

Lecture 5: Framing

COGS 153

What is framing?

- The way information is presented (*framed*) can influence decision making.
 - The information is not changed, just the way it is presented.
- Which would you prefer?

A drug that is effective 95% of the time

VS

A drug that fails to work 5% of the time

90% fat free ice cream

VS

10% fat ice cream

The effects of framing on decision making

The Infectious Disease Problem

“Imagine that the U.S. is preparing for an outbreak of an unusual disease, which is expected to kill 600 people. Two alternative programs to combat the disease have been proposed. Assume that the exact scientific estimate of the consequences of the program are as follows:

- If program A is adopted, 200 people will be saved.
- If program B is adopted, there is a $\frac{1}{3}$ probability that 600 people will be saved and a $\frac{2}{3}$ probability that no people will be saved”

- Which of the two programs would you favor?

The effects of framing on decision making

The Infectious Disease Problem

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- Which of the two programs would you favor?
 - The majority of ppts (72%) preferred the risk averse program A
 - Saving 200 lives sounds more attractive to people than a $\frac{1}{3}$ chance of saving everyone

Framing effects on risk

- Group 1 (*Gain Frame*)
 - If program A is adopted, 200 people will be saved.
 - If program B is adopted, there is a 1/3 probability that 600 people will be saved and a 2/3 probability that no people will be saved.
- Group 2 (*Loss Frame*)
 - If program C is adopted, 400 people will die.
 - If program D is adopted, there is a 1/3 probability that nobody will die, and 2/3 probability that 600 people will die.

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 - If program D is adopted, there is a 1/3 probability that nobody will die, and 2/3 probability that 600 people will die.
- **Note that it's the same proportions across frames!**

Framing effects on risk

- Group 1 (*Gain Frame*)
 - **If program A is adopted, 200 people will be saved.**
 - If program B is adopted, there is a 1/3 probability that 600 people will be saved and a 2/3 probability that no people will be saved.
- Group 2 (*Loss Frame*)
 - If program C is adopted, 400 people will die.
 - **If program D is adopted, there is a 1/3 probability that nobody will die, and 2/3 probability that 600 people will die.**
- The framing leads to irrational biases in decision making
 - Choices framed as **gains** often lead people to be **risk averse** (group 1, program A)
 - Choices framed as **losses** often lead people to be **risk seeking** (group 2, program D)

Metaphoric Framing

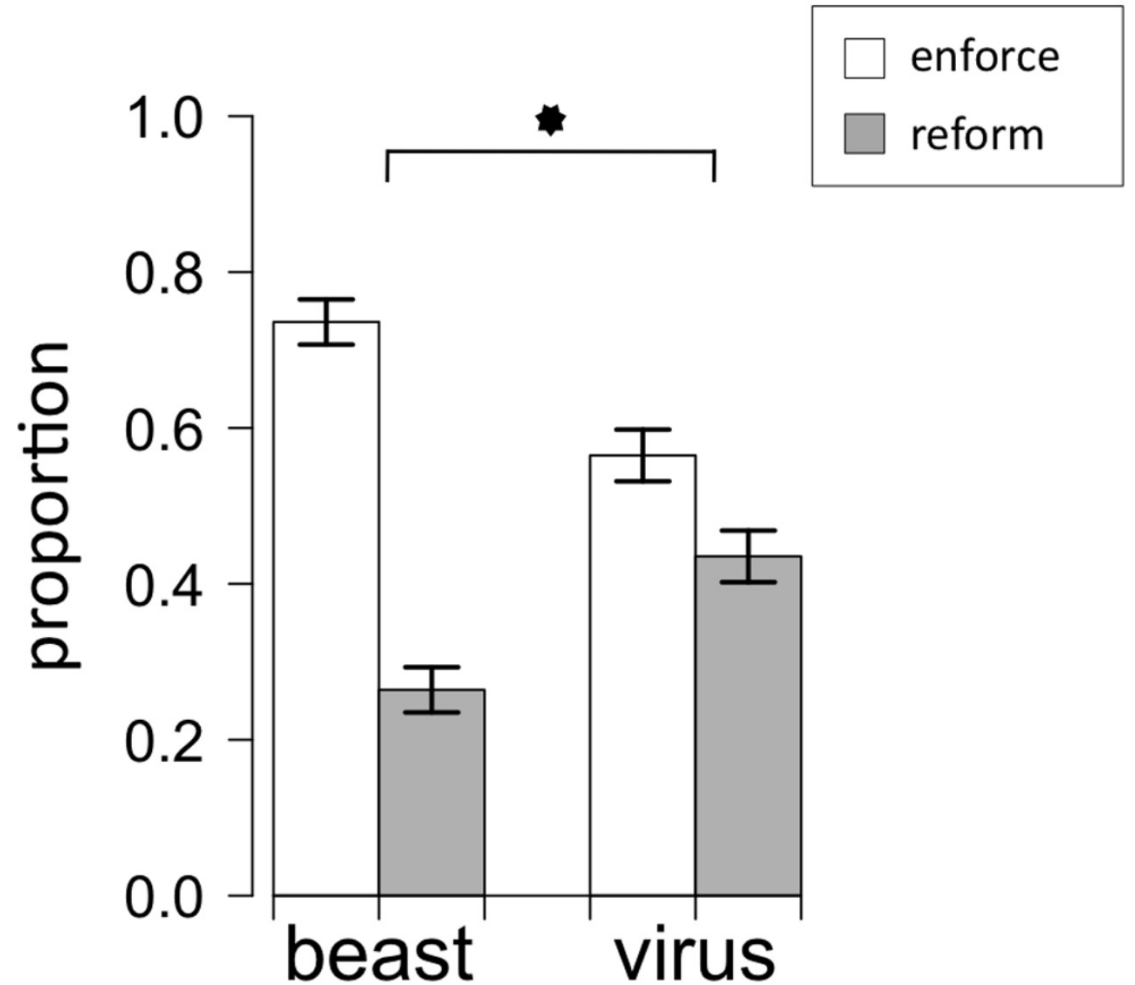
Task: Participants read a paragraph and then give a suggestion for how crime should be dealt with.

“Crime is a **(beast/virus)** ravaging the city of Addison. Five years ago, Addison was in good shape, with no obvious vulnerabilities. Unfortunately, in the past five years the city’s defense systems have weakened, and the city has succumbed to crime. Today, there are more than 55,000 criminal incidents a year - up by more than 10,000 per year. There is a worry that if the city does not regain its strength soon, even more serious problems may start to develop.”

Metaphoric Framing

Results:

- Participants given the crime-as-beast metaphorical framing were more likely to suggest enforcement than participants given the crime-as-virus framing
- Participants given the crime-as-virus metaphorical framing were more likely to suggest reform than participants given the crime-as-beast framing
 - solutions varied as a function of framing



Framing effects in the real world

- Previous studies found that political ideology & education level predict opinions on climate change
 - Higher educational levels intensify beliefs and predicts:
 - increased environmental concern among liberals
 - decreased environmental concern among conservatives
 - (Hamilton et al, 2011)
- Does framing have an effect?
 - Framing climate change as a *pervasive issue* (rather than as specific episodic events) increased concern
 - (Hart, 2011)
 - Framing it as a *public health issue* reduced partisan polarization
 - (Maibac, 2010)
 - Republicans were more likely to believe in “*climate change*” than “*global warming*”
 - (Schudlt et al., 2011)

Can framing effects be reduced by encouraging reflection?

- What about not trying to eliminate frames, but rather to raise individuals' awareness and scrutiny of frames?

Experiment Design:

- 2 frame (global warming, climate change) x 2 frame reflection (experimental, control)
- In the experimental “frame reflection” condition, ppts were given a description of what a frame is and how it often relies on key words
 - Key words were highlighted in the vignette that participants read

Political issues can often be complex, contentious, and difficult to understand. One way of making sense of these issues, and the different positions that one can take on an issue, is to think about the frames that structure debate about the issue. Frames help organize facts and information. They help define what counts as a problem, diagnose the problem's causes, and suggest remedies for solving the problem. These ways of thinking have lots of different parts, including stereotypes, metaphors, images, catchphrases, and other elements.

Different framings are often associated with a particular way of talking about or communicating about an issue. In the following questions, words or phrases that might indicate different framings have been highlighted.

You may have heard about the idea that the world's temperature may have been **<going up/changing>** over the past 100 years, a phenomenon sometimes called **<global warming/climate change>**. What is your personal opinion regarding whether or not this has been happening?

Can framing effects be reduced by encouraging reflection?

- DV:
 - Belief was indicated on the same 7-point scale from “Definitely has not been happening” to “Definitely has been happening.”
- Highlighting the framing language *reduced* framing effects compared to control condition
 - less polarization in the Global Warming (GW) frame

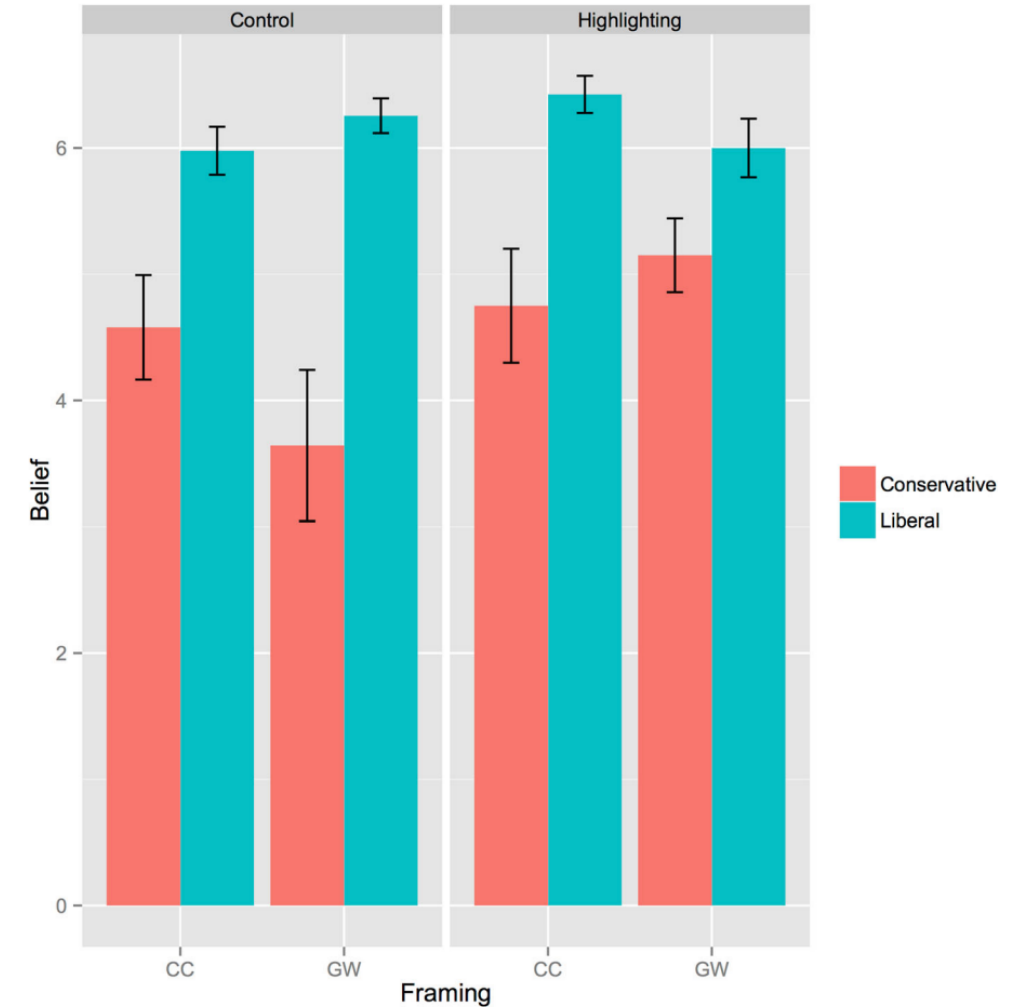


Figure 1. Belief in global climate change as a function of framing, ideology, and highlighting intervention. Highlighting the frame eliminates the framing effect.

Analogy & Problem Solving

- **Duncker's Tumor Problem**

- A patient needs radiation treatment for a deadly tumor. The tumor can be killed if treated by a laser. Unfortunately, if the laser beam is strong enough to kill the tumor, it will kill all the healthy tissue around it too (and the patient!).

Analogy & Problem Solving

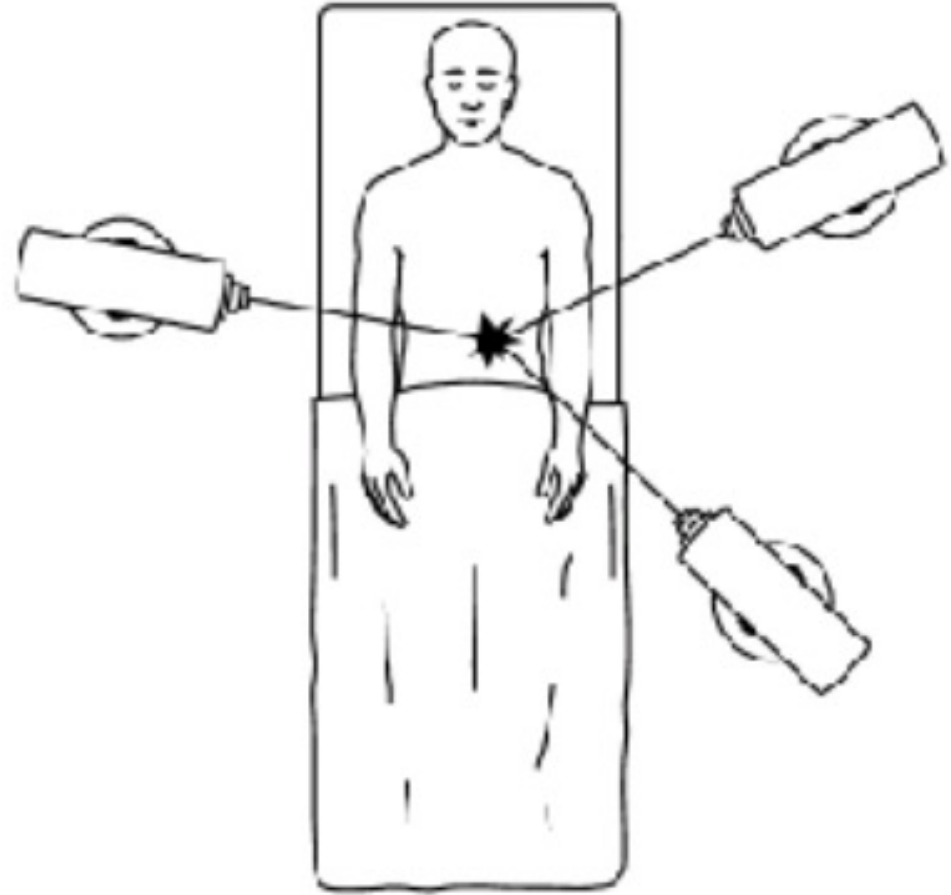
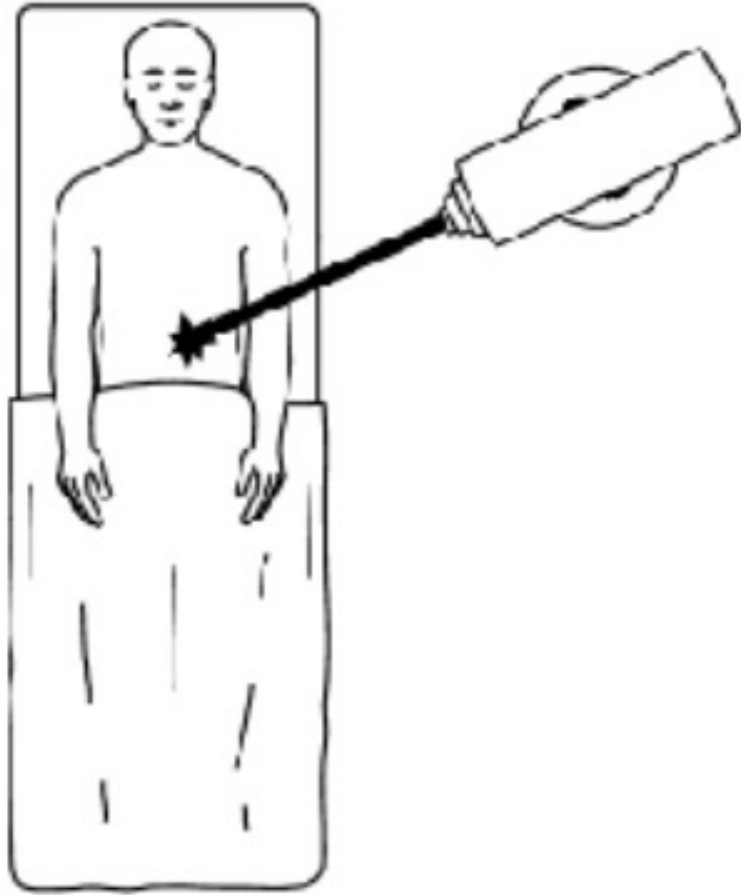
- **Duncker's Tumor Problem**

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- **The Impenetrable Fortress Problem**

- A general with a large army wants to overthrow a dictator who lives in a large fortress. All roads to the fortress are armed with mines that will go off if too many people are on them at the same time. To solve this problem, the general breaks up his army into several groups and has them take different roads. They all arrive at the same time and take the fortress.

Which solution did you propose?



Analogical problem solving involves mapping

| | |
|----------------------------------|-------------------------------------|
| General | Doctor |
| Fortress | Tumor |
| Army | Rays |
| Small Groups | Low intensity rays |
| Converge(Small Groups, Fortress) | Converge(Low intensity rays, Tumor) |
| Capture(Fortress) | Kill(Tumor) |

Analogical problem solving allows you to 'highlight' or 'hide' some features across the problem domains

Analogy & Problem Solving

- Duncker's Tumor Problem
 - **10%** of participants solve problem with no information
 - **35%** of participants solve problem when given the Impenetrable Fortress story
 - **100%** of participants solve problem when given the Impenetrable Fortress story + a hint to apply it

