Supplementary Materials: The Limitations of the Backfire Effect

June 20, 2017

Survey Materials for "The Limitations of the Backfire Effect"

[Vaccine concern - pre-intervention]
In general, how concerned are you about serious side effects from vaccines?

- Extremely concerned [5]
- Very concerned [4]
- Somewhat concerned [3]
- Not too concerned [2]
- Not at all concerned [1]

[Delay questions]

[Randomization after delay; control group receives no message]

Please examine the following information about seasonal influenza (the flu) carefully.

[Correction intervention]

Can the flu shot give me the flu?

No, a flu shot cannot cause flu illness. The viruses contained in flu shots are inactivated (killed), which means they cannot cause infection. Flu vaccine manufacturers kill the viruses used in the flu shot during the process of making vaccine, and batches of flu vaccine are tested to make sure they are safe. In randomized, blinded studies, where some people got flu shots and others got saltwater shots, the only differences in symptoms was increased soreness in the arm and redness at the injection site among people who got the flu shot. There were no differences in terms of body aches, fever, cough, runny nose or sore throat.

More information about these studies is available at:

Carolyn Bridges et al. (2000). Effectiveness and cost-benefit of influenza vaccination of healthy working adults: A randomized controlled trial. JAMA. 284(13):1655-1663.

Kristin Nichol et al. (1995). The effectiveness of vaccination against influenza in healthy working adults. New England Journal of Medicine. 333(14): 889- 893.

Can the nasal spray flu vaccine give you the flu?

Unlike the flu shot, the nasal spray flu vaccine does contain live viruses. However, the viruses are attenuated (weakened) and cannot cause flu illness. Some children and young adults 2-17 years of age have reported experiencing mild reactions after receiving nasal spray flu vaccine, including runny nose, nasal congestion or cough, chills, tiredness/weakness, sore throat and headache. Some adults 18-49 years of age have reported runny nose or nasal congestion, cough, chills, tiredness/weakness, sore throat and headache. These side effects are mild and short lasting, especially when compared to symptoms of influenza infection.

[Dependent variables]
We would like to ask you some questions about the seasonal flu vaccine (a flu shot or nasal flu spray).

How likely is it that you will get a flu vaccine for the seasonal flu during future flu seasons?

- Very likely [6]
- Somewhat likely [5]
- Slightly likely [4]
- Slightly unlikely [3]
- Somewhat unlikely [2]
- Very unlikely [1]

Just based on what you know, how safe do you believe the seasonal flu vaccine, meaning the flu vaccine available every year, is generally for most people to take?

- Very safe [1]
- Somewhat safe [2]
- Not very safe [3]
- Not at all safe [4]

Just based on what you know, is the following statement accurate or inaccurate?

You can get the flu from the seasonal flu vaccine.

- Very accurate [4]
- Somewhat accurate [3]
- Somewhat inaccurate [2]
- Very inaccurate[1]

Just based on what you know, how much do you agree with the following statement?
If a child has not been vaccinated (even though they are healthy enough to receive vaccines), that child should be allowed to attend public school.

- Strongly Agree
- Agree
- Slightly Agree
- Neither Agree Nor Disagree
- Slightly Disagree
- Disagree
- Strongly Disagree

[Manipulation Checks not given to control group]
[Correction Group]

The nasal spray flu vaccine contains live viruses.

- True
- False

[Demographics]

Now we would like to ask you some questions about yourself.

Please indicate your age range:

- 18-29
- 30-44
- 45-59
- 60+

Please indicate your gender:

- Male
- Female
- Prefer Not To Answer

What is the highest degree or level of schooling you have completed?

- High school diploma or less
- Some college credit, no degree
- Trade, technical, or vocational training
- Associates degree
- Bachelors degree
- Masters/Doctoral degree
- Other professional degree

Please indicate your race:

- White
- Black
- Hispanic/Latino
- Native American
- Asian
- Pacific Islander
- Other (please write in)

Generally speaking, do you usually think of yourself as a Republican, a Democrat, an Independent, or what?

- Strong Democract
- Weak Democrat
- Independent Leaning Democrat
- Independent
- Independent Leaning Republican
- Weak Republican
- Strong Republican

We hear a lot of talk these days about liberals and conservatives. Here is a seven-point scale on which the political views people might hold are arranged from extremely liberal to extremely conservative. Where would you place yourself on this scale, or havent you thought much about this?

- Very Liberal
- Liberal
- Slightly Liberal
- Moderate, Middle of the Road
- Slightly Conservative
- Conservative
- Very Conservative
- Do Not Know/Have Not Thought About It

Party Identification, Ideology, and Economic Views in the Replication Sample for "The Limitations of the Backfire Effect"

Data for the original study were collected as part of the 2012 Cooperative Congressional Election Survey. Because Nyhan and Reifler (2015) do not report the distribution of party identification and ideology in their panel, I have included the distribution of party identification and ideology from the larger survey as a means of comparison between the Mechanical Turk sample and a national sample taken used for Nyhan and Reifler (2015).

Table 1: Distribution of Party Identification in Replication Sample and 2012 CCES by (%)

	Replication	2012 CCES
Strong Democrat	16.5	25.6
Weak Democrat	9.9	11.5
Independent Leaning Democrat	18.5	10.1
Independent	20.7	11.6
Independent Leaning Republican	14.1	11.8
Weak Republican	10.8	8.6
Strong Republican	9.5	18
N	474	53,522

Due to rounding, percentgaes may not add to 100%

Table 2: Distribution of Ideology in Replication Sample and 2012 CCES by (%)

	Replication	2012 CCES
Very Liberal	12.2	7.8
Liberal	17.1	12.7
Slightly Liberal	15.4	10.7
Moderate, Middle of the Road	17.5	21.9
Slightly Conservative	12.7	11.1
Conservative	16	18.4
Very Conservative	5.9	12.5
Do Not Know/Haven't Thought About It	3.1	4.7
N	474	54,181

Due to rounding, percentgaes may not add to 100%

Table 3: Responses to Social and Economic Views Questions by (%)

	Taxes[1]	Health care[2]
Favor	63.5	50.5
Oppose	27.9	35.9
Do Not Know	8.7	13.6
N	474	474

Due to rounding, percentgaes may not add to 100%

[1] "Taxes" shows responses to the question: "In general, would you favor or oppose increasing taxes on wealthy Americans and large corporations in order to reduce income inequality in the U.S.?" This question text was taken from Gallup.

[2] "Health care" shows responses to the question: "Would you favor or oppose a single payer health care system, in which all Americans would get their health insurance from one government plan that is financed by taxes?" This question text was taken from Gallup.

Dependant Variable Distributions from Nyhan and Reifler (2015)[3]

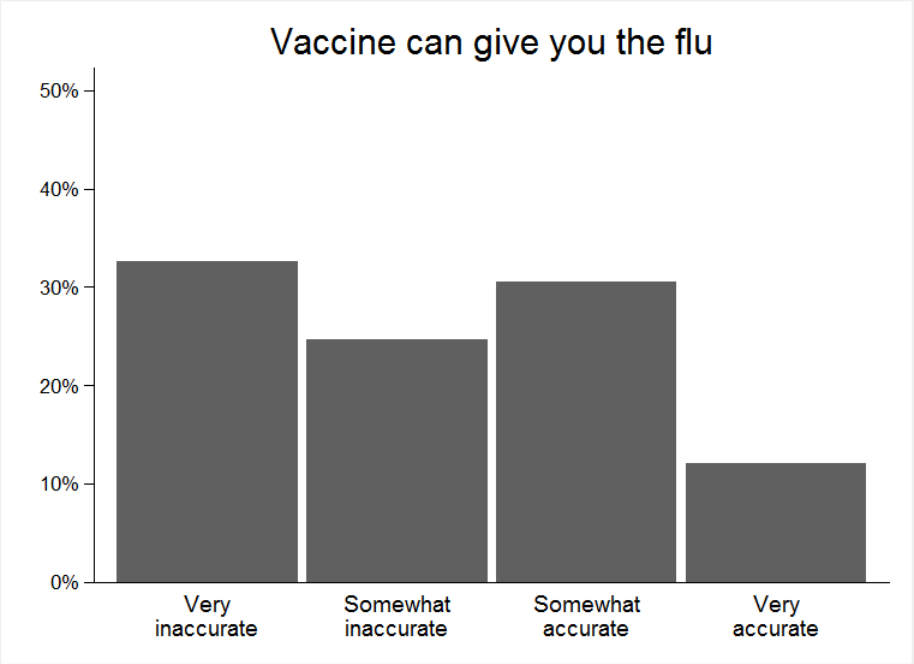

Figure 1: Distribution of Vaccine Misperception Measure from Nyhan and Reifler (2015)

[3]These figures were produced using replication materials made available online by Brenden Nyhan.

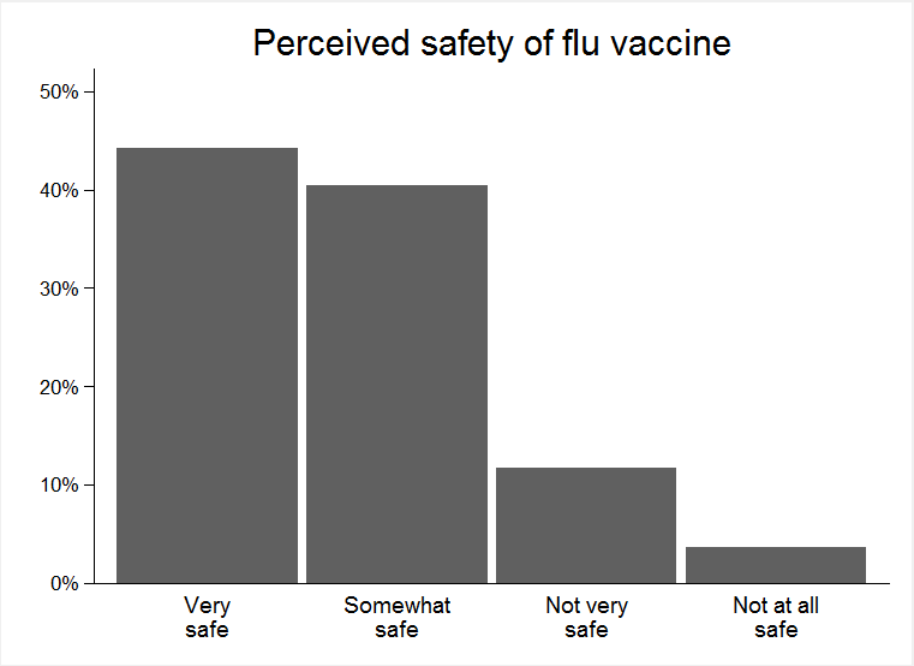

Figure 2: Distribution of Vaccine Safety Measure from Nyhan and Reifler (2015)

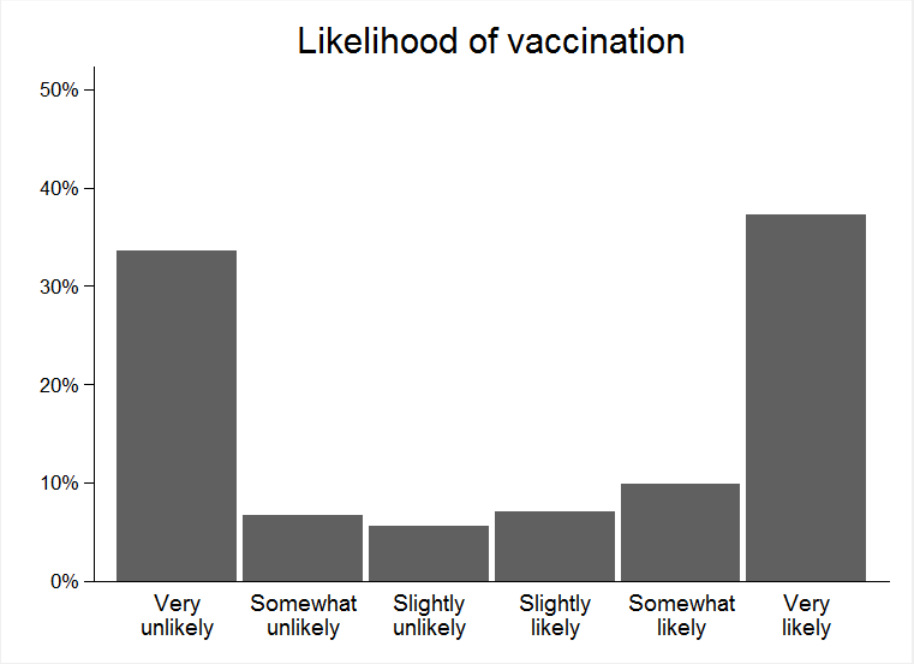

Figure 3: Distribution of Intent to Vaccinate Measure from Nyhan and Reifler (2015)