

# Frighteningly Similar: Relationship Metaphors Elicit Defensive Information Processing

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## Abstract

Messages in public discourse commonly employ metaphors to describe abstract sociopolitical issues in terms of unrelated concepts. In prior research, exposure to such metaphoric messages influences attitudes. The current research tests the novel possibility that metaphor exposure can elicit defensive avoidance of otherwise benign information. We build on the evidence that individuals with avoidant attachment style avoid thinking about close relationships, operationalized as lower recall of relationship information. Two studies show that dispositionally high and experimentally increased attachment avoidance impaired recall of messages framing political topics metaphorically in terms of close relationships. This effect is specific to the relationship metaphor and avoidance regarding relevant relationships. It held even when the message referred to positive relationships, casting doubt on an alternative valence priming explanation. Although the target political topics are not, literally speaking, close relationships, relationship-metaphoric messages led individuals who avoid relationship information to transfer that defensive processing style across domains.

## Keywords

adult attachment, defensive processes, relationship cognition, social cognition, motivation/goals

Individuals routinely encounter messages using metaphors to describe abstract ideas in terms of superficially dissimilar concepts. For example, Speaker John Boehner attempted to sway attitudes toward the federal budget by appealing to intuitive beliefs about household finances: “Every family ought to balance its budget; Washington should balance its budget as well.” (Boehner, 2013). Such metaphors may seem like mere figures of speech, but emerging research shows that they have far-reaching and practically significant consequences for thought and behavior (Landau, Robinson, & Meier, 2013). The current research aims to further illuminate metaphors’ influence on social information processing.

Conceptual metaphor theory (CMT; Lakoff & Johnson, 1980) proposes that exposure to a metaphor can activate a systematic mapping between aspects of the target concept and analogous aspects of the concrete concept to which it is compared—called the *source*. As a result, people access knowledge and experience related to the source as a conceptual framework for processing the target concept, even though the two concepts are unrelated at a surface level. To illustrate, exposure to Boehner’s quote may prompt observers to transfer their knowledge of household finances to reason about analogous aspects of the federal budget (e.g., conceptualizing tax revenue in terms of paychecks and federal program spending in terms of bills).

Supporting this account, numerous studies show that exposure to metaphoric messages leads people to make judgments about a target issue that parallel their source knowledge (reviewed in Landau & Keefer, 2014). For example, an article framing a company’s bankruptcy metaphorically as an automobile accident led participants to blame that bankruptcy on the company’s CEO, but not its employees or economic context, because they transferred their knowledge that a driver directs and controls a vehicle and therefore is typically at fault for allowing the vehicle to crash (Landau, Keefer, & Rothschild, 2014).

Yet no prior research has examined the possibility that metaphor exposure affects people’s motivation to think about a target issue whatsoever. According to CMT, metaphor use transfers not only bits of source knowledge but also personal experiences related to the source and, presumably, preferred strategies for processing source information. This is practically

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important because many metaphors in public discourse compare abstract sociopolitical issues to sources that may be personally threatening. Consider, for example, how Mikhail Gorbachev protested Lithuania's desire for independence from the Soviet Union by claiming that the two were a married couple. Although a temporary separation might be healthy, he said, an immediate divorce would be disruptive. Algis Cekuolis, a Lithuanian newspaper editor, retorted that the two countries "cannot get a divorce unless you are married" and he concluded "We were never married, Lithuania was simply raped" (Goldstein, 1990). We would expect this *rape* metaphor to influence attitudes and indeed it does (Mio, 1996). Our point here is that it may also render a relatively abstract political issue (Soviet–Lithuania relations) threatening to think about. In particular, we might expect victims of sexual assault to avoid thinking in detail about Cekuolis's message, whereas individuals without those experiences would process the message more completely.

To examine this possibility, we built on a separate line of research showing that individuals with avoidant interpersonal attachments defensively avoid thinking about close relationships. Integrating this finding with CMT, we hypothesized that when individuals high in attachment avoidance encountered a message framing a political issue metaphorically in terms of close relationships, they would avoid processing that issue. Support for this hypothesis would extend metaphor research to unexplored social–cognitive outcomes and reveal nonintuitive influences of attachment processes. At a practical level, it would show that people can disengage politically when rhetorical metaphors relate political concepts to personally aversive experiences, even those that lie far outside the political domain.

### Attachment and Defensive Avoidance

Attachment theory proposes that humans have an innate need to seek support from close others when distressed (Bowlby, 1969/1992). Individuals differ, however, in when and how they seek support—that is, their *attachment style* (Ainsworth, Blehar, Waters, & Wall, 1978). These styles reflect the schemas people learn from their recurring experiences with close others, expectations for others' behavior, and behavioral strategies based on those expectations (Hazan & Shaver, 1987; Mikulincer & Shaver, 2007). Individuals with a more *secure attachment* have a schema of others as generally trustworthy and reliable. They learned from a history of positive, reliable interactions with caregivers to trust others and depend on them in times of need. People with less secure attachments tend to have less positive expectations of others that fall along two dimensions. *Attachment anxiety* is characterized by uncertainty about the dependability of close others arising from a history of inconsistent or unpredictable assistance from caregivers.

According to attachment theory, some individuals instead develop a degree of *attachment avoidance*: defensively maintaining independence and emotional distance from close others to avoid anticipated rejection. In contrast to the uncertainty of

attachment anxiety, avoidance is the result of experiences in which attachment figures consistently reject individuals in times of need, teaching them that relying on others is typically not an effective way to manage distress. Consequently, more avoidant individuals expect that others are untrustworthy and rejecting and that attempts to seek support are futile.

More avoidantly attached individuals are motivated to suppress their relational needs because relationships are a persistent reminder of the neglect and rejection they associate with close others (Bowlby, 1980; Mikulincer & Shaver, 2007). As a result, they form fewer close bonds (Fraley & Davis, 1997), avoid turning to others for help (Simpson, Rholes, & Nelligan, 1992), and actively suppress attachment-related thoughts and feelings (Fraley & Shaver, 1997; Mikulincer, Dolev, & Shaver, 2004).

This avoidance strategy also colors basic information processing. In research by Fraley, Garner, and Shaver (2000), more avoidantly attached individuals defensively avoided processing information about close relationships. Specifically, they recalled less information about a description of close relationships on both explicit and implicit assessments. This deficit in recall was evident even when recall was assessed immediately after exposure, suggesting that high avoidance individuals have trouble encoding information about close relationships in short-term memory. In fact, they show the same recall deficit regardless of whether or not they received a monetary incentive to improve recall (Fraley & Brumbaugh, 2007). This suggests that high attachment avoidance automatically inclines individuals to block out information about close relationships.

### The Current Research

Many conventional metaphors use close relationships as a source to structure representations of issues in other domains (Kövecses, 2010; Lakoff & Johnson, 1980). For example, Journalist David Carr (2014) described the relation between print and television divisions of major media companies as "one big, long episode of 'Divorce Court,' with various petitioners showing up and citing irreconcilable differences with their print partners." Integrating CMT with the attachment research just reviewed, we hypothesized that these relationship metaphors would elicit defensive avoidance of the target issue among individuals with higher levels of attachment avoidance, whereas an alternative metaphor for the same issue would have no such effect.

Study 1 tests whether individual differences in attachment avoidance predict poorer recall of an article employing a relationship (vs. alternative military) metaphor to describe President Obama's relationship with Congress. To test the specificity of this effect, we built on prior studies showing that exposure to a metaphor (e.g., *bankruptcy is a vehicle accident*) prompts observers to access knowledge about that metaphor's particular source (*vehicle accidents*) but not related concepts (*accidents at home*; Landau et al., 2014). We combined this with evidence that attachment styles can be specific to a given close relationship, such as one's mother or romantic partner

(Fraley, Hefferman, Vicary, & Brumbaugh, 2011). Hence, we predicted that framing the Obama–Congress relationship as a *romantic* relationship would impair recall of that issue among individuals high in attachment avoidance regarding romantic relationships, specifically, but not other relationships.

Study 2 conceptually replicates Study 1 with a different real-world context, framing the United Nations (UN) metaphorically in terms of either a close-knit family or a supportive sports team. Going beyond Study 1, we experimentally manipulated attachment avoidance. This enabled us to directly test the causal effect of attachment avoidance on recall of relationship-metaphoric messages. Finally, because attachment avoidance elicits a defensive avoidance of relationship information in general, we expected that it would impair recall regardless of whether the salient metaphor refers to negative aspects of close relationships (romantic conflict in Study 1) or positive aspects (family harmony in Study 2). Converging findings across both relationship framings would rule out the alternative possibility that the predicted effect is simply due to pairing a target topic with negative semantic content and would instead support our claim that close relationship metaphors prompt a transfer of information processing strategy across domains.

## Study 1

Study 1 tests whether a message framing a political relationship metaphorically as a close relationship would elicit defensive processing (operationalized as impaired recall of the message) among participants high in trait attachment avoidance. In prior research, attachment avoidance, but not attachment anxiety, predicted poor recall of relationship information, and this effect held even after controlling for variation in anxiety (Fraley & Brumbaugh, 2007). We expected to replicate this pattern.

To test the specificity of this effect, we measured trait avoidance regarding four relationships: mother, father, romantic partner, and best friend (following Fraley et al., 2011). We expected romantic avoidance to predict lower recall of a romantic-metaphoric message, whereas avoidance regarding other relationships would not. To control for exposure to just any metaphor, we compared the relationship-metaphoric message to an equivalent military-metaphoric message.

## Method

American adults ( $N = 93$ ; 42% women;  $M_{\text{age}} = 36.88$ ,  $SD = 13.46$ ; 77% White, 6% Black, 9% Asian, 5% Hispanic, and 3% other) were recruited through Amazon's Mechanical Turk (payment = US\$0.50) for a purported study of political perceptions (Study 2 used the same cover story).

### Attachment Avoidance and Anxiety

We used the validated Experiences in Close Relationships–Relationship Structures (ECR-RS) measure (Fraley et al., 2011) to assess individual differences in attachment avoidance and

anxiety. For each of the aforementioned relationships, participants rated their agreement with six statements assessing avoidance (e.g., “I prefer not to show this person how I feel deep down”; “It helps to turn to this person in times of need” [reverse-scored]) and three statements assessing anxiety (e.g., “I’m afraid that this person doesn’t really care for me”; “I’m afraid that this person may abandon me”); 1 = *strongly disagree* and 7 = *strongly agree*). Composite scores of avoidance ( $\alpha_{\text{range}} = .90-.94$ ) and anxiety ( $\alpha_{\text{range}} = .85-.92$ ) were reliable across relationships.

### Metaphoric Framing Condition

Participants read one of the two randomly assigned articles describing President Obama’s State of the Union address and how it reflected his contentious relationship with Congress. The articles were matched in length and tone but employed different key metaphoric phrases to present different framings of the target issue (a commonly used priming technique; Landau & Keefer, 2014).

In the *romantic conflict framing* condition, these phrases described the Obama–Congress relationship as a strained romantic relationship (e.g., “He didn’t quite break up with Congress, but he made it clear that their relationship wouldn’t be supportive anytime soon”; “Sure, he’d still be willing to hook up occasionally and enact legislation, but he’d also be O.K. if they went their separate ways”).

In the *military conflict framing* condition, parallel phrases described the Obama–Congress relationship as a military conflict (e.g., “He didn’t quite deploy his full arsenal, but he did make it clear that he would be willing to strike where he could”; “Sure he’d still be willing to negotiate a cease-fire and enact legislation, but he’d also be O.K. if the fight continued”).

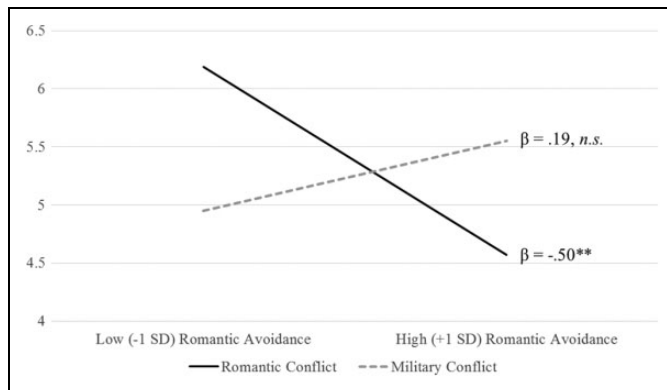
Eight face-valid items assessed overall enjoyment of the article (e.g., “I enjoyed reading the article”) and were primarily intended to bolster the cover story that we were interested in political perceptions.<sup>1</sup>

### Recall

Finally, in a surprise recall task, seven multiple-choice items (Appendix A) assessed recall for the article’s facts and themes. To encourage accurate responses and minimize guessing, we instructed participants that their performance would not affect their payment and to freely select the “don’t know” option if they were uncertain. Recall scores are the sum of correct responses ( $M_{\text{grand}} = 5.42$ ,  $SD = 1.46$ , range = 1–7).

## Results

Recall scores were hierarchically regressed onto metaphoric framing (dummy coded: 1 = *romantic conflict* and 0 = *military conflict*), romantic attachment avoidance, and romantic attachment anxiety in Step 1 to test the specific effect of avoidance. In Step 2, we included the Romantic Avoidance  $\times$  Metaphoric Framing interaction term and, for purposes of control, the Romantic Anxiety  $\times$  Metaphoric Framing interaction term.<sup>2</sup>



**Figure 1.** Recall of political message as a function of trait romantic attachment avoidance and metaphoric framing condition (Study 1). Note. Scores ranged from 1 to 7, higher scores indicate greater recall. \*\* $p < .01$ .

This analysis returned a significant Romantic Avoidance  $\times$  Metaphoric Framing interaction,  $\beta = -.73$ ,  $SE = .41$ ,  $t = 2.66$ ,  $p = .009$ , but no main effects of romantic avoidance ( $\beta = .19$ ,  $SE = .28$ ,  $t = 1.07$ ,  $p = .29$ ), romantic anxiety ( $\beta = -.24$ ,  $SE = .28$ ,  $t = .86$ ,  $p = .39$ ), or metaphoric framing condition ( $\beta = .05$ ,  $SE = .30$ ,  $t = .48$ ,  $p = .63$ ). The Romantic Anxiety  $\times$  Metaphoric Framing interaction was not significant ( $\beta = .12$ ,  $SE = .39$ ,  $t = .85$ ,  $p = .40$ ).

Planned analyses of simple slopes within metaphoric framing condition (maintaining attachment anxiety and its interaction term as covariates)<sup>5</sup> supported predictions (Figure 1). Romantic avoidance was associated with lower recall among participants who read the romantic conflict framing ( $\beta = -.50$ ,  $SE = .27$ ,  $t = 2.99$ ,  $p = .004$ ) but not those who read the military conflict framing ( $\beta = .19$ ,  $SE = .28$ ,  $t = 1.07$ ,  $p = .29$ ).

Planned comparisons also showed that participants high (+1 *SD*) in romantic avoidance showed poorer recall of the romantic (vs. military) conflict framing article, although the effect was marginally significant ( $\beta = -.35$ ,  $SE = .55$ ,  $t = 1.78$ ,  $p = .07$ ). In contrast, at low (-1 *SD*) levels of romantic avoidance, recall was higher in the romantic conflict framing condition ( $\beta = .45$ ,  $SE = .47$ ,  $t = 2.66$ ,  $p = .01$ ).

Similar regression analyses showed, as expected, that metaphoric framing condition did not interact with maternal avoidance ( $\beta = .09$ ,  $SE = .29$ ,  $t = .44$ ,  $p = .66$ ), paternal avoidance ( $\beta = -.27$ ,  $SE = .27$ ,  $t = 1.31$ ,  $p = .19$ ), or best friend avoidance ( $\beta = -.17$ ,  $SE = .32$ ,  $t = .79$ ,  $p = .43$ ). Also, there were no main effects of maternal avoidance ( $\beta = -.10$ ,  $SE = .21$ ,  $t = .68$ ,  $p = .49$ ), paternal avoidance ( $\beta = .24$ ,  $SE = .19$ ,  $t = 1.60$ ,  $p = .11$ ), or best friend avoidance ( $\beta = .002$ ,  $SE = .22$ ,  $t = .02$ ,  $p = .99$ ).

## Discussion

Individuals with a more avoidant attachment style in their romantic relationships had difficulty processing a message about a political relationship described metaphorically as a romantic conflict. Results support several theoretically

specified boundary conditions of this effect. First, comparison with the military conflict framing shows that the predicted recall deficit is not a result of exposure to any metaphoric language (which might appear informal and thus unimportant) nor did it result from pairing the political relationship with a semantically negative concept (*conflict*).

Second, the effect was specific to attachment avoidance as distinct from attachment anxiety. This conceptually replicates Fraley and Brumbaugh's (2007) evidence that avoidance predicted poor recall of relationship information when controlling for anxiety.

Third, a romantic relationship framing decreased recall among individuals high in avoidance regarding their romantic relationships, as distinct from other close relationships. This conceptually replicates evidence that metaphor exposure prompts transfer of knowledge about that metaphor's particular source, not related concepts. It also replicates evidence that attachment styles can operate distinctly within different relationships.

We found less avoidant participants better remembered the relationship-metaphoric information. Although unexpected, this finding is consistent with our theoretical model. Secure individuals have positive schemas for close relationships (at least compared to military conflicts). Hence, they may have been better able to process political dynamics that, although not literally close relationships, call up those schemas by means of metaphor.

While Study 1 measured individual differences in attachment style, Study 2 provides a stronger test of attachment avoidance's causal role. It also tests the alternative possibility that recall was impaired by the salience of specifically *negative* (i.e., conflictual) aspects of romantic relationships.

## Study 2

We tested whether experimentally induced attachment avoidance (vs. security or control) impairs recall of semantically positive relationship-framed political information. Our theoretical analysis suggests that avoidance will impair recall of messages even when they frame the target issue in terms of *positive* aspects of close relationships. To test this, we had half of the participants who read an article that included metaphoric phrases comparing the UN to a supportive family whose members help one another through difficult times posed by the climate change treaty. For the other half of participants, the article used a sport metaphor comparing the UN to a team that works together to win an important game. That is, both framing conditions employed conventional metaphors that use positive social interactions as a source but, critically, only the *family harmony* metaphor draws on the domain of close relationships.

While Study 1's design focused on the specificity of the predicted effect, Study 2 aims to test the causal effect of salient attachment avoidance. In a large body of prior research (e.g., Mikulincer, Shaver, & Rom, 2011), experimental attachment primes increase avoidance or security *in general* by allowing



participants to reflect on personal experiences (from any close relationship) that best approximate a given attachment style. This general priming procedure allowed us to test the causal effect of avoidance on recall but as a result limited our ability to once again test for the specificity of the relationship between avoidance and recall observed in Study 1.

## Method

Participants were American adults ( $N = 230$ ; 44% women, 1% other;  $M_{\text{age}} = 35.61$ ,  $SD = 12.28$ ; 77% White, 7% Black, 6% Hispanic, 8% Asian, and 2% other) recruited through Mechanical Turk (payment = US\$0.50).

### Attachment Prime

Following Mikulincer, Shaver, and Rom (2011), we randomly assigned participants to write about three personal experiences in which close relationship partners were neglecting (*attachment avoidance*), supportive (*attachment security*), or a no prime *control* in which participants were given no task before the article.

### Metaphoric Framing Condition

Next, participants read an article describing the UN's involvement with a climate change treaty. In the *family harmony framing* condition, the article's metaphoric phrases compared the UN to a positive, supportive network of close familial relationships (e.g., "The UN may not always be the most supportive family, but if we look after each other and deal with one problem at a time, we can get through this together"). In the *team harmony framing* condition, parallel phrases compared the UN to a tight-knit, supportive sports team (e.g., "The UN may not always be the most organized team, but if we keep our eye on the ball and take it one inning at a time, we can win this one together"). Participants rated article enjoyment as in Study 1.

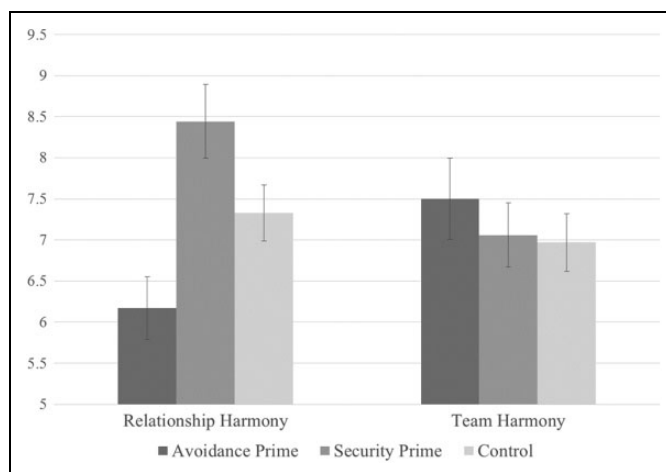
### Recall

The surprise multiple-choice recall quiz came last. To improve measurement variability, we expanded the quiz to 11 items (see Appendix B;  $M_{\text{grand}} = 7.19$ ,  $SD = 2.51$ , range = 1–11).

## Results

Submitting recall scores to a 3 (attachment prime: avoidance vs. security vs. control)  $\times$  2 (metaphoric framing: family harmony vs. team harmony) analysis of variance returned a significant interaction,  $F(2, 224) = 4.92$ ,  $p = .008$ ,  $\eta^2 = .04$  (for pattern of means, see Figure 2). There were no main effects of either attachment prime,  $F(2, 224) = 1.92$ ,  $p = .15$ , or metaphoric framing,  $F(1, 224) = .80$ ,  $p = .37$ .

Planned pairwise comparisons (Fisher's least significant difference) revealed that participants primed with attachment avoidance recalled significantly less about the family harmony article ( $M = 6.17$ ,  $SD = 2.08$ ) than the team harmony article



**Figure 2.** Recall of political message as a function of attachment prime and metaphoric framing condition (Study 2). Note. Scores ranged from 1 to 11, higher scores indicate greater recall.

( $M = 7.50$ ,  $SD = 2.52$ ;  $p = .04$ ). In contrast, for participants primed with attachment security, recall was greater for the family harmony article ( $M = 8.44$ ,  $SD = 2.44$ ) compared to team harmony ( $M = 7.06$ ,  $SD = 2.68$ ;  $p = .02$ ). In the control condition, no differences were observed between the family ( $M = 7.33$ ,  $SD = 2.35$ ) and the team harmony articles ( $M = 6.97$ ,  $SD = 2.40$ ;  $p = .47$ ).

Also as predicted, within the family harmony condition, avoidance-primed participants recalled less information than security-primed ( $p = .0002$ ) and control ( $p = .03$ ) participants. Participants primed with security also had higher recall of the family harmony article than those in the control condition ( $p = .05$ ). In contrast, within the team harmony condition, there were no differences between the priming conditions ( $ps > .40$ ).

## Discussion

After being primed with attachment avoidance (vs. security or control), participants recalled less information about an article employing a relationship (vs. sport) metaphor. These results extend Study 1 in two ways. First, they provide more direct evidence that attachment avoidance in fact causes a defensive avoidance of relationship-metaphoric information. Second, this effect held even though the metaphoric framing drew on positive aspects of close relationships (complementing Study 1's use of a relationship conflict framing). Hence, the effect is unlikely to be due to the mere salience of a negative close relationship (or simply any semantically negative concept: recall Study 1's *military conflict* comparison condition). Instead, it appears that mapping abstract ideas onto the close relationship domain can disrupt processing among individuals high in attachment avoidance.

Results also revealed that heightened attachment security (vs. control) facilitated recall of the relationship (vs. sport) metaphoric article. This experimentally replicates the effect

of low trait avoidance observed in Study 1. It is likely that the salience of positive relational schemas may have facilitated processing of the relationship metaphoric article.

## General Discussion

Two studies provide converging support for the hypothesis that close relationship metaphors elicit defensive information processing for individuals high in attachment avoidance. In Study 1, exposure to a message metaphorically framing Obama's relationship with Congress as a romantic conflict (vs. a military conflict) led romantically avoidant participants to recall less information. This effect was specific to attachment avoidance (vs. anxiety) and romantic relationships, which is consistent with boundary conditions specified by CMT and prior attachment research.

Study 2 replicated this effect with an experimental induction of attachment avoidance, providing stronger evidence of causality. This effect also held when the salient metaphor framed the target topic in terms of positive close relationships. Across studies, the interactive effect of attachment avoidance and relationship-metaphoric framing held across different real-world political issues, demonstrating its generalizability.

Taken together, these findings provide strong evidence that a relationship-metaphoric framing of a sociopolitical issue triggers the same defensive avoidance of information found in prior research (Fraley, Garner, & Shaver, 2000), despite the fact that the target issue is not a close relationship in any literal sense.

## Implications for CMT

Prior research has demonstrated important connections between metaphor and cognition related to close relationships. For example, metaphors about the nature of love influence how individuals respond to perceptions of relational conflict: Those who think of love as a harmonious union (vs. a journey) responded more negatively to reminders of relational conflict (Lee & Schwarz, 2014).

Other studies show that individual differences in attachment moderate how individuals respond to physical cues. For example, Ijzerman, Karremans, Thomsen, and Schubert (2013) found that physical cues metaphorically linked to prosocial behavior (physical warmth) only influenced the behavior of children with more secure interpersonal attachments (for a contrasting finding, see Vess, 2012). These studies show that attachment style moderates responses to embodied metaphoric cues.

Our studies extend this prior work in an important way by demonstrating that schemas about close relationships can exert an influence on the mere processing of metaphoric information. By demonstrating that attachment models influence metaphor processing, our findings offer a cognitive explanation for why attachment differences moderate the processing of embodied cues and other metaphoric information.

## Implications for Threat Research

Research is increasingly studying the strategies by which people defend against psychological threats like self-relevant uncertainty and mortality concerns (Sullivan, Landau, & Kay, 2012). The current studies suggest that boundaries of what activates a threat response may be broader than some theorists assume. While research shows that salient aversive experiences like reminders of mortality elicit defensive cognitive processing (Arndt, Cook, & Routledge, 2004), less work has explored the possibility that even neutral stimuli might elicit this response as a result of metaphor. People commonly use death and dying metaphors to describe a variety of everyday experiences, including the status of devices (as in a "dead" phone), failing social movements (which may be described as "dying out"), or struggling corporations (on their "deathbed"). To the extent that individuals are motivated to suppress thoughts of their own mortality, metaphors like these may raise awareness of one's own mortality. As a result, they may prompt defensive avoidance through similar processes related to those in the current studies. While likely subtle, it may be that metaphors drawing upon threatening source concepts interfere with processing of a wide range of abstract social phenomena. This presents interesting possibilities for future research on the intersection of metaphor and threat-oriented cognition.

## Conclusion

The current studies show that metaphoric mappings transfer defensive responses from source concepts to targets and this has important practical implications. To the extent that speakers employ metaphors that elicit defensive avoidance, they may undermine the extent to which individuals can engage with target issues. For example, relationship metaphors may alienate more avoidant voters by limiting their ability to consider social issues or prevent more avoidant students from understanding a classroom lecture.

It may seem that the only solution is to abandon metaphor altogether, but this is simply not possible. Across cultures and languages, metaphor plays an essential role in structuring knowledge of abstract concepts (Kövecses, 2005). Rather than avoiding metaphor, a better solution seems to be an acknowledgment of metaphor's broad consequences and a call for greater flexibility in the language people use to make sense of the social world.

## Appendix A

### Recall Quiz for Study 1

The following questions assess your memory of the article you read earlier in the study. Read each question carefully and select the answer that best matches the article you saw. We are interested in what *you* personally remember, so if you are unsure which answer is correct, just select "don't know/not sure" from the options provided.

Remember that your answers are completely anonymous and can never be traced back to you specifically. We are only interested in seeing which aspects of the article stood out to you. How you respond will have no effect on your payment for completing the survey.

From which website was the article selected?

- The New York Times
- *The New Yorker*
- The Nation
- Huffington Post
- Don't know/not sure

Which description best fits the photograph provided in the article?

- The Capitol building
- *President Obama speaking*
- President Obama at a desk
- The White House
- Don't know/not sure

The article talked specifically about an event. Which event did the article talk about?

- A UN address
- A Martin Luther King Jr. day speech
- *The State of the Union address*
- A press conference about health care
- Don't know/not sure

According to the article, which best describes President Obama's political goals?

- To be closer to the American people
- To be more supportive of Congress
- To be more supportive of judicial powers
- *To be more willing to challenge Congress*
- Don't know/not sure

According to the article, about which person did the president NOT tell an anecdote?

- *Soldier*
- Teacher
- Farmer
- Autoworker
- Don't know/not sure

How many paragraphs were in the article selection you read?

- 1
- 2
- 3
- 4
- Don't know/not sure

What was the title of the article you read? If you are unsure, just leave this question blank.

- *Obama Ready to Battle with Congress*
- *Obama Ready to Break Up with Congress*
- Obama Ready to Fight Congress
- Obama Strengthens Bond with Nation
- Don't know/not sure

## Appendix B

### Recall Quiz for Study 2

The following questions assess your memory of the article you read earlier in the study. Read each question carefully and select the answer that best matches the article you saw. We are interested in what *you* personally remember, so if you are unsure which answer is correct, just select "don't know/not sure" from the options provided.

Remember that your answers are completely anonymous and can never be traced back to you specifically. We are only interested in seeing which aspects of the article stood out to you. How you respond will have no effect on your payment for completing the survey.

Which of the following was the title of the article you read?

- Obama administration pursues trade treaty
- *Obama administration pursues climate change treaty*
- Obama administration supports climate change treaty
- Obama administration supports trade treaty
- Don't know/not sure

Which best describes the picture in the article you read?

- *Two men shaking hands*
- Two women shaking hands
- A man and a woman shaking hands
- A man at a desk
- Don't know/not sure

What best describes the background of the picture?

- A U.S. flag
- *The UN seal*
- The UN flag
- A painting
- Don't know/not sure

What color was the background of the picture?

- Gray
- Blue
- Green
- *White*
- Don't know/not sure

How many paragraphs were in the article you read?

- 2
- 3
- 4
- 5
- Don't know/Not sure

The article mentioned an upcoming UN summit. Where is that summit going to be held?

- Paris
- London
- Berlin
- New York
- Don't know/not sure

What is the goal of the treaty described in the article?

- To promote international trade
- To reduce emissions worldwide
- To set new requirements on automobiles
- To reduce the impact of international waste
- Don't know/not sure

The article contained statements about the treaty. Which of the following individuals is quoted in the article?

- Michael Greenberg
- John Bloomberg
- Michael Bloomberg
- John Greenberg
- Don't know/not sure

What was the official title of the first person quoted in the article?

- UN Special Envoy for Cities and Climate Change
- UN Special Envoy for Trade and Climate Change
- UN Special Envoy for Cities and Trade
- UN Special Envoy for Cities and Transportation
- Don't know/not sure

Which of the following individuals was also quoted in the article?

- David Chou
- Ban Chou
- David Ki-Moon
- Ban Ki-Moon
- Don't know/not sure

What was the official title of the second person quoted in the article?

- UN Secretary-General
- UN Chairman-General
- UN General Secretary
- UN General Chairman
- Don't know/not sure

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## Notes

1. Preliminary analyses across both reported studies revealed no between-groups differences in overall liking for the article (Study 1:  $p = .50$ ; Study 2:  $p = .99$ ). Composite liking scores did not interact with our predictor variables (Study 1:  $ps > .53$ ; Study 2:  $ps > .38$ ). Entering article liking as an additional covariate did not affect the predicted Attachment Avoidance  $\times$  Metaphoric Framing interaction (Study 1:  $p = .008$ ; Study 2:  $p = .01$ ).
2. Analyses reported employ standard linear regression. Given that total scores on the recall quiz are a count variable, they could also be analyzed using Poisson regression, which treats the outcome as Poisson (vs. normally) distributed. Doing so changes the  $p$  values, but not the pattern, of results. Specifically, the interaction of romantic avoidance and conflict framing condition is trending toward significance ( $p = .11$ ) and the slope of romantic avoidance on recall in the romantic conflict framing condition becomes marginal ( $p = .09$ ), but the pattern of all other results is the same. This is likely because Poisson regression requires larger sample sizes to detect effects (Signorini, 1991). Conducting a parallel analysis using negative binomial regression, which has fewer assumptions than Poisson regression, lowers the  $p$  value of the critical interaction to  $p = .12$  and the slope of avoidance in the relationship framing to  $p = .13$ , but as in the Poisson model, the patterns of results are similar to those reported.
3. Results are identical without the inclusion of anxiety or its interaction with framing condition as covariates. Without these controls, the interaction is significant,  $\beta = -.58$ ,  $SE = .32$ ,  $t = 2.76$ ,  $p = .007$ , and this is still due to the fact that avoidance predicts decreased recall in the romantic conflict framing ( $\beta = -.46$ ,  $SE = .22$ ,  $t = 3.47$ ,  $p = .00$ ) but not for the military conflict framing ( $\beta = .09$ ,  $SE = .23$ ,  $t = .61$ ,  $p = .55$ ).

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