

SITUATIONS CHANGE THOUGHT AND BEHAVIOR THROUGH METAPHOR

Mark J. Landau and Lucas A. Keefer

Thousands of psychological studies have shown that a person's current situation significantly influences how she or he thinks and acts in social life. Yet most people—and indeed many psychologists—believe that social behavior can be explained solely in terms of personality traits, genetic inheritance, and other “internal” characteristics of the person that are presumed to be invariant across situations. This volume aims to correct this persistent attribution bias by highlighting just how flexibly people change as they inhabit different situations and develop over the life span.

As the chapters in this volume attest, there are many useful empirical approaches to investigating how and why people change. Our starting point is the social-cognitive approach of identifying the cognitive mechanisms that mediate the influence of the current situation on social behavior. The prevailing view (e.g., Fiske & Taylor, 1991) is that encountering a stimulus (e.g., another person, an advertisement) brings to mind a *schema*: a mental structure containing knowledge about similar stimuli accumulated through experience. This accessible knowledge informs subsequent thought, feeling, and action. To illustrate, when study volunteers were asked to form an impression of someone who takes part in various high-risk activities, those who had previously read words pertaining to *recklessness* formed a negative impression, whereas those who read words pertaining to *adventurousness* formed a positive impression (Higgins, Rholes, & Jones, 1977). These diverging impressions resulted from the different schemas activated by the situation.

Our goal in this chapter is to show that *metaphor* is another important cognitive mediator between the situation and social behavior. We will argue that metaphor is not, as conventional wisdom would have it, simply a linguistic device comparing dissimilar things; rather, it is a mental tool by which people understand an abstract

concept using knowledge of another, relatively more concrete concept. From this perspective, many social concepts, such as *justice*, *spirituality*, and *happiness*, are inherently abstract and difficult to grasp in their own terms, and people routinely use metaphor (typically unconsciously) to make meaningful sense of them.

In the past 10 years, extensive, sometimes surprising evidence has emerged that metaphoric thinking influences a wide range of social-psychological phenomena, including consumer decision making, moral judgment, and political attitudes (for more complete reviews, see Landau, Meier, & Keefer, 2010; Landau, Robinson, & Meier, 2013). Our selective review of this literature highlights two ways in which metaphor uniquely mediates between the situation people find themselves in and subsequent thought and behavior:

- Because some metaphors are used to represent abstract concepts in terms of bodily states and experiences, the person's interaction with the physical environment can systematically shape perceptions, judgments, and actions related to those abstract concepts. In fact, studies show that, by means of metaphoric associations, embodied experiences influence outcomes that are commonly attributed to fixed personality traits (e.g., agreeableness) or intellectual capacity (e.g., creativity).
- Across diverse social contexts ranging from the classroom to the courtroom, people encounter messages that frame abstract concepts (e.g., *morality*, *the national economy*) in terms of concrete concepts that are unrelated in a literal sense (e.g., *cleanliness*, *vehicle operation*). These metaphoric messages are often assumed to be "mere" figures of speech or pictorial tropes. Yet there is increasing evidence that even incidental exposure to such messages shapes how people reason and form attitudes, regulate their goal pursuit, and even cope with traumatic life events.

The take-home point emerging from this review is that changeability in social behavior stems from metaphoric cognition to a much greater extent than has been appreciated in social-personality psychology and related disciplines. We conclude by discussing practical implications of this discovery and recommending some avenues for future research on metaphor's contribution to change.

Conceptual Metaphor Theory

Metaphor is commonly known as a figure of speech through which we describe one thing in terms of another. When Romeo says "Juliet is the sun," he cannot *really* mean that she is a giant spherical mass of hot plasma. Most of us are taught in grade school that metaphor is a decorative frill—a colorful but essentially useless embellishment to "normal" or even "proper" language—and that it is the special province of poets and other literary elites. But that is incorrect. English speakers

utter about o
minute (Gear

- I can see
- Keep that
- Christma
- That is a
- I feel dow
- I devoured
- The econ

Although t
make sense in
does not "go"
are neverthele
esses deeper s
underlie thoug

According t
the answer to t
(figures of spee
Yet many philo
mental to hum
cally because th
in George Lake
has come to be
made a compete
thought proces

A conceptu
understood in
generally abstra
to knowledge c
feeling somethi
to comprehend.

How do peo
According to C
ciations among
and analogous e
way, a conceptu
crete concept as

To illustrate,
a journey, depict
two concepts int

another, relatively more concrete concept. From concepts, such as *justice*, *spirituality*, and *happiness*, are not to grasp in their own terms, and people routinely (and unconsciously) to make meaningful sense of them. However, sometimes surprising evidence has emerged that there is a wide range of social-psychological phenomena, such as making moral judgment, and political attitudes (for example, Landau, Meier, & Keefer, 2010; Landau, Robinson, & Trope, 2010). This literature highlights two ways in which the situation people find themselves in and their behavior:

Metaphors are used to represent abstract concepts in terms of concrete concepts, the person's interaction with the physical environment, and they shape perceptions, judgments, and actions related to these concepts. In fact, studies show that, by means of metaphoric experiences influence outcomes that are commonly associated with these concepts (e.g., agreeableness) or intellectual capacities.

Metaphors in texts ranging from the classroom to the courtroom, and in media that frame abstract concepts (e.g., *morality*, *the mind*) in terms of concrete concepts that are unrelated in a literal sense (*the mind is a container*). These metaphoric messages are often conveyed through figures of speech or pictorial tropes. Yet there is increasing evidence that exposure to such messages shapes how people think, regulate their goal pursuit, and even cope with stress.

Emerging from this review is that changeability in social cognition is to a much greater extent than has been recognized in social psychology and related disciplines. We conclude that the implications of this discovery and recommending some ways to harness metaphor's contribution to change.

Theory

Metaphor is known as a figure of speech through which we describe one thing in terms of another. When Romeo says "Juliet is the sun," he cannot mean that she is a spherical mass of hot plasma. Most of us are taught in school that metaphor is a decorative frill—a colorful but essentially useless ornament or even "proper" language—and that it is the special province of literary elites. But that is incorrect. English speakers

utter about one metaphor for every 10 to 25 words, or about six metaphors a minute (Geary, 2011). Consider the following ordinary expressions:

- I can *see* your point (*understanding is seeing*)
- *Keep* that in mind (*the mind is a container*)
- Christmas is *fast approaching* (*events are moving objects*)
- That is a *heavy* thought (*thoughts are objects with weight*)
- I feel *down* (*feelings are vertical locations*)
- I *devoured* the book, but I'm still *digesting* its claims (*ideas are food*)
- The economy *went from bad to worse* (*states are locations*)

Although these expressions strike most people as perfectly natural, they do not make sense in literal terms. For example, thoughts lack weight and the economy does not "go" anywhere. Given such points and the fact that linguistic metaphors are nevertheless pervasive, the big question is whether metaphoric language possesses deeper significance for understanding the representational processes that underlie thought.

According to many theories of language and, perhaps, common sense as well, the answer to this question is "no." Metaphoric expressions may be simply idioms (figures of speech) that do not convey any meaningful insight into how we think. Yet many philosophers and psychologists have proposed that metaphor is fundamental to human thought (Gibbs, 1994). On this view, people speak metaphorically because they think metaphorically. This notion finds its clearest formulation in George Lakoff and Mark Johnson's 1980 book *Metaphors We Live By*. In what has come to be known as *conceptual metaphor theory* (CMT), Lakoff and Johnson made a compelling theoretical case for the view that metaphor pervades human thought processes (see Kövecses, 2010, for introductory overview).

A conceptual metaphor consists of two dissimilar concepts, one of which is understood in terms of the other. The concept that one tries to understand is generally abstract, complex, and difficult to comprehend. The other concept refers to knowledge domains or experiences (e.g., tasting something, seeing something, feeling something's texture) that are relatively more concrete and therefore easier to comprehend.

How do people understand an abstract concept in terms of a concrete concept? According to CMT, metaphor creates a *conceptual mapping*: a systematic set of associations among elements of the abstract concept (i.e., features, properties, relations) and analogous elements of the concrete concept (depicted in Figure 11.1). In this way, a conceptual metaphor allows people to draw on their knowledge of the concrete concept as a framework for thinking about the abstract concept.

To illustrate, consider the conceptual mapping created by the metaphor *love is a journey*, depicted in Figure 11.2. The mapping puts analogous elements of the two concepts into systematic correspondence, thereby allowing people to use their

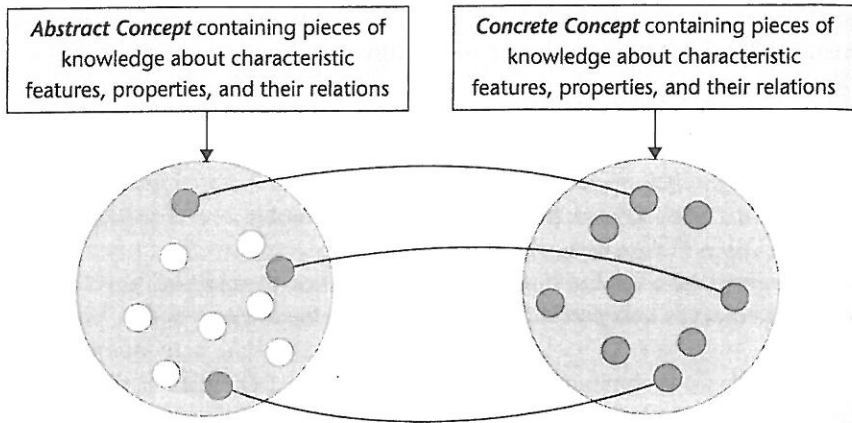


FIGURE 11.1 Depiction of a conceptual mapping.

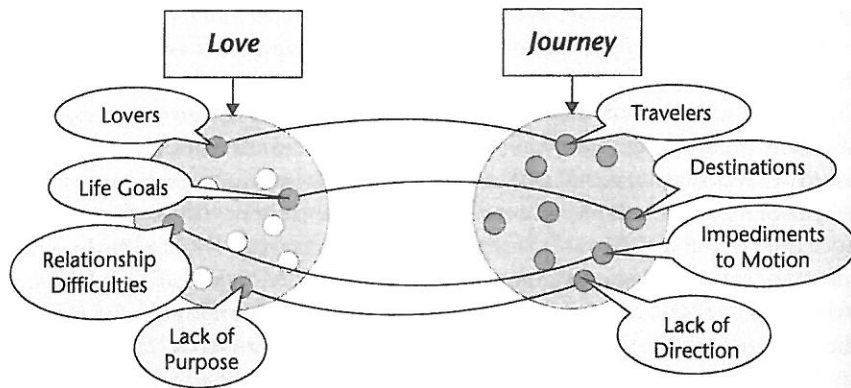


FIGURE 11.2 Depiction of a portion of the conceptual mapping created by the metaphor *love is a journey*.

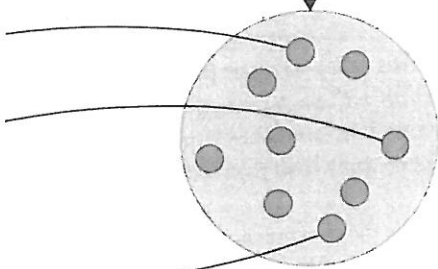
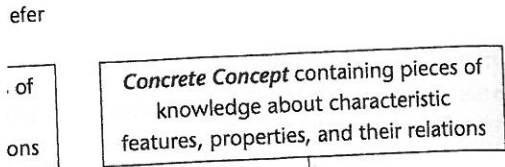
knowledge of journeys to inform how they think, feel, and act during a close relationship marked by love. For example, they can represent love-related experiences as having a *starting point* (initial attraction) and an intended *destination* (increased intimacy over time). The relationship can *stall* or *move* in the wrong *direction*, such as when a partner feels they are *headed* for a breakup.

The metaphor also entails practical inferences. People generally understand that a person on a journey usually has to pass over difficult terrain to reach a destination. By understanding a close relationship as a journey, people can expect to encounter conflicts as their relationships progress. Of course, conceptual mappings are partial, meaning that not all elements of the concrete concept are used to structure the abstract concept. When beginning a new relationship, for example, people do not usually worry about packing a suitcase.

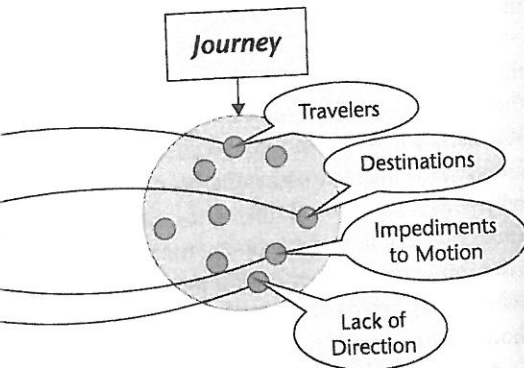
cor
an
dov
ont
exa
sho
dee
with
ness
in p
con
pro
the
("A
tow:

Me
Per

Frie
preci
and
ple s
They
of gu
politi
quest
the a
At
sense
schen
mora
Persp
in ad
occur
may c
gressi
stored
De
may l
people
types c
structu



ptual mapping.



tion of the conceptual mapping created by the

form how they think, feel, and act during a close relationship. For example, they can represent love-related experiences as a journey. An intended destination (increased relationship attraction) and an intended destination (increased relationship attraction) and an intended destination (increased relationship attraction) can stall or move in the wrong direction, such as being headed for a breakup. People generally understand practical inferences. People generally understand usually has to pass over difficult terrain to reach a destination. When beginning a new relationship, for example, people can expect their relationships progress. Of course, conceptual mappings are used to map not all elements of the concrete concept are used to map. When beginning a new relationship, for example, people can expect about packing a suitcase.

This analysis points to interesting consequences of mapping the same abstract concept onto different concrete concepts. Because mappings are partial, mapping an abstract concept onto one concrete concept will highlight (make salient) and downplay (inhibit) some elements, whereas mapping that same abstract concept onto an alternate concrete concept will pick out a different set of elements. For example, thinking of love as a journey will highlight the fact that relationships should *head somewhere*, whereas thinking of love as a plant that needs nurturing will deemphasize movement but perhaps better capture the idea that relationships can *wither* to the extent that one fails to *water* them (e.g., by periodic expressions of kindness). In this way, alternate conceptual mappings can produce systematic changes in perceptions, inferences, and attitudes toward the abstract concept. For example, conceptualizing arguments in terms of war (“I cannot *penetrate* her *defenses*”) should promote a hostile orientation whereby one party is the victor and the other is the vanquished, whereas conceptualizing arguments in terms of far-apart locations (“Are we on different *planets*?”) should downplay hostility and even promote efforts toward finding a “common ground,” or compromise, between arguing parties.

Metaphor Links Embodied Experiences to Social Perception, Judgment, and Behavior

Friendship, authenticity, guilt, power, morality, freedom, evil. Scholars wrestle with the precise meaning of these concepts because they cannot be directly experienced and are inherently abstract. It is therefore remarkable that, generally speaking, people seem to have little difficulty making sense of these and other abstract concepts. They form impressions of coworkers’ friendliness and authenticity, suffer the pangs of guilt, buy luxury goods to advertise their power, judge the moral implications of political policy, and support wars to spread freedom and stem the tide of evil. The question then becomes: What cognitive processes do people normally use to grasp the abstract concepts that lie at the center of their social life?

As we noted earlier, the prevailing view in social cognition is that people make sense of these concepts using schemas. For instance, *morality* is represented as a schema containing accumulated knowledge about morality (e.g., memories of moral and immoral individuals, beliefs about traits that correlate with morality). Perspectives on grounded cognition (Barsalou, 2008) posit that schemas contain, in addition to symbolic knowledge, representations of bodily states that regularly occur during interactions with relevant stimuli. For example, the morality schema may contain representations of the visceral experience of guilt over moral transgressions. Critically, however, these perspectives retain the traditional emphasis on stored knowledge *about* a given concept.

Despite its intuitive appeal and ample empirical support, this prevailing view may be incomplete. CMT supplements these perspectives by explaining how people understand and experience abstract social concepts in terms of *different types* of concepts that are more concrete. Conceptions of *morality*, for instance, are structured around knowledge of bodily states and experiences related to physical

cleanliness and contamination. On this view, the embodied concept (e.g., *cleanliness*) is a concept in its own right, and is not part of the schema for the abstract concept (e.g., *morality*). Instead, it serves as a mental scaffold for structuring schematic knowledge about the abstract concept (for further discussion of metaphor's uniqueness, see Landau et al., 2010).

Some evidence that metaphors shape thought comes from linguistic analyses showing that metaphoric linguistic expressions cluster around common themes (Gibbs, 1994). Returning to our example, if people do *not* think about morality metaphorically in terms of cleanliness, at least in part, then why do they routinely talk about *filthy minds*, *pure thoughts*, and a *clean conscience*? Still, people may employ metaphoric language as a matter of convention without necessarily accessing an underlying cognitive mapping. Put more simply, metaphoric expressions may be simply idioms (figures of speech) that do not convey any meaningful insight into how we think. We need more direct tests that embodied concepts are in fact used to represent abstract concepts and not just to talk about them.

A growing body of experimental research is doing just that. The reasoning guiding most of this work is that if an embodied concept is in fact used to structure representations of an abstract concept, then manipulating how people understand or experience the embodied concept should "transfer" across the conceptual mapping, changing how they process analogous elements of the abstract concept. If, alternatively, there is no conceptual mapping actively linking the embodied and abstract concepts, then priming embodied experiences should have no impact on thinking about the abstract concept. The success of this strategy would be surprising in part because priming research in social psychology has mostly focused on the activation of knowledge structures that have a relatively obvious bearing on the target phenomenon (e.g., priming hostile thoughts produce hostile behaviors). That manipulating a more concrete perceptual concept would systematically influence processing with respect to a more abstract social concept represents a major departure from this traditional focus, one in favor of a fundamental role for metaphor in social cognition (Bargh, 2006).

Williams and Bargh (2008) used this strategy to examine the metaphoric link between physical and interpersonal warmth. They built on prior evidence that people commonly refer to interactions with others by using the concepts *warm* and *cold* (Asch, 1946; Fiske, Cuddy, & Glick, 2007), such as when one receives a *warm* welcome or a *cold* manuscript rejection. To test whether this metaphor influences social perceptions, they had the experimenter, who apparently needed a free hand, ask participants to hold her coffee cup. Depending on condition, the cup was either warm or cold. Afterward, all participants were asked to read a brief description of another person and rate that person's friendliness and trustworthiness—that is, their interpersonal "warmth." As predicted, participants who simply held a warm (versus cold) beverage perceived the target individual as friendlier and more trustworthy, suggesting that conceptual metaphors can influence social perceptions even in contexts in which metaphoric language is absent.

Similar et al., 2010 experience make judgments. To r perceived . tures result increases fe are viewed

These fi ence of the outcomes (attachment the situatio outcomes t teristics? E three such

Moral Juc

A long-sta judgment a Whether it or the utilit tively, "out on the mir portrays the informatio encased in :

But met to a signific physical filt Participants moral viola falsifying a participants and dried-u other partic mere presen suggesting t sense of rigl

Indeed, 1 people thin

ew, the embodied concept (e.g., *cleanliness*) is not part of the schema for the abstract concept, it serves as a mental scaffold for structuring the abstract concept (for further discussion of metaphor's

thought comes from linguistic analyses. Research shows that associations cluster around common themes. For example, if people do *not* think about morality, they are at least in part, then why do they routinely use the metaphor *clean conscience*? Still, people may employ metaphors without necessarily accessing an embodied concept: simply, metaphoric expressions may be used to not convey any meaningful insight into the relationship between that embodied concepts are in fact used to talk about them.

Research is doing just that. The reasoning behind the embodied concept is in fact used to structure the abstract concept, then manipulating how people understand it should "transfer" across the conceptual elements of the abstract concept. Research is actively linking the embodied and abstract experiences should have no impact on the success of this strategy would be surprising. Research in social psychology has mostly focused on metaphors that have a relatively obvious bearing on the abstract concept; hostile thoughts produce hostile behavior, and a perceptual concept would systematically influence how an abstract social concept represents a person. For example, one in favor of a fundamental role for metaphors (Bloom, 2011).

Research strategy to examine the metaphoric link between embodied and abstract concepts. They built on prior evidence that metaphors with others by using the concepts *warm* and *dirty* (Bloom, 2007), such as when one receives a *warm* cup of coffee. To test whether this metaphor influences social perception, who apparently needed a free hand, researchers used a cup. Depending on condition, the cup was either clean or dirty. Participants were asked to read a brief description of a person's friendliness and trustworthiness—predicted, participants who simply held a clean cup perceived the target individual as friendlier and more trustworthy. When metaphors are absent, metaphoric language is absent.

Similar effects have now been found in dozens of published studies (see Landau et al., 2010; Landau, Robinson, & Meier 2013). Subtle manipulations of embodied experiences have been shown to influence how people perceive, remember, and make judgments and decisions related to a wide range of abstract social concepts. To mention just a few surprising findings: weight manipulations influence perceived importance; smooth textures promote social coordination; hard textures result in greater strictness in social judgment; priming closeness (vs. distance) increases felt attachment to one's hometown and families; groups and individuals are viewed as more powerful when they occupy higher regions of vertical space.

These findings are consistent with our claim that metaphor mediates the influence of the person's current environment on his or her social behavior. Still, the outcomes examined in the majority of these studies—impression formation, felt attachment to one's family—are known to be highly malleable and responsive to the situation. Can embodied experiences operate through metaphor to influence outcomes that are assumed by many psychologists to be stable, enduring characteristics? Emerging research suggests that the answer is "yes." Next we consider three such outcomes: moral judgment, creativity, and trait agreeableness.

Moral Judgment

A long-standing tradition in Western philosophy and psychology views moral judgment as based on eternal, unvarying principles or universally applicable truths. Whether it be the Ten Commandments, Immanuel Kant's categorical imperative, or the utilitarian standard of the greatest good, morality is believed to exist objectively, "out there" in the world, and is not in any fundamental sense dependent on the mind, let alone ephemeral bodily states and experiences. This tradition portrays the person making judgments about right and wrong as a type of moral information processor (perhaps prone to persistent biases) that just happens to be encased in a body (Bloom, 2011).

But metaphor research is beginning to show that moral cognition is grounded to a significant degree in embodied concepts, particularly those related to disgust, physical filth, and cleanliness. Consider a study by Schnall and colleagues (2008). Participants were asked to read about individuals committing various kinds of moral violations, such as not returning a found wallet to its rightful owner and falsifying a resume, and to rate how morally wrong those actions are. Half the participants made their judgments in a dirty work space: on the desk were stains and dried-up food remains, and next to the desk was an overflowing trash can; the other participants made their judgments in a clean work space. As expected, the mere presence of filth led participants to condemn moral violations more severely, suggesting that embodied experiences with filth are used to represent the abstract sense of right and wrong.

Indeed, this metaphoric link between morality and cleanliness shapes how people think about their own actions, and it can have very specific effects. Lee

and Schwarz (2010) showed that participants induced to commit an unethical act using their mouth—specifically, leaving a lie on someone’s voice mail—showed an increased concern with the physical cleanliness of their mouth, as reflected in their preference for mouthwash over hand sanitizer as a gift for participating. But if participants were instead induced to perform the same unethical act using their hands (by typing a deceptive email), they clamored for the hand sanitizer over the mouthwash in order to cleanse themselves of their immoral actions.

The act of physical cleansing is not only more attractive following the commission of an immoral action; it also works to increase judgments of personal moral integrity. Zhong and Liljenquist (2006) showed that when a personal immoral action was salient, the simple act of hand washing mitigated participants’ feelings of guilt as well as their desire to engage in moral restoration behaviors such as volunteering (see also Lee & Schwarz, 2011).

While cleanliness metaphors are involved in the severity of moral judgment, other metaphors influence confidence in moral judgment. People who are convinced that something is right or wrong are often said to be thinking in *black-and-white* terms, ignoring the *gray* areas of ambiguous or qualified ethics. To test whether black-and-white visual contrast is in fact used to represent moral judgment, Zarkadi and Schnall (2013) had participants read about a moral dilemma (e.g., a man stole a loaf of bread to save his starving family) and rate the act on a scale from right to wrong. For some participants, the moral dilemmas were presented against a black-and-white checkered background; for others, the background was either blue-and-yellow checkered or uniformly gray. Participants primed with the black-and-white checkered background gave ratings that were significantly further from the response scale’s midpoint. Importantly, this prime specifically influenced the polarity of moral judgment and did not shift participants toward positive or negative judgments overall.

Creativity

It seems that some people have a knack for thinking creatively, coming up with innovative ideas and discovering hidden connections, while others find creative thought difficult and even aversive. What accounts for this variation? Many psychologists claim that creativity is an inherent capacity of the person and, as the story goes, remains constant from one situation or life stage to the next. For example, McCrae and Costa (1999) posit that engagement in creative activities reflects the person’s dispositional level of “openness to experience,” one of the five stable traits that make up the individual’s personality.

An alternative perspective is suggested by the way we ordinarily communicate about creativity, both in our language and in our culturally shared images. Here, creative thought is commonly likened to *fluid* movement, like flowing water, while a lack of creativity is likened to *rigid* material. Another common metaphor likens creativity to the sensation of illumination: people can have a *bright* idea or a *spark*

of insig
finally .

Mig
ative th
Particip
coordin
lar shap
easier ti
and the
object. I
difficult
any cog
convent

Anot
prime ill
Ambady
(compar
problem:
formed l
not influ
influence
with the
ation can
differenc

Agreeat

Mainstrea
sociality, e
This trait
metaphor
sugary tas
terms of e
of speech.

of trait ag
menter (N
“sweet” se

The stu
even incid
duce signi
constant a
phor medi
be brought

Participants induced to commit an unethical act (e.g., lying on someone's voice mail—showed a lack of cleanliness of their mouth, as reflected in their use of hand sanitizer as a gift for participating. But they did not perform the same unethical act using their own hands. They clamored for the hand sanitizer over the alternatives of their immoral actions.

They were only more attractive following the commission of the act. Studies have shown that people are more likely to increase judgments of personal moral behavior (e.g., 2006) showed that when a personal immoral act is committed and washing mitigated participants' feelings of guilt and led to moral restoration behaviors such as confession (e.g., 2011).

They were also involved in the severity of moral judgment, and the degree of moral judgment. People who are more morally upright are often said to be thinking in *black-and-white* terms of ambiguous or qualified ethics. To test this, researchers in fact used to represent moral judgment (e.g., a participant read about a moral dilemma (e.g., a man save his starving family) and rate the act on a scale from 1 (strongly disapprove) to 7 (strongly approve). Some participants, the moral dilemmas were presented with a checkered background; for others, the background was checkered or uniformly gray. Participants with a checkered background gave ratings that were closer to the scale's midpoint. Importantly, this prime of moral judgment and did not shift participants' judgments overall.

They lack for thinking creatively, coming up with novel ideas and hidden connections, while others find creative ideas easily. What accounts for this variation? Many psychologists have posited an inherent capacity of the person and, as the person moves from one situation or life stage to the next. For example, they posit that engagement in creative activities is related to the level of "openness to experience," one of the five dimensions of personality.

As suggested by the way we ordinarily communicate and in our culturally shared images. Here, we are related to *fluid* movement, like flowing water, while *solid* material. Another common metaphor likens to a *spark* of inspiration: people can have a *bright* idea or a *spark*

of insight, and a novel solution to an old problem can *emerge from the shadows* and finally *dawn* on them.

Might situations that prime these embodied experiences stimulate more creative thinking? Studies by Slepian and Ambady (2012) support this possibility. Participants who traced a fluid shape (in an ostensible assessment of hand-eye coordination) displayed more creativity than participants who traced an angular shape. Specifically, after simply moving their hand fluidly, participants had an easier time seeing relationships between things that are only remotely associated, and they generated more—and more original—ideas for how to use a common object. Importantly, priming embodied fluidity did not influence performance on difficult math problems, suggesting that it did not simply bolster performance on any cognitive task but specifically influenced creative performance in line with the conventional metaphor.

Another set of studies by Slepian and colleagues showed that situations that prime illumination also boost creativity (Slepian, Weisbuch, Rutchick, Newman, & Ambady, 2010). Participants working near a light bulb that had been illuminated (compared to a more diffuse fluorescent light overhead) were better at solving problems that demand sudden insight and, as in the case of fluid movement, performed better on a remote associates test. Once again, the embodied prime did not influence performance on noncreative problem-solving tasks but specifically influenced performance on tasks that required creative thought. Taken together with the fluidity studies, these findings suggest that even subtle aspects of the situation can change the creative capacities traditionally attributed to stable individual differences.

Agreeableness

Mainstream personality theory views agreeableness, a dimension reflecting prosociality, as another stable individual difference variable (McCrae & Costa, 1999). This trait is somewhat abstract and, unsurprisingly, people commonly rely on metaphors to describe it. Particularly common are metaphors based on pleasant, sugary taste. A nice person is a *sweet* person, and *honey* and *sugar* are common terms of endearment. Meier and colleagues show that these are more than figures of speech. Participants in their study who ate a sweet food reported higher levels of trait agreeableness and were more willing to volunteer time to help the experimenter (Meier, Moeller, Riemer-Peltz, & Robinson, 2012). Tasting sweet produces "sweet" self-conceptions and behaviors.

The studies reviewed thus far show that, by means of metaphoric associations, even incidental embodied interactions with the physical environment can produce significant changes in characteristics of the person often posited to remain constant across situations. Still, we've highlighted only one way in which metaphor mediates the situation's influence on social behavior. While metaphors can be brought to mind by embodied experiences, they can also be activated by the

messages one encounters in the media and everyday communications. In the next section, we review evidence that these messages can powerfully change people's beliefs, attitudes, and even their mental health.

Metaphoric Messages Uniquely Influence Attitudes, Motivation, and Health Outcomes

According to a recent newspaper article (Mutikani, 2011), the U.S. economy is "struggling against stiff headwinds" but it has not yet "fallen off a cliff." Many readers interpret these phrases effortlessly despite the fact that they do not make sense in literal terms: The economy does not literally struggle against headwinds, like a sailboat, nor can it fall off a cliff. This is an example of a *metaphoric message (MM)*: a communication comparing (typically by means of words, phrases, and images) an abstract concept to a superficially unrelated, more concrete concept. MMs pervade public discourse (e.g., magazine editorials, political speeches) surrounding such controversial sociopolitical issues as terrorism (Kruglanski et al., 2007), immigration (O'Brien, 2003), and war (Lakoff, 1991; for detailed qualitative analyses, see Charteris-Black, 2011; Musolf & Zinken, 2009).

The ubiquity of MMs in public discourse raises an important question: Are these communications interpreted simply as ornamental figures of speech, or does exposure to an MM influence how people think, feel, and act? Metaphor theorists (e.g., Lakoff, 2004) posit that MM exposure can activate in the recipient's mind an active conceptual mapping between the concrete concept and the abstract concept. This claim suggests a unique way in which metaphors in persuasive communications can influence attitudes: Exposure to an MM comparing even one aspect of an abstract concept to an analogous element of a concrete concept (i.e., one connecting line in Figure 11.1) can trigger a cascade of other associations entailed by that metaphor. As a result, message recipients will use their knowledge of the concrete concept to interpret and evaluate aspects of the abstract concept—even those that are not explicitly described in the original communication.

To illustrate, imagine that people hear on TV that a military engagement in Afghanistan "upped the ante." By comparing an element of military conflict to an element of games requiring bets (e.g., poker), this MM may activate related associations between the concepts *military operation* and *games*. In this way, the message can indirectly shape recipients' attitudes toward other aspects of the war. For instance, since people generally know that, in games, the party with the most points wins, they may form the attitude that the United States' invasion of Afghanistan was a successful military operation insofar as the U.S. military accrued more "points" (i.e., enemy casualties) than the Taliban resistance, even though the original communication did not explicitly describe what constitutes a successful military operation. If the message had compared the battle to another concrete concept, such as a chapter in a story, or described it in literal terms, recipients may be less likely to gauge military success in such concrete, quantifiable terms.

This metaphoric message may influence people's attitudes if they interpret it differently. For example, Morris and colleagues (Morris, 2007) found that NASDAQ's announcement that the NA would be delisted would lead investors to believe that the company was destined for failure. The price of the stock would drop, whereas the price of the company's stock would rise.

Other research has shown that metaphoric messages can influence people's attitudes toward controversial political issues. For example, a study by Lakoff and Johnson (1999) found that using a phyllophagous metaphor (a metaphor that is vulnerable to attack) to describe immigrants would lead to protectionist attitudes toward immigrants.

To test this idea, researchers contaminated the environment with phyllophagous metaphors (all the United States' expression of an unprecise expression unprecisely concerns with grants if the contamination was framed as a game).

Finding by which the social cognition on knowledge (Greenstock & Keefer, 2007) stock market

everyday communications. In the next messages can powerfully change people's

fluence Attitudes,

Mutikani, 2011), the U.S. economy is has not yet "fallen off a cliff." Many despite the fact that they do not make ot literally struggle against headwinds, is is an example of a *metaphoric message* ally by means of words, phrases, and lly unrelated, more concrete concept. zine editorials, political speeches) sur- issues as terrorism (Kruglanski et al., var (Lakoff, 1991; for detailed qualita- isolf & Zinken, 2009).

urse raises an important question: Are s ornamental figures of speech, or does hink, feel, and act? Metaphor theorists can activate in the recipient's mind an oncrete concept and the abstract con- hich metaphors in persuasive commu- to an MM comparing even one aspect ment of a concrete concept (i.e., one a cascade of other associations entailed pients will use their knowledge of the aspects of the abstract concept—even *inal communication*.

on TV that a military engagement in g an element of military conflict to an , this MM may activate related associa- and *games*. In this way, the message can other aspects of the war. For instance, , the party with the most points wins, l States' invasion of Afghanistan was a U.S. military accrued more "points" stance, even though the original com- constitutes a successful military opera- e to another concrete concept, such as terms, recipients may be less likely to ntifiable terms.

This account leads us to expect that situational exposure to a MM will produce metaphor-consistent changes in people's construal of abstract social concepts, even if they are not consciously aware of using metaphor. To examine this possibility, Morris, Sheldon, Ames, and Young (2007) asked participants to read commentaries comparing stock market trends to living agents (e.g., "This afternoon the NASDAQ started *climbing* upward") or inanimate objects (e.g., "This afternoon the NASDAQ was *swept* upward"). Participants were then asked to predict what would happen to the price trends the next day. Morris and colleagues reasoned that because people generally know that living things move with intention toward destinations, participants exposed to agent-metaphoric message would infer that the price trends would continue along their current trajectory the following day, whereas those exposed to an object-metaphoric message would not make this inference. This is exactly what they found.

Other studies show that even brief exposure to an MM prompts people to transfer attitudes from the message's concrete idea to its target issue, thereby influencing attitudes that would appear to be deeply entrenched. Consider the controversial issue of immigration. This is a complex issue layered with nuanced political and economic considerations, but that is not how many people represent it. Instead, immigration discourse is often framed in terms of foreign agents entering a physical body (O'Brien, 2003). One common belief about bodies is that they are vulnerable to contaminating foreign agents such as viruses. Therefore, exposure to this metaphoric portrayal may prompt people to transfer their motivation to protect their own bodies from contamination to feel heightened concern over immigrants entering their nation.

To test this possibility, Landau, Sullivan, and Greenberg (2009) manipulated contamination concern by priming participants to view airborne bacteria in their environment as either harmful to their physical health or innocuous. Participants (all American citizens) then read an ostensibly unrelated essay describing the United States. For half of the participants, the essay contained metaphoric expressions comparing the United States to a body (e.g., "The U.S. experienced an unprecedented *growth spurt*"); for the other participants, those metaphoric expressions were replaced with literal paraphrases (e.g., "The U.S. experienced an unprecedented *period of innovation*"). As expected, heightening participants' concerns with bodily contamination led them to express more hostility toward immigrants if they were primed to think of their nation as a physical body; in contrast, contamination threat did not influence immigration attitudes when the nation was framed in nonmetaphoric terms.

Findings like these advance our understanding of the cognitive mechanisms by which the situation creates change in the person. Mainstream perspectives in social cognition assume that people base their attitudes toward a social stimulus on knowledge structures that have a relatively obvious bearing on that stimulus (Greenwald, Brock, & Ostrom, 1968). For example, people's beliefs about the *stock market* are assumed to be based merely on accumulated knowledge about

the stock market. Metaphor research goes further to show that people's attitudes about abstract concepts can be systematically structured by their knowledge of *superficially unrelated types of stimuli*. Although the *stock market* and a *moving agent* may share few superficial similarities, people access knowledge about agents to interpret and evaluate analogous aspects of the stock market.

In fact, studies are beginning to show that MM exposure has the power to influence not only attitudes (which, after all, are known to be relatively responsive to situational factors) but also outcomes that are thought to be stable across situations.

Consider academic motivation. Students desire school success but often fail to prioritize coursework, take advantage of tutoring and other support services, or put their best effort into academic tasks (Hu & Kuh, 2002). We could attribute this lukewarm motivation to something intrinsic to students themselves: a dispositional apathy, perhaps, or a generational syndrome of entitlement. Yet such a facile conclusion cannot account for evidence that even brief interventions can motivate students to achieve their academic goals.

One such intervention is to have students visualize their *possible academic identity*—an image of an academically successful self in the future. But fantasizing a possible identity alone does not always yield higher motivation or better performance. Rather, people take action to attain possible identities that feel strongly connected to a current identity, but not when that felt connection is absent (Oyserman, Bybee, & Terry, 2006). How, then, can we create situations that boost this sense of identity connection?

Identities and the relations among them are abstract concepts that are difficult to comprehend, and students may find it helpful to conceptualize them metaphorically. The *journey* metaphor, in particular, may help students to concretely visualize identity connection because it frames goal-directed action in terms of the familiar experience of moving forward along a physical path toward a destination. We (Landau, Oyserman, Keefer, & Smith, 2013) recently tested this possibility. We hypothesized that if college freshmen were asked to imagine themselves as academically accomplished college graduates and then to visualize that academic possible identity metaphorically as a destination on the "path" of their college careers, they would show increased engagement with academic activities.

Accordingly, this "journey" prime increased students' intentions to excel, their interest in academic support services, and their effort on academic tasks. In fact, this prime predicted better performance on a final exam 1 week later. Also supporting predictions, the motivating effect of priming the *journey* metaphor was mediated by students' perceived connection between their current and possible identities, suggesting that the prime prompted students to apply their knowledge of progressive motion along a path to grasp the relationship between the student they are now and the accomplished student they imagine themselves being at graduation.

In addition to academic outcomes, the effects of MM exposure extend to psychotherapeutic outcomes. There is also a long history of theoretical discussion on the use of metaphor in the context of therapy to allow individuals to better

understar
1995; Lo
clients' gr
as a *darkn*

Resear
eficial and
McMulle
ful clients
others") r
therapeut
unity and
to metapl
myself"; N

Therap
also how,
In one stu
from there
metaphori
shoulders, a
more likely
metaphori
ure 11.1. /
knowledge
to highlight
the mappir

In sum,
the effectiv
and positiv
ment, it off
change in t

Practical

The picture
situation, er
the person's
believed to
are some pr.

As we n
about practi
sumer adve.
(Gibbs, 2008
can prompt

her to show that people's attitudes structured by their knowledge of the *stock market* and a *moving agent* access knowledge about agents to stock market.

Research inspired by this idea finds, however, that not all metaphors are beneficial and that specific MMs are more or less helpful in the therapeutic context. McMullen and Conway (1994) found in an analysis of 21 cases that more successful clients embraced metaphors of themselves that were active (e.g., "I stood up to others") rather than passive (e.g., "I'm a doormat"). Similarly, clients show better therapeutic outcomes if they think about themselves using metaphors suggesting unity and coherence (even if jeopardized; e.g., "I lost a piece of myself") compared to metaphors suggesting displacement (e.g., "I don't really know how to find myself"; McMullen & Conway, 1996).

Therapeutic outcomes depend not only on *which* metaphor clients use but also how broadly they apply a given metaphor to conceptualize their situation. In one study (Levitt, Korman, & Angus, 2000), depressed clients who benefitted from therapy were just as likely as those who did not benefit to frame depression metaphorically as a physical weight or a burden ("I'm carrying this sadness on my shoulders, and it's dragging me down"). However, the successful clients were relatively more likely to view the process of therapy as an act of removing or unloading the metaphoric weight of depression. We can interpret this finding by looking at Figure 11.1. All of the clients mapped the abstract concept *depression* onto concrete knowledge of burdens; but whereas the successful clients extended that mapping to highlight the goal of therapy, that element of depression was not highlighted in the mapping used by unsuccessful clients.

In sum, studies show that exposure to MMs can play a powerful role in shaping the effectiveness of academic and therapeutic interventions to create meaningful and positive changes. Although this line of research is at an early stage of development, it offers a promising direction for investigating metaphor's role in creating change in the person.

Practical Implications

The picture emerging from metaphor research is clear: Within the person's current situation, embodied experiences and exposure to MMs can significantly influence the person's thinking and behavior and can even change outcomes that are widely believed to be internal to the person and unaffected by his or her context. What are some practical implications of this discovery?

As we noted, MMs are commonly used in public discourse to communicate about practically important topics. They can be found in campaign slogans, consumer advertisements, news reports, educational materials, and the courtroom (Gibbs, 2008). We reviewed evidence that even brief exposures to such messages can prompt recipients to recruit their knowledge of a concrete concept to interpret

and evaluate an abstract concept, even though the two concepts are unrelated at a surface level. This suggests that these widespread communications have powerful but largely unrecognized consequences for how people make judgments and decisions about practically important matters.

Research also suggests that, through the unconscious use of metaphor, people rely on their current bodily experiences to form attitudes and make decisions about pressing issues. Given the relatively subtle procedures that researchers have used to prime embodied experiences (e.g., holding warm coffee, being in a dirty office), physical ecology may play an underappreciated role in creating situational variability in people's thoughts and beliefs as they move from one physical setting to another. We can imagine, for instance, a person at the polls voting for tougher immigration policy based partly on bodily contamination concerns elicited by the funny-smelling tuna sandwich they just ate.

In short, MM exposure and embodied experiences can bias people's attitudes toward abstract issues by leading them to base their attitudes on knowledge of familiar concrete concepts, without due consideration of the unique properties and features of the abstract issues. The practical implication is that interventions designed to reduce bias in attitudes should pay particular attention to the metaphors individuals and groups use to frame discourse as well as individuals' physical ecology.

Indeed, although we have been stressing metaphor's contribution to ideological changeability, another practical consideration is that metaphor can create *stability* in attitudes, perceptions, and even one's lifestyle. That is because metaphor transfers not only bits of knowledge from a concrete concept to an abstract concept; it can also transfer the sheer *self-evident nature* of one's knowledge about the concrete concept. When people use that concrete knowledge as a framework for making sense of an abstract issue, they may be equally confident that their beliefs and attitudes toward that issue are correct.

To illustrate, it is obviously true that an infant requires constant care to survive and thrive. So what happens when people encounter a message that metaphorically frames the handling of the national economy in terms of infant care? We've already discussed the possibility that they'll transfer knowledge of infant care to make sense of the economy, perhaps forming the attitude that the economy needs federal regulation to operate properly. Here we are adding a more subtle point: that the beliefs and attitudes they form about the economy using that metaphor will feel just as obvious, just as self-evident, as their beliefs and attitudes about what infants need to survive. This presents a paradox to consider when applying metaphor research to understand attitudes and attitude change: Metaphor can play a role at both ends of the continuum of ideological malleability, promoting change but, once in place, infusing attitudes with a subjective confidence that makes that highly resistant to change.

Directions for Future Research on Metaphor and Change

The study of metaphor's contribution to personal and collective change is in its earliest stages, and there are many questions that remain to be addressed.

Mallec

Future
consider
ing the
have ass
interpre
This ass
tor func
which v
Still, psy
subject t
Postman
contextu

For e:
directed
course of
although
sally, ther
knowledg
residence
terparts t
may expe
physical e
journeys a
may view

The re
unrecogni
efficient u
that urban
could easi
rior, indus
abstract cc

The up
when peop
exhibit diff
metaphor.
dents prim
will prepar
on it, while
quickly, but

The role
nation for
occupy sim:

Malleability of Concrete Concepts

Future research could explore the full extent of metaphor-mediated change by considering variability in knowledge about concrete concepts. To clarify, following the lead of CMT and the emerging experimental literature it has inspired, we have assumed that while abstract concepts are ambiguous and open to multiple interpretations, everyone has more or less the same knowledge of source concepts. This assumption is plausible because many aspects of our bodies and sensorimotor functioning are shared universally (e.g., we all generally face the direction in which we move; we experience warmth through physical contact with others). Still, psychologists have long known that even "concrete" bodily experiences are subject to social and cultural influence (e.g., Bruner & Goodman, 1947; Bruner & Postman, 1948). Thus, there may be room in metaphor research for even more contextual variability than has been examined thus far.

For example, metaphor theorists propose that knowledge of journeys—goal-directed motion along a path—is used to metaphorically conceptualize the time-course of goal pursuits, such as romantic relationships and business ventures. Yet although some aspects of movement along a path may be experienced universally, there are certainly important cultural and individual differences in people's knowledge of journeys. For example, individuals raised in rural settings, in which residences are located far apart, may be more likely than their urban-raised counterparts to expect journeys to require sustained effort, while urban individuals may expect journeys to be relatively more dangerous or unpleasant. Aside from physical ecology, experience with transportation technology likely changes how journeys are understood. Individuals with ready access to cars, trains, and airplanes may view journeys as relatively common.

The role of physical ecology in shaping concrete concepts also illustrates the unrecognized importance of physical design for abstract cognition. For example, efficient urban design that eases travel may attenuate any aversive associations that urban residents are likely to develop toward journeys. And these insights could easily be extended to architecture and other forms of design (e.g., interior, industrial) that may change source knowledge and, thereby, corresponding abstract concepts.

The upshot of this variability in representations of concrete concepts is that, when people apply these concepts to make sense of abstract concepts, they may exhibit different patterns of belief, attitudes, and behavior, despite using the "same" metaphor. Returning to our journey example, we might expect that, among students primed to view a class assignment as a journey, those raised in rural settings will prepare to put significant effort into the assignment and to spend a long time on it, while their peers from the big city will anticipate completing the assignment quickly, but not without significant stress.

The role of environment in shaping source knowledge also offers one explanation for group differences in cognition. To the extent that group members occupy similar geographic and cultural environments, their knowledge of concrete

ough the two concepts are unrelated at a despread communications have powerful or how people make judgments and decisions.

the unconscious use of metaphor, people es to form attitudes and make decisions ly subtle procedures that researchers have g., holding warm coffee, being in a dirty derappreciated role in creating situational s as they move from one physical setting e, a person at the polls voting for tougher ly contamination concerns elicited by the ate.

ed experiences can bias people's attitudes base their attitudes on knowledge of famil-deration of the unique properties and fea-mplication is that interventions designed to ular attention to the metaphors individuals l as individuals' physical ecology.

ing metaphor's contribution to ideological ration is that metaphor can create *stability* lifestyle. That is because metaphor trans-concrete concept to an abstract concept; it ure of one's knowledge about the concrete te knowledge as a framework for making qually confident that their beliefs and atti-

an infant requires constant care to survive le encounter a message that metaphorically omy in terms of infant care? We've already fer knowledge of infant care to make sense tude that the economy needs federal regula-ling a more subtle point: that the beliefs and using that metaphor will feel just as obvious, ttitudes about what infants need to survive. n applying metaphor research to understand an play a role at both ends of the continuum hange but, once in place, infusing attitudes that highly resistant to change.

on Metaphor and Change

to personal and collective change is in its tions that remain to be addressed.

concepts will inevitably be more similar than that between individuals in different groups. Thus, by informing the metaphors people use, different physical environments may perpetuate different understandings of important abstract concepts, including those that play a role in seemingly intractable intergroup conflict (e.g., religious or moral ideals).

Another potential source of variation in concrete concepts is change in metaphorically associated abstract concepts. Metaphor research shows that not only do cues in the immediate environment change how people reason about abstract targets, but thinking about abstract targets also influences perceptions of the environment. For example, people often think about social belonging in temperature-metaphoric terms (e.g., "a warm welcome"). Accordingly, Zhong and Leonardelli (2008) found that participants primed with social rejection (compared to inclusion) actually felt that the room they were in was physically colder.

Such effects could reciprocally influence social perception. For example, primed loneliness may change the sensory experience of physical temperature, and this sensory change may subsequently affect abstract thought in the same or other dimensions (e.g., reducing perceptions of a target's friendliness; Williams & Bargh, 2008). Future research should examine how such dynamic relations between metaphor use and conceptions of the physical world contribute to personal and collective change.

Motivation to Use (and Reject) Metaphor

Future research should also address the situational motives that may moderate when and how people use metaphor. According to CMT, metaphor functions to reduce uncertainty about abstract concepts. Accordingly, initial studies show that MM exposure shapes perceptions when people feel uncertain about the target abstract concept, but not when they have a firm grasp on it (Keefer, Landau, Sullivan, & Rothschild, 2011). Still, many issues remain to be studied. For one, we do not yet know whether the motive to reduce uncertainty moderates the effect of embodied experiences on processing of abstract, metaphorically linked concepts. Future studies addressing this issue can examine the interaction between embodied primes and situationally induced motivation to seek and prefer clear, confident knowledge over ambiguity and confusion (for relevant experimental procedures, see Kruglanski, 2004).

Future research can also look beyond the motive to reduce general uncertainty to examine the motive to maintain specific beliefs and attitudes. We know from social cognition research that schema use is heavily influenced by this motive: Schemas are most likely to be activated and applied to interpret the present situation when they accord with one's worldview (e.g., the confirmation bias; Kruglanski, 2004). We would expect people to be similarly motivated to adopt metaphors that accord with their existing beliefs and attitudes while rejecting metaphors that threaten cherished ideals.

Long-Term

Finally, v
diate ch
metapho
using ce
len & C
endures
et al., 20
manipu
ments a
not only
the situ.

On
metaph
riences
for abs
ence co
Crawfc
shape t
tion. V
dued u

On
edge, i
certain
(Figure
their s
for bo
metaph
beyond
term c
Fur
the po
how p

Ackn

This r
under

Refer

Asch,
cho

Long-Term Change

Finally, while there is considerable evidence that metaphor use contributes to immediate changes in thought and behavior, there have been few attempts to examine metaphor's long-term effects. Clinical practitioners have reported the effectiveness of using certain metaphors at least over the course of therapy (e.g., Kopp, 1995; McMullen & Conway, 1994), but we lack conclusive evidence that metaphor-induced change endures. The aforementioned studies on academic motivation (Landau, Oyserman et al., 2013) show that MM exposure predicts behavior at least 1 week following the manipulation, but this evidence is preliminary at best. More refined methods (experiments and longitudinal designs) must be brought to bear on this question to address not only the length of time that an activated metaphor affects the individual but also the situational factors that may prolong or diminish this effect.

On the one hand, there are good reasons to think that the effects of any given metaphoric cue or framing may be somewhat ephemeral. New embodied experiences are commonplace, as is exposure to new and even competing metaphors for abstract social concepts. Prior research shows that primed metaphors influence cognition even after very brief exposure (250 milliseconds; Meier, Robinson, Crawford, & Ahlvers, 2007), suggesting that this stream of metaphoric cues may shape thought and behavior even with minimal conscious awareness or recognition. We might expect the effect of any given metaphor cue to be quickly subdued under a torrent of new cues.

On the other hand, because metaphor can be used to actively structure knowledge, its effects may persist indirectly by influencing how people respond to certain situations. For example, if one used the metaphor that *love is a journey* (Figure 11.2), they may find it easier to work through a particular conflict with their significant other, thereby resulting in long-term positive consequences for both them and their partner that might not have been possible without the metaphor. Even if the effect of a given embodied cue or MM may not extend beyond a given situation, that momentary change could have meaningful long-term consequences.

Further research along these lines will illuminate metaphor's role in mediating the power of the situation and ultimately contribute to a full scientific picture of how people change and adapt to a social world in continual flux.

Acknowledgments

This material is based upon work supported by the National Science Foundation under Grant Number BCS-1222047.

References

- Asch, S. E. (1946). Forming impressions of personality. *Journal of Abnormal and Social Psychology*, 41, 258-290.

- Bargh, J. (2006). What have we been priming all these years? On the development, mechanisms, and ecology of nonconscious social behavior. *European Journal of Social Psychology*, 36, 147-168.
- Barsalou, L. W. (2008). Grounded cognition. *Annual Review of Psychology*, 59, 617-645.
- Bloom, P. (2011). Family, community, trolley problems, and the crisis in moral psychology. *Yale Review*, 99, 26-43.
- Bruner, J. S., & Goodman, C. C. (1947). Value and need as organizing factors in perception. *Journal of Abnormal and Social Psychology*, 42, 33-44.
- Bruner, J. S., & Postman, L. (1948). Symbolic value as an organizing factor in perception. *Journal of Social Psychology*, 27, 203-208.
- Charteris-Black, J. (2011). *Politics and rhetoric: The persuasive power of metaphor* (2nd ed.). New York: Palgrave Macmillan.
- Fiske, S. T., Cuddy, A. J. C., & Glick, P. (2007). Universal dimensions of social perception: Warmth and competence. *Trends in Cognitive Science*, 11, 77-83.
- Fiske, S. T., & Taylor, S. E. (1991). *Social cognition*. New York: Random House.
- Geary, J. (2011). *I is an other*. New York: HarperCollins.
- Gibbs, R. W. (1994). *The poetics of mind: Figurative thought, language, and understanding*. Cambridge: Cambridge University Press.
- Gibbs, R. W. (2008). *The Cambridge handbook of metaphor and thought*. New York: Cambridge University Press.
- Greenwald, A. G., Brock, T. C., & Ostrom, T. M. (1968). *Psychological foundations of attitudes*. New York: Academic Press.
- Higgins, E. T., Rholes, W. S., & Jones, C. R. (1977). Category accessibility and impression formation. *Journal of Experimental Social Psychology*, 13, 141-154.
- Hu, S., & Kuh, G. D. (2002). Being (dis)engaged in educationally purposeful activities: The influences of student and institutional characteristics. *Research in Higher Education*, 43, 555-575.
- Keefer, L., Landau, M. J., Rothschild, Z., & Sullivan, D. (2011). Exploring metaphor's epistemic function: Uncertainty moderates metaphor-consistent priming effects on social perceptions. *Journal of Experimental Social Psychology*, 47, 657-660.
- Kopp, R. R. (1995). *Metaphor therapy: Using client-generated metaphors in psychotherapy*. New York: Brunner-Routledge.
- Kövecses, Z. (2010). *Metaphor: A practical introduction*. New York: Oxford University Press.
- Kruglanski, A. W. (2004). *The psychology of closed mindedness*. New York: Taylor & Francis.
- Kruglanski, A. W., Crenshaw, M., Post, J. M., & Victoroff, J. (2007). What should this fight be called? Metaphors of counterterrorism and their implications. *Psychological Science in the Public Interest*, 8, 97-133.
- Lakoff, G. (1991). Metaphor and war: The metaphor system used to justify war in the Gulf. In B. Hallet (Ed.), *Engulfed in war: Just war and the Persian Gulf* (pp. 95-111). Honolulu, HI: Matsunaga Institute for Peace.
- Lakoff, G. (2004). *Don't think of an elephant: Know your values and frame the debate*. White River Junction, VT: Chelsea Green Publishing.
- Lakoff, G., & Johnson, M. (1980). *Metaphors we live by*. Chicago, IL: University of Chicago Press.
- Landau, M. J., Meier, B. P., & Keefer, L. A. (2010). A metaphor-enriched social cognition. *Psychological Bulletin*, 136, 1045-1067.
- Landau, M. J. *journey met*
script unde
- Landau, M. J. *influence on*
- Landau, M. J. *and metap*
Science, 20,
- Lee, S. W. S., & *moral-puri*
sion. *Psych*
- Lee, S. W. S., & *physical cl*
- Levitt, H., Kor *Metaphor*
- Loue, S. (2008 *McCrae, R. I*
A. Pervin
139-153).
- McMullen, L. *expression:*
- McMullen, L. *psychothe*
tions (pp. 5
- Meier, B. P., *N*
ences and
of Personali
- Meier, B. P., R *"dark" the*
Emotion, 7
- Morris, M. W *market: Co*
commenta
- Musolff, A., & *Mutikani, L.* (
O'Brien, G. **
phors of it
- Metaphor a*
- Oyserman, D. *and why*
188-204.
- Schnall, S., H: *judgment.*
- Slepian, M. L. *Psychology.*
- Slepian, M. I *Shedding*
46, 696-7

- all these years? On the development, mechanism, and the crisis in moral psychology. *European Journal of Social Psychology*, 39, 617-645.
- problems, and the crisis in moral psychology. *Annual Review of Psychology*, 59, 617-645.
- and need as organizing factors in perception. *Journal of Experimental Psychology*, 42, 33-44.
- value as an organizing factor in perception. *Journal of Experimental Psychology*, 42, 33-44.
- :: *The persuasive power of metaphor* (2nd ed.). New York: Random House.
- . Universal dimensions of social perception: *Psychological Science*, 11, 77-83.
- ion. New York: Random House.
- perCollins. *Metaphors we live by*. Cambridge, MA: Harvard University Press.
- of metaphor and thought. New York: Cambridge University Press.
- M. (1968). *Psychological foundations of attitudes*. New York: Random House.
- (1977). Category accessibility and impression formation. *Journal of Experimental Psychology*, 13, 141-154.
- ged in educationally purposeful activities: The characteristics. *Research in Higher Education*, 43, 1-15.
- sullivan, D. (2011). Exploring metaphor's episodic effects on social priming. *Journal of Experimental Psychology*, 47, 657-660.
- client-generated metaphors in psychotherapy. New York: Oxford University Press.
- of closed mindedness. New York: Taylor & Francis.
- & Victoroff, J. (2007). What should this fight be about? Metaphors and their implications. *Psychological Science in the Public Interest*, 8, 1-11.
- metaphor system used to justify war in the Gulf. *Journal of Experimental Psychology*, 47, 657-660.
- war and the Persian Gulf (pp. 95-111). Honolulu, HI: University of Hawaii Press.
- it: *Know your values and frame the debate*. White Plains, NY: John Wiley & Sons.
- rs we live by. Chicago, IL: University of Chicago Press.
- (2010). A metaphor-enriched social cognition. *Journal of Experimental Psychology*, 46, 696-700.
- Landau, M. J., Oyserman, D., Keefer, L. A., & Smith, G. C. (2013). *On the road: Using the journey metaphor to represent a possible academic identity increases academic motivation*. Manuscript under review.
- Landau, M. J., Robinson, M. D., & Meier, B. P. (2013). *The power of metaphor: Examining its influence on social life*. Washington, DC: APA Press.
- Landau, M. J., Sullivan, D., & Greenberg, J. (2009). Evidence that self-relevant motives and metaphoric framing interact to influence political and social attitudes. *Psychological Science*, 20, 1421-1427.
- Lee, S.W.S., & Schwarz, N. (2010). Dirty hands and dirty mouths: Embodiment of the moral-purity metaphor is specific to the motor modality involved in moral transgression. *Psychological Science*, 21, 1423-1425.
- Lee, S.W.S., & Schwarz, N. (2011). Wiping the slate clean: Psychological consequences of physical cleansing. *Current Directions in Psychological Science*, 20, 307-311.
- Levitt, H., Korman, Y., & Angus, L. (2000). A metaphor analysis in treatments of depression: Metaphor as a marker of change. *Counseling Psychology Quarterly*, 13, 23-35.
- Loue, S. (2008). *The transformative power of metaphor in therapy*. New York: Springer.
- McCrae, R. R., & Costa Jr., P. T. (1999). A five-factor theory of personality. In L. A. Pervin & O. P. John (Eds.), *Handbook of personality: Theory and research* (2nd ed., pp. 139-153). New York: Guilford Press.
- McMullen, L. M., & Conway, J. B. (1994). Dominance and nurturance in the figurative expressions of psychotherapy clients. *Psychotherapy Research*, 4, 43-57.
- McMullen, L. M., & Conway, J. B. (1996). Conceptualizing the figurative expressions of psychotherapy clients. In J. S. Mio & A. Katz (Eds.), *Metaphor: Implications and applications* (pp. 59-71). Mahwah, NJ: Lawrence Erlbaum.
- Meier, B. P., Moeller, S. K., Riemer-Peltz, M., & Robinson, M. D. (2012). Sweet taste preferences and experiences predict prosocial inferences, personalities, and behaviors. *Journal of Personality and Social Psychology*, 102, 163-174.
- Meier, B. P., Robinson, M. D., Crawford, L. E., & Ahlvers, W. J. (2007). When "light" and "dark" thoughts become light and dark responses: Affect biases brightness judgments. *Emotion*, 7, 366-376.
- Morris, M. W., Sheldon, O. J., Ames, D. R., & Young, M. J. (2007). Metaphors and the market: Consequences and preconditions of agent and object metaphors in stock market commentary. *Organizational Behavior and Human Decision Processes*, 102, 174-192.
- Musolff, A., & Zinken, J. (2009). *Metaphor and discourse*. New York: Palgrave Macmillan.
- Mutikani, L. (September 2, 2011). *Job growth stalls, fuels recession fears*. www.reuters.com.
- O'Brien, G. V. (2003). Indigestible food, conquering hordes, and waste materials: Metaphors of immigrants and the early immigration restriction debate in the United States. *Metaphor and Symbol*, 18, 33-47.
- Oyserman, D., Bybee, D., & Terry, K. (2006). Possible selves and academic outcomes: How and why possible selves impel action. *Journal of Personality and Social Psychology*, 91, 188-204.
- Schnall, S., Haidt, J., Clore, G. L., & Jordan, A. H. (2008). Disgust as an embodied moral judgment. *Personality and Social Psychology Bulletin*, 34, 1096-1109.
- Slepian, M. L., & Ambady, N. (2012). Fluid movement and creativity. *Journal of Experimental Psychology: General*, 141, 625-629.
- Slepian, M. L., Weisbuch, M., Rutchick, A. M., Newman, L. S., & Ambady, N. (2010). Shedding light on insight: Priming bright ideas. *Journal of Experimental Social Psychology*, 46, 696-700.

- Williams, L. E., & Bargh, J. A. (2008). Experiencing physical warmth influences interpersonal warmth. *Science*, 322, 606–607.
- Zarkadi, T., & Schnall, S. (2013). “Black and white” thinking: Visual contrast polarizes moral judgment. *Journal of Experimental Social Psychology*, 49, 355–359.
- Zhong, C. B., & Leonardelli, G. J. (2008). Cold and lonely: Does social exclusion literally feel cold? *Psychological Science*, 19, 838–842.
- Zhong, C. B., & Liljenquist, K. A. (2006). Washing away your sins: Threatened morality and physical cleansing. *Science*, 313, 1451–1452.

12

PROSOC PERSON

Lara B. Akn.

The pursuit of Americans indi during their lif piness (Wood, on how people and airports, c achieving hap new, interest in (SWB)—has t Thousands of tent, healthy, p famously dec able” right in

While the happiness ca Aristotle and ous life that : Oishi et al., 2 hundreds of government: you must ce has painted Lykken and futile as tryi cluding tha variation.