

# Effects of cooperative and uncooperative narratives on trust and health attitudes during the COVID-19 pandemic: Experimental evidence

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# Motivation

- COVID-19 pandemic – **one of the largest health crises** in human history:
  - 7M official deaths, 18-32M excess deaths globally (the Economist);
  - Unprecedented health measures and changes in human behavior.
- Health crises can affect people's trust in each other, e.g.:
  - The Black Death (Voigtländer and Voth, 2012);
  - The Spanish Flu (Aassve et al., 2021);
  - The COVID-19 pandemic (Aassve et al., 2022; Gambetta and Morisi, 2022; Iacono et al., 2021; Li et al., 2021).
- **Trust is important for many economic outcomes!** (Guiso et al., 2004; Guiso et al., 2006; Guiso et al., 2009; Algan and Cahuc, 2010; Tabellini, 2010; Bloom et al., 2012).
- How a health crisis affects trust could depend on **pandemic communication** (Aassve et al., 2021).

# Motivation

- During COVID-19 – a lot of communication (e.g., to promote responsible health practices).
- Often included the sharing of **norm-based narratives**, i.e., messages/ stories evaluating society's behavior during the pandemic in terms of (non)compliance to pandemic norms (e.g., social distancing, mask-wearing, or vaccination).
- Narratives depicting behaviors that violate pandemic social norms (**uncooperative narratives**), were often more common than narratives depicting behaviors that support pandemic social norms (**cooperative narratives**).

# Uncooperative narrative: people are irresponsible and do not cooperate for the common good

*“This is a pandemic of the unvaccinated... The unvaccinated overcrowd our hospitals, are overrunning the emergency rooms and intensive care units, leaving no room for someone with a heart attack, or pancreatitis, or cancer.” (J. Biden, September 9, 2021)*

*“Now the unvaccinated <...> When my freedom threatens that of others, I become irresponsible. An irresponsible person is no longer a citizen.” (E. Macron, January 4, 2022)*

# Research question

## **Main:**

*How do norm-based pandemic narratives affect individuals' trust in strangers?*

## **Additional:**

*How do norm-based pandemic narratives affect health attitudes?*

# Related literature

- **COVID-19 pandemic and trust:** Esaiasson et al., 2020; Aksoy et al., 2021; Iacono et al., 2021; Li et al., 2021; Aassve et al., 2022; Gambetta and Morisi, 2022; Casoria et al., 2023.
- **Social norm violations/ promotions and trust:** Banerjee, 2016; Peysakhovich and Rand 2016; Iacono et al., 2021.
- **Media/ information and trust:** Olken, 2009; Antoci et al., 2019.
- **Norm-based/ moral communication and pro-social behavior:** Dal Bó and Dal Bó, 2014; Posten et al., 2014; Rand et al., 2014; Drouvelis et al., 2015; Capraro and Rand, 2018; Bénabou et al., 2018; Tappin and Caprano, 2018; Capraro et al., 2019.
- **Norm-based/ moral communication and health behavior/ attitudes:** e.g., *healthy eating* (Robinson et al., 2014), *alcohol consumption* (Bewick et al., 2010), *vaccination* (Gao et al., 2022), and *support of pandemic health measures* (Ryoo and Kim, 2021).

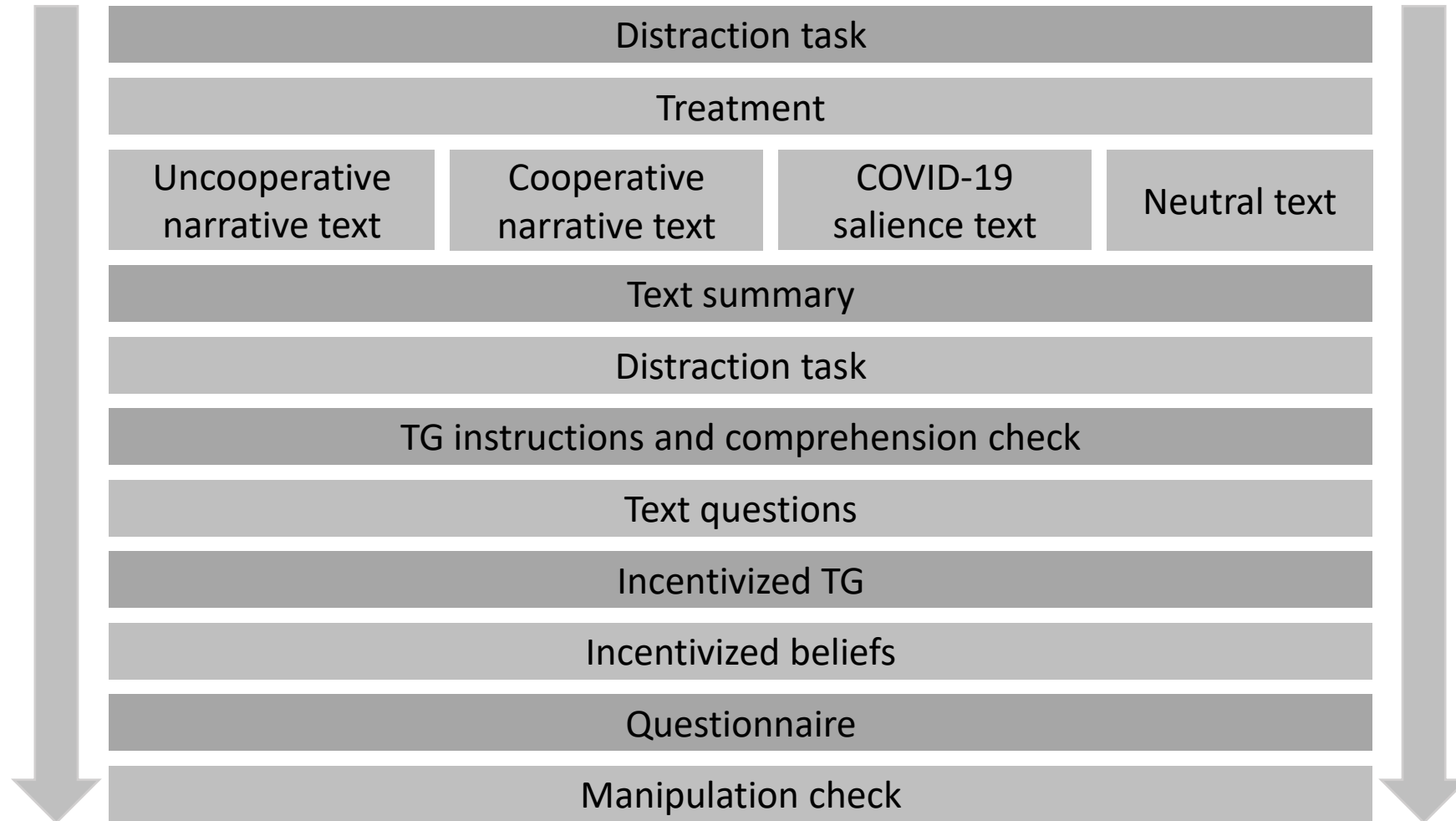
## → Contribution:

- Explore actual norm-based narratives from a recent health crisis (not in-lab norm violations/ promotions).
- Focus on late pandemic period → cleaner identification (no social distancing, vaccination requirements, less pandemic anxiety, potentially recovered trust levels).

# Identification strategy

- Conduct a preregistered **online between-subject experiment** on Prolific.
- Date: May-June 2022.
- 875 participants:
  - All British nationals residing in the UK.
  - 50.5% men, 49.3% women, and 0.2% other.
  - Mean age: 40 years.
- £1.5 for participation plus additional reward depending on role and decisions in the experiment. Average total pay: £4.6.
- Average duration: 16 minutes.
- **Four treatments**, where participants read a short article: (1) *uncooperative narrative treatment*, (2) *cooperative narrative treatment*, (3) *COVID-19 salience treatment*, or (4) *neutral treatment*.
- **Incentivized trust game (TG)** (Berg et al., 1995), incentivized belief elicitation, and questionnaire.

# Procedures

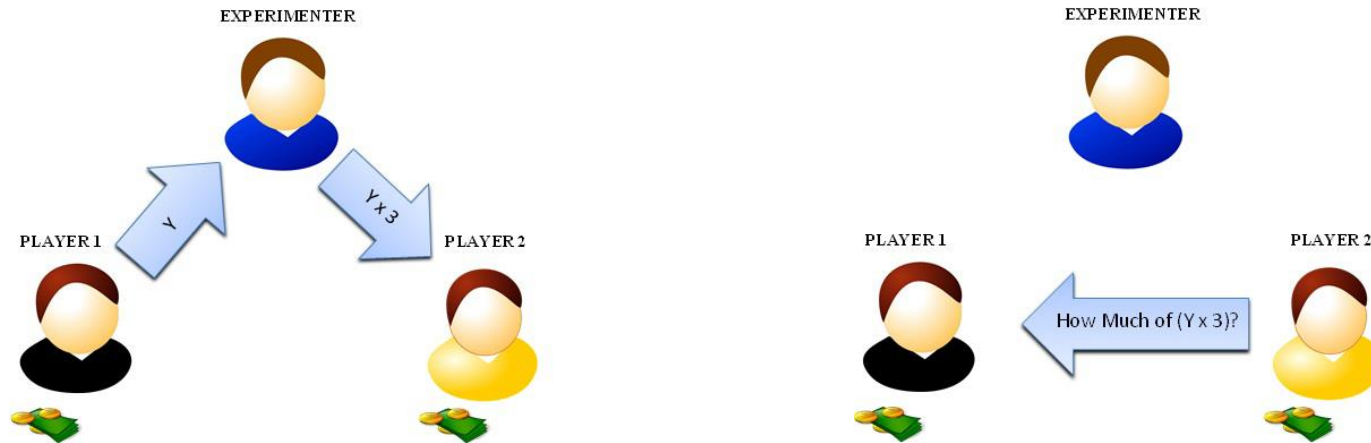




# Treatments

Treatment	Content
<i>Uncooperative narrative</i>	Emphasizes <b>uncooperative behaviour of British people during the COVID-19 pandemic</b> : the refusal of some Britons to uphold preventative health measures (social distancing, mask-wearing, travel rules), to get vaccinated, and the consequences of such behaviors (i.e., spreading the virus).
<i>Cooperative narrative</i>	Emphasizes <b>cooperative behaviour of British people during the COVID-19 pandemic</b> : the compliance of most Britons to preventative health measures (social distancing, mask-wearing, travel rules), getting vaccinated, and the consequences of such behaviors (i.e., saving lives).
<i>COVID-19 salience</i>	Reminds participants of the <b>COVID-19 pandemic without any reference to behavior</b> : the start of the pandemic, the symptoms, and the variations in the severity of the disease.
<i>Neutral (Baseline)</i>	Provides participants with <b>neutral information unrelated to the COVID-19 pandemic</b> : describes the distribution, habitat, physical appearance, and breeding behavior of a “tern” (a bird similar to a seagull).

# Trust game



- One-shot game. 2 players: player 1 (trustor) and player 2 (trustee).
- Endowment: £2 each.
- *Trustor* is told to send some amount  $Y$  (where  $0 \leq Y \leq 2$ ) to *trustee*.
- *Trustor* keeps  $2 - Y$  and  $3Y$  is passed onto *trustee*.
- *Trustee* is told to give some amount  $X$  back to *trustor* (where  $0 \leq X \leq 3Y$ ).
- Final payoff for the *trustor* is  $2 - Y + X$  and for *trustee* it is  $2 + 3Y - X$ .

# Outcomes

- *Trust*: the fraction of endowment sent by the trustors to the trustees in the trust game.
- *Pandemic emergency*: “The COVID-19 pandemic has been one of the greatest health emergencies in human history” (11-point Likert scale)
- *Pro-vaccine*: “In general, vaccines are necessary to prevent the spread of infectious diseases” (11-point Likert scale)

# Hypotheses: *Trust*

- Providing individuals with instances of non-compliance (compliance) to health measures decreases (increases) their trust in other people.
  - beliefs of trustworthiness
  - moral excuses/ reputational benefits
- Priming individuals with the COVID-19 pandemic reduces their trust in other people.
  - emotions

# Hypotheses: *Health-related attitudes*

The *uncooperative narrative* increases the perceived pandemic awareness and general support for vaccines.

→ emotions

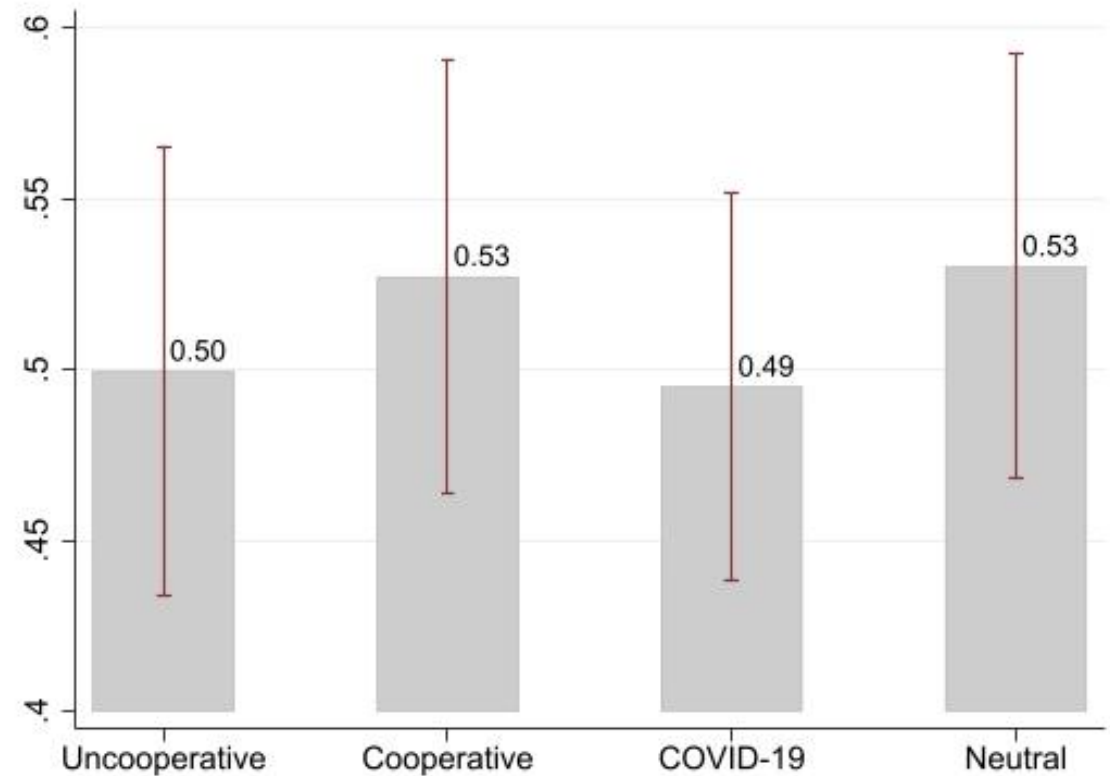
→ image concerns

# No effect of narratives or COVID-19 salience on trust

Treatments compared	t test
Uncooperative vs COVID-19	0.105
Uncooperative vs Cooperative	-0.603
Cooperative vs COVID-19	0.737
COVID-19 vs Neutral	-0.834

Note: The t test represented here is a two-tailed test with equal variances. \*\*\* $p < 0.01$ , \*\* $p < 0.05$ , \* $p < 0.1$ .

Also, no effect on trustworthiness, trustworthiness beliefs, or survey-based measures of trust.



**Fig 1.** Average trust, measured with the fraction of endowment sent by the trustors to the trustees in the trust game.

# OLS: *Trust*

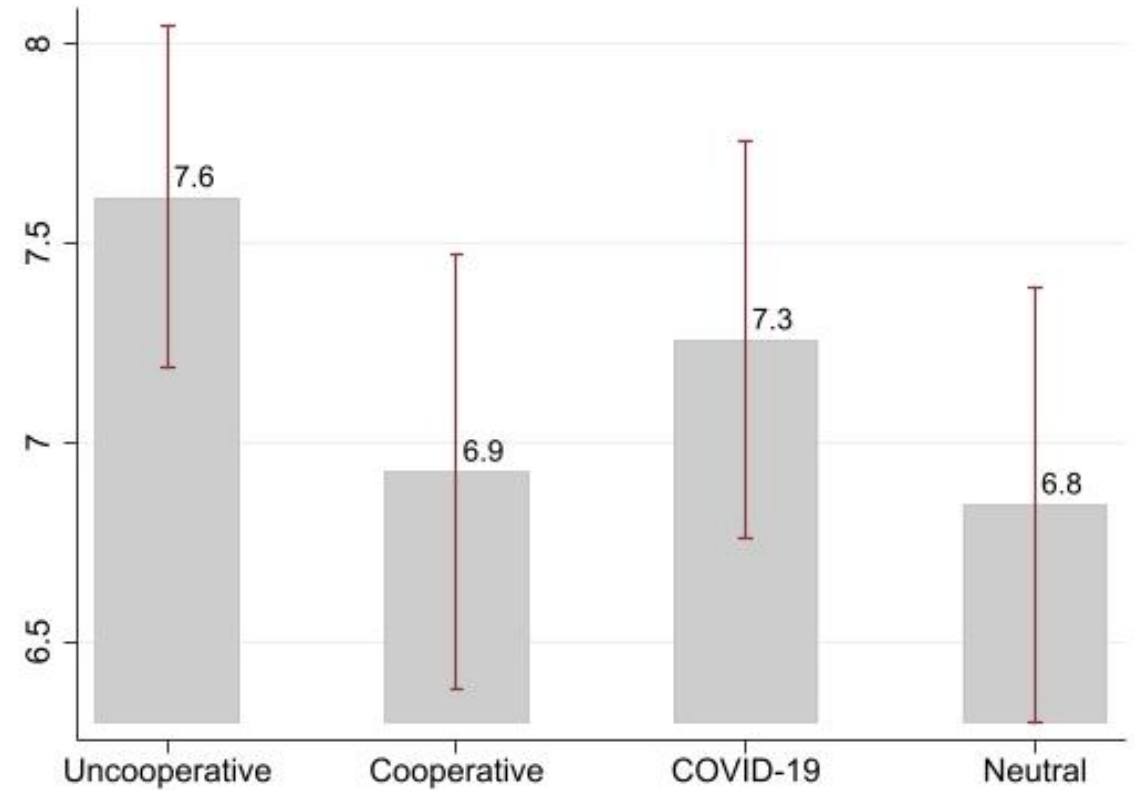
- Treatments have no effect on trust.
- Women ↓
- Low-income (£500-749) and high-income individuals (>£2000) ↓

Trust	(1)	(2)	(3)	(4)
Uncooperative narrative	-0.031 (0.044)	-0.016 (0.045)	-0.018 (0.045)	-0.019 (0.045)
Cooperative narrative	-0.003 (0.044)	0.011 (0.044)	0.005 (0.045)	0.008 (0.045)
COVID-19 salience	-0.035 (0.044)	-0.018 (0.045)	-0.019 (0.045)	-0.018 (0.046)
Age		-0.000 (0.001)	0.001 (0.001)	0.000 (0.001)
Female gender		-0.063** (0.032)	-0.057* (0.032)	-0.057* (0.032)
University education		0.049 (0.035)	0.044 (0.036)	0.040 (0.036)
Income: £500-749		-0.116** (0.052)	-0.112** (0.052)	-0.100* (0.053)
Income: £750-999		-0.021 (0.060)	-0.020 (0.060)	-0.017 (0.060)
Income: £1000-1249		-0.078 (0.057)	-0.067 (0.057)	-0.061 (0.057)
Income: £1250-1499		-0.050 (0.062)	-0.043 (0.062)	-0.034 (0.062)
Income: £1500-1749		0.003 (0.061)	-0.000 (0.062)	0.015 (0.063)
Income: £1750-1999		-0.098 (0.073)	-0.107 (0.073)	-0.117 (0.074)
Income: >£2000		-0.140*** (0.054)	-0.132** (0.054)	-0.132** (0.054)
Political party: Conservative			-0.027 (0.047)	-0.029 (0.047)
Political party: Lib Dem			0.018 (0.060)	0.026 (0.060)
Political party: Green			0.093 (0.057)	0.097* (0.057)
Political party: Scottish			-0.134 (0.082)	-0.134 (0.083)
Political party: Reform UK			-0.075 (0.115)	-0.070 (0.116)
Political party: Other			0.119 (0.137)	0.122 (0.137)
Political party: None			-0.048 (0.044)	-0.046 (0.045)
Sick with COVID-19: Yes				0.097 (0.087)
Family sick with COVID-19: Yes				-0.015 (0.047)
At risk of COVID-19: Yes				0.084* (0.045)
At risk of COVID-19: Do not know				0.042 (0.067)
Constant	0.530*** (0.031)	0.574*** (0.069)	0.556*** (0.071)	0.553*** (0.072)

# Uncooperative narrative increases pandemic concerns

Treatments compared	t test
Uncooperative vs Cooperative	1.973**
Uncooperative vs Neutral	2.197**

Note: The t test represented here is a two-tailed test with equal variances. \*\*\*p < 0.01, \*\*p < 0.05, \*p < 0.1.



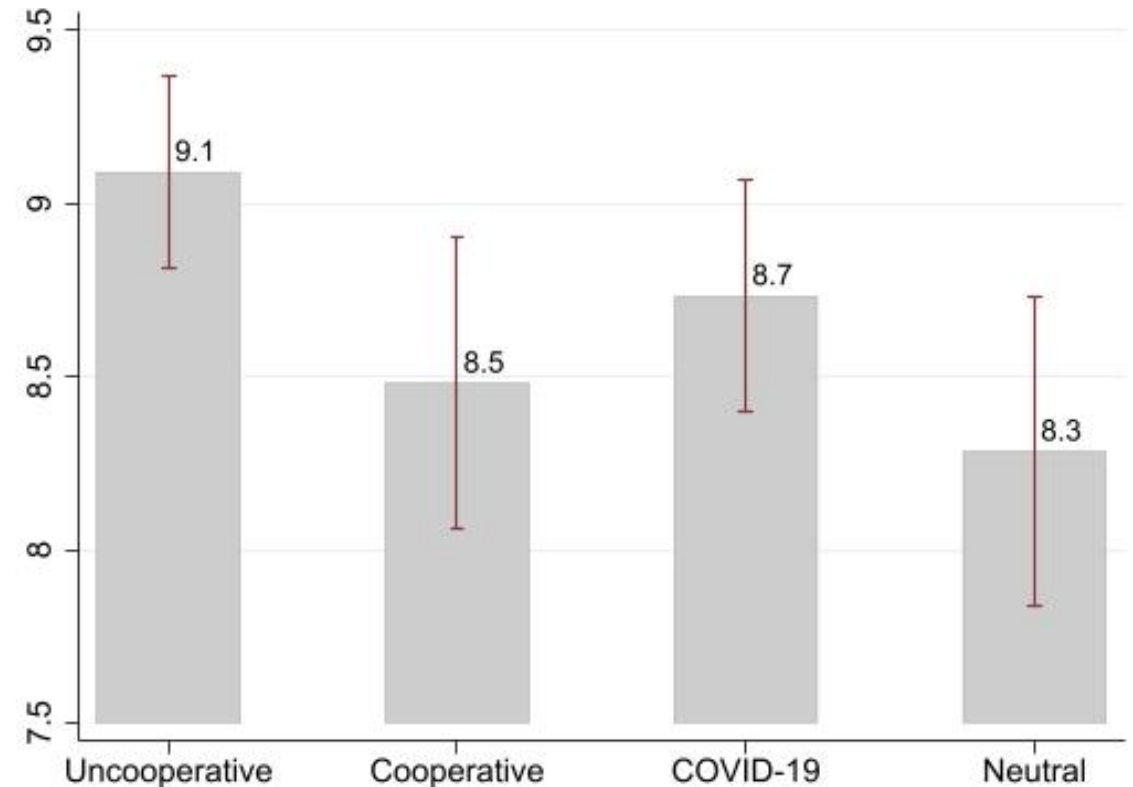
**Fig 2.** Average pandemic emergency attitudes, measured using the participants' agreement to the statement "The COVID-19 pandemic has been one of the greatest health emergencies in human history" on an 11-point Likert scale.



# Uncooperative narrative increases support for vaccines

Treatments compared	t test
Uncooperative vs Cooperative	2.400**
Uncooperative vs Neutral	3.045***

Note: The t test represented here is a two-tailed test with equal variances. \*\*\*p < 0.01, \*\*p < 0.05, \*p < 0.1.



**Fig 3.** Average vaccine attitudes, measured using participants' agreement to the statement "In general, vaccines are necessary to prevent the spread of infectious diseases" on an 11-point Likert scale.

# OLS: *Pandemic emergency attitudes*

- Uncooperative narrative ↑.
- Identifying with the Conservative Party, the Reform UK (former Brexit Party) and no party at all ↓

Pandemic emergency attitudes	(1)	(2)	(3)	(4)
Uncooperative narrative	0.771** (0.361)	0.751** (0.367)	0.703* (0.359)	0.660* (0.363)
Cooperative narrative	0.082 (0.362)	0.116 (0.366)	0.170 (0.357)	0.158 (0.361)
COVID-19 salience	0.413 (0.361)	0.314 (0.370)	0.413 (0.363)	0.378 (0.367)
Age		0.014 (0.010)	0.027** (0.011)	0.026** (0.011)
Female gender		0.406 (0.260)	0.293 (0.258)	0.303 (0.259)
University education		0.371 (0.289)	0.159 (0.285)	0.153 (0.287)
Income: £500–749		0.033 (0.427)	0.151 (0.419)	0.221 (0.426)
Income: £750–999		0.040 (0.494)	0.029 (0.482)	0.058 (0.485)
Income: £1000–1249		−0.562 (0.467)	−0.445 (0.455)	−0.424 (0.458)
Income: £1250–1499		0.268 (0.511)	0.248 (0.498)	0.290 (0.502)
Income: £1500–1749		−0.199 (0.506)	−0.248 (0.495)	−0.182 (0.504)
Income: £1750–1999		−0.491 (0.599)	−0.696 (0.584)	−0.662 (0.592)
Income: >£2000		0.187 (0.442)	0.260 (0.432)	0.293 (0.436)
Political party: Conservative			−1.053*** (0.375)	−1.044*** (0.376)
Political party: Lib Dem			−0.480 (0.480)	−0.494 (0.483)
Political party: Green			−0.423 (0.455)	−0.436 (0.457)
Political party: Scottish			−0.282 (0.661)	−0.282 (0.664)
Political party: Reform UK			−3.997*** (0.922)	−3.990*** (0.930)
Political party: Other			−0.148 (1.097)	−0.101 (1.106)
Political party: None			−1.489*** (0.355)	−1.488*** (0.359)
Sick with COVID-19: Yes				−0.050 (0.698)
Family sick with COVID-19: Yes				0.375 (0.379)
At risk of COVID-19: Yes				0.192 (0.362)
At risk of COVID-19: Do not know				0.138 (0.539)
Constant	6.844*** (0.255)	5.887*** (0.568)	6.182*** (0.573)	6.121*** (0.579)

# OLS: *Pro-vaccine attitudes*

- Uncooperative narrative ↑.
- Older individuals and those with at least some university education ↑.
- Women ↓.
- Identifying with the Conservative and Reform UK Parties ↓.

Vaccine attitudes	(1)	(2)	(3)	(4)
Uncooperative narrative	0.807*** (0.268)	0.772*** (0.271)	0.806*** (0.259)	0.825*** (0.261)
Cooperative narrative	0.197 (0.269)	0.239 (0.270)	0.199 (0.258)	0.229 (0.259)
COVID-19 salience	0.450* (0.268)	0.390 (0.272)	0.390 (0.262)	0.404 (0.264)
Age		0.015** (0.008)	0.027*** (0.008)	0.024*** (0.008)
Female gender		-0.312 (0.192)	-0.405** (0.186)	-0.399** (0.186)
University education		0.590*** (0.213)	0.438** (0.206)	0.410** (0.206)
Income: £500-749		0.138 (0.315)	0.375 (0.302)	0.396 (0.307)
Income: £750-999		-0.119 (0.364)	-0.087 (0.348)	-0.058 (0.349)
Income: £1000-1249		-0.237 (0.344)	-0.131 (0.328)	-0.109 (0.329)
Income: £1250-1499		-0.396 (0.376)	-0.320 (0.359)	-0.310 (0.361)
Income: £1500-1749		-0.042 (0.373)	-0.070 (0.357)	-0.010 (0.363)
Income: £1750-1999		-0.651 (0.441)	-0.737* (0.421)	-0.823* (0.426)
Income: >£2000		-0.114 (0.325)	-0.074 (0.311)	-0.098 (0.313)
Political party: Conservative			-0.611** (0.270)	-0.614** (0.271)
Political party: Lib Dem			-0.062 (0.346)	-0.020 (0.347)
Political party: Green			0.457 (0.328)	0.472 (0.329)
Political party: Scottish			-0.651 (0.477)	-0.657 (0.478)
Political party: Reform UK			-4.348*** (0.665)	-4.271*** (0.669)
Political party: Other			-1.093 (0.791)	-1.034 (0.796)
Political party: None			-0.441* (0.256)	-0.405 (0.258)
Sick with COVID-19: Yes				0.123 (0.502)
Family sick with COVID-19: Yes				-0.082 (0.272)
At risk of COVID-19: Yes				0.475* (0.260)
At risk of COVID-19: Do not know				-0.038 (0.388)
Constant	8.284*** (0.190)	7.528*** (0.418)	7.429*** (0.413)	7.457*** (0.417)

# Conclusions

- Norm-based narratives do not have a significant effect on trust.
- Priming individuals with the COVID-19 pandemic does not affect trust.
- Exposure to uncooperative narratives induces people to view the pandemic as a greater health emergency and to be more pro-vaccine in general.
- Age, education, and gender are important predictors of vaccine attitudes.
- Right-leaning individuals view the pandemic as less of a concern and are more skeptical of vaccines.

Thank you!

Appendix

# Limitations

- We study only short-run effects:
  - Studies on the long-run effects of narratives and the pandemic on trust, health attitudes and behaviors are needed.
- Priming at the end of the pandemic may be a less effective technique to study changes in behavior than at the start of the pandemic:
  - People may have already adjusted their own beliefs and behavior and have formed their own perceptions about others' behavior during the pandemic.

# Hypotheses: Trust

- Providing individuals with instances of non-compliance (compliance) to health measures decreases (increases) their trust in other people.
- Mechanism: Exposure to the widespread non-compliance to pandemic health measures (*uncooperative narrative*) demonstrates violations of social norms, which reduces people's beliefs of the trustworthiness of other people and consequently their trust in others, and vice versa for *cooperative narrative*.
- Alternative mechanism: *uncooperative narrative* provides individuals with moral excuses to behave selfishly without compromising their social and/or self-image; *cooperative narrative* increases the reputational benefits of being viewed by others or by themselves as having high moral values and thus increase the pressure to behave pro-socially.

**H1a.** Uncooperative narrative < COVID-19 salience.

**H1b.** Uncooperative narrative < Cooperative narrative.

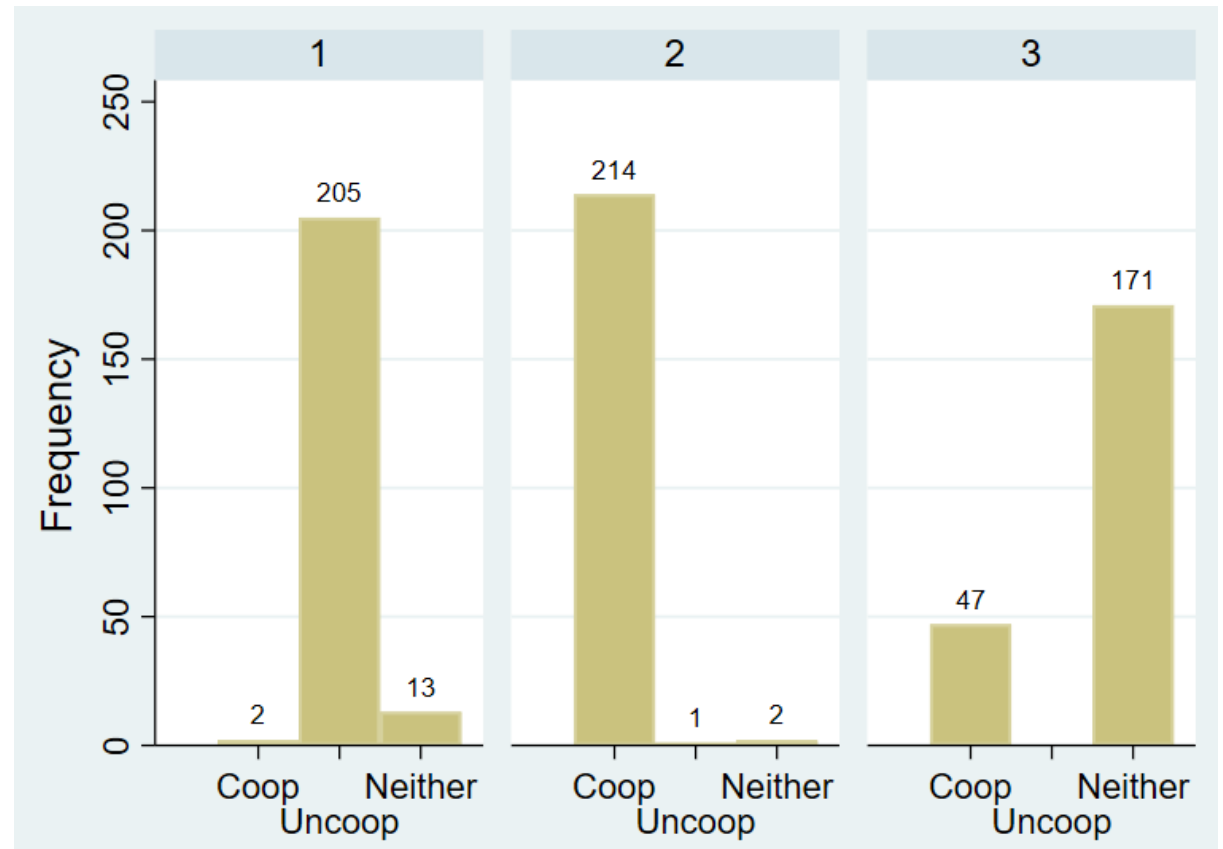
**H1c.** Cooperative narrative treatment > COVID-19 salience.



# Manipulation check

Most participants think that the article in T1 describes “uncooperative behaviour”, in T2 – “cooperative behaviour”, and “neither” in T3.

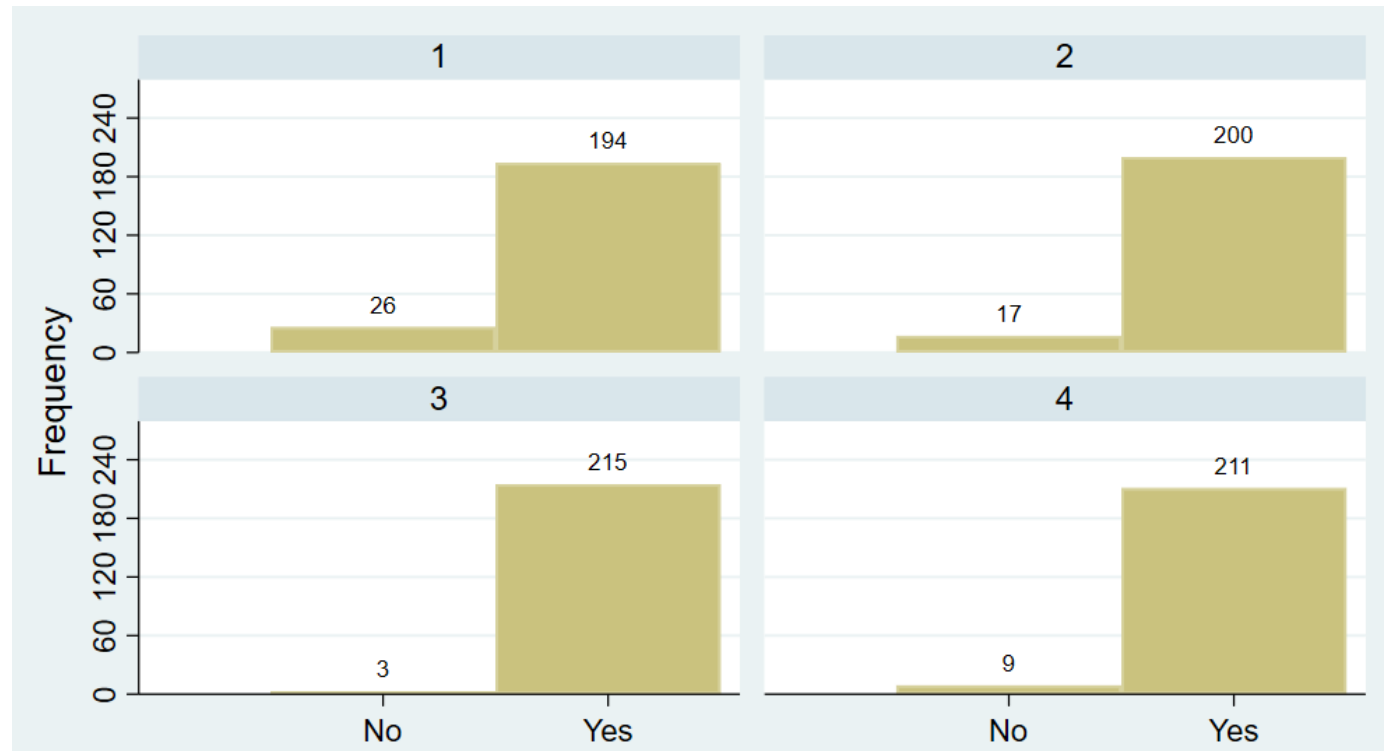
Do you consider the information **provided in the article** as describing cooperative behaviour, uncooperative behaviour or neither during the COVID-19 pandemic in Britain?



# Manipulation check

Most individuals found the information provided in the articles accurate

Did you find the information **provided in the article** as accurate?



# Uncooperative narrative treatment

*For the past two years, the UK has been battling the COVID-19 pandemic. These years have taught us a lot about our fellow Britons.*

*During the pandemic, many preventative measures were put in place to limit the spread of the virus. However, some Britons did not uphold these measures. Even with rising COVID-19 cases and the NHS on the brink of collapse, some adults refused to maintain social distancing and even declined to wear face masks when outside their home. Moreover, some Britons returning home from foreign countries broke travel rules by avoiding self-isolation and testing.*

*Despite the availability of COVID-19 vaccines, some Britons have been refusing vaccinations. With most variants of the coronavirus, the unvaccinated transmit the virus more, and if they contract COVID-19, they are more likely to be hospitalized, which may lead to the collapse of the NHS. To be able to travel and attend events, some anti-vaxxers have turned to the black market to buy fake NHS COVID-19 passes. Opposition to COVID-19 restrictions and vaccinations have spurred numerous protests, many of them violent.*

# Cooperative narrative treatment

*For the past two years, the UK has been battling the COVID-19 pandemic. These years have taught us a lot about our fellow Britons.*

*During the pandemic, many preventative measures were put in place to limit the spread of the virus. Most Britons upheld these measures. With rising COVID-19 cases and the NHS on the brink of collapse, most adults maintained social distancing and also wore face masks when outside their home. Britons returning home from foreign countries largely adhered to travel rules, such as requirements to self-isolate and test for COVID-19.*

*When COVID-19 vaccines became widely available, most Britons got fully vaccinated. Preventing others from contracting the coronavirus has been one of the main reasons for taking the vaccine. With most variants of COVID-19, vaccines lower the risk of contracting the virus, reduce the transmission of the virus and lower the risk of hospitalisation if infected. Thus, vaccinated Britons have helped to limit the spread of COVID-19, prevented the collapse of the NHS, and saved lives of their fellow Britons.*

# COVID-19 salience treatment

*Coronavirus disease 2019 (COVID-19) is a contagious disease caused by a virus, the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The first known case was identified in Wuhan, China, in December 2019. The disease spread worldwide, leading to the COVID-19 pandemic.*

*Symptoms of COVID-19 are variable, but often include fever, cough, headache, fatigue, breathing difficulties, loss of smell, and loss of taste. Symptoms may begin one to fourteen days after exposure to the virus.*

*The severity of COVID-19 varies. The disease may take a mild course with few or no symptoms. In some cases, symptoms are severe enough to cause hospitalization. Mild cases typically recover within two weeks, while those with severe or critical diseases may take three to six weeks to recover. Among those who have died, the time from symptom onset to death has ranged from two to eight weeks.*

# Neutral treatment (baseline)

*Terns are graceful, slender water birds that have a worldwide distribution. They are normally found near the sea, rivers, or wetlands. Terns are treated as a subgroup of the family Laridae which includes gulls and skimmers.*

*Terns range in length from about 20 to 55 cm. Compared with gulls, they are more slender, shorter legged, and longer winged. They range in colour from white to black and white to almost entirely black. The bill of various species may be black, red, or yellow, while the feet are red or black. Their feet are webbed. Most species have long and pointed wings, forked tails, and sharply pointed bills.*

*Most terns breed annually and at the same time of year, but some tropical species may nest at intervals shorter than 12 months or asynchronously. Most species lay two or three eggs, although a few species lay only one egg. The eggs of most terns are brown with dark splotches. Terns are generally long-lived birds, some species reaching more than 30 years of age.*