# Meat consumption can trigger information avoidance

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### Problem

### Meat consumption has an impact on

- the environment (greenhouse gas, freshwater, agricultural land)
- animal welfare
- personal health (WHO: carcinogenic)
- In the last fifty years the amount of meat produced has more than tripled, exceeding 350 million tons a year (FAO, 2024).
- Information campaigns to reduce meat consumption: *the more you know, the less you eat* 
  - Policy makers and NGOs
  - Paul McCartney's words:
    - "If slaughterhouses had glass walls, everyone would be vegetarian."
  - Causal effects of information interventions: mixed results
- Research question: *Does meat consumption increase information avoidance?* The more you eat, the less you want to know...

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### Motivation



#### Experiment

#### • Effect of meat consumption on...

- information acquisition
- knowledge
- attitudes
- Mixed results: Meat consumption...
  - triggers information avoidance!
  - triggers indication not to know!
- Interpretation:
  - Limits effectiveness of information campaigns
  - Revising Paul McCartney's quote: "If slaughterhouses had glass walls, [more people would avoid looking at them.]

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### **Related Literature**

#### Information avoidance

- Benabou & Tirole (JEP, 2016)
- Golman, Hagmann & Loewenstein (JEL, 2017)
- Oster, Shoulson & Dorsey (AER, 2013)
- Dana, Weber & Kuang (*ET, 2007*)
- Grossman, & Van Der Weele (JEEA, 2017)

#### Economics of meat

- Hestermann, Le Yaouanq & Treich (EER, 2020)
- Espinosa & Stoop (Exp Econ, 2021)
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- Studies on meat consumption in other disciplines
  - Bratanova, Bastian and Loughnan (2011)
  - Bastian, Haslam and Loughnan (2011)
  - Bastian, Haslam, Loughnan and Radke (2012)

T-Control		WTP info about beef		WTP info about pork	Attitudes	Knowledge	Information
T-Meat	Eating beef	WTP info about beef	Eating pork	WTP info about pork	Attitudes	Knowledge	Information

- Two groups:
  - Control group: T-Control
  - Treatment group: T-Meat
- Random allocation of treatments to sessions
- Between-subjects design
- Comparison among omnivores
- T-Meat makes being a meat eater salient

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- 146 participants
- Mostly students in Switzerland: Fribourg, Lausanne, Bern
- Lab in Fribourg and in Bern.
- A variation of T-Meat discontinued.

Two parts

- online survey: (10 min)
  - Demographic questions
  - Attitudes
  - Knowledge
- lab experiment (40 min)

Randomized into T-Control or T-Meat

- Eating meat or not (according to treatment)
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### Treatment





Meat Info Avoidance

Rotterdam, August 2024

#### Item 1: Information on animal welfare in the beef production

If you are paid 75 points for this information item, would you accept?	⊖ Yes	O No
If you are paid 50 points for this information item, would you accept?	) Yes	O No
If you are paid 25 points for this information item, would you accept?	⊖ Yes	O No
If you are paid 0 points for this information item, would you accept?	) Yes	O No
If you have to pay 25 points for this information item, would you accept?	) Yes	O No
If you have to pay 50 points for this information item, would you accept?	) Yes	O No
If you have to pay 75 points for this information item, would you accept?	⊖ Yes	O No

#### Consistent choice by design

- When switched to "No" all lower answers are switched to "No" too.
- Underlying assumption: if some item is refused at some price *p*, it must be refused at a higher price as well.

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Switch to "No"	WTP	WTPproxy	Info Avoidance
at paid 75 (always "No")	$\in (-\infty, -75]$	-87.5	1
at paid 50	∈ [−75, −50]	-62.5	1
at paid 25	∈ [−50, −25]	-37.5	1
at zero	∈ [−25, 0]	-12.5	1
at price 25	∈ [0, 25]	12.5	0
at price 50	∈ [25, 50]	37.5	0
at price 75	∈ [50, 75]	62.5	0
never (always "Yes")	$\in$ [75, $\infty$ )	87.5	0

Outcome variables:

WTPproxy

Information avoidance:= refuse information item even if it is for free.

Image: Image:

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Outcome variables:

- WTPproxy
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- Meat consumption is 7x too high
- Meat consumption is 3x too high
- Meat consumption is approximately at the right level
- Meat consumption is 2x too low
- I don't know

In Swiss farms, the percentage of pigs that live their whole life without having the possibility to go outside is:

- 0 36%
- 0 58%
- 0%
- 0 88%
- O I don't know

Outcome variables:

- *Knowledge score*:= Number of correct answers out of eight questions.
- IDK respondent:= Respondent has ticked "I don't know" at least once.

Image: A matrix

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It is acceptable to eat meat because the animals killed for our consumption have lower intellectual capacities than humans.

○ 1	<u>2</u>	○ 3	0 4	05	0 6	○ 7
Animals are mo	ostly treated well	in farms in Switz	erland.			
○ 1	O 2	⊖ 3	○ 4	○ 5	0 6	07
Eating meat is	healthy.					
01	○ 2	⊖ 3	○ 4	05	0 6	○ 7
Eating meat is	necessary for go	od health.				
01	○ 2	О З	○ 4	05	0 6	○ 7
It's normal to e	at meat.					
○ 1	○ 2	⊖ 3	○ 4	05	0 6	○ 7
Fating meat m	av be bad for the	environment. bu	it no more so tha	an eating vegetab	oles or cereals.	

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01	0 2	O 3	04	0 5	0 6	07

#### Outcome variables:

- Consequences score:= perception of bad consequences (vs. downplaying).
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Eating meatin	hay be bad for th	le environment, L	out no more so tr	ian eating vegeta	ables of cereals.	
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- Consequences score:= perception of bad consequences.
  - Eating meat may be bad for the environment, but no more so than eating vegetables or cereals. (reverse)
  - Animals are mostly treated well in farms in Switzerland. (reverse)
  - The way meat is produced in Switzerland is morally wrong.
  - Deforestation is a major concern for humanity.
  - Preserving jobs is more important than reducing CO2 emissions. (reverse)
  - It is acceptable to eat meat because the animals killed for our consumption do not really suffer. (reverse)

#### • *Justification score*:= average meat justification attitude.

- It is acceptable to eat meat because the animals killed for our consumption do not really suffer. (also used for consequence score)
- It is acceptable to eat meat because the animals killed for our consumption have lower intellectual capacities than humans.
- It is acceptable to eat meat because animals are raised for this purpose.
- God created animals for us to eat them.
- Eating meat is healthy.
- It's natural to eat meat, it's written in our genes.
- It's normal to eat meat.
- I like meat too much to stop eating it.
- Eating meat is necessary for good health.
- Eating meat may be bad for the environment, but no more so than eating vegetables or cereals.

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# Hypotheses

Incentivized outcomes: Information Avoidance & Knowledge

Hypothesis (H1)

Meat consumption lowers the willingness to pay for information about meat.

### Hypothesis (H2)

Meat consumption hampers knowledge concerning meat.

#### Non-incentivized outcomes: Attitudes

Hypothesis (H3)

Meat consumption lowers estimation of its negative consequences

#### Hypothesis (H4)

Meat consumption fosters meat justification attitudes.

#### Pre-registered at AEA RCT Registry: AEARCTR-0008904.

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< ≣⇒ Rotterdam, August 2024

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Variable	Obs	Mean	Std. Dev.	Min	Max
T Meat	146	0.62	0.49	0	1
Female	145	0.60	0.49	0	1
Age	146	23.56	4.33	19	46
Lab dummy	146	0.45	0.50	0	1
WTP info about beef	146	20.15	34.37	-62.5	87.5
WTP info about pork	146	18.55	34.60	-87.5	87.5
Info avoider - beef	146	0.28	0.45	0	1
Info avoider - pork	146	0.31	0.46	0	1
Knowledge score	146	4.62	1.50	1	8
IDK respondent	146	0.13	0.34	0	1
Consequences score	146	4.81	0.71	2.83	6.33
Justification score	146	3.39	0.99	1.10	5.80

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### H1: Meat consumption lowers WTP



 Mean WTPproxy does not reduce significantly (*t*-test):

- 23.1 vs. 18.3 points
- 19.0 vs. 18.2 points

 Frequency of information avoiders, i.e., respondents who more often avoid information than seek information, increases weakly significantly (one-sided Fisher exact test).

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# H1: Information avoidance by information item



Information avoidance

Bénédicte Droz

Rotterdam, August 2024

20/30

# H1: Information avoidance by information item



Bénédicte Droz

pork & animal welfare

pork & health

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### H1: Information Avoidance - Beef

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Info avoider	Info avoider	Info avoidance					
	beef	beef	beef & env.	beef & env.	beef & a-w.	beef & a-w.	beef & health	beef & health
main								
T_Meat	$0.424^{*}$	$0.442^{*}$	$0.514^{**}$	$0.529^{**}$	0.00221	-0.0101	0.232	0.286
	(0.235)	(0.248)	(0.234)	(0.247)	(0.222)	(0.237)	(0.238)	(0.251)
Female		0.135		0.0695		0.157		0.366
		(0.238)		(0.234)		(0.231)		(0.249)
Age		0.0793***		0.0782***		0.0945***		0.0698***
		(0.0275)		(0.0277)		(0.0284)		(0.0262)
Lab_dummy		-0.0117		0.0131		0.0238		-0.239
		(0.238)		(0.235)		(0.234)		(0.245)
_cons	-0.854***	-2.824***	-0.854***	-2.763***	-0.464***	-2.800***	-0.854***	-2.673***
	(0.192)	(0.719)	(0.192)	(0.721)	(0.174)	(0.722)	(0.192)	(0.692)
N	146	145	146	145	146	145	146	145

Table 2: Information avoidance for beef: probit model

Standard errors in parentheses

\* p < 0.1, \*\* p < 0.05, \*\*\* p < 0.01

Marginal effects: Meat consumption increases the probability of...

- ...becoming a beef information avoider by 14.2\*p.p.
- ...avoiding information about beef & environment by 17.7\*\* p.p.

## H1: Information Avoidance - Pork

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Info avoider	Info avoider	Info avoidance					
	pork	pork	pork & env.	pork & env.	pork & a-w.	pork & a-w.	pork & health	pork & health
main								
T_Meat	0.361	0.387	0.274	0.245	$0.391^{*}$	$0.421^{*}$	$0.459^{*}$	$0.544^{**}$
	(0.229)	(0.240)	(0.227)	(0.237)	(0.229)	(0.237)	(0.239)	(0.251)
Female		-0.207		-0.188		-0.108		-0.0106
		(0.227)		(0.225)		(0.225)		(0.235)
Age		0.0528**		$0.0465^{*}$		0.0330		0.0464*
		(0.0262)		(0.0260)		(0.0251)		(0.0256)
Lab_dummy		-0.0821		0.118		-0.104		-0.300
		(0.231)		(0.229)		(0.229)		(0.240)
Constant	-0.732***	-1.835***	-0.674***	-1.697**	-0.732***	-1.413**	-0.921***	-1.931***
	(0.185)	(0.670)	(0.182)	(0.666)	(0.185)	(0.645)	(0.196)	(0.665)
Observations	146	145	146	145	146	145	146	145

Table 4: Information avoidance for pork: probit model

Standard errors in parentheses

\* p < 0.1,\*\* p < 0.05,\*\*\* p < 0.01

Marginal effects: Meat consumption increases the probability of...

- (...becoming a pork information avoider by 12.7<sup>*n.s.,p*=0.114</sup>*p.p.*.)
- ...avoiding information about pork & animal welfare by 13.8\**p.p.*
- ...avoiding information about pork & health by 15.0\*p.p.

We do not find that meat consumption lowers the mean WTP, but it does significantly lower the probability of seeking information.

#### Result

Meat consumption can increase information avoidance.

## H2: Meat consumption hampers knowledge



• Mean knowledge score does not reduce significantly (*t*-test).

 Frequency of IDK respondents, i.e., respondents who tick at least once "I don't know", increases significantly (one-sided *Fisher exact* test).

## H2: Meat consumption hampers knowledge



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- Frequency of IDK respondents, i.e., respondents who tick at least once "I don't know", increases significantly (one-sided *Fisher exact* test).

# H2: Meat consumption hampers knowledge

#### Table with marginal effects of probit regressions

	(1)	(2)	(3)	(4)
	IDK respondent	IDK respondent	IDK respondent	IDK respondent
T_Meat	0.135**	0.157***	0.102**	0.108**
	(0.0592)	(0.0576)	(0.0427)	(0.0439)
Controls	no	yes	no	yes
Survey IDK resp.	no	no	yes	yes
Observations	146	145	146	145

Standard errors in parentheses

\* p < 0.1, \*\* p < 0.05, \*\*\* p < 0.01

Marginal effects: Meat consumption increases the probability of...

...becoming a IDK respondent by 13.5\*\* p.p.

We do not find that meat consumption significantly lowers the knowledge about meat, but it does significantly increase the probability of ticking "I don't know".

#### Result

Meat consumption increases the probability of indicating not to know.

### H3 and H4: Attitudes



H3: Meat consumption lowers estimation of its negative consequences.

H4: Meat consumption fosters meat justification attitudes.

- Mean consequences score does not reduce significantly (*t*-test).
- Mean justification score does not increase significantly (*t*-test).

#### Result

No effect of meat consumption on attitudes found.

### H3 and H4: Attitudes



H3: Meat consumption lowers estimation of its negative consequences.

H4: Meat consumption fosters meat justification attitudes.

- Mean consequences score does not reduce significantly (t-test).
- Mean justification score does not increase significantly (*t*-test).

#### Result

No effect of meat consumption on attitudes found.

#### Warning:

- ! Cross-sectional correlations!
- ! Not pre-registered hypotheses!
- Information avoidance correlates positively with **age** and **right-wing** political orientation.
- Meat consumption outside the lab correlates positively with information avoidance, negatively with WTP, negatively with Consequences score, and positively with Justification score.

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#### Experiment

- Influence of meat consumption on...
  - information acquisition
  - knowledge
  - attitudes
- Mixed results: Meat consumption...
  - triggers information avoidance!
  - triggers indication not to know!

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- Influence of meat consumption on...
  - information acquisition
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- Mixed results: Meat consumption...
  - triggers information avoidance!
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# Thank you!

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