COVID-19 vaccines: Examining the impact of evidence communication guidelines

John R. Kerr

Comment

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Blastland et al., 2020; *https://doi.org/10.1038/d41586-020-03189-1*

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" Our aim is to design communications that do not lead people to a particular decision but help them to understand what is known about a topic and to make up their own minds on the basis of that evidence."

"We worry that the urge to persuade or to tell a simple story can damage credibility and trustworthiness."

"In our view, it is important to be clear about motivations, present data fully and clearly, and share sources."

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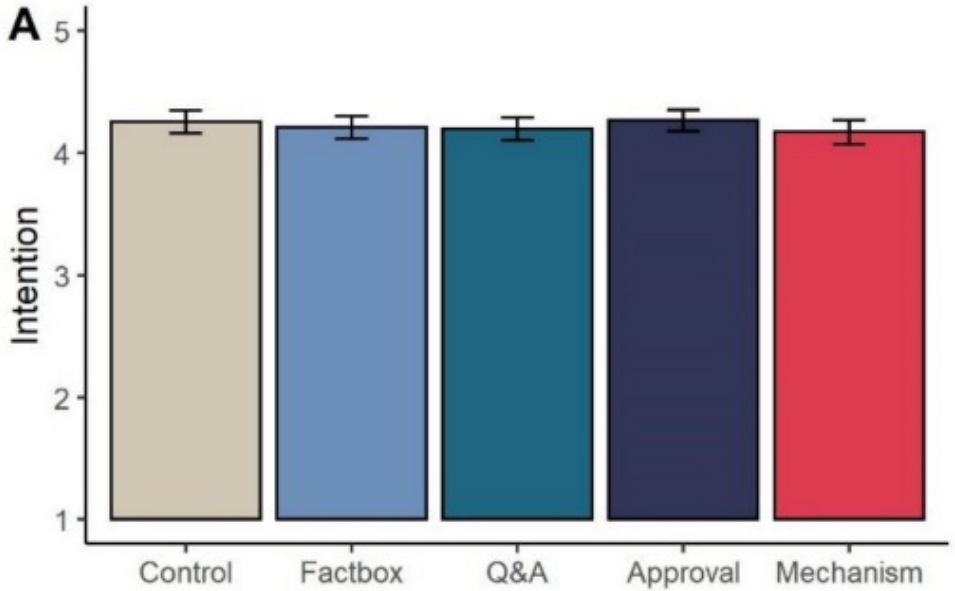
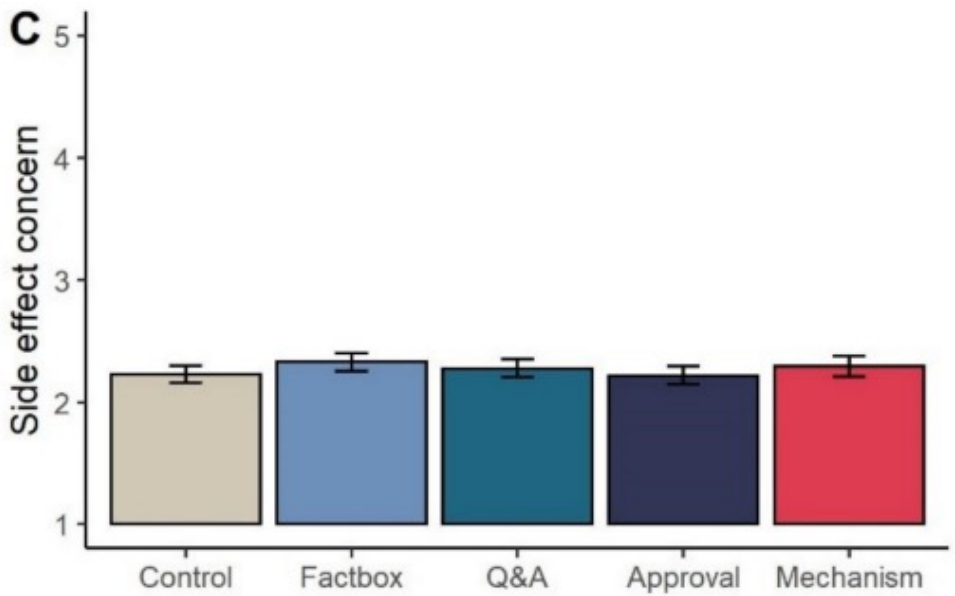
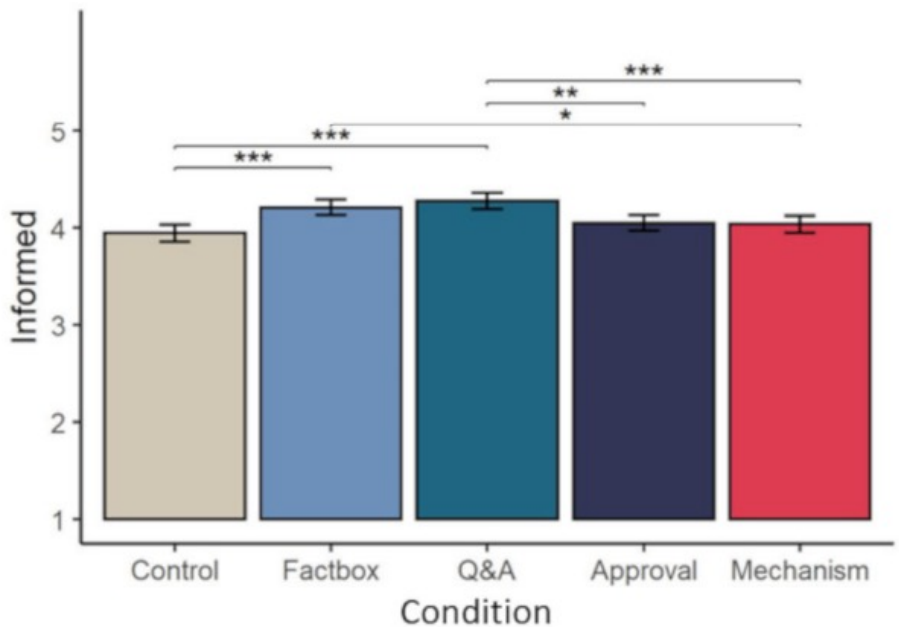
For 18-64 year old:

POTENTIAL BENEFITS **From 2 weeks after 2nd dose**			
	Dummy injection (10,521 people)	**Vaccine injection (10,551 people)**	**What difference did the vaccine make?**
Number who developed symptoms confirmed to be COVID-19	156 (1.5%)	7 (less than 0.1%)	149 fewer cases (95.5% reduction in COVID-19 cases)

POTENTIAL HARMS* **(usually lasting 2-3 days)**		
Number who reported:	**Dummy injection (10,315 people)**	**Vaccine injection (10,357 people)**
Pain at the injection site (some also reported redness and swelling)	1,942 (18.8%)	9,335 (90.1%)
Swollen/sore armpit glands	444 (4.3%)	1,654 (16%)
Fever	38 (0.4%)	1,806 (17.4%)
Headache (a similar number reported other 'flu-like symptoms such as fatigue, aching joints, chills)	2,617 (25.4%)	6,500 (62.8%)
Nausea/Vomiting	754 (7.3%)	2,209 (21.3%)







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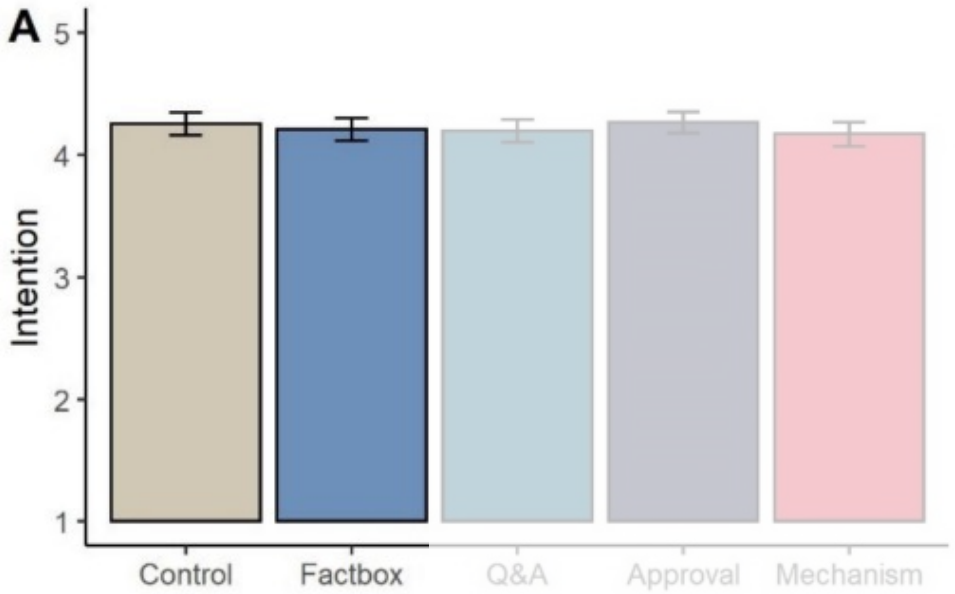

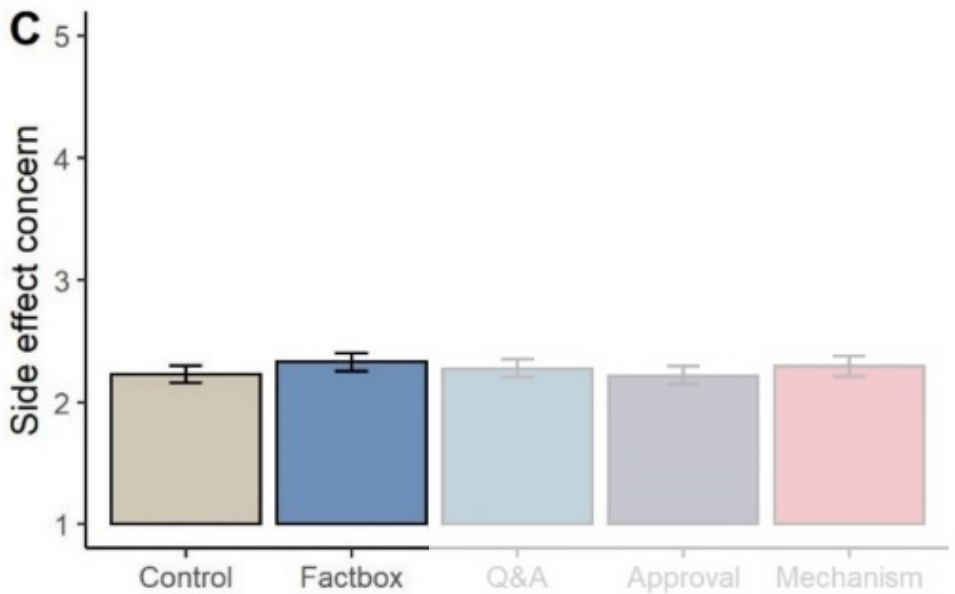

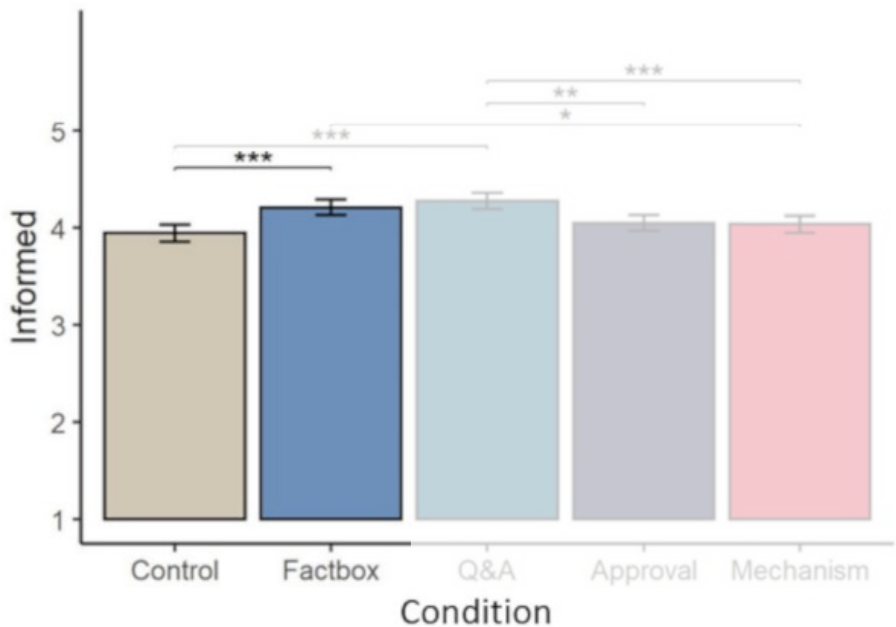

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SCOTTISH HERITAGE/GETTY

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'PROVE' Framework

• Pre-empt misinformation & misunderstandings	Pre-bunk
• Inform not persuade	Reliably Inform
• Offer balance, not false balance	Offer balance
• State evidence quality	Verify quality
• Disclose uncertainties	Explain uncertainty

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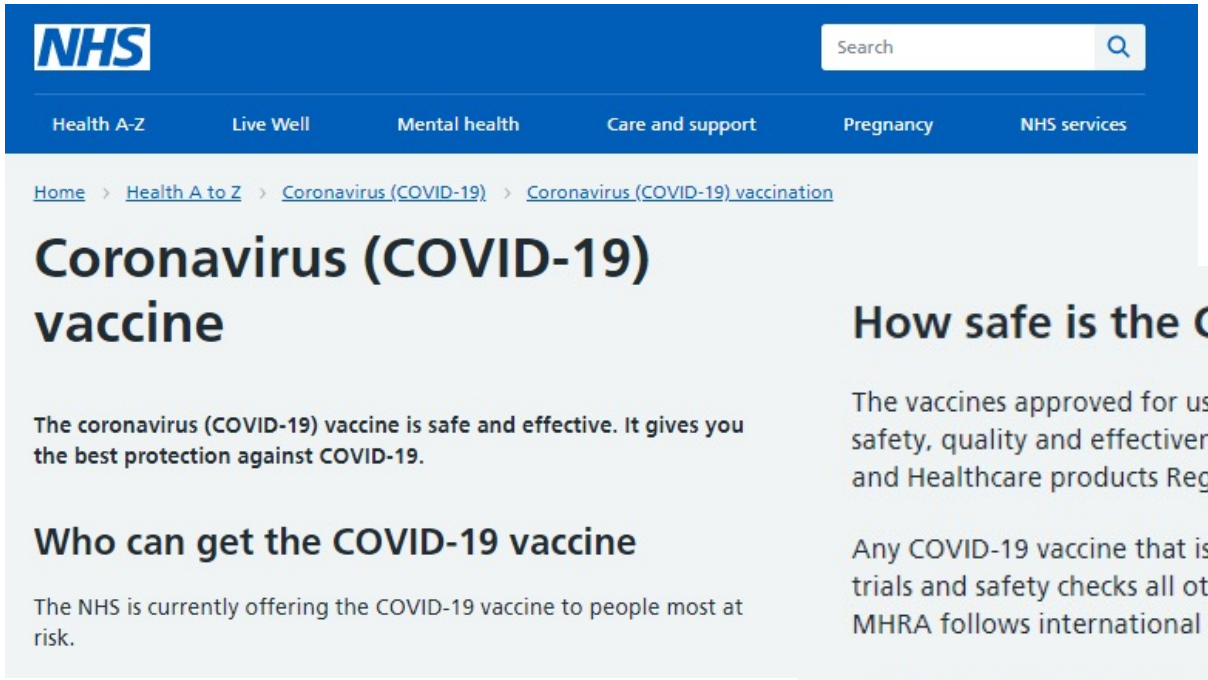
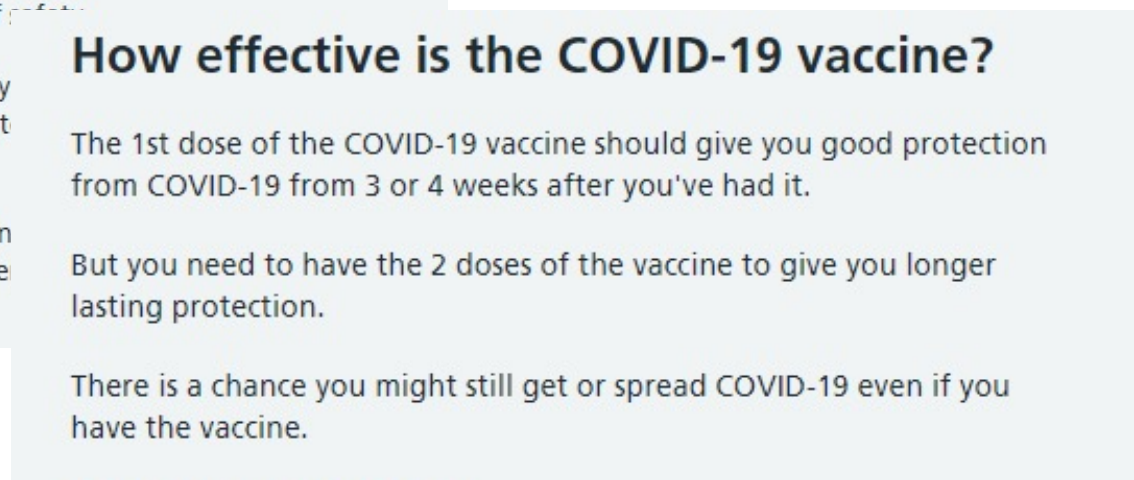
COVID-19 Vaccines – a test case for applying PROVE guidelines





Comparison of COVID-19 information and version adapted using PROVE criteria (see *Nature* article: Five rules for evidence communication)

CURRENT: Coronavirus (COVID-19) vaccine	PROVE: Coronavirus (COVID-19) vaccination: making your decision	PROVE Criteria notes
The coronavirus (COVID-19) vaccine is safe and effective. It gives you the best protection against coronavirus.	**The coronavirus (COVID-19) vaccine is now being offered in the UK. This information is designed to help you make ~~your~~ an informed decision about vaccination. ~~whether to accept the offer or not.~~**	**Inform not persuade**
	All medical treatments have potential benefits and potential side effects. You should weigh these up when making your decision.	
How safe is the COVID-19 vaccine? The vaccines approved for use in the UK have met strict standards of safety, quality and effectiveness set out by the independent Medicines and Healthcare products Regulatory Agency (MHRA). Any coronavirus vaccine that is approved must go through all the clinical trials and safety checks all other licensed medicines go through. The MHRA follows international standards of safety. Other vaccines are being developed. They will only be available on the NHS once they have been thoroughly tested to make sure they are safe and effective. So far, millions of people have been given a COVID-19 vaccine and reports of serious side effects, such as allergic reactions, have been very rare. No long-term complications have been reported.	~~**How safe is the COVID-19 vaccine?**~~ **Rapid approvals process** ~~The vaccines approved for use in the UK have met strict standards of safety, quality and effectiveness set out by the independent Medicines and Healthcare products Regulatory Agency (MHRA).~~ Any coronavirus vaccine that is approved must go through all the clinical trials and safety checks all other licensed medicines go through. However, the medicines regulators have provided 'rolling review' which means that they have been able to assess the data at it has come in and speed up the authorisation application assessment. The MHRA follows international standards of safety. ~~Other vaccines are being developed. They will only be available on the NHS once they have been thoroughly tested to make sure they are safe and effective.~~ So far, millions of people have been given a COVID-19 vaccine and reports of serious side effects, such as allergic reactions, have been very rare. No long-term complications have been reported.	Prebunking "Prebunking requires anticipating potential misunderstandings or disinformation attacks"
How effective is the COVID-19 vaccine? The 1st dose of the COVID-19 vaccine should give you good protection from coronavirus. But you need to have the 2 doses of the vaccine to give you longer lasting protection.	**Potential benefits of the COVID-19 vaccine** The vaccines are designed to protect you against becoming ill with COVID-19. The vaccine available in the UK at the moment has been tested in over 10,500 volunteers aged 18-64 and over 3,500 over 65s, including many ethnicities and people with underlying health conditions. These volunteers were compared with the same number of people who got a	State evidence quality – use numbers "Audiences also judge the credibility of information based on the quality of the underlying evidence, more than its clarity, the usual priority for a communications department."

Dr. S.L. van der... I think this kind of wording ma
Dr. S.L. van der... inform not persuade
Dr. S.L. van der... Formatted
Alexandra Free... I worry about having this as the
Alexandra Free... Since the safety information
Alexandra Free... This is unsubstantiated,
Dr. S.L. van der... or is this simply a factual
Theresa Marteau Formatted
Alexandra Free... This is again written in a
Dr. S.L. van der... I'm not sure, is there
Alexandra Free... This should be under the 'side
Theresa Marteau Terminology: side-effects vs
Dr. S.L. van der... benefits and risk with numerical
John Kerr Punctuation added for
Dr. S.L. van der... Quality of evidence

Current

The COVID-19 vaccine is safe and effective. It gives you the best protection against COVID-19.

PROVE

The COVID-19 vaccine is now being offered in the UK. This information is designed to help you make an informed decision about vaccination.

Current

Most side effects of the COVID-19 vaccine are mild and should not last longer than a week, such as:

- a sore arm where the needle went in,
- feeling tired,
- a headache,
- feeling achy,
- feeling or being sick

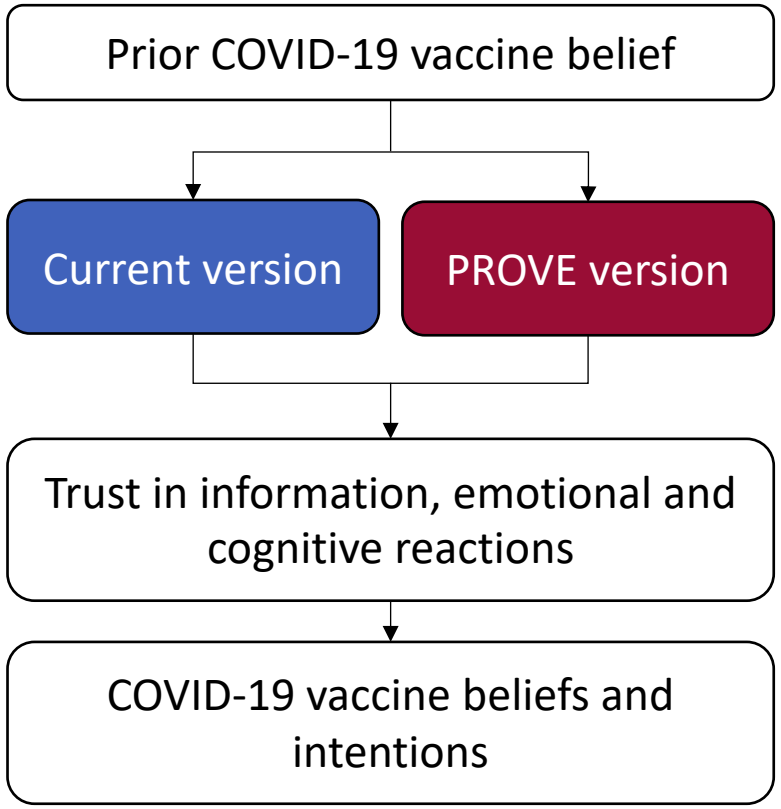
PROVE

Most side effects of the COVID-19 vaccine are mild and should not last longer than a week. In clinical trials, certain side effects were more common for people who received the vaccine compared to those who received a dummy (placebo) injection:

Side effect	**Percent of people reporting side effect in clinical trial**	
	Received a vaccine	**Received a dummy injection**
a sore arm where the needle went in	90%	19%
feeling tired	68%	36%
a headache	63%	36%
feeling achy	60%	20%
feeling or being sick	21%	7%

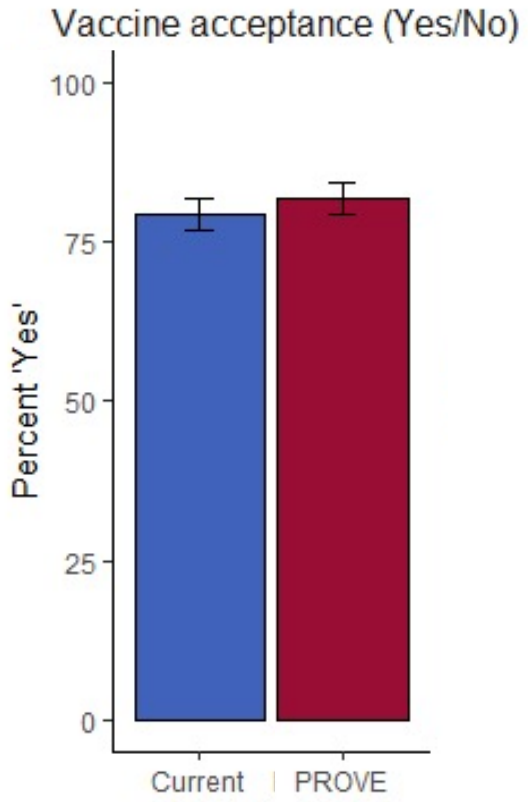
Online experiment

- ~2,000 unvaccinated UK residents aged 18-50 (pre-registered)



Key results

- No overall effect on vaccine decision (consistent with prior research)



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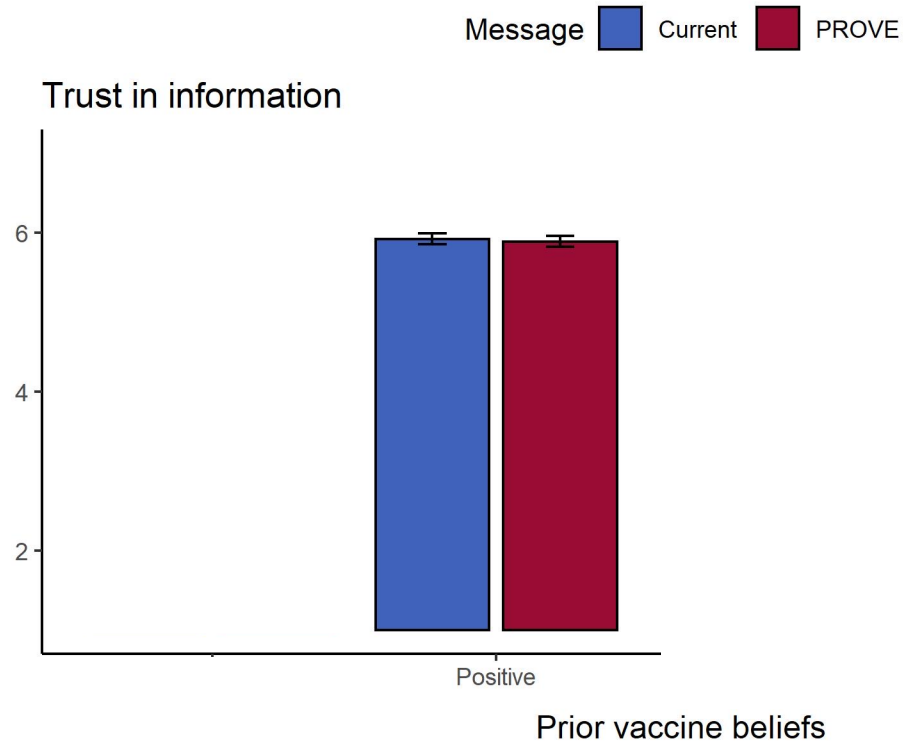
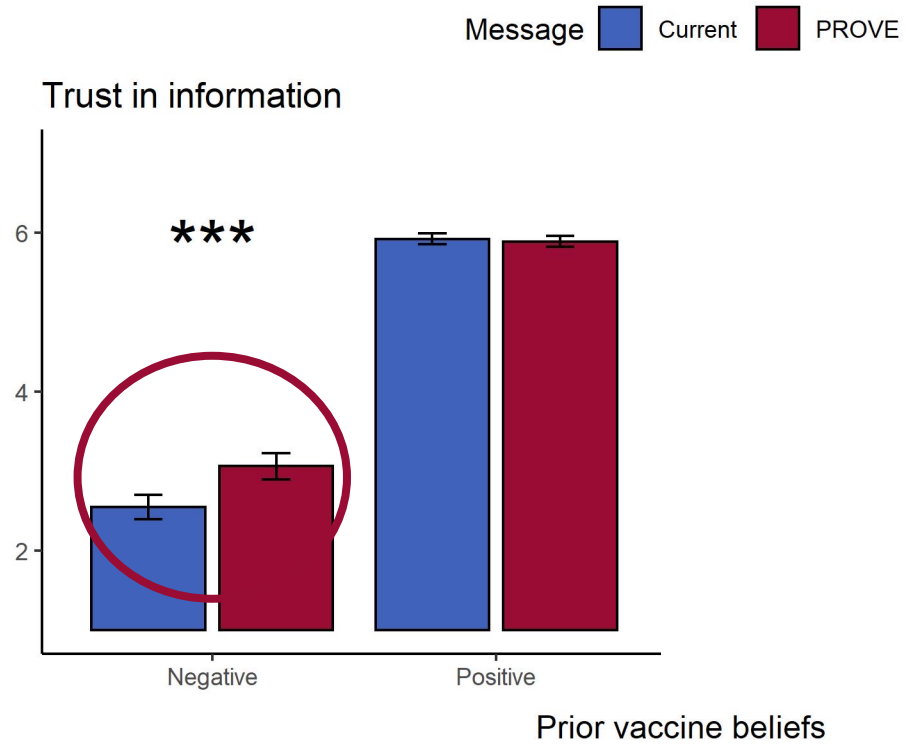

Message
Current
PROVE
Trust in information
6
4
2
Positive
Prior vaccine beliefs

Key results

- PROVE message (compared to Current) was considered more trustworthy by those with a negative view of COVID-19 vaccines.



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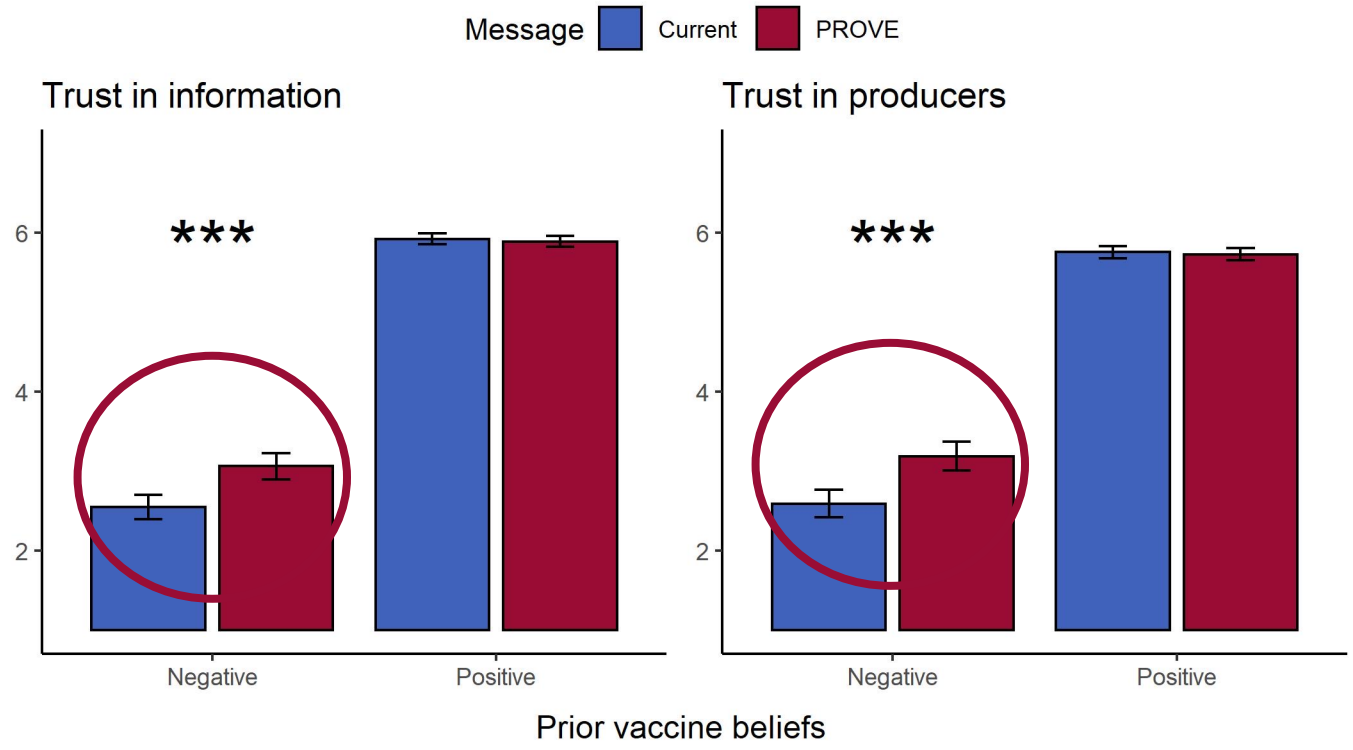

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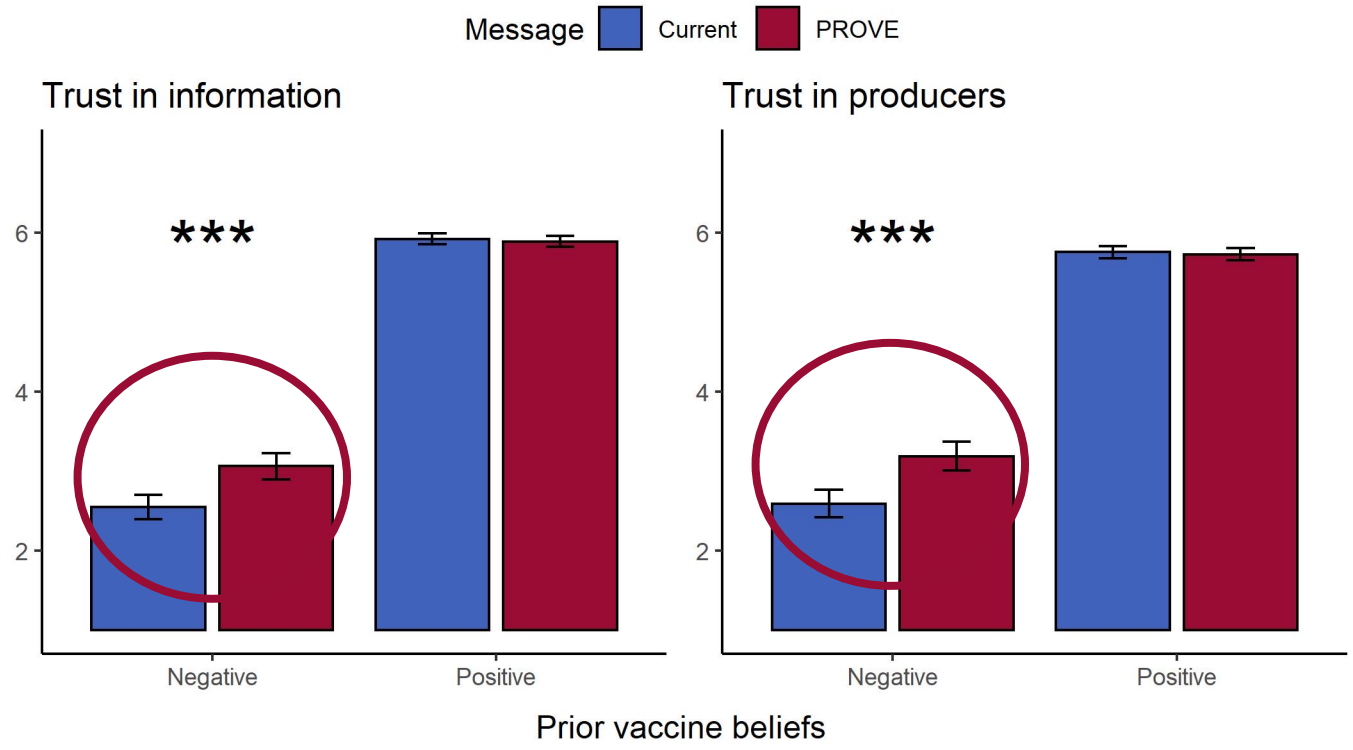
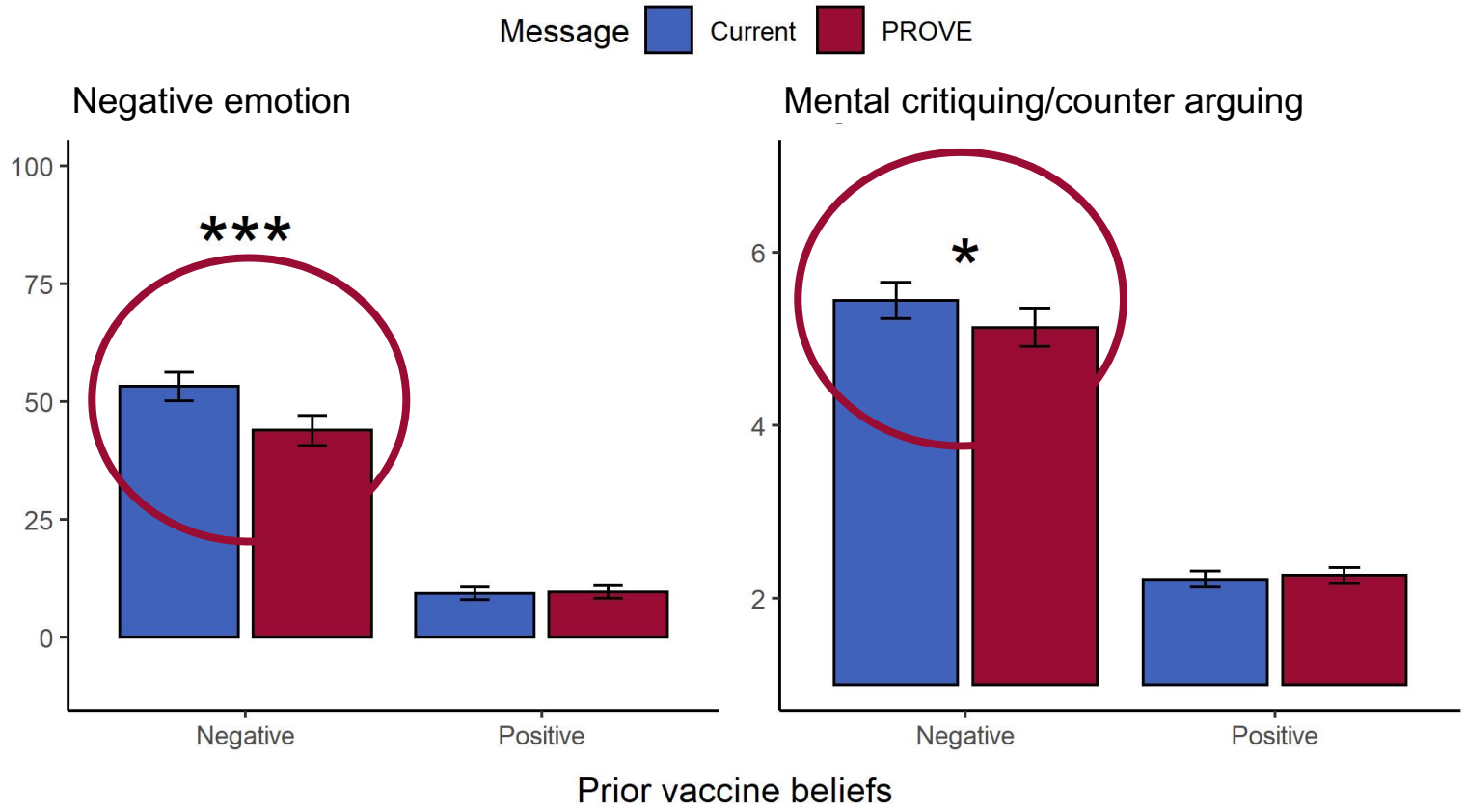


Key results

- PROVE messages elicited less negative cognitive and emotional responses among those with a negative view of COVID-19 vaccines.



Conclusions

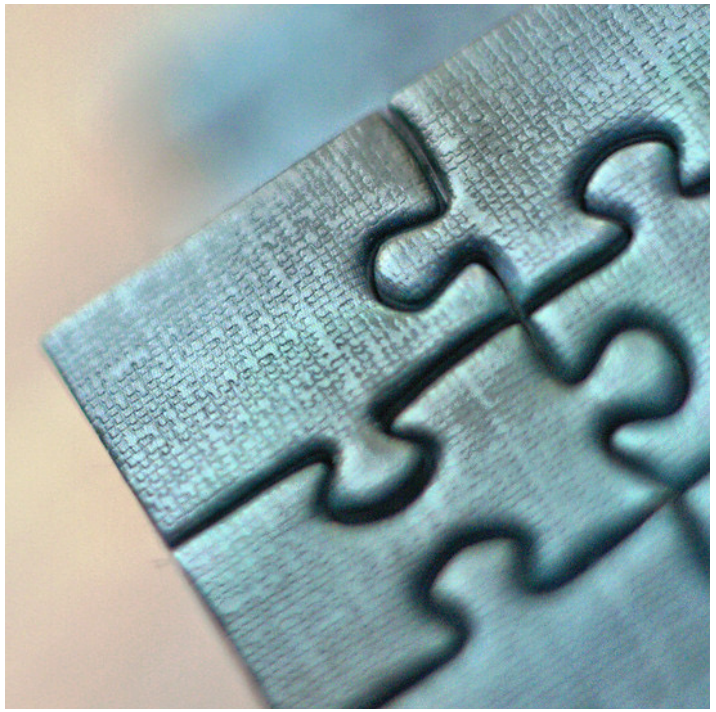
Transparent and balanced communication of COVID-19 vaccine evidence:

- Does not negatively impact vaccine attitudes and intentions.
- Is considered more trustworthy and elicits less negative reactions among those those with negative prior vaccine beliefs.

Future research

Do these findings generalize to other domains?

Which PROVE elements have greatest impact?



Thank you
Merci

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Blastland, M., Freeman, A. L., van der Linden, S., Marteau, T. M., & Spiegelhalter, D. (2020). Five rules for evidence communication. *Nature*, 587, pp. 362-364. https://doi.org/10.1038/d41586-020-03189-1

Extra slides

Linear model interactions