

# **Psychological Inoculation Against Misinformation**

**Sander van der Linden**

**Professor of Social Psychology in Society  
Department of Psychology, University of Cambridge**

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**@Sander\_vdLinden**

**PRE-BUNKING**  
e.g. inoculation

**Exposure to  
MISINFO**

**DE-BUNKING**  
e.g. fact-check

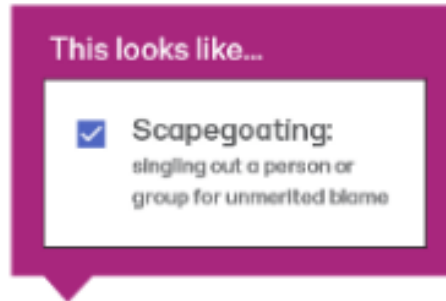
Time

### 1. Emotional warning



Users are alerted that there are impending “attacks” to manipulate them.

### 2. Refute the attack



Users are equipped to spot and refute a manipulative message.

### 3. Micro-dose



Users see example(s) of manipulative message to identify it in the future.

How inoculation messaging works. (Source: [Jigsaw](#))

# Can “Inoculation” Build Broad-Based Resistance to Misinformation?

## PSYCHOLOGICAL SCIENCE

# Psychological inoculation improves resilience against misinformation on social media

**Jon Roozenbeek<sup>1\*</sup>, Sander van der Linden<sup>1</sup>, Beth Goldberg<sup>2</sup>, Steve Rathje<sup>1</sup>, Stephan Lewandowsky<sup>3,4</sup>**

Online misinformation continues to have adverse consequences for society. Inoculation theory has been put forward as a way to reduce susceptibility to misinformation by informing people about how they might be misinformed, but its scalability has been elusive both at a theoretical level and a practical level. We developed five short videos that inoculate people against manipulation techniques commonly used in misinformation: emotionally manipulative language, incoherence, false dichotomies, scapegoating, and ad hominem attacks. In seven preregistered studies, i.e., six randomized controlled studies ( $n = 6464$ ) and an ecologically valid field study on YouTube ( $n = 22,632$ ), we find that these videos improve manipulation technique recognition, boost confidence in spotting these techniques, increase people's ability to discern trustworthy from untrustworthy content, and improve the quality of their sharing decisions. These effects are robust across the political spectrum and a wide variety of covariates. We show that psychological inoculation campaigns on social media are effective at improving misinformation resilience at scale.

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**Prolific**

**Inoculation group**

Inoculation video  
(approx. 1.30 min)

**Control group**

Unrelated video of  
similar length and  
aesthetic (1:46 min)

**Posttest**

Item test (10 items)

**OR**

**Paired neutral social media post**

Update:  
Police have refuted a woman's account of a reported child abduction at a theme park.  
... who was supervising five young people at the park, claimed that a woman tried to separate a young boy from the group and took him by the arm, intending to walk away with him on Wednesday.  
Police Department's Chief of Police ... later stated that ... likely misinterpreted the situation.

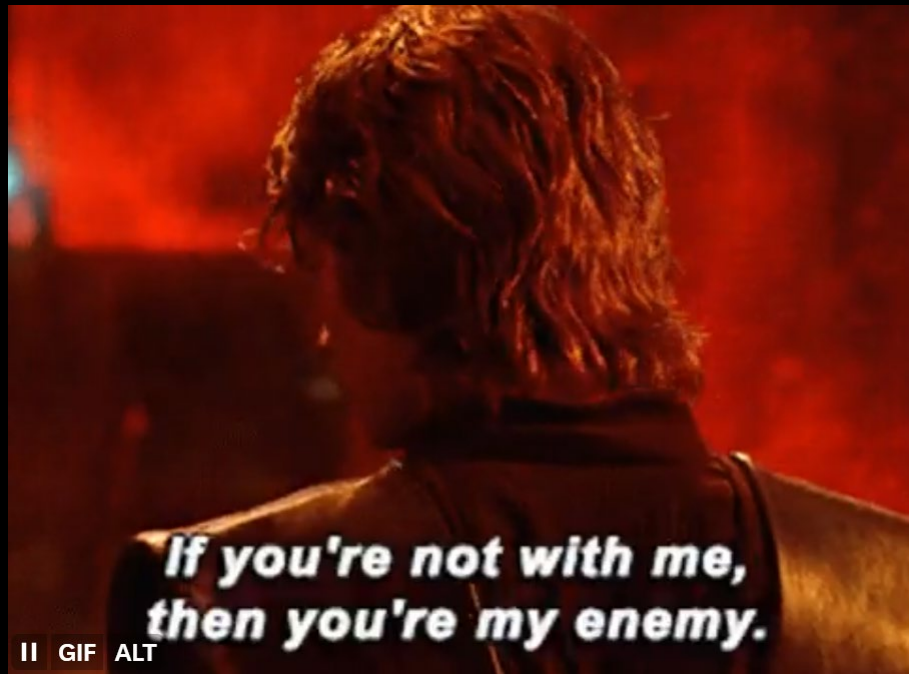
Participants are randomly shown either a manipulative or its paired neutral post (10 posts in total) and indicate manipulateness, confidence, trustworthiness, and sharing intent (1–7 scale).

Discriminative ability ("discernment") is calculated by subtracting the average score for each measure on the manipulative posts from the average score on the neutral posts and comparing this score between conditions (inoculation and control).

**Rest of survey**

Age, gender, education, political ideology, news checking, social media use, populism, analytical thinking, numeracy skills, bullshit receptivity, and conspiracy belief

**Debrief**



# Pre-registered field experiment on YouTube

## Brand Lift

All estimates are weighted averages across the three survey questions per video.

