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Authors

Chkhaidze, Ana

Buyruk, Parla

Boroditsky, Lera

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Linguistic Metaphors Shape Attitudes towards Immigration

Ana Chkhaidze (achkhaid@ucsd.edu)

Parla Buyruk (pbuyruk@ucsd.edu)

Lera Boroditsky (lera@ucsd.edu)

Department of Cognitive Science, University of California, San Diego
9500 Gilman Dr, La Jolla, CA 92093, United States

Abstract

Immigration policy has been one of the top concerns of American voters over the last decade and has attracted some of the most heated rhetoric in politics and news media across the world. Much like other political language, talk about immigration is suffused with metaphor. To what extent does the language about immigration, and specifically the metaphors used, influence people's views of the issues? How powerful are these metaphors? In our studies, we exposed participants to one of four versions of a passage about an increase in immigrants in one town. The four versions of the passage included all identical facts and figures and differed in only a single word at the beginning of the passage, describing the increase in immigrant labor as either an "increase," a "boost," an "invasion," or a "flood." Although the passages differed only in this one word, participants' attitudes towards this increase and their predictions about its effects on the economy differed significantly depending on the metaphor. Of course, opinions on immigration differ across political affiliations. Remarkably, the single word metaphor was strong enough to mitigate much of the difference in opinion on immigration between Democrats and Republicans in our sample. Further analyses suggested that the results are not due simply to positive or negative lexical associations to the metaphorical words, and also that metaphors can act covertly in organizing people's beliefs.

Keywords: metaphor; framing; attitudes; immigration

Introduction

The United States is famously "a nation of immigrants" (Martin, 2010), and yet the question of immigration policy remains a hot-button issue. A third of the 2020 voters reported immigration should be a top priority for Congress, and more than 4 in 5 registered voters in the 2020 US presidential election reported that immigration was important in their decision about who to vote for. A similar trend was seen in the 2018 midterm elections (Pew Research Center, 2018).

Immigration is actively discussed in media, political, and public discourse and attracts much-heated rhetoric. The discussion is often suffused with a variety of linguistic metaphors (Ana, 1999). For example, during the 2018 election campaign, former US President Donald Trump stated: "That's an *invasion*. I don't care what they say. ... That's an *invasion* of our country," referring to Central American migrant caravans (Factbase Videos, 2018). Trump's 2016 and 2018 campaign rallies and tweets on immigration are filled with "battle" and "threat" rhetoric.

Several recurrent metaphor categories have been identified in discussions of immigration in media (Dervinytė, 2009), immigration jurisprudence (Cunningham-Parmeter, 2011), and political campaigns (Charteris-Black, 2006; Delouis, 2014; O'Brien, 2003). For example, by analyzing the early 20th-century immigration debate discourse, O'Brien (2003) identified "organism," "object," "natural catastrophe," "war," and "animal and subhuman" metaphorical categories. "Flood" and "invasion" were among the most frequently used metaphors. O'Brien argued that these metaphors might support repressive public policies against immigrants. In another paper, Charteris-Black (2006) analyzed Supreme Court texts about immigration law and found three prevalent metaphors: immigrants are "aliens," immigration is a "flood," and immigration is an "invasion." He argued that these metaphors contain images of danger, and there is a risk for the public to literalize these images in forming their opinions on immigration, hinting that language might influence not only human communication but also cognition.

Do these ways of talking about immigration and immigrants indeed have an influence on how the public thinks and feels about immigration? Researchers in cognitive linguistics have argued that metaphors are more than figurative linguistic ornaments – rather they structure human conceptual systems and become part of our thoughts and actions (e.g., Lakoff & Johnson, 1980a). In the legal domain, Justin Benjamin Cardozo (1926) argued that "(metaphors) end often by enslaving [thought]." Empirical work in cognitive psychology has shown that metaphors allow us to conceptualize abstract and complex ideas by activating conceptual frames for concrete and familiar concepts (e.g., Gentner et al., 2001), and different metaphors can support and lead to different ways of thinking (e.g., Thibodeau, Hendricks & Boroditsky, 2017). For example, one study found that thinking about conflicts in a relationship hurts more when a relationship is framed as a unity rather than a journey (Lee & Schwarz, 2014). Furthermore, the effects of metaphors can be implicit – people's views can be shaped by a metaphorical framing even if they don't explicitly notice or remember the metaphor itself (Thibodeau & Boroditsky, 2013).

Prior work has shown that linguistic metaphors also change our attitudes towards social issues. In one study, participants who read about climate change metaphorically framed as war felt more urgency and willingness to change behavior than when it was framed as a race (Flusberg et al., 2016). Another study showed that people who read about crime as either a

virus or a beast offered different solutions for dealing with it (Thibodeau & Boroditsky, 2011, 2013). When crime was framed as a beast, participants were more likely to offer stricter law enforcement and punishment solutions than when it was framed as a virus.

Can metaphors likewise structure the way people think even about such prominent, highly politicized, and media-saturated issues like immigration? Prior work suggests that exposure to different news reports about immigration can shift people's attitudes toward immigrants (López-Rodríguez et al., 2020). These studies compared participants' responses after being exposed to news articles that reported on immigration either as an invasion or an opportunity. The reports were drawn from real newspapers, which used entirely different text and narratives, and included different accompanying graphics. Would metaphorical framing have a similar effect, acting implicitly to activate whole systems of knowledge even when all other information was controlled?

One possibility is that people's views might be too calcified, not susceptible to metaphorical framing when it comes to a social topic with such clear and saturated political divides. Further, how much metaphor is needed to shift people's views? In our study, we include only a single metaphorical word that changes between conditions. Would even such a minimal framing shift people's views? Because immigration is such a politicized issue, there are baseline differences in attitudes towards immigration between Democrats and Republicans. This baseline difference allows us to compare the strength of the metaphor effect to the differences we find across this political divide. How much of a difference can a metaphor make against the large political divide between Democrats and Republicans on this issue?

We explore how immigration metaphors shape people's views on it by comparing people's responses to a passage about a recent increase in immigrant labor framed as either an "increase," a "boost," a "flood," or an "invasion."

Experiment 1 tested whether different metaphorical framings influence attitudes towards immigration. We chose two frequently used negative metaphors in immigration discourse, "flood" and "invasion." Both floods and invasions have devastated cities and societies throughout history. These metaphors emphasize the dangers of immigration. We also included an alternative positive metaphor for immigration – "boost," a framing that may invoke the idea of immigration as providing needed help and enrichment to society. Our fourth condition was the word "increase" to serve as a neutral baseline. We checked the valence of these four words in the affective norms database (Warriner, Kuperman, Brysbaert, 2013). The valence of "invasion" and "flood" was ranked low (2.45 and 2.76, respectively) on a scale ranging from 1 to 9. "Boost" was ranked as more positive (6.53), while "increase" was ranked as more neutral (5.9).

First, participants read a paragraph about a town that was said to have recently experienced an "increase," a "boost," a "flood," or an "invasion" of immigrant labor. The paragraphs about the town were completely identical in the four conditions except for this one word. Afterward, we measured

the inferences they made about the impact of immigration on the local economy. We found that people indeed were more negatively disposed to immigration if it was framed as an invasion or flood, as opposed to a boost.

Of course, a negative word like "invasion" may simply put people in a worse mood than a positive word like "boost" or may activate other negative lexical associates, and so people may report more negative opinions on immigration simply because of this general negativity – not specifically to do with immigration. Experiment 2 was designed to test whether being exposed to these words in isolation (not as a metaphor about immigration) would likewise shift people's attitudes on immigration.

Methods

Participants

Participants in each of the two experiments were recruited through Amazon's Mechanical Turk. We restricted participants to those whose IP addresses were in the United States, who reported being native English speakers, had completed at least 500 tasks, and had an overall approval rate of at least 95%. We also tracked participant Worker IDs to ensure that everyone participated only once. We excluded participants who did not respond to our survey questions, participated more than once, did not finish the survey, did not indicate their political affiliation or did not learn English until they were 12 years old. Each experiment took about five minutes to complete. Participants were paid 85 cents (a rate of approximately \$10/hour).

Experiment 1: Metaphors 1220 Turkers participated in the experiment. Data from 455 participants were excluded. The final dataset included 765 participants (417 males, 348 females). 379 participants were Democrats, 205 Republicans, and 181 Independents.

Experiment 2: Lexical Prime 864 Turkers participated in the experiment. After applying exclusion criteria, the final dataset consisted of 596 participants (304 males, 290 females, 2 did not specify). 309 participants chose Democrat as their political affiliation, 131 were Republicans, 156 – Independent.

Materials & Procedure

In Experiment 1, each participant read one of the four reports about increasing immigration in the hypothetical town of Addison and was asked to evaluate the effect of this increase on the local economy and general situation. The reports were identical except in the metaphor used to describe the increase of immigrants. One version framed this increase as an "invasion" (n = 191), another one as a "flood" (n = 186), the third one as a "boost" (n = 193). The neutral baseline condition used an "increase" (n = 195). The paragraph read:

In the last three years, there has been a(n) {invasion/flood/boost/increase} of immigrant labor in the

town of Addison. Most of the immigrants do farm work in the surrounding agricultural communities. Some have expanded into construction, cleaning, food service, or other manual labor professions. Some immigrants have also started businesses, opening restaurants, or small shops. In 2016, there were 12,000 immigrants working in Addison, but that number has rapidly grown. In 2020, there were 40,000 immigrant workers.

To test the lexical priming hypothesis, in Experiment 2, the words “invasion,” “flood,” “increase,” and “boost” were dissociated from the metaphorical frame. Instead, they were displayed at the beginning of the experiment. Each participant saw one of these words and was asked to provide a synonym. This design was used for priming representations for “invasion,” “flood,” “increase,” or “boost.” Immediately after providing this synonym, participants read the same paragraph as in Experiment 1 that used the neutral “increase” frame.

In both experiments, the reports were followed up with one open-ended question: “In your opinion, what has been the effect of this change on the local economy?” Participants were given a text box to provide a narrative answer. Participants were also asked to rate the overall effect of immigration on the town of Addison by responding to the following question: “Overall, how positive or negative is this for Addison? (1 – very negative, 10 – very positive).”

On the next page, participants were asked to recall the framing by filling the following blank from memory: “In the last three years, there has been a(n) _____ of immigrant labor in the town of Addison”.

At the end of the experiment, participants filled out a questionnaire about their gender, political affiliation, language background, and immigration status.

Two independent raters manually coded free responses as either positive or negative. Coders were blind to participants’ metaphor conditions. The raters’ initial judgments agreed 94% of the time, with disagreement resolved through discussion. Responses that did not fit into either category were excluded from the valence analysis (125 in Experiment 1, 68 in Experiment 2).

Prior studies have found that attitudes towards immigration differ across political parties: Republicans prefer lower levels of immigration compared to Democrats (Citrin & Wright, 2009). They are also more likely to express anti-immigrant sentiment and vote for more restrictive immigration policies (Burns & Gimpel, 2000; Chandler & Tsai, 2019; Haubert & Fussell, 2006). More than half of Republicans report that immigration should be the most important policy issue compared to 21% of Democrats (Morning Consult, 2019). To account for these differences, we analyzed whether political affiliation influenced participant responses.

Results

Experiment 1: Metaphorical framing

Overview Metaphors influenced people’s views on immigration both as expressed in their free responses and their ratings on a numerical scale, with more negative views expressed after being exposed to negative metaphors like ‘invasion.’ The results did not differ between participants who could explicitly recall the metaphor and those who could not. Predictably, Republicans were more negatively disposed toward immigration than Democrats. Impressively, the difference in opinion induced by metaphor was considerable as compared to the difference by political affiliation (about equal in size in the rating data and about 1/3 of the size as measured in free responses).

Free responses A majority (79.4%) of the participants judged immigration influence as more positive than negative [$\chi^2(1) = 221, p < 2.2 \times 10^{-16}$]. A set of logistic regression models were used to assess the influence of metaphor and political affiliation on the valence of participants’ responses. As predicted, metaphor framing predicted the valence of a participant’s response significantly better than a reduced model that did not include metaphor condition [$\chi^2(3)=24, p < 2.49 \times 10^{-5}$] (Figure 2a). “Invasion” and “flood” framings elicited a lower proportion of positive responses (66% and 79%, respectively) than “boost” and “increase” framings (85% and 87%, respectively). Pairwise comparisons using Z-tests, corrected with Holm’s sequential Bonferroni procedure, indicated that “invasion” vs “boost” was significantly different ($Z = -1.08, p = .0006$), as was “invasion” vs “increase” ($Z = -1.19, p = .0002$). The difference between “invasion” vs “flood” was marginally significant ($Z = -0.65, p = .05$). There was no significant difference between the rest of the pairs. In other words, participants were more likely to give negative responses when immigration was framed as invasion compared to boost, increase, and flood framings. There was no significant difference between the other pairs.

We further tested whether the effect of metaphors was conscious or not by looking at the recall test results. 333 participants (51%) successfully recalled the metaphor they saw in the immigration paragraph. To explore the effect of recall on participant responses, we included the recall test as a predictor in the logistic regression model. The full model including metaphor condition and recall test results did not predict the valence of participants’ responses better than the reduced model only with metaphor condition [$\chi^2(1)=0.06, p = .8$]. In other words, participants who had no explicit recall of the metaphor were just as much affected by the metaphor as participants who were able to remember the metaphorical frame. We also examined if the metaphorical framing effect was independently significant for those who did not explicitly recall the metaphor. Indeed, it was. For those participants who did not explicitly recall the metaphorical framing, the

regression model including the metaphor condition predicted participant responses significantly better compared to the reduced model without this predictor [$\chi^2(3)=25.4, p = 1.274*10^{-5}$].

Lastly, we explored whether political affiliation influenced people's responses. A logistic regression model that included a regressor for metaphor frame and political affiliation predicted the valence of a participant's response significantly better than the reduced model only with metaphor condition [$\chi^2(2) = 36.38, p < 1.26*10^{-8}$] (Figure 2c). Pairwise comparisons using Z-tests, corrected with Holm's sequential Bonferroni procedure, indicated that the valence of the responses significantly differed between *Independents* and *Democrats* ($Z = -4.01, p = .0001$) and *Republicans* and *Democrats* ($Z = -5.62, p < 5.84*10^{-8}$). There was no significant difference between *Republicans* and *Independents* ($Z = -1.45, p = .15$).

Ratings A 4 (Framing: Increase, boost, invasion, flood) x 3 (Political affiliation: Democrat, Independent, Republican) x 2 (Covertness: Remembered, forgot) ANOVA was used to analyze participants' ratings of the immigration influence on Addison. There was a significant main effect of framing, $F(3, 741) = 4.44, p = .004, \eta_p^2 = .02$. Tukey's HSD post hoc tests revealed that "invasion" elicited more negative attitudes than "increase" and "boost," $p = .006$ and $p = .01$, respectively (Figure 1a). There was no significant difference between the other pairs. There was also a significant main effect of political affiliation, $F(2, 741) = 40.88, p = 2.2*10^{-16}, \eta_p^2 = .1$. Republicans rated the immigration influence on Addison more negatively compared to Independents and Democrats, $p = .006$ and $p = .00$, respectively. Independents' ratings were more negative compared to Democrats, $p = 2.6*10^{-6}$ (Figure 1c). There was no main effect of covertness, $p = .61$. We also examined if the metaphorical framing effect was independently significant for those who did not succeed on the free recall test. There was indeed a main effect of metaphor condition even for those participants who could not recall the metaphorical framing, $F(3, 741) = 4.96, p = .002$.

Experiment 2: Lexical Prime

Overview Simply providing synonyms for words like "boost" "invasion" and "flood" did not influence people's views on immigration, neither as expressed in their free responses nor their ratings on a numerical scale. This suggests that it is the meanings of these words as used as metaphors for immigration, not simply their valences or lexical associations that influenced people's responses in Experiment 1. Predictably, Republicans were more negatively disposed toward immigration than Democrats just as in Experiment 1. This provides a further sanity check, suggesting that a failure to see an effect across conditions here is not simply a matter of not having enough sensitivity to measure any differences between participants.

Free responses If Experiment 1 results could be explained by lexical priming, we would expect similar differences in participant responses across different priming conditions in Experiment 2. However, priming conditions did not predict participants' free responses [$\chi^2(1) = 4.72, p = .19$] (Figure 2b). We found that after adding political affiliation, our logistic regression model predicted the valence of participant responses significantly better than the reduced model with framing condition only [$\chi^2(2) = 19.90, p = 4.78*10^{-5}$] (Figure 2d). The proportion of negative responses was significantly higher in Republicans compared to Independents ($Z = -2.78, p = .01$) and Democrats ($Z = -4.47, p = 2.33*10^{-5}$). There was no significant difference in responses between Independents and Democrats ($Z = -1.35, p = .18$).

We further compared the free response results from Experiments 1 and 2. We found an interaction between experiment (lexical prime vs. metaphor) x condition (invasion, flood, boost, increase). A logistic regression model with this interaction term included predicted participant responses significantly better than a reduced model that only included condition as a predictor, [$\chi^2(4) = 9.34, p = .05$].

Ratings The results for ratings were similar to the free responses. A 4 (Lexical prime: Increase, boost, invasion, flood) x 3 (Political affiliation: Democrat, Independent, Republican) ANOVA showed that there was no main effect of lexical prime on participant ratings, $F(3, 584) = 0.89, p = .45, \eta_p^2 = .004$ (Figure 1b). However, there was a main effect of political affiliation, $F(2, 584) = 20.65, p = 2.17*10^{-9}, \eta_p^2 = .07$. Pairwise comparisons showed that there was a significant difference between all three pairs (Figure 1d). Combined, these results suggest that participants' attitudes are affected by using "invasion," "flood," and "boost" metaphorically rather than as lexical primes.

As a caveat, we further compared the rating results from Experiments 1 and 2. We found that the interaction term for experiment (lexical prime vs. metaphor) x condition (invasion, flood, boost, increase) did not reach significance, $F(3, 1337) = 1.53, p = .2$. Further data collection would be needed to increase the power for this comparison before coming to stronger conclusions about the differences between the two experiments.

Discussion

We explored the role of metaphors in shaping people's attitudes toward immigration.

In Experiment 1, participants read a paragraph about a town that was said to have recently experienced an "increase," a "boost," a "flood," or an "invasion" of immigrant labor. The paragraphs about the town were completely identical in the four conditions except for this one word. Afterward, we measured the inferences they made about the impact of immigration on the local economy. We found that people indeed were more negatively disposed to immigration if it was framed as an invasion or flood as opposed to a boost or increase.

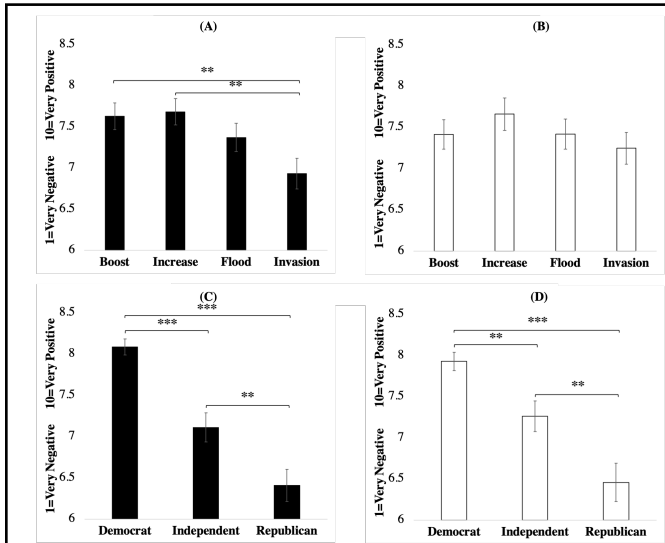


Figure 1. Rating (A) Metaphorical condition influences attitudes towards immigration, while (B) lexical priming does not. (C) (D) Political affiliation influences attitudes towards immigration in both experiments.

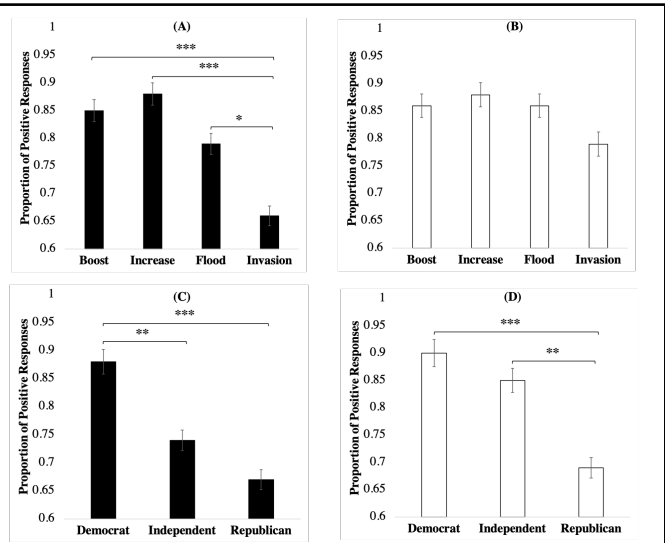


Figure 2. Free response (A) Metaphorical condition influences attitudes towards immigration, while (B) lexical priming does not. (C) (D) Political affiliation influences attitudes towards immigration in both experiments.

Metaphors influenced people’s views on immigration both as expressed in their free responses and ratings on a numerical scale, with more negative views expressed after being exposed to negative metaphors like ‘invasion.’ The results did not differ between participants who could explicitly recall the metaphor and those who could not. Indeed, even participants who did not explicitly recall the metaphor they had read on the memory check immediately after, still showed an effect of metaphor on their views of immigration. This suggests that metaphors can act covertly – even if people do not take special note of them or remember them explicitly, metaphors can influence their judgments.

Predictably, Republicans were more negatively disposed toward immigration than Democrats. Impressively, the difference in opinion induced by the metaphor was considerable as compared to the difference by political affiliation (about equal in size in the rating data, and about 1/3 of the size as measured in free responses). It is impressive that a single word intervention can produce shifts in opinion as large as exist between these two opposing political parties, especially on such a politicized and entrenched issue.

Of course, a negative word like invasion may simply put people in a worse mood than a positive word like boost or may activate other negative lexical associates, and so people may report more negative opinions on immigration simply because of this general negativity – not specifically to do with immigration. In Experiment 2, we tested whether being exposed to these words in isolation (not as a metaphor about immigration) would likewise shift people’s attitudes on immigration. Instead of using words like ‘invasion’ and ‘flood’ as metaphors, we asked participants to provide a synonym for these words before reading the paragraph about the increase in immigration. We found that simply providing

synonyms for words like “boost,” “invasion,” and “flood” did not influence people’s views on immigration, neither as expressed in their free responses nor their ratings on a numerical scale. This suggests that it is the meanings of these words as used as metaphors for immigration, not simply their valences or lexical associations that influenced people’s responses in Experiment 1.

Conclusion

Our results suggest that metaphors can structure the way people think even about such prominent, highly politicized, and media-saturated issues as immigration. Further, we find that only a single metaphorical word embedded in a description rich with other details, facts, and numbers still influences how positively people view immigration. Finally, the effect of the metaphor can be strong, in ecological terms, as big as the pre-existing differences in opinions on immigration between Democrats and Republicans.

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