

# **The Effects of Multiple Metaphors on Framing**

by

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**Abstract**

Metaphors are frequently utilized to frame discussions of complicated societal issues, which has been shown to influence decision-making. However, no studies have examined the effects of using multiple metaphors. Specifically, it is unclear how people will react when they read a report framed with two different metaphors that have different entailments. Will the metaphor introduced at the beginning of the report or the one added at the end make more of an impact? Or would the effects of the two metaphors cancel each other out? We hypothesized that participants would be more affected by the metaphor that was presented first. In the present study, participants read a series of four metaphorically framed vignettes. They were randomly assigned to one of two conditions: (1) One Metaphor Condition: where each vignette was framed using two instantiations of a single metaphor, or (2) Two Metaphor Condition: where each vignette was framed using a single instantiation of each of two different metaphors. After reading each vignette, participants answered a question about the vignette with two possible response options, one of which was conceptually consistent with the first metaphor frame. Results supported our hypothesis: overall, participants responded in a manner congruent with the first metaphor they read significantly above chance levels. While metaphor-congruent responding was higher in the One Metaphor Condition, there was not a significant difference between the two conditions on this measure. The implications of these results and the limitations of the current study are discussed.

Keywords: *metaphor, framing, mixed metaphor*

## **The Impact of Multiple Metaphors on Framing**

When explaining and addressing complex issues, like crime and politics, the use of metaphors can be incredibly helpful. Metaphors are a figure of speech that compare two things that are otherwise not literally comparable. They aid people in understanding the difficulty of new, complicated, or abstract subjects by establishing commonality, through simpler notions. For example, the metaphor “words cut deeper than a knife.” We are aware that words cannot physically cut, the metaphor of a knife is used to illustrate how hurtful words can be when used as a “weapon”. In everyday speech, the media, politics, and when debating intricate societal issues, metaphors are regularly utilized. But how do metaphors operate and how much do they affect the way we think and make decisions?

### **Metaphorical Framing**

Metaphorical framing is the process of explaining things using metaphors. By equating characteristics of one idea with that of another, metaphorical framing describes a thought. In other words, metaphorical framing aids in the understanding of difficult concepts by comparing them to simpler ones. One example of metaphorical framing is in Thibodeau and Boroditsky 2011 study titled "Metaphors We Think With: The Role of Metaphor in Reasoning." Participants in this study were randomly assigned to read one of two paragraphs regarding crime. The metaphors used to compare crime was the only change between the two versions of the paragraphs. Crime was portrayed as either a "beast lurking in the city" or a "virus plaguing the city." After reading the paragraphs, participants were asked to respond to a target question, with one possible response being conceptually consistent with the metaphor they were given. The results showed that metaphorical framing had an impact on participants' opinions on crime and preferred policies. Participants who read the "beast" metaphor were more inclined to support harsh law enforcement measures, whereas participants who received the "virus" metaphor were

more likely to support social reform measures. Indicating that the framing we chose, impacts how we think and feel.

In another study conducted by Elmore and Luna-Lucero (2016), they looked at how various metaphors used to represent genius and creativity can affect how individuals perceive these notions. In the study, participants who were exposed to the metaphor of "light bulbs," which implied that creative ideas appear suddenly and fully formed, like a light bulb turning on, were more likely to think that creativity and genius are innate and fixed qualities that cannot be developed or improved. On the other hand, participants who were exposed to the metaphor of "seeds," which implied that creative ideas develop over time like a seed growing into a plant, were more inclined to believe that creativity and genius are traits that can be developed and enhanced through work and practice. These findings suggest that the metaphors we use can strongly influence our attitudes and views.

Additionally, metaphorical framing can be characterized as a strategy for promoting a point of view on a subject by highlighting some aspects while obscuring others (Ritchie, 2017). According to this concept of a framing, certain aspects of a scenario should receive more focus, while others that are outside the frame should receive less attention. In keeping with this, Ritchie investigates the numerous ways that liberals and conservatives utilize and frame metaphors in political discourse as propaganda to support their agendas, since they have distinct worldviews. Ritchie points out that liberals frequently use metaphors that highlight group accountability and collective action, whereas conservatives frequently use those that emphasize individual responsibility and self-reliance. Conservatives, for instance, often refer to the country as a family, with the government serving as the parent and the people as the children. This metaphor highlights the notion of personal accountability, and it implies that people should look out for

themselves rather than depending on the government. Liberals, on the other hand, often refer to the country as a community, with citizens cooperating to achieve shared objectives.

Incorporating the concepts of social responsibility and group effort, this metaphor highlights the notion that people should come together to address social issues.

Newspapers are another type of media that employs metaphorical framing by highlighting some aspects while obscuring others. In order to determine the metaphorical frameworks that were used to discuss language change, Bogetic in his 2019 study examined articles from *The Guardian* and *The Daily Mail*, two British newspapers. He discovered that linguistic change was frequently depicted in media as a bad phenomenon that needed to be stopped or reversed by using metaphors of disease and decay. For instance, the metaphor of "language decay" was used to highlight linguistic developments that were perceived as a decrease from a former standard. The study also discovered that metaphors of evolution and advancement were used by the media to portray linguistic change in a more favorable manner. For instance, the metaphor "language evolution" was used to highlight linguistic changes as a normal process of growth and development. Overall, the study emphasizes the significance of metaphors in influencing public discourse regarding language change and contends that many metaphors can be used to frame the same occurrence in various ways by highlighting some elements while downplaying others.

Furthermore, metaphors aren't just decorative devices in language, they are a conceptual tool that can be used to form, reform, and even construct new realities (Lakoff & Johnson, 1980). Metaphors enable us to think more constructively and effectively by allowing us to utilize our existing knowledge of more familiar concepts. Metaphors use similarities to serve their purpose. Similarity is resemblance without being exact. Similarities are often closely related to our ability

to identify, generalize, and differentiate concepts. Simpler concepts that are established in familiarity give metaphors the foundation they need to compare more complex notions. For example, in Thibodeau and Flusberg (2017) when they cited research on what factors most affected people's choice of candidate, voters tended to say, "the economy." Therefore, to determine if metaphors might influence important choices like casting a ballot in a presidential election, researchers metaphorically compared the federal budget to a household budget. This metaphor positioned the president as the head of the country and in charge of making financial decisions. If this metaphor is effective in its implications, then we can anticipate that voters will equate the government budget to a household's, which will lead to a greater weighing of the candidate's personal financial history in assessing who to vote for. Participants read one of two descriptions of the federal budget, either emphasizing similarities or emphasizing differences between federal and household budgets. After reading one of the two descriptions, participants were asked to rate whether they agreed or disagreed with statements (e.g., "I would vote for a presidential candidate who had problems managing his or her personal assets, as long as I support their broader economic values"). The results showed that participants who read that the budgets were similar considered the personal financial history of candidates to be more relevant. This demonstrates that participants were influenced, and the metaphor achieved its desired effect

Moreover, millions of Americans do not consider climate change to be an urgent issue, despite majority consensus from the scientific community of its threat. In a 2017 study, Flusberg and colleagues attempted to tackle this disconnect between science and public opinion with the influence of metaphors. In the study, participants read one of three articles headlined either "The War Against Climate Change", "The Race Against Climate Change", or "The Issue of Climate Change" (no metaphor), comparing climate change to either a war or a race. Participants in the

war condition read about how the US would "kill" air pollution issues, participants in the race stimuli read about how the US would "surge ahead" on air pollution problems, and participants in the no metaphor stimuli just read about how the US would "address" air pollution.

After reading the stimuli, participants were asked a series of questions, like how urgent they think the problem of climate change is. Researchers found that applying the metaphor of war did slightly increase people's views of the urgency and danger of climate change, followed by the race metaphor. These findings suggest that metaphors are particularly successful at influencing attitudes

### **Different Types of Metaphors**

The use of metaphors is not limited to language. Similar to linguistic metaphors, art or visuals can be used to communicate a thought or messages. There is still much to learn about how visual metaphors affect people. However, visual metaphors are more accessible across cultures than verbal ones since they are more easily understood. For example, a political cartoon. During his election, Donald Trump said "it's time to drain the swamp in Washington D.C.". In Thibodeau and colleagues' 2019 article, we see an illustration of a swamp that metaphorically represents the American government, with President Donald Trump hovering over the "swamp" holding a plug. People are being drained out of the dirty "swamp" as a result of the plug, which has changed their state. Looking at this illustration, the message that Trump will end corruption by ousting dishonest leaders was communicated.

Additionally, metaphors are used regularly throughout communicative outlets, but majority of metaphorical framing research conducted is done with written metaphors. Experiments usually contain a written passage which includes a metaphor, and the researchers aim to answer specific questions regarding written metaphorical framing. However, Flusberg and

colleagues (2020) examined the effects of metaphors through not only reading but auditory and visual stimuli as well. Researchers sought to answer the following questions: When used in various forms of communication, are metaphors equally successful at influencing attitudes and beliefs? If not, why do some formats tend to have stronger framing effects? Participants were given the same set of statements that were metaphorically framed in written, aural, or visual form. Following each message, participants made a choice between two answers to a target question, one of which was conceptually consistent with the metaphor they received. The results showed no significant changes in the impact of metaphor framing across the communication channels, but they did find that expanding the metaphor improves metaphor framing generally.

### **Present Study**

Metaphors are frequently utilized to discuss complicated societal issues. Metaphors aid in forming our ideas and deconstructing difficult concepts by comparing two things that aren't literally comparable. Previous research indicated metaphors have the potential to influence our thoughts and, as a result, help us make decisions (Thibodeau and Boroditsky 2011). However, no study had examined the effects of using multiple metaphors. Specifically, it is unclear how people will react when they read a report framed with two different metaphors that have different entailments. Will the metaphor introduced at the beginning of the report or the one added at the end make more of an impact? Alternatively, will having two metaphors make no difference? The primary goal of this study was to gain further knowledge about the utilization of metaphors. We predicted that the first metaphor presented in the report would have a greater impact on reasoning than the second one.

The justification behind the prediction was, the presumption that people typically adhere to the notion they are first exposed to and base all subsequent thoughts on it.



Furthermore, in Thibodeau and Boroditsky 2011 study, they investigated the time course of metaphors. In experiment 5 of their study, they looked at whether the beginning or end of a metaphor's introduction affected the metaphor's impact. They repeated experiment 4, but this time the metaphor was placed in the final sentence of the vignette as opposed to the opening sentence as it was in experiment 4. The results showed, contrary to experiment 4, experiment 5 had no effect. In experiment 4, where the metaphor was introduced at the beginning, there was a significant impact on people gathering information related to crime. These findings further strengthened our hypothesis.

## **Methods**

### **Participants**

We recruited 400 participants (50.8% male, 49% female, 0.2% non-binary,) from CloudResearch Connect, an online crowdsourcing platform. We aimed for a sample size of 200 individuals per condition to be consistent with past research on metaphor framing. Participants self-identified as African American (7.6%), Asian/Asian American (8.6%), Latino/Hispanic (3.4%), Native American (0.3%), Pacific Islander (0.3%), White/Caucasian (75.7%), or more than one race (3.4%), and three people (0.7%) preferred not to say. All participants were at least 18 years of age ( $M = 40.016$ ,  $SD = 11.6599$ ), lived in the US, and had a good performance record on previous tasks (minimum 95% approval rating).

### **Materials and Procedures**

The experiment was created using Qualtrics online survey software. There were four metaphor framing trials in the experiment adapted from Flusberg et al., 2020 and Thibodeau, 2016, presented in a randomized order. Each trial consisted of a brief vignette describing an issue framed using metaphors. The issues included billiards, research, politics, and crime. After

reading the vignette, participants responded to a question about the vignette with two possible response options, one of which was conceptually congruent with the metaphor presented.

For example, in one vignette from Flusberg et al., 2020 and Thibodeau, 2016, politics is framed as either a *theater where politicians are performing dramatic monologues* or a *battle where they are attacking their opponents*. After reading the vignette, participants were asked “Which of the following do you think would be more likely to change the culture in Washington?” The response options included (1) “Close the curtain on the saga by ending the 24-hour media coverage of politicians” (congruent with the theater metaphor), and (2) “Bring a truce to the war by forcing politicians to acknowledge their common obligation” (congruent with the battle metaphor). In both previous studies, results showed that participants were more likely to choose the response that was conceptually consistent with the metaphor they received.

In the present study, we used a between-subjects design. Participants were randomly assigned to one of two conditions: (1) One Metaphor Condition: where each vignette is framed using two instantiations of a single metaphor (a replication of Flusberg et al., 2020 and Thibodeau, 2016), and (2) Two Metaphor Condition: where each vignette is framed using a single instantiation of each of the two different metaphors, one that comes at the beginning and one at the end of the vignette. The specific metaphors that people received on each trial, and their order in the Two Metaphor Condition, were randomized. See Appendix for an example of the vignettes for each condition. After completing all four metaphor framing trials, participants responded to a brief demographic’s questionnaire, providing their age, gender, race/ethnicity, and political affiliation and ideology. They were then debriefed and thanked for their time.

## **Analysis Plan**

Data was coded following Flusberg et al. (2020) and Thibodeau (2016). In the One Metaphor condition, we calculated the percentage of responses on the four trials that were congruent with the metaphor presented to each participant (chance = 50%). In the Two Metaphor condition, we calculated the percentage of responses that were congruent with the first versus last metaphor participants receive. Since there were 4 trials, there can either be 0, 0.25, 0.5, 0.75, or 1, corresponding to whether they gave the conceptually congruent response 0, 1, 2, 3, or 4 times on the four trials. Random or chance responding was 0.5. We hypothesized that results in the One Metaphor condition will replicate previous findings, while results in the Two Metaphor condition would show participants are more likely to give a response congruent with the first metaphor they read on each trial.

## Results

We calculated the proportion of times each participant responded in a way that was congruent with the *first* metaphor people read across the four framing trials. As a reminder, in the one metaphor condition, the first and second metaphors were the same, but in the two metaphor condition, the second metaphor was different from the first. Because there were only two response options, the mean congruence score expected due to chance was 0.5. Consistent with previous research, a single sample t-test comparing mean proportion metaphor-congruent responding to chance levels (0.5) revealed a reliable, moderate-sized effect of metaphor framing. Overall, across both of the metaphor framing conditions, participants responded in a first-metaphor-congruent fashion on average 54.2% of the time ( $SD = 24.9$ ), and this was significantly above chance levels of 50%,  $t(381) = 3.28$ ,  $p < 0.001$ . In the One Metaphor Condition, participants responded in a metaphor-congruent fashion on average 55.7% of the time ( $SD = 24.5$ ). The Two-Metaphor Condition was slightly lower with the average of 52.6% ( $SD =$

25.4). However, an independent-samples t-test revealed there were no significant difference in metaphor-congruent response between the two conditions,  $t(380) = 1.197$ ,  $p = 0.232$ . In other words, we correctly hypothesized that participants would replicate Flusberg, et al. (2020) study by responding in a way that was metaphorically consistent in the One Metaphor Condition. As well as correctly predicting participants in the Two Metaphor Condition would demonstrate a higher preference for responding in accordance with the first metaphor they read.

## **Discussion**

Metaphors are not merely figurative language. They impact how we think and behave, connect with others, and make sense of the world around us. They develop conceptual frameworks and mental models to help us understand the world and its experiences. Metaphors do this by highlighting similarities and differences between two objects. Numerous research has established this. However, no research had looked at the results of using multiple metaphors. In particular, it was unknown how readers would respond to two separate metaphors with contrasting connotations. Would the metaphor added at the end have more of an impact than the one introduced at the beginning? Or would the consequences of the two metaphors negate one another?

In this current study, we recruited 400 participants. We aimed for a sample size of 200 individuals per condition. Participants in this study were given either the One Metaphor Condition or the Two Metaphor Condition at random. The One Metaphor Condition included vignettes that were framed using two different instances of a single metaphor in order to be consistent with earlier research on metaphor framing (Flusberg et al., 2020 and Thibodeau, 2016). As a result, each trial consisted of a brief vignette that used metaphors to describe an

issue. Billiards, research, politics, and crime were among the topics. After reading the vignettes, participants were given two options for answering a question about the vignette, one of which was conceptually consistent with the metaphor used. The findings showed that, on average, 55.7% of the time, participants gave answers that were metaphorically congruent, replicating the results of earlier research. In other words, we discovered a consistent metaphor framing effect that was significantly higher than chance level.

Furthermore, in the Two Metaphor Condition, each vignette was framed using a single instantiation of each of the two different metaphors, one that came at the beginning and one at the end of the vignette in randomized order. After reading the vignettes, participants were given two options to choose from to answer a target question. Each option was conceptually compatible with one of the two metaphors that were used. We hypothesized that participants would be more affected by the metaphor that was presented first. Results supported our hypothesis: overall, participants responded in a manner congruent with the first metaphor they read significantly above chance levels. While metaphor-congruent responding was higher in the One Metaphor Condition, there was not a significant difference between the two conditions on this measure. In other words, there was a numerical difference between the two conditions, but it was not enough to be considered significant.

### **Limitations**

One of the study's limitations was its lack of diversity. Only 400 participants were included in the sample size, and 75.7% of all participants, identified as white or Caucasian. We know that metaphors can have a significant impact on our thinking and behavior, according to studies. For instance, metaphors can alter how we view social issues, how we make decisions, and how we feel. A lack of diversity in these studies can be problematic. if a study has a small

range of racial or cultural backgrounds, the studies findings may not be applicable to different populations. It may not be clear how certain metaphors are interpreted or understood by other groups, which can restrict effective intergroup communication. Furthermore, this study did not examine the use of other forms of metaphors, instead, it concentrated primarily on the use of conceptual metaphors. Overall, these issues can be addressed through future studies by having more diversity in sample sizes and imploring different forms of metaphors (orientational, cognitive, visual, or cultural metaphors).

Despite its limitations, this study had a significant impact on how multiple metaphors can affect framing and how we think and perceive things. This study increased our understanding of metaphor usage. It made it possible for us to communicate in more effective and precise ways. Metaphors help us communicate in more effective and precise ways by providing a way to understand complex concepts and relationships in terms of something more familiar or concrete. For example, the metaphor "politics is a battlefield" can give us a more tangible understanding of the complexity and gravity of politics. By giving us a way to express something in terms of something else that is more detailed or precise, metaphors aid in our ability to communicate more accurately. Again using the metaphor "politics is a battle field" provided a more precise description of politics rather than simply saying that it is "demanding" or "tough." Finally, by understanding how metaphors or multiple metaphor's function, this study contributed to our overall understanding of the world around us.

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## Appendix: Example Trial

### **One metaphor: battle**

The Democrats and Republicans have been fighting a battle with each other. Congress has passed roughly 80% fewer bills in recent terms than it did in the '70 s and '80 s. The American People, on the other hand, would like to see more legislative progress. Unfortunately, both parties seem more interested in attacking their opponent than engaging with difficult policy questions.

### **One metaphor: theater**

The Democrats and Republicans have been playing political theater with each other. Congress has passed roughly 80% fewer bills in recent terms than it did in the '70 s and '80 s. The American People, on the other hand, would like to see more legislative progress. Unfortunately, both parties seem more interested in performing dramatic monologues than engaging with difficult policy questions.

### **Two metaphors: battle first, theater last**

The Democrats and Republicans have been fighting a battle with each other. Congress has passed roughly 80% fewer bills in recent terms than it did in the '70 s and '80 s. The American People, on the other hand, would like to see more legislative progress. Unfortunately, both parties seem more interested in performing dramatic monologues than engaging with difficult policy questions.

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### **All stimuli used the same target question**

*Which of the following do you think would be more likely to change the culture in Washington?*

1. End the 24-hour media coverage of politicians (*congruent with theater*)
2. Force politicians to acknowledge their common obligations (*congruent with battle*)

### **One metaphor: detective**

Aaron is the detective of the billiards world. He can often sink several balls in a row, winning before his opponent has any real chance to take a shot of their own. Next week he'll be playing for a championship in the national title game. He feels like he can be a sleuth uncovering clues to unlock the game.

**One metaphor: Sniper**

Aaron is the sniper of the billiards world. He can often sink several balls in a row, winning before his opponent has any real chance to take a shot of their own. Next week he'll be playing for a championship in the national title game. He feels like he can eye the table like an assassin targeting a line of shots.

**Two metaphors: detective first, sniper last**

Aaron is the **detective** of the billiards world. He can often sink several balls in a row, winning before his opponent has any real chance to take a shot of their own. Next week he'll be playing for a championship in the national title game. He feels like he can eye the table like an **assassin targeting a line of shots**.

**Two metaphors: sniper first, detective last**

Aaron is the **sniper** of the billiards world. He can often sink several balls in a row, winning before his opponent has any real chance to take a shot of their own. Next week he'll be playing for a championship in the national title game. He feels like he can be a **sleuth uncovering clues to unlock a game**.

**All stimuli used the same target question**

*Which of the following do you think would be more likely to focus on when he's playing?*

- 1. Setting up a sequence of several shots (congruent with detective)*
- 2. Making the current shot (congruent with sniper)*

**One metaphor: beast**

Crime is a wild beast preying on the city of Addison. The crime rate in the once peaceful city has steadily increased over the past three years. More than 55,000 crimes were reported in 2022, including 512 murders, as compared to 40,000 crimes and 303 murders reported in 2019. These days it seems that crime is lurking in every neighborhood

**One metaphor: virus**

Crime is a virus infecting the city of Addison. The crime rate in the once peaceful city has steadily increased over the past three years. More than 55,000 crimes were reported in 2022, including 512 murders, as compared to 40,000 crimes and 303 murders reported in 2019. These days it seems that crime is plaguing every neighborhood

**Two metaphors: beast first, virus last**

Crime is a **wild beast preying** on the city of Addison. The crime rate in the once peaceful city has steadily increased over the past three years. More than 55,000 crimes were reported in 2022, including 512 murders, as compared to 40,000 crimes and 303 murders reported in 2019. These days it seems that crime is **plaguing** every neighborhood.

**Two metaphors: virus first, beast last**

Crime is a **virus infecting the city** of Addison. The crime rate in the once peaceful city has steadily increased over the past three years. More than 55,000 crimes were reported in 2022, including 512 murders, as compared to 40,000 crimes and 303 murders reported in 2019. These days it seems that crime is **lurking** in every neighborhood.

### **All stimuli used the same target question**

*Which of the following do you think would be more likely to reduce crime?*

- 1. Reform educational practices and create after school programs (congruent with virus)*
- 2. Increase Street patrols that look for criminals (congruent with beast)*

### **One metaphor: mountain**

Dr. Roy is a cancer researcher. When she does her work, she imagines herself scaling a mountain, slowly but surely planting one foot in front of the other. She seeks to make a positive impact on the scientific community. Her goal is to extend our understanding of the disease and improve how we treat it. She'll keep climbing until she reaches the summit.

### **One metaphor: Puzzle**

Dr. Roy is a cancer researcher. When she does her work, she imagines herself solving a puzzle, pondering how to make the pieces fit together. She seeks to make a positive impact on the scientific community. Her goal is to extend our understanding of the disease and improve how we treat it. She'll keep rearranging the pieces until she sees the big picture.

### **Two metaphors: mountain first, puzzle last**

Dr. Roy is a cancer researcher. When she does her work, she imagines herself scaling a mountain, slowly but surely planting one foot in front of the other. She seeks to make a positive impact on the scientific community. Her goal is to extend our understanding of the disease and improve how we treat it. She'll keep rearranging the pieces until she sees the big picture.

### **Two metaphors: puzzle first, mountain last**

Dr. Roy is a cancer researcher. When she does her work, she imagines herself **solving a puzzle**, pondering how to make the pieces fit together. She seeks to make a positive impact on the scientific community. Her goal is to extend our understanding of the disease and improve how we treat it. She'll keep **climbing until she reaches** the summit.

### **All stimuli used the same target question**

*Which of the following do you think would you predict of the researcher?*

- 1. Tests completely novel theories (congruent with mountain)*
- 2. Uses methods that are simple to follow (congruent with puzzle)*

