Metadata

Title

Speaker's reliability influencing the effect of metaphors on reasoning

Description

Metaphors can be found in everyday speech. Their persuasive nature has been object of studies since the last 1970s (cf. Gibbs 2010). For instance, Thibodeau & Boroditsky (2011) researched how even subtle metaphors impact decision-making regarding a socio-political issue, namely crime. In their study, they explored how metaphorically framing crime as a beast or as a virus influences the suggestions offered by the participants to solve the issue. That is, when crime was metaphorically described as a beast, participants were more likely to suggest enforcement-oriented solutions to the issue than when crime was metaphorically framed as a virus. However, the question to what extent the reliability of the speaker influences this effect has hardly been researched so far. Therefore, the present study aims to test whether the reliability of the speaker describing the issue influences the effect of the metaphor on reasoning. Unlike in the study by Thibodeau & Boroditsky (2011), the participants are not only presented with a metaphorical description of the crime issue but also with pictures of different speakers that are associated with different levels of reliability, namely a newscaster and an alcoholic.

We hypothesize that the effect of metaphors on reasoning is due to the participants' (underlying) assumption that the use of a specific metaphor is not a random decision. Instead, it is assumed the speaker has reflected on the issue and concluded that this metaphor best describes the problem and thus the solutions. This explains how the use of a specific metaphor influences participants to suggest responses in line with the metaphor, as shown by Thibodeau & Boroditsky (2011). However, according to our theory, this effect of metaphors on reasoning should be less clear, if the speaker is perceived as unreliable, because in this case, the reflection about which metaphor to use seems ill-conceived and thus, less convincing. The main hypothesis, therefore, holds that while there is an expected response (enforce vs. reform) for expected triggers (beast vs. virus), this tendency to suggest solutions in line with the metaphor varies with the speakers' reliability. That is, for the reliable speaker, the probability of the expected response is higher than for the unreliable speaker.

Contributors

Miriam Schiele and Michael Franke

Category

Project

Affiliated institutions

No affiliated institutions

License

MIT License

Year

2023

Copyright Holders

Miriam Schiele

Subjects

- Arts and Humanities

Tags

No tags

Study Information

Hypotheses

Compared to the "alcoholic" condition, we expect a higher proportion of expected suggestions (reform-oriented suggestions in "virus" frame and enforce-oriented suggestions in "beast" frame) in the "newscaster" condition.

Design Plan

Study type

Experiment - A researcher randomly assigns treatments to study subjects, this includes field or lab experiments. This is also known as an intervention experiment and includes randomized controlled trials.

Blinding

- For studies that involve human subjects, they will not know the treatment group to which they have been assigned.

Is there any additional blinding in this study?

The relevant manipulation is within-participants. Participants are not informed about this manipulation. The experiment is conducted via the internet. No direct contact between experimenters and participants will take place.

Study design

The experiment is conducted using a 2 (metaphorical frame: beast or virus) x 2 (reliability: newscaster or alcoholic) between-subjects design. The four options of the metaphorically framed description of crime are given in the attached documents. Participants are randomly presented with one of the four possible metaphorically framed crime descriptions. Next,

participants are asked to suggest solutions to the crime problem as well as to rate the level of reliability of the paragraph.

- beast, reliable.png
- beast, unreliable.png
- virus, reliable.png
- virus, unreliable.png

Randomization

The study makes use of block randomization, where each participant will be randomly assigned to one of the four predetermined blocks. That is, each participant will be presented with one of the four vignettes randomly.

Sampling Plan

Existing Data

Registration prior to creation of data

Explanation of existing data

No response

Data collection procedures

The study is realized as an online study via Prolific. The participants are being paid 0.5 pounds for estimated 2.5 minutes of participation. We recruited only participants who self-identified as native English speakers and required being based in the US. Every participant is allowed to take part only once.

No files selected

Sample size

200

Sample size rationale

Given monetary restrictions (for a student project), we have to limit the sample size to 200.

Stopping rule

No response

Variables

Manipulated variables

We manipulate the metaphor used in the description of crime. Crime is either metaphorically framed as "a wild beast preying on the city of Addison" or as "a virus infecting on the city of Addison". Additionally, we manipulate the picture of the speaker. The picture either shows a newscaster or an alcoholic. For each speaker, the text in the description of crime is slightly adjusted to match the speaker's jargon, as shown in the attached documents.

No files selected

Measured variables

We measure the participants' proposed solutions for the crime problem and the reliability rating on a scale from 1 (not reliable) to 7 (very reliable). We treat the participants' proposed solutions as a set of suggestions. Each suggestion is classified as either "enforce" or "virus". As in the original study by Thibodeau & Boroditsky (2011), suggestions are categorized as "reform" if the proposed solution suggests investigating the underlying cause of the problem or suggests a particular social reform to treat or inoculate the community. In contrast, suggestions are categorized as "enforce" if the proposed solution focuses on the police force or other methods of law enforcement or modifying the criminal justice system. As pointed out by Thibodeau & Boroditsky (2015), suggestions of neighborhood watches cannot be clearly classified and are therefore excluded from the analysis as well. Solutions that contain the same number of suggestions for both reform and enforce are categorized as "both". Finally, solutions are categorized as "neither" if the proposed solution lacked a suggestion and are therefore excluded from the analysis. The remaining three categories are ordered as follows: "reform", "both", "enforce". (See attached document "categorizing-of-responses.pdf" for examples from the pilot study.)

No files selected

Indices

No response

No files selected

Analysis Plan

Statistical models

We will a logistic regression model for binary choice variable RELIABILITY as covariate (either "newscaster" or "alcoholic"). Our analysis will use the statistical programming language R. The attached script "code-for-followup-study.R" contains the analysis as planned.

No files selected

Transformations

No response

Inference criteria

We judge there to be positive evidence in favor of the main hypothesis, if the posterior probability of the difference between expected suggestions in the reliable speaker condition and in the unreliable speaker condition (more expected suggestions in "newscaster" condition than in "alcoholic" condition" being bigger than zero is at least 0.95.

Data exclusion

Solutions of the category "neither" as well as suggestions of "neighborhood watches" as solution to the crime issue are excluded.

Missing data

The nature of the software is such that only complete data sets will be stored.

Exploratory analysis

No response

Other

Other

No response