you will not be shown any ingredient lists or a description of the origin of the ingredients. This is because we only want to give you the information which you would normally find in a restaurant. We would like to know how you, based only on the name of the meal on the menu, guess the magnitude of the emissions caused by a meal.

Of course, the emissions of a seemingly identical meal can differ, e.g., depending on the exact ingredients and depending on whether the ingredients were produced in an ecologically sustainable or in a conventional manner. Please assume a conventional production and a conventional meal preparation – just like you would expect it, if you are offered such a meal without any further information in a restaurant.

Please take into account all emissions caused in the agricultural production and in food processing, packaging, conservation and transport of ingredients, up until an ingredient can be purchased in the store. You do not need to take into account emissions which are caused by the transport of ingredients from store to restaurant

Continue

Example carbon footprint estimation



Introduction decisions with labels

You will now make four more of the 15 decisions. One of the 15 decisions will be implemented.

You will be shown the greenhouse gas emissions (in CO2 equivalents) of both dishes for the upcoming decisions.

For those interested: More information on the calculation of greenhouse gas emissions:

What assumptions are made in the calculation?

In the calculation, the emissions attributable to a dish are calculated as the sum of the emissions generated in the production of the ingredients. The emissions of each ingredient are calculated "from farm to gate", i.e. all emissions are included that occur during agricultural production and during further processing, packaging, preservation and transport until the ingredient is available for purchase in shops. Not included are the transport from the shop to the restaurant or end consumer and the emissions that arise from any further refrigeration in the restaurant or at the end consumer, as well as the emissions that arise from cooking the dish.

When calculating the values, conventional (i.e. not specifically organically certified) agriculture is assumed. Otherwise, assumptions are made about production that reflect the production of the average product found on our supermarket shelves.

What data is the calculation based on?

The Eaternity database on which the calculations are based is currently the largest and most comprehensive database for calculating the climate-relevant emissions of meals and food products. It includes more than 550 ingredients and other parameters on organic and greenhouse production as well as production, processing, packaging and preservation. The eaternity database is maintained by scientists from the Zurich University of Applied Sciences (ZHAW), the University of Zurich (UZH), the Swiss Federal Institute of Technology Zurich (ETH Zurich), the Research Institute of Organic Agriculture (FiBL), Quantis and other institutions.

Source: eaternity.

Continue

Example decision with labels

You can either get a cheese roll or the dish 'stir-fry sweet and sour with rice' with your payout.

Which dish do you prefer? Click on one of the two buttons.

Stir-fry sweet and sour with rice	or	Cheese Roll
CO_2 Causes 0,4 kg CO_2 ≈ 2,0 km Car drive		CO_2 Causes 0,7 kg CO_2 ≈ 3,5 km Car drive
vegetarian		vegetarian
Stir-fry sweet and sour with rice		Cheese Roll

If you are given the cheese roll: What is the **maximum** amount of your expense compensation you would be willing to give up in exchange for stir-fry sweet and sour with rice?

(Click on the grey bar to make the slider visible).

0.00€ 1.00€ 2.00€ 3.00€

You would like to give up a maximum of **€1.10** of your allowance to receive the dish **stir-fry sweet and sour with rice** instead of the cheese roll.

Continue

For those interested: More information on the calculation of greenhouse gas emissions:

What assumptions are made in the calculation?

In the calculation, the emissions attributable to a dish are calculated as the sum of the emissions generated in the production of the ingredients. The emissions of each ingredient are calculated "from farm to gate", i.e. all emissions are included that occur during agricultural production and during further processing, packaging, preservation and transport until the ingredient is available for purchase in shops. Not included are the transport from the shop to the restaurant or end consumer and the emissions that arise from any further refrigeration in the restaurant or at the end consumer, as well as the emissions that arise from cooking the dish.

When calculating the values, conventional (i.e. not specifically organically certified) agriculture is assumed. Otherwise, assumptions are made about production that reflect the production of the average product found on our supermarket shelves.

What data is the calculation based on?

The Eaternity database on which the calculations are based is currently the largest and most comprehensive database for calculating the climate-relevant emissions of meals and food products. It includes more than 550 ingredients and other parameters on organic and greenhouse production as well as production, processing, packaging and preservation. The eaternity database is maintained by scientists from the Zurich University of Applied Sciences (ZHAW), the University of Zurich (UZH), the Swiss Federal Institute of Technology Zurich (ETH Zurich), the Research Institute of Organic Agriculture (FiBL), Quantis and other institutions.

Source: eaternity.

Introduction decisions with offsetting

You will now make four more of the 15 decisions. One of the 15 decisions will actually be implemented.

If it is one of the now following four choices that is implemented, the greenhouse gas emissions of the dish you have been handed will be offset by a donation to the NGO atmosfair. This happens regardless of whether the dish was originally assigned to you or whether you exchanged it for the other dish by paying a surcharge. Atmosfair uses the donation to support sustainable energy projects so that the emissions are saved elsewhere. In this way, the dish handed out to you becomes emission-neutral / CO_2-neutral.

For those interested: Further information on CO_2 offsetting:

How does the CO_2 offset work?

The donation to atmosfair is used to develop renewable energies in countries where they hardly exist yet, i.e. mainly in developing countries. In this way, atmosfair saves CO_2 that would otherwise have been produced by fossil energies in these countries.

Example projects

- Atmosfair uses donations to reduce the selling price of energy-efficient stoves in Nigeria. In Nigeria, 75% of families cook on open fires, and a family of 7 consumes 5 tonnes of wood per year. This enormous consumption of firewood has already led to almost total deforestation and the progressive spread of deserts, especially in the poor north of the country. Energy-efficient stoves use about 80% less wood.
- Atmosfair uses donations to make small-scale biogas plants more affordable in Nepal. This project targets families living in rural areas who previously used wood as an energy source for cooking. In this way, the increasing deforestation of Nepal's forests can be counteracted.
- Atmosfair uses donations to support a small hydropower plant in Honduras. In this way, four villages that previously used wood and diesel generators for energy supply could be connected to the electricity grid for the first time. In addition, electricity can be fed into the national grid, replacing electricity from gas-fired power plants.

Source: atmosfair

Continue

Example decision with offsetting

You can either receive a cheese roll or the dish 'Italian Vegetable ragout with pasta' with your payout.

The emissions attributable to each dish are offset by a donation to the NGO atmosfair. Atmosfair supports sustainable energy projects with the donation, so that the emissions are saved elsewhere.

Which dish do you prefer? Click on one of the two buttons.

Italian Vegetable ragout with pasta

CO2 neutral

Emission offset

vegetarian

or

Cheese Roll

CO2 neutral

Emission offset

vegetarian

Italian Vegetable ragout with pasta

Cheese Roll

If you are assigned the cheese roll: What is the **maximum** amount of your expense compensation that you would be willing to give up in exchange for Italian Vegetable ragout with pasta? (Click on the grey bar to make the slider visible).

0.00€ 1.00€ 2.00€ 3.00€

You would like to give up a maximum of **0.75 €** of your expense compensation to receive the **Italian Vegetable ragout with pasta** instead of the cheese roll.

Continue

For those interested: Further information on CO2 offsetting:

How does the CO2 offset work?

The donation to atmosfair is used to develop renewable energies in countries where they hardly exist yet, i.e. mainly in developing countries. In this way, atmosfair saves CO2 that would otherwise have been produced by fossil energies in these countries.

Example projects

- Atmosfair uses donations to reduce the selling price of energy-efficient stoves in Nigeria. In Nigeria, 75% of families cook on open fires, and a family of 7 consumes 5 tonnes of wood per year. This enormous consumption of firewood has already led to almost total deforestation and the progressive spread of deserts, especially in the poor north of the country. Energy-efficient stoves use about 80% less wood.
- Atmosfair uses donations to make small-scale biogas plants more affordable in Nepal. This project targets families living in rural areas who previously used wood as an energy source for cooking. In this way, the increasing deforestation of Nepal's forests can be counteracted.
- Atmosfair uses donations to support a small hydropower plant in Honduras. In this way, four villages that previously used wood and diesel generators for energy supply could be connected to the electricity grid for the first time. In addition, electricity can be fed into the national grid, replacing electricity from gas-fired power plants.

Source: atmosfair

Introduction calorie estimation

You will now estimate the energy value of each dish in kilocalories (kcal) for a total of five dishes. For each estimation question, the completion time is **limited to 60 seconds**. For each estimation question where your estimate does not deviate from the correct value by more than 30%, **your payout increases by 0.10 euros**.

What assumptions should be made for the estimation?

You will not be presented with ingredient lists for the following estimation questions. This is because we want to give you, as much as possible, only the information that you would find in the restaurant. We want to know how you estimate the energy value of a dish, based solely on the name of the dish in the menu.

Continue

Example calorie estimation

Remaining time on this page. **0:54**

What do you estimate: What is the energy value in kilocalories (kcal) of the dish ‘Beef ragout with potatoes’?

Beef ragout with potatoes

Beef

I estimate that the dish ‘Beef ragout with potatoes’ has

kcal.

Continue

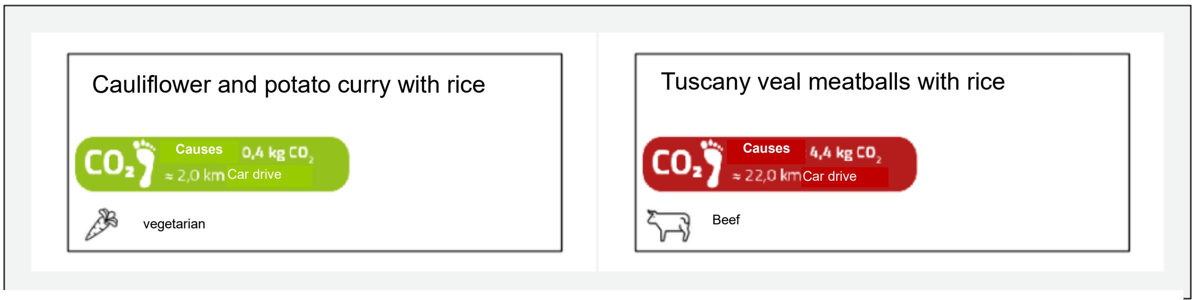
WTP for label presence

You are about to make the last three of the 15 decisions. One of the 15 decisions will actually be implemented.

But now there are two differences:

5. There are now three **new dishes** that you have not seen in your previous decisions.
6. You can see **emission labels** for these three dishes. These labels show the greenhouse gas emissions of the dishes in CO2 equivalents.

For example, two of the labels might look like this:



The display of the labels can either be preset so that:

- The labels are also displayed to you, or that
- The labels are not displayed to you.

Chance decides whether the display setting of the labels corresponds to your wishes without charge.

- Case 1 (probability 50%): We (do not) display the labels according to your wishes.
- Case 2 (probability 50%): The labels are initially preset so that it does not correspond to your wishes. For this case, you specify the **maximum** amount of your expense compensation you would like to give up in order to get your preferred display setting instead.

If **case 2** occurs, chance decides again:

- A **price** is determined randomly. Every value between 0€ and 3€ (in 5 cent steps) is equally probable.
- If the given amount is **higher** than the price, you will still get your **preferred display setting**. For this**, the charge will be deducted from your expense compensation**. However, this will only happen if one of the three dishes shown equally actually determines your payout.
- If the specified amount is **less** than the price, you will receive your **non-preferred display setting for free**.

Which display settings do you prefer? Click on one of the two buttons.

Labels should be **shown** | Labels should **not be shown**

If the display of labels is **not** preset and one of the three choices, you make now actually determines your payout: What is the **maximum** amount of your expense compensation you would like to give up in order to have the labels displayed?

(Click on the gray bar to make the slider visible).

0.00€ 1.00€ 2.00€ 3.00€

You want to give up a maximum of **1.70 €** of your expense compensation to **unlock the display of labels**.

Continue

Appendix D Experiment 2: Details on the experimental set-up

D.1 Pre-registration

I pre-registered Experiment 2 on the 25th of April 2022 on aspredicted #95108.

D.2 Canteen set-up in Bonn

The natural field experiment was conducted in the student canteens of the University of Bonn from April 2022 to July 2022. The whole of April (four weeks) served as a pre-intervention phase in which baseline consumption decisions were observed. Emission labels were introduced in the treatment student canteen from the beginning of May to mid-June 2022 (seven weeks). From mid-June to mid-July 2022 (three weeks, which ended with the summer closing of the treated student canteen), I continue to observe consumption decisions to examine post-intervention behavior.

There are three student canteens in Bonn: The treatment student canteen, the first control restaurant (located 1.7 km from the treatment restaurant), and the second control restaurant (located 4.7 km from the treatment restaurant and frequented much less than the other two restaurants). Menu planning is centralized among the three student canteens, and there is thus a large overlap in the daily offering. All three student canteens offer two main meal components, which differ daily but are mostly the same across student canteens. In addition, each of the student canteens might offer additional options, which are student-restaurant-specific. The larger control restaurant sometimes offers pizza or pasta in addition, and all student canteens might serve leftover main meal components from the previous day, soup, and side dishes. In the treatment restaurant, only the main meal components were equipped with carbon labels, and sides and leftover main meal components were not labeled. [2] Correspondingly, the dependent variable in my main regression is whether the main meal component a restaurant guest chooses contains meat or is vegetarian.

D.3 Canteen visiting patterns

An average student canteen guest visited the student canteen 10 times from April to mid-July. Around 34% visit 10 times or more, and around 15% visit 20 times or more. 90% of guests visited the same student canteen at least 80% of the time. The student canteens offer very cheap meals, with complete meals costing between €1.00 and €3.00. In fast food restaurants located in the surrounding area, meals are priced at €4.00 upward. In a survey I conducted among over 1,000 student canteen guests, over 40% of students report that they would

2. The main reason for this was that I wanted to test carbon labeling in a manner that was feasible for the student canteen to implement long-term. While main meal components are planned and known beforehand, sides and leftover dishes are decided spontaneously. Further, leftover main meal components only make up a smaller part of daily sales and the emissions caused by side dishes are almost negligible compared to those of the main meal components. Sales of all products are tracked, and label effects in the main sample are conservatively calculated over all main meal components offered, i.e. including main meal components spontaneously added to the menu but not labeled.

have difficulty finding an affordable meal if the student canteens did not exist. This suggests that switching between student canteens and other gastronomic offers is not frequent.

Do canteen guests regularly frequent multiple canteens? Figure D.1 includes an analysis based on the trackable personal card payments. I classify restaurant guests as “Treatment” or “Control” visitors based on their consumption behavior in the first two weeks. 91% of those regularly frequenting canteens during these two weeks (i.e. at least twice) visit the same canteen at least 80% of the time. I classify guests as “Control” or “Treatment” guests based on these two weeks. Around 2% of purchases made by “Control” visitors are made in the treated restaurant in the remaining 12-week period, while around 5% of the canteen visits of those classified as “Treatment” guests are to one of the Control canteens. Figure D.1 calculates weekly statistics on switching and shows time trends. It does not seem as if switching between canteens differed during the intervention period from post-intervention patterns, except for a small drop in treatment guests switching to the control canteen in week 5. Note, however, that week 5 is anyways excluded from the main analysis in Table 2 as explained in more detail in section D.5. Further, an analysis of daily restaurant guests shows that the labeling intervention does not seem to have led to a decrease in student canteen guests, relative to the control restaurant (see Figure B.1).

Note that the ITT specification shown in Table 2 by design controls for any change in canteen frequenting behavior induced by the intervention. Since I use an intent-to-treat specification, effect sizes are not impacted by possible increased switching between canteens. Further, since I include guest fixed effects, changes in average consumption behavior due to a mere change in the composition of canteen guests are controlled for.

The introduction of carbon labels in the treatment restaurant was displayed as a measure taken by the student canteens themselves, with no connection presented to the University of Bonn or me specifically as the researcher. The introduction of the emission labels was explained on billboards and leaflets available inside the student canteen, as shown in Figure D.2. I conducted two surveys accompanying the measure, one before the intervention period and one after the intervention period. The surveys and the labeling measures were advertised through different channels, and the survey was advertised as a chance to voice one’s opinion on the offer of the student canteen. It is thus unlikely that restaurant guests drew a connection between the initiative and the survey.

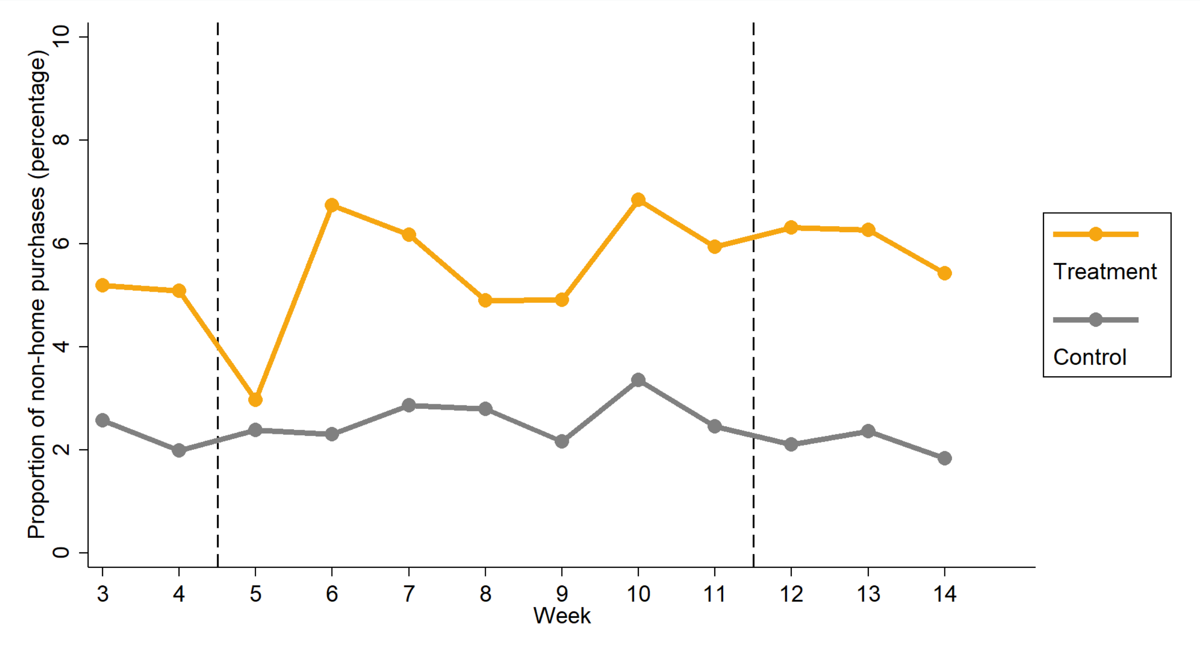


Figure D.1. Visits to the "non-home" canteen

Notes: In percentage points relative to total canteen visits. Classification as the "home" canteen based on behavior in the first two weeks. The sample is similar to that in spec. (4) in Table 2, but the intention to treat is calculated based entirely on the first two weeks, based on a minimum of two visits during this period. $N = 39,318$

D.4 Carbon label calculation

For the carbon labels, I calculated emission values with the application Eaternity Institute (2020), using ingredient lists provided by the student canteen. The design of the carbon labels was proposed by the student canteen, based on what is technically feasible and possibly implementable as a long-run measure. Examples are shown in Figure 7. They were coded in a traffic-light system, with thresholds determined such that approximately a third of the main components offered by the student canteen during the study period would be classified as green, one-third as yellow, and one-third as red. This corresponded to thresholds of 0.7 kg and 1 kg. [3]

3. Carbon emission labels for a given meal are calculated as the sum of the emissions caused by each of the ingredients. For each ingredient, emission values are calculated "from farm to gate". Hereby, it is assumed that the production process mirrors the average conventional production, e.g. I do not track the specific chicken breast bought by the student canteen but assume average conventional production. Emissions caused by the student canteen cooling, freezing, and cooking ingredients on-site are not included. These calculation details are explained to students on the student canteen website and on leaflets lying out on-site in the student canteen.

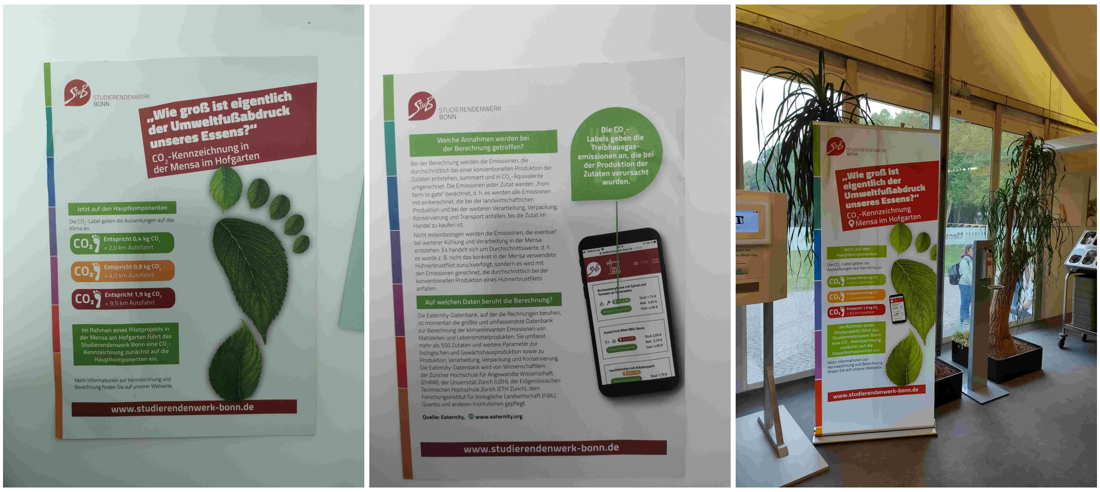


Figure D.2. Explanation of the carbon labeling initiative in the canteen

Notes: Leaflets (left and center) and billboards at the entrance of the student canteen (right).

D.5 Data set construction: Full sample

The main data set covers purchase data from April 1st, 2022 to July 8th, 2022. Spec. (1) in Table D.1 performs the basic analysis shown in the main text in Table 2 in Col.(1) on all data before any exclusions.

- Starting from week 9 of the treatment period (May 30th to June 3rd), Ukrainian refugees received free meals in the treated student canteen and the larger control restaurant, using specific student canteen cards. I thus identify these sales and exclude them from all analyses. For the treated restaurant, they make up 12% of total sales in week 9,26% in week 10, and between 13% and 17% for the rest of the observation period. For the control restaurant, they make up between 2% and 5% of total sales. Spec. (2) in Table D.1 shows how this exclusion affects results.
- During the first week of the label period (May 2nd to May 6th), the display was irregular, as the student canteen needed some “trial and error” to get the system running. On some days, the labels were only displayed in the student canteen or online. Further, the student canteen had a special “Healthy Campus” week during the first week of May, during which it offered additional extraordinary meals which were also irregularly labeled. It is thus not clear whether the decrease in meat consumption observed during this week (see Figure 8) can be attributed to the carbon labels. To be conservative, I exclude this week from the main analysis. Spec. (3) in Table D.1 additionally excludes week 5 from the sample.
- There are seven days on which the treatment restaurant and the larger control restaurant differed in the main meal components they offered. [4] This is because, although menu planning is centralized, one of the student canteens may not have delivered an ingredient on time or may realize another ingredient

4. Specifically, these seven days include: (1) one day on which both the meat and vegetarian main meal component offered in the treatment canteen were not the most-offered meal components in the control canteens, and (2) six days only one type of main meal component offered in the treatment canteen was also the most-sold respective meal component in control, and the other type of main meal component offered in treatment substantially differed to what was offered in control. I code this main meal component as substantially differing if both of the following conditions are met: First, the most-sold meal component sold in control differs in its characteristics

is about to expire and independently adjust its meal offer. Any differences in the choice of the main meal component between treatment and control restaurants on these days are likely mainly influenced by differences in offer rather than by differences in label treatment. I thus exclude these days. Spec. (4) in Table D.1 additionally excludes these seven days from the sample (the final sample used in the main text).

For each purchase, I have data on the mode of purchase (student canteen card or debit card), meal category (combined with daily menus, this provides the specific meal name), student canteen card ID (if the purchase is made with the student canteen card), cash register number, date of purchase, time of purchase (exact to the minute), and purchase value.

(i.e. meat type, vegan or non-vegan, carb-heavy or not) to the most-sold meal component in treatment. Second, the most-sold meal component in treatment is not among the two most-sold meal components of its type in control.

Table D.1. Field estimates of the effect of carbon labels on meat consumption, testing robustness to different data exclusion criteria

	Likelihood of consuming meat			
	(1)	(2)	(3)	(4)
	Full data	Excl. Ukr.	+Excl. W5	+Excl. diff. offer
Treatment restaurant x Label period	-0.02***	-0.03***	-0.02***	-0.02***
	(0.01)	(0.01)	(0.01)	(0.01)
Treatment restaurant x Post period	-0.01	-0.07***	-0.07***	-0.06***
	(0.01)	(0.01)	(0.01)	(0.01)
Treatment restaurant	-0.10***	-0.10***	-0.10***	-0.10***
	(0.01)	(0.01)	(0.01)	(0.01)
Label period	0.01***	0.01**	0.01**	0.01**
	(0.00)	(0.00)	(0.00)	(0.00)
Post period	0.02***	0.01	0.01	-0.00
	(0.00)	(0.00)	(0.00)	(0.00)
Constant	0.51***	0.51***	0.51***	0.51***
	(0.00)	(0.00)	(0.00)	(0.00)
Date effects	No	No	No	No
Fixed effects	No	No	No	No
Guests control	7,315	7,209	6,639	5,831
Guests treated	3,249	2,935	2,670	2,364
Observations	155,398	150,320	137,955	121,371

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: Spec. (1) includes all data from weeks 1 to week 14. Spec. (2) excludes consumption by Ukrainian refugees. Spec. (3) additionally excludes the first week of the label period (week 5). Spec. (4) additionally excludes seven days on which the offer of the treatment and control canteens strongly differed, resulting in the final sample analyzed in Table 2. Specification follows 3.

D.6 Data set construction: ITT sample

From the full sample data set detailed above, I construct the ITT sample data set:

- I restrict the sample to purchases made with a personal payment card (69% of purchases).
- Using the individual payment data, I can identify guests who purchased several meal components on a single day. These are 7% of the remaining sample. While the analyses on the full sample are at the level of the individual purchase (does the purchase contain meat?), the analyses on the restricted sample are at the level of the individual guest (does the guest eat meat on a given day?). If a guest purchases multiple main meal components, it is not clear whether they consume these themselves or whether they are paying

for a friend. I thus drop all purchases made by a specific guest if they make multiple purchases on a given day.

- Further, I restrict the analysis to regular canteen guests, which I define as individuals who visited one of the student canteens at least four times during the pre-intervention period (41% of the remaining sample). Results are robust to different cut-off values, as Table D.2 shows.
- Finally, I restrict the sample to canteen guests visiting the same canteen in 80% of their visits (87% of the remaining sample). Results are robust to different percentage cutoff values, as Table D.3 shows.

Table D.2. Field estimates of the effect of carbon labels on meat consumption, testing robustness to different data exclusion criteria

	Likelihood of consuming meat				
	(1)	(2)	(3)	(4)	(5)
	> 4 visits	> 2 visits	> 3 visits	> 5 visits	> 6 visits
ITT guest x Label period	-0.03***	-0.02***	-0.03***	-0.03**	-0.03*
	(0.01)	(0.01)	(0.01)	(0.01)	(0.02)
ITT guest x Post period	-0.05***	-0.04***	-0.05***	-0.04***	-0.04**
	(0.01)	(0.01)	(0.01)	(0.02)	(0.02)
Constant	0.51***	0.49***	0.50***	0.53***	0.53***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Date effects	No	No	No	No	No
Fixed effects	Yes	Yes	Yes	Yes	Yes
Guests control	787	1,514	1,116	558	382
Guests treated	262	519	353	165	119
Observations	27,640	41,643	34,509	21,313	15,618

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: Spec. (1) conducts the ITT analysis following the above described data preparation procedure, i.e. guests are classified as regular student canteen guests if they visit the treatment canteen at least five times during the pre-intervention period. Col. (2) instead requires at least 2 visits, Col. (3) requires at least three visits, Col. (4) at least 5, and Col. (5) at least 6 visits. All specifications include individual fixed effects.

Table D.3. Field estimates of the effect of carbon labels on meat consumption, testing robustness to different data exclusion criteria

	Likelihood of consuming meat			
	(1)	(2)	(3)	(4)
	80	60	70	90
ITT guest x Label period	-0.03***	-0.02**	-0.03***	-0.03***
	(0.01)	(0.01)	(0.01)	(0.01)
ITT guest x Post period	-0.05***	-0.05***	-0.05***	-0.06***
	(0.01)	(0.01)	(0.01)	(0.02)
Constant	0.51***	0.50***	0.50***	0.51***
	(0.00)	(0.00)	(0.00)	(0.00)
Date effects	No	No	No	No
Fixed effects	Yes	Yes	Yes	Yes
Guests control	787	856	828	736
Guests treated	262	289	274	233
Observations	27,640	30,259	28,841	25,453

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: Spec. (1) conducts the ITT analysis following the above described data preparation procedure, i.e. assigning guests as ITT if they visit the treatment canteen in at least 80% of their canteen visits pre-intervention. . Col. (2) instead uses a 60% assignment rule, Col. (3) uses a 70% assignment rule, and Col. (4) uses a 90% assignment rule. All specifications include individual fixed effects.

D.7 Descriptive statistics on meat consumption and average emissions

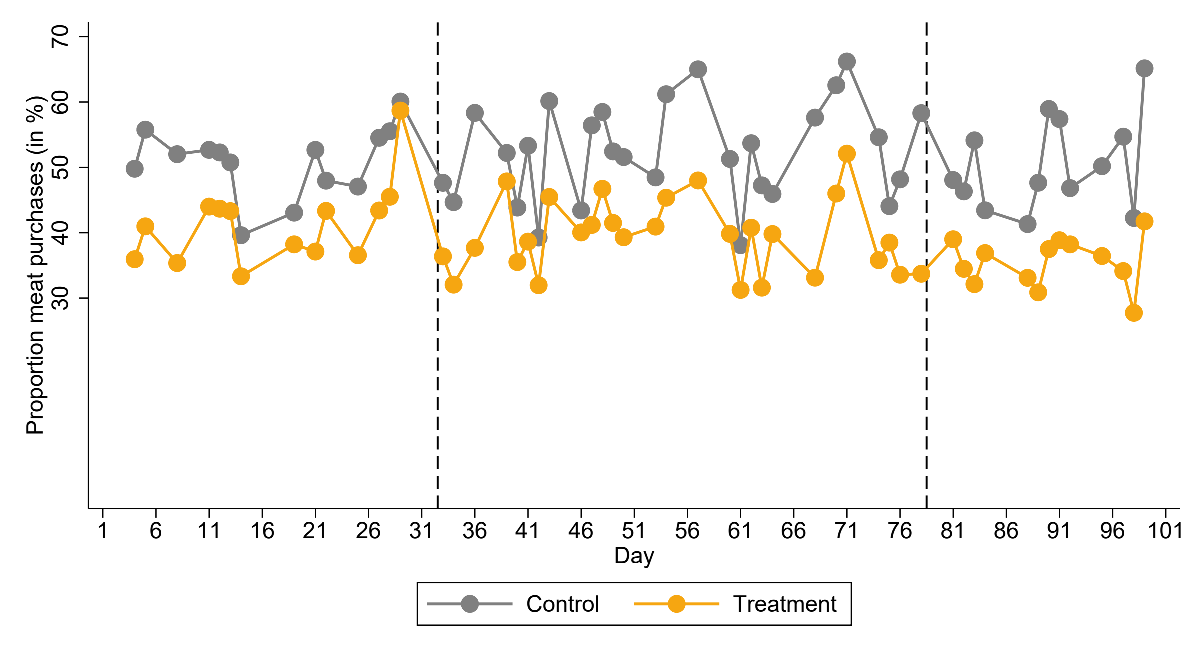


Figure D.3. Proportion of meat meals sold in the canteen

Notes: using the final sample but including week 5. $N = 129, 166$

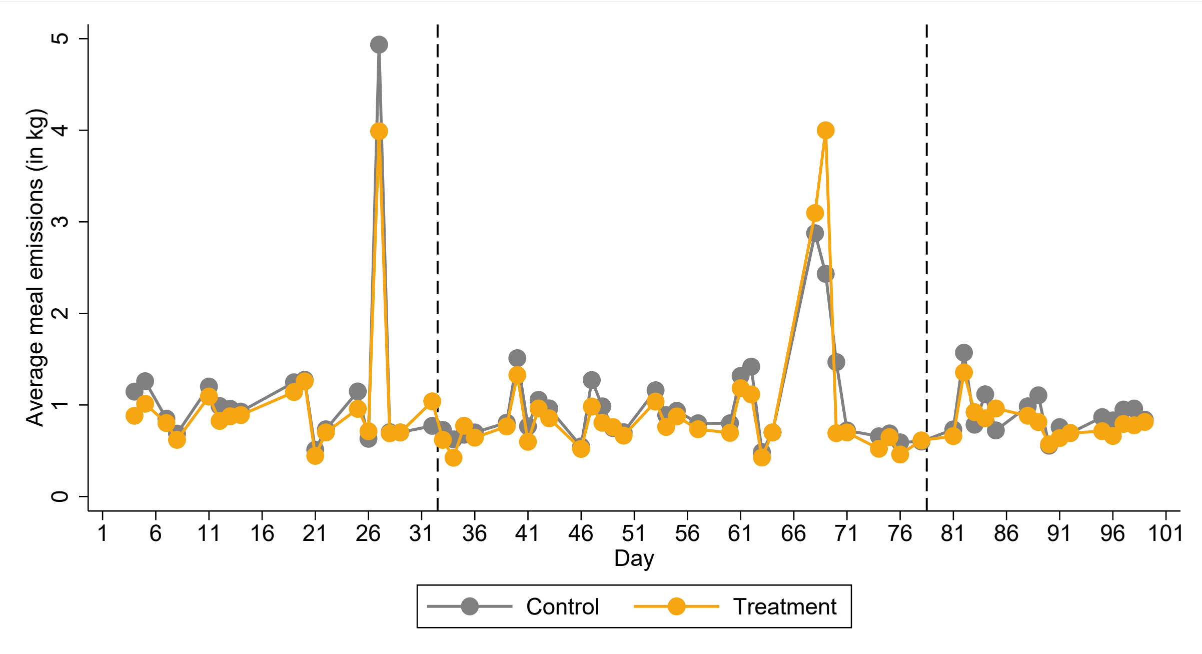


Figure D.4. Average emissions per meal sold in the canteen

Notes: Using the final sample but including week 5. $N = 129, 166$

D.8 Survey accompanying natural field experiment

Pre-intervention survey: During the second week of April, I conducted a survey among student canteen guests at the treatment student canteen and the first, larger, control restaurant. The survey was advertised as an opportunity to voice one's opinion on the offer of the student canteen, took participants around five minutes, and motivated potential participants with the chance to win one of ten €50 coupons for the student canteen. The survey was advertised through multiple channels. First, I put up posters advertising the survey in many faculties throughout the University of Bonn. Second, I distributed leaflets in front of the treatment restaurant and the larger control restaurant, together with research assistants (see Figure D.5). It is common for students and student groups to advertise surveys, projects, and events in this manner. Finally, the experimental lab at the University of Bonn sent out an e-mail to its entire participant pool advertising participation.

Figure D.5. Leaflet advertising participation in the survey

Notes: Leaflet was distributed in front of the student canteen.

In the survey, respondents indicated their student canteen card number and consented to their survey responses being connected to their consumption decisions from April to July. They filled out questions on demographics, environmental attitudes, political preferences, and preferences towards the student canteen offer. Responses to the questions on student canteen offer and participant comments were analyzed, summarized, and presented to the gastronomic manager of the student canteens. 1,700 respondents participated in this first survey, 94% of these students.

Post-intervention survey: From the 22nd of June, I started sending out invitations to participate in a second survey. These were sent out by e-mail to those participants of the first survey who indicated their e-mail addresses and consented to be contacted for a second survey. This was the case for 93% of participants in survey 1. Of the 1,558 I invited to the survey, 940 filled out survey 2. I invited participants in a staggered fashion over two weeks and sent a reminder on the 7th of July. Again, survey respondents had the opportunity to win one of ten 50 €coupons for the student canteen.

In survey 2, I repeated some of the questions from survey 1, to assess whether attitudes changed differentially in the treatment student canteen. The survey further included some questions of interest to the student canteen following the outcome of the first survey. At the end of the survey, participants could indicate whether and how they had perceived the emission labels, as well as voice their opinion on the initiative.

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