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Research Article

Evidence That Self-Relevant Motives and Metaphoric Framing Interact to Influence Political and Social Attitudes

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ABSTRACT—*We propose that metaphor is a mechanism by which motivational states in one conceptual domain can influence attitudes in a superficially unrelated domain. Two studies tested whether activating motives related to the self-concept influences attitudes toward social topics when the topics' metaphoric association to the motives is made salient through linguistic framing. In Study 1, heightened motivation to protect one's own body from contamination led to harsher attitudes toward immigrants entering the United States when the country was framed in body-metaphoric, rather than literal, terms. In Study 2, a self-esteem threat led to more positive attitudes toward binge drinking of alcohol when drinking was metaphorically framed as physical self-destruction, compared with when it was framed literally or metaphorically as competitive other-destruction.*

Several research programs in social psychology have investigated how people's internal motives (e.g., to seek and avoid closure) influence their attitudes toward social information (see, e.g., Higgins & Kruglanski, 2000). Various cognitive mechanisms by which motives influence attitudes have been identified, but one heretofore unexplored mechanism is metaphor—a cognitive tool by which people conceptualize (and not just talk about) abstract or complex concepts in terms of dissimilar, typically more concrete, concepts and experiences (e.g., conceptualizing time or goal pursuit using knowledge of spatial movement, as in "the weekend is *fast approaching*"; Lakoff & Johnson, 1980). Drawing on past research on metaphor, we hypothesized that a given motive can affect attitudes toward a superficially unrelated social topic if a metaphoric framing of the topic links the motive to the topic.

Recent studies of metaphoric representation of social concepts show that manipulating perceptions related to one concept directly affects perceptions related to a dissimilar concept in metaphor-consistent ways. For example, Meier, Hauser, Robinson, Friesen, and Schjeldahl (2007) examined verticality metaphors in representations of abstract divinity-related concepts (e.g., "God the *highest*") and found that participants showed an upward bias in recalling the spatial position of individuals ascribed strong beliefs in divinity. Also, Williams and Bargh (2008) examined the metaphoric grounding of interpersonal "warmth" in perceptions of physical temperature and found that participants holding a warm (vs. cold) cup of coffee perceived target individuals as friendlier. The studies reported here address whether variations in motivational states have similar metaphor-consistent effects on attitudes toward political and social topics.

Although prior research has shown that social perceptions can be directly shaped by particular metaphoric associations (e.g., divine is up), complex social topics are subject to multiple potential metaphoric interpretations, and therefore it is possible that a particular metaphor needs to be activated to link a given motive to attitudes toward a topic. Lakoff and Johnson (1980) argued that a metaphor can be activated by linguistically framing an issue using related metaphoric expressions. This suggests, for example, that linguistically framing the campaign against drug abuse using *war* metaphors (e.g., "Let's *demolish*

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marijuana use"), but not using literal paraphrases or alternate metaphors (e.g., purification), will uniquely guide the interpretation and evaluation of drug-relevant information in line with one's schema for combat. Consistent with Lakoff and Johnson's claim is experimental evidence that metaphoric framing influences how people attend to persuasive messages (Ottati, Rhoads, & Graesser, 1999) and draw inferences about social events (Morris, Sheldon, Ames, & Young, 2007). We extended this work by testing whether motives related to one topic shape attitudes toward dissimilar social topics when those topics are linguistically framed using expressions that reflect a motive-relevant metaphor.

In sum, we hypothesized that when people have a particular motive and are exposed to a linguistic framing of a social topic that metaphorically associates the motive with the topic, their attitudes toward the topic will shift in a motive-serving direction. If, however, the topic is framed in literal or alternate metaphoric terms, the activated motive will not be relevant to the topic and will therefore not carry over and influence attitudes. Two studies assessed this hypothesis by testing whether activating self-relevant motives (avoiding physical contamination and negative self-views) has metaphor-consistent effects on attitudes toward social topics (immigration and binge alcohol use, respectively) when metaphors linking the motives and the topics are made salient by means of linguistic framing.

STUDY 1

Study 1 examined attitudes toward U.S. immigration. Multiple expressions suggest that nations are often conceptualized metaphorically as physical bodies (e.g., "America *reaches out*"). Because bodies are known to be vulnerable to contaminating foreign agents, it is possible that people's concern with protecting their own bodies from contamination underlies negative attitudes toward immigration and immigrants when the nation is conceived as a body—a possibility consistent with cultural (Douglas, 1966) and linguistic (O'Brian, 2003) analyses. We therefore hypothesized that heightening individuals' motivation to protect their own bodies from contamination will result in more negative attitudes toward U.S. immigration when the United States is metaphorically framed as a body, but that this contamination threat will not influence immigration attitudes when the country is framed in literal terms. To test this hypothesis, we manipulated participants' concern with contaminating airborne bacteria, exposed them to a synopsis of U.S. history that framed the country in either body-metaphoric or literal terms, and assessed immigration attitudes. To examine the alternative possibility that the hypothesized effect is due to a general increase in political conservatism, we also measured attitudes toward escalation of the minimum wage, a political issue with a clear conservative position but no clear relation to the metaphor of country as body.

Method

Participants were 69 (49 female, 20 male) undergraduates at an Arizona university.[1]

Contamination Threat

In a study purported to be about media preferences, participants in the contamination-threat condition read an article, ostensibly retrieved from a popular science magazine, describing airborne bacteria as ubiquitous and deleterious to health. Participants in the no-threat condition read a parallel article describing airborne bacteria as ubiquitous but harmless.

U.S. Framing

Participants then read an essay describing U.S. domestic issues (other than immigration). In the body-metaphoric-framing condition, the essay contained language subtly relating the United States to a body (e.g., "After the Civil War, the United States experienced an unprecedented growth spurt, and is scurrying to create new laws that will give it a chance to digest the millions of innovations"). In the literal-framing condition, the same domestic issues and opinions were discussed using literal paraphrases of the metaphors ("After the Civil War, the United States experienced an unprecedented period of innovation, and efforts are now underway to create new laws to control the millions of innovations").

Attitudes Toward Immigration and the Minimum Wage

Next, participants completed two questionnaires, counterbalanced in order, assessing their agreement with six statements each about immigration and the minimum wage. The immigration items included "It's important to increase restrictions on who can enter into the United States" and "An open immigration policy would have a negative impact on the nation." The minimum-wage measure included statements like "It's important to increase the minimum wage in the United States." Responses were made on 9-point scales (1 = *strongly disagree*, 9 = *strongly agree*) and were averaged to form composite scores for anti-immigration attitudes ($\alpha = .87$) and agreement with increasing the minimum wage ($\alpha = .88$). Preliminary analyses revealed no significant effects involving presentation order, so we omitted this factor from subsequent analyses.

Contamination-Threat Manipulation Check

Finally, participants answered two questions assessing contamination concern: "To what extent did the article on airborne bacteria make you more concerned about what substances *your* body is exposed to?" and "To what extent did the article on airborne bacteria increase your desire to protect *your* body from harmful substances?" (1 = *not at all*, 9 = *very much so*).

[1]Thirteen (19%) participants reported being of Latino ethnicity. Preliminary analysis of immigration attitudes revealed, perhaps surprisingly, no main effect of ethnicity and no interactive effects involving ethnicity.

Results

Contamination-Threat Manipulation Check

As expected, participants in the contamination-threat condition reported greater concern with what substances their bodies were exposed to ($M = 5.64$, $SD = 2.18$) than did participants in the no-threat condition ($M = 4.48$, $SD = 2.20$), $t(67) = 2.18$, $p = .03$. They also expressed greater desire to protect their bodies from harmful substances ($M = 5.60$, $SD = 2.14$) than did participants in the no-threat condition ($M = 4.70$, $SD = 2.15$), $t(67) = 2.08$, $p = .04$.

Attitudes Toward Immigration and the Minimum Wage

Our primary prediction was that a bodily-contamination threat would lead to more negative immigration attitudes when the United States was framed in body-metaphoric terms than when it was framed in literal terms, whereas minimum-wage attitudes would be unaffected by this manipulation. We performed a 2 (contamination threat: threat vs. no threat) × 2 (U.S. framing: body-metaphoric vs. literal) × 2 (issue: immigration vs. minimum wage) × 2 (gender) mixed-model analysis of variance (ANOVA) with issue serving as a within-subjects factor. This analysis revealed only the predicted three-way interaction, $F(1, 61) = 5.10$, $p = .03$, $p_{rep} = .91$, $\eta_p^2 = .08$ (all other ps $> .31$). We decomposed this interaction by analyzing each dependent measure separately.

A Threat × Framing ANOVA on immigration attitudes revealed only the predicted two-way interaction, $F(1, 65) = 5.13$, $p = .03$, $p_{rep} = .91$, $\eta_p^2 = .07$ (for both main effects, ps $> .55$). Pair-wise comparisons (Fisher's least significant difference) and the pattern of means presented in Table 1 revealed that among participants who read a body-metaphoric framing of the United States, those under contamination threat expressed more negative attitudes toward U.S. immigration than those whose bodily purity was not threatened, $F(1, 65) = 4.29$, $p = .04$. In contrast, when the United States was framed in a literal fashion, contamination threat did not significantly influence immigration attitudes ($p > .17$). Also as predicted, it was only when participants were under contamination threat that the body-metaphoric framing led to more negative immigration attitudes, $F(1, 65) = 4.20$, $p = .04$ (for the simple framing effect within the no-threat condition, $p = .34$).

TABLE 1

Anti-Immigration Attitudes as a Function of Contamination Threat and Framing of the United States in Study 1

	Contamination threat	
U.S. framing	Threat	No threat
Body-metaphoric	5.66_a (1.13)	4.43_b (1.50)
Literal (control)	4.44_b (1.59)	4.99_{ab} (1.25)

Note. The attitude scale ranged from 1 to 9, with higher scores indicating more negative attitudes toward immigration. Means that do not share a subscript differ at $p < .05$.

The same two-way ANOVA on minimum-wage attitudes revealed no significant effects (Fs < 1, ps $> .49$).

Discussion

The results of Study 1 confirm our hypothesis that activating motivation to protect one's own body against contamination will result in more negative immigration attitudes, but only when the United States is metaphorically framed as a body. Specifically, participants who were threatened with contamination from airborne bacteria and subsequently exposed to a subtle body-metaphoric framing of the United States reported especially negative attitudes toward immigrants entering the United States. These manipulations had no effect on minimum-wage attitudes, which suggests that contamination concerns specifically influence attitudes toward metaphorically associated (albeit superficially unrelated) issues, and do not generally push participants toward more traditionally conservative positions.

The results of Study 1 support our broader claim that motivational states can influence attitudes toward social topics when the topics are metaphorically framed in a motive-relevant manner. However, we included only a metaphoric and a nonmetaphoric framing, leaving open the possibility that the observed effect was due to the use of metaphoric language generally, rather than the specific metaphor of the United States as a body (although the fact that the metaphoric-framing effect depended on the manipulation of contamination concerns makes this unlikely). Therefore, in Study 2, we compared attitudes toward a social behavior that was framed in three ways, two of which shared a broad metaphoric premise (binge drinking as physical destruction), but only one of which related the behavior to a self-relevant motive (destruction of the self, as opposed to competitive destruction of others, through drinking).

STUDY 2

Study 2 examined attitudes toward binge alcohol use, which is regularly described metaphorically as a physically destructive act (e.g., "I got *hammered*" or "*destroyed*"). Levine (1981) argued that such self-destructive metaphors may reflect a desire (met by excessive consumption of intoxicating substances) to "smash," or obliterate, self-awareness. Although prior research has shown that alcohol use is attractive as a means of reducing negative self-focused attention (e.g., Hull & Young, 1983), no research has yet examined whether this function of drinking is enhanced by metaphoric framing of drinking as self-destruction. We tested the hypothesis that heightening motivation to avoid negative self-views (by means of a self-esteem threat) would increase attraction to a binge drinker when binge drinking was metaphorically framed as physically destroying the self, but not when it was framed in literal terms. Also, to test whether any observed effect was due to a motivation to metaphorically destroy the self and not, alternatively, to attraction to generally

destructive or metaphoric language, we included a second control condition in which binge drinking was metaphorically framed as competitive destruction of other people.

We also examined the potential moderating influence of individual differences in dispositional alcohol use. Excessive alcohol consumption is probably more likely to be seen as an attractive means of avoiding negative self-views among frequent than among infrequent drinkers (Hull & Young, 1983). Insofar as self-destructive metaphors for drinking reflect that desire, heavy drinkers motivated to avoid negative self-views should be more attracted to binge drinking when it is framed as self-destruction, but light drinkers with the same motivation may not be. Therefore, although we expected all participants to be negatively affected by our self-esteem threat manipulation, and perhaps to experience a desire for self-escape, we predicted that only heavy drinkers would respond with an increase in attraction to a binge drinker when binge drinking was metaphorically framed as a self-destructive act.

Method

Participants were 63 (37 female, 26 male) undergraduates at a Midwestern university.

Alcohol Consumption

Participants completed a demographics questionnaire. A single item assessing individual differences in alcohol consumption was embedded among filler items included to distract participants from the true purpose of the study: "How many alcoholic beverages have you consumed in the past month?" (1 = *none*, 2 = *less than 5*, 3 = *5 to 10*, 4 = *3 to 5 each week*, . . ., 8 = *more than 20 each week*; grand mean = 3.90, $SD = 2.37$).

Self-Esteem Threat

As part of a purported personality survey, and following two neutral questionnaires about media preferences, participants were asked to write a paragraph about either a recent personal failure (threat condition) or a recent success (no threat).

Binge-Drinking Framing

Participants then read three articles, ostensibly excerpted from the university newspaper. Each article reported an individual interview with an undergraduate (gender unspecified) about a recent night of heavy drinking. The experimenter-fabricated articles represented the three framing conditions. In the self-destructive metaphoric framing, the interviewee emphasized that the evening's goal was to obliterate the self (metaphorically; e.g., "The only thing I wanted to do was get absolutely *wasted*"). The literal framing used nonmetaphoric paraphrases (e.g., "Last night I just wanted to drink a lot of beer"). In the other-destructive metaphoric framing, the interviewee employed metaphors of destructive competition to express a capacity to drink more than other people (e.g., "I *destroyed* them all at beer pong"). Efforts were taken to ensure that the basic events described in all three interviews were essentially the same (e.g., playing "drinking games," consuming copious amounts of alcohol, experiencing nausea) and that the articles differed only in the type of language used to describe these events. The three articles were presented in two fixed random orders; preliminary analyses showed no order effects. No participants expressed suspicions about the articles' legitimacy.

Liking for the Binge Drinker

As a measure of preference for binge drinking, we assessed participants' attitudes toward the binge drinkers depicted in the interviews. Participants answered four questions following each interview: "How much do you like this person?" "How well do you relate to this person?" "How willing would you be to be friends with this person?" and "How likely would you be to hang out with this person in a party setting?" (1 = *not at all*, 7 = *very much*). Responses were averaged to form composite attraction scores (αs $> .91$).

Self-Esteem Manipulation Check

Participants completed Rosenberg's (1965) 10-item self-esteem inventory ($\alpha = .89$) as a check on our threat manipulation.

Results

Manipulation Check

Regressing self-esteem scores onto threat condition (dummy-coded), dispositional level of alcohol consumption (continuous), and their interaction revealed only the predicted effect of threat, $\beta = .26$, $t(60) = 2.14$, $p = .04$ (for other effects, ps $> .21$); participants in the threat condition reported lower self-esteem ($M = 3.11$, $SD = 0.48$) than those in the no-threat condition ($M = 3.33$, $SD = 0.44$).

Liking for the Binge Drinker

For our primary analysis, we submitted attraction scores to a 2 (self-esteem threat: threat vs. no threat) × 3 (framing: self-destructive metaphoric vs. literal vs. other-destructive metaphoric) × 2 (alcohol consumption; continuous, centered) × 2 (gender) mixed-model ANOVA with framing as a within-subjects factor. We observed a significant framing effect, $F(2, 54) = 10.57$, $p < .001$, $p_{rep} = .99$, $\eta_p^2 = .28$, such that attraction was overall higher for the literal interviewee ($M = 3.48$) than for the interviewee who described drinking in self-destructive metaphoric terms ($M = 2.86$; $p < .001$) and the interviewee who described drinking in other-destructive metaphoric terms ($M = 3.00$; $p < .01$); attraction to the latter two did not differ ($p = .37$). Although unexpected, this effect minimally helps rule out the possibility that any effects of the predictor variables on attraction to the binge drinkers were due to enhancement of a general preference for a metaphoric or colloquial style. Also, the absence of a Framing × Consumption interaction ($F = 1.02$, $p = .37$) min-

imally suggests that the interviewee who described drinking in self-destructive metaphoric terms was not more liked simply because he or she was perceived as drinking more than the other interviewees.

The only other effect observed was the predicted three-way interaction, $F(2, 54) = 3.42$, $p = .04$, $p_{rep} = .89$, $\eta_p^2 = .11$ (all other ps $> .10$). To decompose this interaction, we conducted separate Threat × Consumption regression analyses for the three framing conditions.

Self-Destructive Metaphoric Framing. In this condition, we observed a main effect for alcohol consumption, $\beta = .71$, $t(60) = 8.01$, $p < .001$, $p_{rep} = .99$, which was qualified by the predicted Threat × Consumption interaction, $\beta = .23$, $t(59) = 2.00$, $p = .05$, $p_{rep} = .88$. This interaction is illustrated graphically in Figure 1, which shows predicted attraction to the binge drinker in the threat and no-threat conditions for light drinkers (1 *SD* below the centered mean) and heavy drinkers (1 *SD* above the centered mean; Aiken & West, 1991). Simple-slopes analyses indicated that dispositional consumption of alcohol was positively and significantly associated with attraction to the self-destructive binge drinker in both the threat condition, $\beta = .86$, $t(59) = 7.52$, $p < .001$, and the no-threat condition, $\beta = .51$, $t(59) = 3.85$, $p < .001$. More important, this effect was stronger in the threat condition, and, critically, a comparison of the predicted means (recentered at 1 *SD* above the centered consumption mean) showed that heavy drinkers were more attracted to the self-destructive binge drinker after thinking about a personal failure than after thinking about a personal success, $\beta = .32$, $t(59) = 2.55$, $p = .01$, $p_{rep} = .95$. A similar comparison for light drinkers (1 *SD* below the centered consumption mean) revealed no simple effect of threat ($p = .78$).

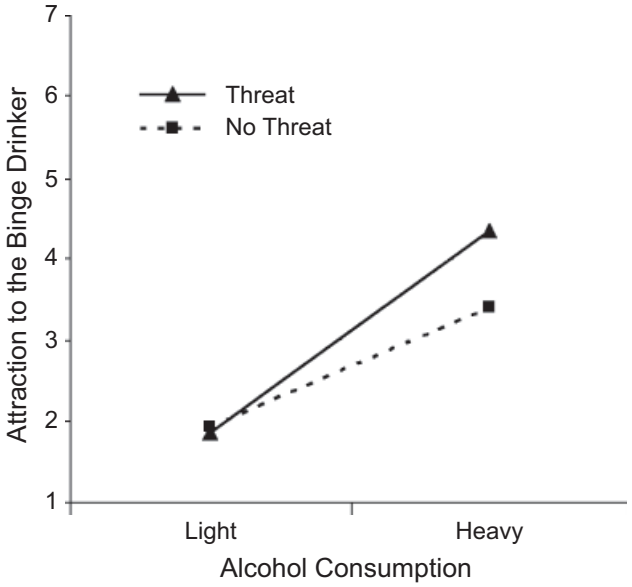

Fig. 1. Attraction to the binge drinker in the self-destructive metaphoric-framing condition of Study 2 as a function of self-esteem threat and chronic alcohol consumption (1 *SD* above and 1 *SD* below the mean). Composite attraction scores ranged from 1 to 7.

Literal Framing. The same analysis in the literal-framing condition again revealed a main effect of consumption, $\beta = .69$, $t(60) = 7.50$, $p < .001$, but no interaction ($p = .61$). Predictably, dispositional consumption was positively associated with attraction to the binge drinker in both the threat condition, $\beta = .73$, $t(59) = 6.02$, $p < .001$, and the no-threat condition, $\beta = .64$, $t(59) = 4.43$, $p < .001$, but no difference in attraction was observed as a function of the threat manipulation (for the simple effect of threat among heavy drinkers, $p = .62$).

Other-Destructive Metaphoric Framing. In this framing condition as well, a consumption effect emerged, $\beta = .47$, $t(60) = 4.14$, $p < .001$, but there was no interaction ($p = .94$). Consumption predicted liking for the binge drinker in both the threat condition, $\beta = .47$, $t(59) = 3.18$, $p = .002$, and the no-threat condition, $\beta = .46$, $t(59) = 2.60$, $p = .01$, but, as in the literal-framing condition, the threat manipulation had no effect (for the simple effect of threat among heavy drinkers, $p = .62$).

Discussion

Building on prior theory and research concerning alcohol use, we found that a self-esteem threat increased attraction to a binge drinker when drinking was metaphorically framed as a form of self-destruction, but only among individuals predisposed to regular alcohol consumption. Note that we measured liking for a binge drinker rather than attitudes toward binge drinking itself. We did this for two reasons. First, this measure fit better with the procedures and materials we used to introduce the different frames for binge drinking. Second, we thought that if participants were asked about binge drinking directly, the purpose of the study would be obvious, and socially desirable responding would be more likely; students may be reluctant to admit to positive views of binge drinking if asked directly about it.

In addition to having implications for understanding attitudes toward binge drinking, this study demonstrates that the interactive effect of motivation and metaphor is specific to motive-relevant metaphoric framing, and does not arise from metaphoric framing in general. Inducing a self-relevant motive influenced attitudes toward a social activity only when that activity was described using a metaphor that implied the relevance of that activity to the activated motive. This study also shows that the appeal of an activity metaphorically framed to fit an activated motive is moderated by individual differences in prior experience with that activity. More broadly, it supports the idea that metaphoric framings for common social acts can influence perceptions of and even the psychological functions of those acts.

GENERAL DISCUSSION

Two studies demonstrated that the presentation of common metaphors for politically and socially important topics can combine with self-relevant motivational states to influence attitudes regarding those topics. In Study 1, induced motivation to protect the literal body interacted with a body-metaphoric framing of the United States, resulting in more negative attitudes toward U.S. immigration. In Study 2, the induction of a self-esteem threat increased heavy drinkers' attraction to a binge drinker when binge drinking was metaphorically framed as an act of self-destruction.

Taken together, these findings suggest that the language people use to discuss topics of social import serves particular (if commonly unrecognized) psychological functions, and can influence attitudes regarding those topics. Contamination metaphors, commonly used by politicians to frame the immigration debate, may unconsciously sway citizens to take a harsher stance on this issue, and widespread colloquialisms equating excessive alcohol use with self-obliteration may subtly increase the attractiveness of drinking among individuals who are prone to drinking and who are not feeling good about themselves. Interestingly, both studies support the idea that people often frame potentially controversial social topics metaphorically in terms of a domain with which they are intimately familiar—the self encased in a physical body (Lakoff & Johnson, 1980). In some cases, using these metaphors can lead to defensive desires to protect the "body" (preserving the country's integrity), whereas in other cases, people may seek symbolically destructive activities to escape negative self-views. Taken to extremes, these metaphoric framings can have serious ramifications. Glover (1999) argued that government officials' telegrams employing metaphors of the nation as a body to be protected played a major role in the escalation of hostilities in the first month of World War I. And Jim Morrison is only one example of a popular figure who penned elaborate self-destructive metaphors before literally self-destructing from alcohol use (Hopkins & Sugerman, 1995).

These findings suggest important applications. Given that public opinion on controversial issues may be swayed by particular metaphoric framings, it is important to be sensitive to the use of metaphor in rhetoric surrounding issues such as immigration and national defense (Lakoff, 1991). Furthermore, our finding that particular metaphoric framings can combine with personal motivations to influence the attractiveness of harmful or addictive behaviors suggests the relevance of metaphor to therapeutic and interventional programs aimed at reducing addiction. As Montagne (1988) observed, different metaphors for substance use may rise to prominence in different historical periods as a result of popular conceptions of the purpose of drug use; for example, in 1960s America, metaphors of drug use as a self-exploratory journey were more widespread than self-destructive metaphors of drug use. Analyses of addictive behaviors may benefit from considering the psychological function that popular metaphoric framings of these behaviors may imply or serve.

Considered in the context of the growing research on metaphor's role in social cognition, our findings break new ground by showing that motivational states can interact with particular metaphoric framings to influence attitudes toward political issues and social behaviors even when the activated motives and the topics are unrelated in a literal sense. This suggests fertile directions for future theoretical and applied research on the intersection of motivation, metaphoric thought, and attitudes toward topics of social and personal import.

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