

This Is Like That: Metaphors in Public Discourse Shape Attitudes

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Abstract

A metaphoric framing is a message comparing an abstract concept (e.g., the economy) to a dissimilar concept that is more concrete and easier to comprehend (e.g., a vehicle). Metaphoric framings are commonly used in public discourse (e.g., magazine editorials, political campaign advertisements) to communicate about controversial sociopolitical issues. These messages are not mere figures of speech. Mounting evidence shows that even brief exposure to a metaphoric framing can prompt observers to transfer their knowledge of the metaphor's concrete concept to interpret analogous features of the target issue, even though the two concepts are superficially quite different. This article reviews this evidence, demonstrating that the metaphors pervading everyday communication uniquely shape how people think and feel about a host of important issues. The authors draw on theories of motivated social cognition to chart avenues for future research on the situational factors that moderate metaphor's impact on attitudes.

Your long-awaited DVD arrives in the mail, and you pop it in the player for a much-deserved break. But not so fast. The powers that be insist that you first gain a lesson in the legality of downloading movies off the Internet. The words “You wouldn’t steal a car” appear on the screen, followed by a dramatic reenactment of a car theft. Then “You wouldn’t steal a purse”. After reminding you of other objects you presumably do not intend to steal, the message concludes: “Downloading pirated films is stealing”.

This is an example of a metaphoric framing: a message that compares an abstract “target” concept to a superficially unrelated “source” concept that is more concrete and easier to grasp. On the surface, downloading a pirated film and snatching a woman’s purse differ in many respects (e.g., the woman is left without the purse, whereas the movie’s owner still “has” the copyrighted content), but the message tries to get you to see them as sharing the same underlying structure.

Even a cursory glance reveals that metaphoric framing pervades public discourse surrounding essentially all important sociopolitical issues. Televised campaign attack advertisements criticize politicians who did not cut back on spending for federal programs by comparing the federal budget to a household budget. Commenting on a proposed oil pipeline that would further reliance on non-renewable energy sources, former Vice President Al Gore said, “Junkies find veins in their toes when their arms and legs go out” (Sheppard, 2013). More systematic observations reveal that metaphoric framings are commonly used in magazine editorials, political speeches, health communications, and other outlets to communicate about such controversial issues as terrorism (Kruglanski, Crenshaw, Post, & Victoroff, 2007), immigration (O’Brien, 2003), war (Lakoff, 1991), cancer (Reisfeld & Wilson, 2004), and civil rights (Charteris-Black, 2011). Metaphoric framing also manifests in images (e.g., political cartoons), rituals, and other communicative modes (Forceville & Urios-Aparisi, 2009).

The ubiquity of metaphoric framing raises an important question: Do observers interpret these messages as mere figures of speech, or does exposure to metaphoric framing influence

how observers think and feel about the target issues? We know from influential theories of persuasion such as the elaboration likelihood model (Petty & Cacioppo, 1986) and the heuristic-systematic model (Chaiken, Wood, & Eagly, 1996) that attitudes can be influenced by peripheral cues – aspects of the communication (e.g., communicator attractiveness) that are irrelevant to the true merits of the position advocated in the message. Metaphor can be understood as a type of peripheral cue because it compares things that are, in a strict literal sense, different. In this way, metaphors might lead people to base their attitudes on knowledge of irrelevant yet familiar concepts, without due consideration of the target issues' unique features.

But unlike other peripheral cues that nudge observers to link the attitude object with positive or negative stimuli in a fairly simple associative fashion, metaphor can guide observers to conceptualize the target *systematically* in terms of the source. For example, the intention behind the anti-piracy announcement is to get you to look past the inherent complexities of copyright law and view movie downloading and property theft as the same type of thing – the type of thing that law-abiding people like you do not do. Because metaphor can appear to undergird the central argument, people may stand by their preferred metaphors even when (or especially when) they believe they are thinking deeply about the information they are exposed to.

These provocative possibilities have recently spurred social psychologists to test the causal impact of metaphoric framing exposure on attitudes. This article selectively reviews this work (for a more comprehensive treatment, see Landau, Robinson, & Meier, 2014). The take-home point emerging from this review is that exposure to metaphoric framings has unique consequences for how people make judgments and decisions about practically important issues. What's more, this emerging research area enhances our theoretical understanding of the cognitive processes that underlie attitudes.

It also points to a new question: Does exposure to a metaphoric framing inevitably influence attitudes? This is unlikely to be the case because people are motivated to interpret information in particular ways. Lay epistemology theory (Kruglanski, 1989), a broad perspective on motivated social cognition, identifies three epistemic motives that guide information processing: to be certain, consistent with prior attitudes, or accurate. In a later section, we will see how this perspective suggests several hypotheses concerning situational moderators of metaphoric framing effects. Many of these hypotheses can be profitably explored in future research.

Metaphor as a Conceptual Mapping

To understand how metaphoric framing can influence attitudes, we need to step back and see how metaphor operates at a cognitive level. Our starting point is conceptual metaphor theory's claim that metaphor is not merely a communication device. Instead, it is a cognitive tool that people can use to understand an abstract or complex target in terms of a dissimilar source (Kövecses, 2010; Lakoff & Johnson, 1980). Source concepts are more concrete and familiar. Many source concepts derive from familiar sensorimotor experiences such as losing one's balance, firmly grasping objects, moving toward destinations, and avoiding physical filth. Others represent stereotyped cultural knowledge (e.g., how buildings are constructed; how computers work; the rules of chess).

But what does it mean to understand a target *in terms* of a source? Here we come to the key theoretical insight: metaphor creates a conceptual mapping, defined as a set of systematic associations between elements of the target (its features, properties, and relations) and analogous elements of the source. In this way, metaphor use allows people to draw on their knowledge of the source as a framework for understanding and experiencing the target. Consequently, mapping a given target onto one source will highlight (make salient) and downplay (inhibit) some pieces of information, whereas mapping that target onto another source, or thinking about it without metaphor, will support a different interpretation.

By creating a conceptual mapping, metaphor use can help people to understand how the target works – that is, what its features are and how they relate to one another. Imagine that a child learns to think about the atom in terms of the solar system: the nucleus of the atom is orbited by electrons just as planets revolve around the sun. This metaphor downplays surface-level differences between these ideas (e.g., electrons are smaller than planets) and highlights their common relation: *small object revolving around a larger object*. This allows the child to use a well-learned schema about the solar system to construct a coherent understanding of a less familiar target. Of course, metaphor use does not guarantee accurate knowledge. The child in this example might erroneously infer that because planets closer to the sun are hotter, electrons in closer orbit to the nucleus are hotter than those far away.

Metaphor use also helps people to think through abstract problems and their potential solutions. When a problem is vague, abstract, complicated, or poorly defined, people may not be sure what actions are available, the various possible outcomes of those actions, or how to weigh the costs and benefits of different options. Metaphor use allows people to use knowledge of a familiar scenario to reason about possible actions to take in the target situation, what goals to take into account, and how to forecast the potential effects of their actions. Because each metaphoric mapping highlights and downplays select features of a target, using different metaphors for the same target problem can orient people toward different solutions. To illustrate, conceptualizing the national drug problem in terms of war (“*combat cocaine use*”) should promote a hostile strategy of aggressing against those who use and distribute illegal drugs. Alternatively, thinking about the drug problem in terms of a cancer spreading through the population should downplay hostile approaches and even promote efforts to “cure” those whose lives are negatively impacted by drugs.

Supporting this analysis, studies in cognitive psychology show that explicitly provided metaphors prompt people to transfer source knowledge to interpret a target. In one study (Gick & Holyoak, 1980), participants read a scenario in which an army successfully besieged a well-defended city by splitting up and surrounding it on all sides. They were then asked to solve a medical problem: how to focus enough radiation on a tumor to destroy it without damaging the surrounding tissue. The solution is to pass several weak emissions of radiation from multiple angles so that they converge on the tumor, with no one dose so concentrated to damage the surrounding tissue. Among the participants prompted to think back to the military scenario, 76% generated this solution, whereas only 10% of the control participants did so. Although the scenarios shared few similarities at a surface level, participants were able (with sufficient coaching) to transfer knowledge of the well-known scenario to process analogous features of the uncertain scenario.

Exposure to Metaphoric Framing Influences Attitudes

Social psychological research builds on this work, demonstrating that even brief exposure to a metaphoric framing triggers metaphor use. Metaphoric framing research involves a relatively subtle procedure whereby participants are not explicitly asked to think about the target in terms of the source. The reasoning behind this empirical strategy is that if metaphoric framing activates a metaphor at a conceptual level, it should trigger a cascade of associations entailed by that metaphor’s mapping. This should lead people to transfer their knowledge of the source to interpret analogous features of the target – even those which are not explicit in the original message (for a more detailed discussion of this empirical strategy, see Ottati, Renstrom, & Price, 2014).

An example will help to illustrate this reasoning. Imagine that people hear on TV that a military battle in Afghanistan “upped the ante”. By comparing the conflict to an element of games that require bets, such as poker, this metaphoric framing may activate related associations

between the concepts *war* and *games*, as depicted in Figure 1. In this way, the message can unconsciously guide observers to bring their target attitudes in line with their knowledge of the source. For instance, as people generally know that in games the party with the most points wins, they may infer that the US invasion of Afghanistan was successful insofar as the military accrued more “points” – that is, enemy casualties – than the Taliban resistance, even though the original message did not explicitly describe what constitutes a successful military operation (Boettcher & Cobb, 2006; Lakoff, 1991). If the TV message had framed the battle in terms of another source, such as a chapter in a story, or described it without metaphor, the home audience may be less likely to gauge military success in simple quantifiable terms.

Supporting this reasoning, mounting evidence shows that even brief exposure to a metaphoric framing can prompt people to bring their target attitudes in line with their knowledge of the source to which it is compared. In one such study, Morris, Sheldon, Ames, and Young (2007) asked participants to read stock market commentaries that framed a price trend in terms of either the deliberate action of a living agent (e.g., “the NASDAQ starting *climbing* upward”) or as the activity of an inanimate object (e.g., “the NASDAQ was *swept* upward”). Next, participants predicted what would happen to the price trend the next day. Morris et al. reasoned that because people generally know that living things move with intention toward destinations, the agent-metaphoric framing would lead people to transfer that knowledge to think about the stock market, inferring that the price trend would continue along its current trajectory the following day. In contrast, an object-metaphoric framing would not support that inference because people generally know that inanimate objects do not move with intention. This is exactly what they found.

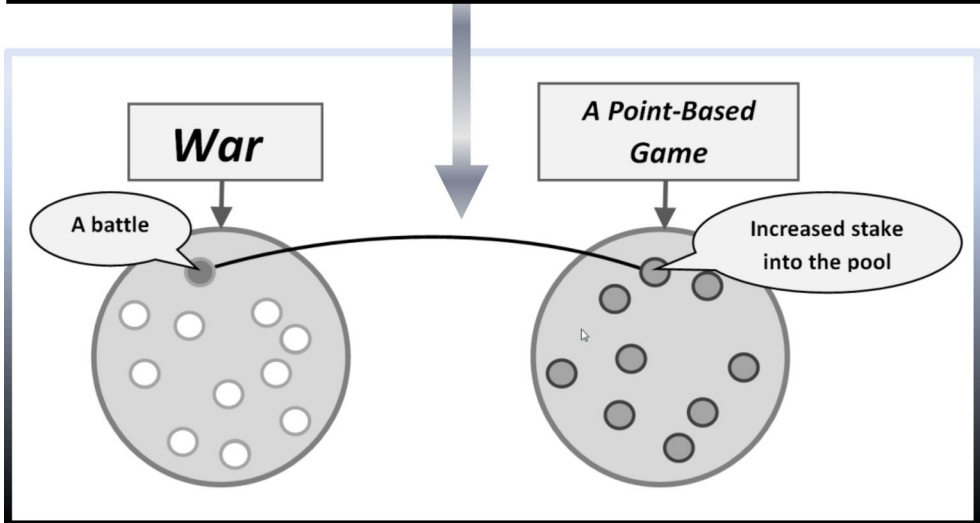
In a related study focused more squarely on target evaluations, Read, Cesa, Jones, and Collins (1990) asked participants to read a passage describing California’s mandatory seat belt legislation. In the metaphoric framing condition, the passage was prefaced by the following statement: “The compulsory seat belt legislation introduced by the state legislature is like having Governor Deukmejian sitting in your bathtub telling you to wash behind your ears”. Participants who read this statement evaluated the legislation more negatively than those who did not.

Yet we might wonder: in Read et al.’s study, did exposure to the bathtub framing lead participants to use their knowledge of physical privacy violations to evaluate seat belt legislation, or did it simply lead them to mentally link seat belt legislation with something else that they find aversive? This question gets at the heart of how metaphors operate at a cognitive level. We’ve proposed that metaphoric framing exposure influences attitudes by activating a conceptual mapping. But an alternative possibility is that metaphoric framing is simply a form of affective priming, whereby people are prompted to assimilate global affective connotations of the source (e.g., disgusting bathtub intrusions) into their evaluations of the target.

We can assess this alternative possibility by manipulating the salience of an evaluatively charged source and then expose only some individuals to a metaphoric framing comparing that source to the target. If metaphoric framing influences attitudes solely by means of affective priming, then juxtaposing an aversive source and a target issue should have a main effect, leading to more negative attitudes toward the target. But if metaphoric framing influences attitudes by activating a mapping that guides observers to think about the target in terms of the source, then priming an aversive source should influence target attitudes only when a salient metaphoric framing compares those concepts.

Landau, Sullivan, and Greenberg (2009) used this strategy to study immigration attitudes. They based their hypotheses on evidence that anti-immigration rhetoric in the early 20th century viewed the nation as analogous to a physical body that is vulnerable to corruption by invading external entities (O’Brien, 2003). Do people occasionally transfer their concern with protecting their *own* bodies from contamination to negatively judge immigrants entering into

Exposure to a metaphoric framing maps a salient feature of the target (e.g., war) onto an analogous feature of the source (e.g., a point-based game).



This can prompt observers to map other target and source features, even at an implicit level of awareness.

In this way, metaphor use systematically influences observers' target attitudes in ways that are consistent with their source knowledge.

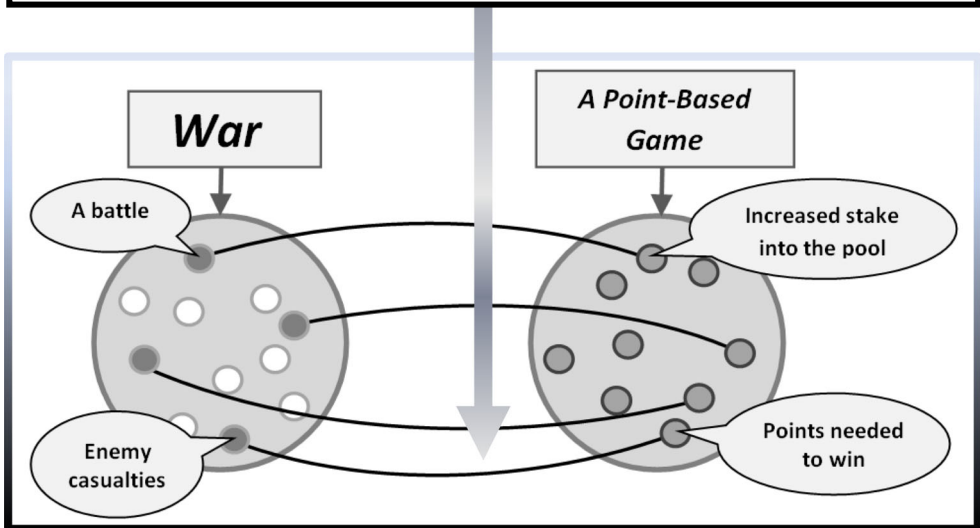


Figure 1. How does a metaphoric framing uniquely influence attitudes toward the target?

their country? To find out, Landau et al. manipulated contamination threat 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. In the metaphoric framing condition, the essay contained statements subtly comparing the US to a body (e.g., the “The US experienced a *growth spurt*”); in the non-metaphoric framing condition, those statements were replaced with literal paraphrases (“The US experienced a *period of innovation*”).

As predicted, heightening participants’ concerns with bodily contamination increased aversion to immigration if they were additionally primed to think of their country as a physical body. In contrast, the mere salience of contamination threat, although globally negative, did not influence immigration attitudes when the nation was framed without a metaphor. For those participants in the non-metaphoric framing condition, there was no meaningful relation between protecting their own body from foreign elements and the abstract issue of immigration. But when a salient bodily metaphoric framing led participants to map those concepts, they transferred yucky feelings about bodily contamination to harshly judge immigration into their country. This finding provides evidence that metaphoric framing effects are mediated by a systematic conceptual mapping between the source and the target, and not by a simple spillover of negative affect from one concept to another.

Earlier in this article we described how metaphors can facilitate abstract problem solving. Relevant studies show, in fact, that even brief exposure to a metaphoric framing can produce metaphor-consistent effects on the ways in which people think through abstract problems. In one study, Gilovich (1981) asked participants to imagine that they were officials at the state department faced with a diplomatic crisis in which a militaristic country was set to invade a weaker country, which was asking for US support. In the materials that some participants received, maps and documents suggested subtle similarities between this hypothetical crisis and prior US military engagements. For one group, the map of the region included labels like the “Gulf of A” as well as other subtle cues (e.g., the President was said to be from Texas) to suggest metaphoric mapping to Vietnam. For another group, cues instead suggested mapping to World War II (e.g., the impending invasion was described as a “Blitzkrieg invasion”). Participants solved this diplomatic scenario very differently depending on which metaphor, if any, was salient. When the materials subtly framed the target scenario as Vietnam, participants were the least supportive of military intervention; by contrast, when the salient framing alluded to WWII, participants supported intervention more than those exposed to Vietnam and non-metaphoric framings.

In addition to influencing the evaluation of candidate solutions, metaphoric framing influences the solutions people generate to address complicated problems. In a series of studies, Thibodeau and Boroditsky (2011) asked participants to think about a city plagued with crime. For some participants, this crime was framed as a “beast” that was “preying upon” the innocent citizens of the town, whereas for other participants it was described as a “disease” that “plagued” the town. Framing crime as a wild animal prompted participants to generate solutions based on increased enforcement (e.g., calling in the National Guard; imposing harsher penalties). In contrast, the virus-metaphoric framing led participants to generate solutions that were diagnostic and reform-oriented (e.g., finding the root cause of the crime wave; improving the economy). In other words, participants generated solutions to the crime problem that were consistent with what they presumably knew about the source concepts: if crime is a beast, it must be “fought”, whereas if it is a disease, it must be “treated”. In fact, Thibodeau and Boroditsky (2011; Study 3) showed that priming the concepts “beast” or “virus” did not, in itself, affect crime-reduction strategies; only when these concepts framed the target problem did they have the predicted effect.

Taken as a whole, these findings enrich our understanding of the cognitive processes underlying attitudes. Social psychologists have traditionally assumed that people base their attitudes toward a social stimulus on knowledge that has a relatively obvious bearing on that stimulus (Greenwald, Brock, & Ostrom, 1968). For example, people's attitudes toward immigration are assumed to be based on their accumulated knowledge about immigration. Despite its intuitive appeal and ample empirical support, this account may be incomplete. Metaphor research offers the complementary insight that people's attitudes toward a social stimulus can be systematically structured by their knowledge of *different types of stimuli*. Although the United States and one's body, for example, share few surface similarities, people may use their knowledge of bodies as a framework for forming attitudes about who should be allowed "in" their country.

Do Metaphors Always Influence Attitudes? Examining the Role of Epistemic Motives

Research has so far assumed that observers exposed to a metaphoric framing inevitably adopt the relevant metaphor and apply it to interpret the target issue. This is unlikely to be the case, and an important next step is to model the factors that moderate metaphoric framing effects.

Cognitive psychologists have already identified some factors constraining people's ability to compare two concepts (Bowdle & Gentner, 2005; Glucksberg & Haught, 2006; Thibodeau & Durgin, 2011). Yet this research focuses on what persuasion researchers refer to as message characteristics, or aspects of the message's content (Hovland, Janis, & Kelley, 1953). For example, people are more likely to accept a metaphoric comparison if the target and the source share many surface features (e.g., comparing the Persian Gulf War to Vietnam: both are military interventions) versus those that are superficially dissimilar (e.g., comparing the Persian Gulf War to an avocado).

A complementary approach is to consider observers' motivation to think about the target issue prior to being exposed to a metaphoric framing. In many real-world contexts where people encounter metaphoric framings (e.g., newspapers), they are not neutral toward the target issues; rather, they seek information for particular purposes. Kruglanski's (1989) theory of lay epistemology identifies three such epistemic motives. Let's consider each motive to see how it might moderate metaphoric framing effects.

Certainty motivation

Also called the need for nonspecific closure, this is the motive to stop the thinking process and grab the first handy judgment or decision, quickly and without extensive effort. By "nonspecific", we mean that the person does not have a strong preference for one conclusion over another; rather, she or he desires any clear understanding as opposed to confusion and ambiguity.

Recall that the function of metaphor is to help people to understand a concept that they otherwise find abstract, complicated, or poorly delineated, and it serves this function by mapping that concept onto something else that they already understand. This suggests that under conditions of high certainty motivation, people should hungrily draw on their source knowledge to gain a confident grasp of the target. But when observers are low in certainty motivation, they should be less likely to employ the metaphor and thus less likely to bring their target attitudes in line with their source knowledge.

Initial support for this possibility comes from a study (Keefer, Landau, Sullivan, & Rothschild, 2011; Study 1) showing that a metaphoric framing influenced self-perceptions only when participants were induced to feel that they did not have a confident grasp of the target. Specifically, participants primed to frame separate episodes from their past as locations along a path (versus without a metaphor) perceived those past experiences as more strongly connected to their

current identity. However, this effect only occurred if participants were initially induced to feel uncertain about their personal identity. Those induced to feel certain about who they are did not rely on the salient journey metaphor to interpret their lives.

A follow-up study by Landau, Keefer, and Rothschild (forthcoming; Study 2) used a metaphoric framing procedure that more closely approximates how such messages are encountered in public discourse. The study examined the conventional metaphor comparing system failure to a vehicle accident, which is reflected in expressions such as “The economy is *veering off course*” and “Our book club is *headed for a ditch*”. The researchers reasoned that because people generally understand that vehicle accidents are the fault of the vehicle’s driver, participants exposed to a single sentence comparing a company’s bankruptcy to a vehicle accident (versus a non-metaphoric framing) would be more likely to heap blame on the company’s former CEO (i.e., the person in the “driver’s seat”), but not on the company’s former employees or the state of the economy at the time. This effect occurred but only if participants were previously induced to feel uncertain about the nature of corporate bankruptcy. If they were instead primed to feel that they already had a firm grasp on bankruptcy, the metaphoric framing had no effect.

The role of certainty motivation has also been demonstrated using more subtle procedures. For example, when evaluating more psychologically distant outcomes, individuals rely on more abstract (i.e., less detailed) processing (Trope & Liberman, 2010). Jia and Smith (2013) reasoned that thinking about a target more abstractly (versus concretely) would therefore increase reliance on metaphor because metaphors provide a sense of certainty lacking in these more abstract construals. Specifically, the authors tested whether these differences in target construal moderate previously established effects of metaphoric framing, including the effects of a bodily framing on immigration attitudes (reviewed above; Landau et al., 2009). This is exactly what they found.

Certainty motivation’s role in moderating metaphoric framing effects lends further intrigue to the issue, introduced earlier in this article, of how to properly situate metaphor’s persuasive influence in the context of influential persuasion theories such as the elaboration likelihood model. On the one hand, metaphors seem to lead people to unconsciously recruit their knowledge of one thing to interpret something that is, strictly speaking, different. Seen in this light, metaphor is a peripheral persuasion cue that is irrelevant to evaluating the target attitude object in its own terms. On the other hand, people gravitate toward metaphors particularly when they desire to gain a confident grasp of the target. That is, although metaphors are technically irrelevant, they may structure understanding of the target so thoroughly that they seem instead to be literal descriptions of the target issue. Therefore, their influence may persist even when people believe that they are thinking carefully about the information they are exposed to.

What’s next? A number of lines of research show that confronting people with broad, existentially threatening realities such as meaninglessness, reduced personal control, and mortality instigate compensatory efforts to seek simple, clear-cut interpretations of social information (Sullivan, Landau, & Kay, 2012). Future research could test whether people respond to such existential threats with compensatory efforts to seek out and defend those metaphors that help them to make sense of the world and their valued place within it.

Consistency motivation

Also called the need for specific closure, this is the desire to understand something in a way that fits well with previously held beliefs and values. Many studies show that people who hold strong attitudes on issues readily accept messages that support those attitudes and reject messages that contradict them (Kruglanski, 2004; Lord, Ross, & Lepper, 1979).

How might metaphor use help people to maintain prior attitudes? Recall that metaphor transfers source knowledge across a conceptual mapping, and in this way it selectively highlights

some of the target's features while downplaying others. In short, metaphor can help preserve prior beliefs and commitments by bringing select features of the target into relief while keeping others in the shadows. To illustrate, a person who supports federal oversight of the national economy may embrace a metaphoric framing of the economy as a vulnerable infant because it transfers their knowledge that infants require constant care to survive.

Based on this reasoning, we expect metaphoric framing to produce source-consistent attitudes when the metaphor supports judgments that fit (versus contradict) observers' prior attitudes toward the target issue. In a preliminary study supporting this possibility (Landau et al., forthcoming; Study 3), participants primed with a vehicle-metaphoric framing of the 2008 financial crisis assigned more blame for the crisis to the economy's single governing institution – the federal government – but not if they previously held the attitude that no single individual or institution is to blame (e.g., because they believe that blame is distributed across many individuals and institutions). This study provides additional evidence that exposure to a metaphoric framing does not inevitably lead observers to interpret the target in terms of the source; instead, this effect is eliminated if that metaphor supports judgments that contradict an observers' prior attitudes.

Accuracy motivation

People desire to gain an accurate understanding of an issue when they believe that a false judgment or a poor decision would have negative repercussions for themselves or others. Does metaphor use satisfy accuracy motivation? Here we encounter dueling intuitions. On the one hand, people who are concerned about an issue's societal impact may reject a metaphor, perceiving it as obscuring the issue's true nature by comparing it to a different type of thing. On the other hand, they may embrace a metaphor because it helps them to reason about the abstract issue in terms of something familiar, concrete, and well known. Indeed education research shows that students seeking to accurately grasp complex concepts are highly receptive to concretizing metaphors (Low, 2008). Some initial evidence shows that metaphoric framing produces source-consistent attitudes among observers with a high (versus low) concern about the target issue's societal impact (Landau et al., forthcoming; Study 4). Still, the role of accuracy motivation deserves more empirical attention.

Practical Implications

We've seen that exposure to metaphoric framings can bias people's attitudes toward major issues by leading them to base their attitudes on knowledge of familiar concrete concepts, without due consideration of the unique attributes of those issues. This might lead people to make bad decisions or misinformed judgments. One practical implication is that interventions designed to reduce bias in attitudes should pay particular attention to the metaphors that individuals and groups use to frame discourse (a project already begun; see exemplary investigations by Kruglanski et al., 2007; Lakoff, 2004). This can be challenging because some metaphors are so conventional that people may not immediately recognize them *as* metaphors – they may interpret them instead as literal descriptions of the issues. For example, the frequently intoned “war against cancer” is, in fact, a metaphor, and as such it may offer a partial or skewed picture of the issues (e.g., in a war there is usually a single enemy, whereas various types of cancer require distinct approaches).

In addition to changing what people believe, metaphor use may create rigidity in attitudes. Metaphor transfers not only bits of knowledge from source to target; it may also transfer the sheer *self-evident* nature of one's knowledge about the source. When people use that familiar 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. This presents a paradox to consider when applying metaphor research to understand attitude change: metaphor can be a powerful spur to attitude change but, once in place, may infuse attitudes with a subjective confidence that makes them highly resistant to change.

Another implication is that metaphor may be an unacknowledged source of conflict in intergroup and interpersonal relationships. If individuals or groups come together for a business deal, military action, a marriage, or a class project, and they are employing different or incompatible metaphors, they may not realize that those metaphors are working behind the scenes to structure their understanding of the situation, and thus why they keep talking past each other. In short, metaphor use may be one reason why debates over many policies in America are so bitterly polarized and dominated by extreme voices.

The last thing we should do, however, is call for a moratorium on metaphor use. Metaphors can be very helpful for wrapping our heads around complex and abstract concepts. Rather than banning metaphor from public discourse, we need to be alert to when it is being used to reinforce and defend ideologies that we already prefer, and when it is being used to broaden our cognitive horizons.

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Short Biographies

Mark J. Landau is Associate Professor of Psychology at the University of Kansas. He received his PhD from the University of Arizona in 2007. Dr Landau has published many articles and chapters focused on metaphor's influence on social cognition and behavior and the role of existential motives in diverse aspects of human behavior. He has been funded by NSF and serves on the editorial board of the *Journal of Experimental Psychology: General*.

Lucas A. Keefer is a graduate student at the University of Kansas. He received his MA in 2011. His research combines attachment theory with perspectives on experimental existential psychology to explore how people compensate for threats to the security provided by close interpersonal relationships. He studies these processes in the context of people's relation to their material possessions and their objectification of themselves and others.

Note

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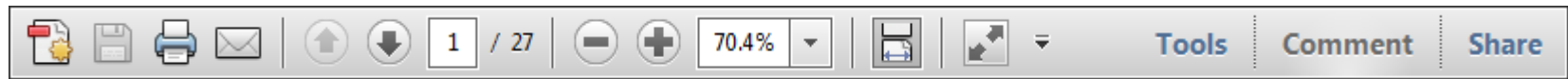
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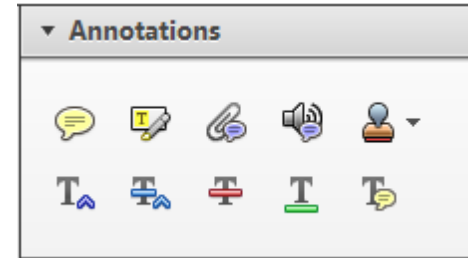
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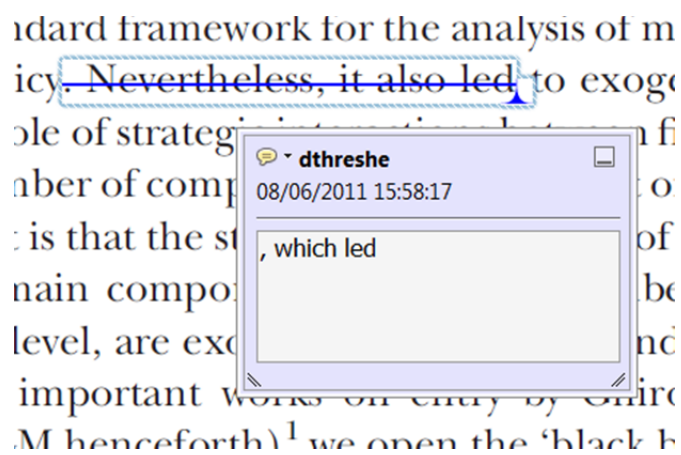
1. Replace (Ins) Tool – for replacing text.



Strikes a line through text and opens up a text box where replacement text can be entered.

How to use it

- Highlight a word or sentence.
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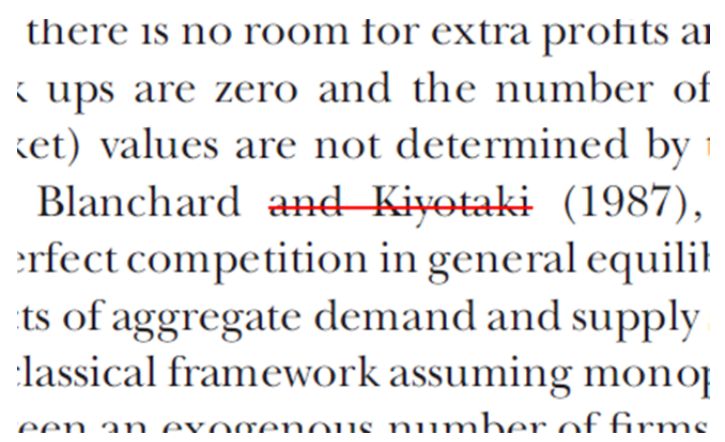
2. Strikethrough (Del) Tool – for deleting text.



Strikes a red line through text that is to be deleted.

How to use it

- Highlight a word or sentence.
- Click on the [Strikethrough \(Del\)](#) icon in the Annotations section.



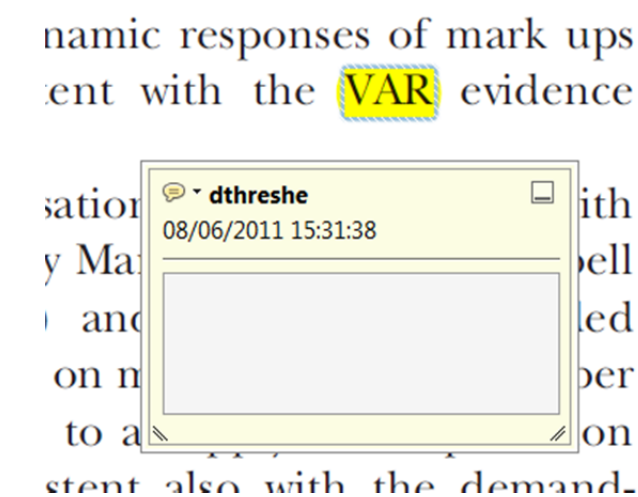
3. Add note to text Tool – for highlighting a section to be changed to bold or italic.



Highlights text in yellow and opens up a text box where comments can be entered.

How to use it

- Highlight the relevant section of text.
- Click on the [Add note to text](#) icon in the Annotations section.
- Type instruction on what should be changed regarding the text into the yellow box that appears.



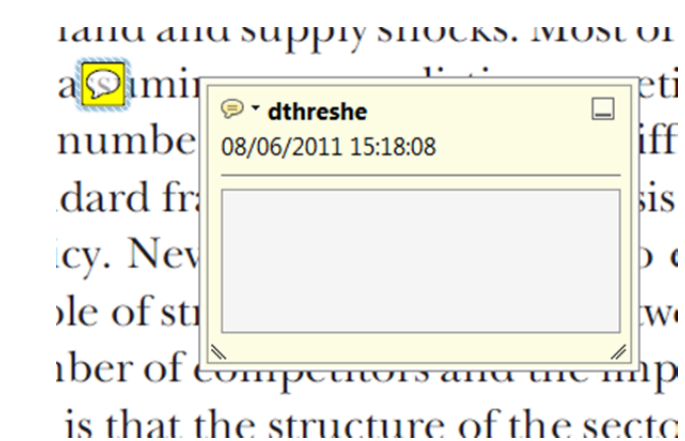
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Marks a point in the proof where a comment needs to be highlighted.

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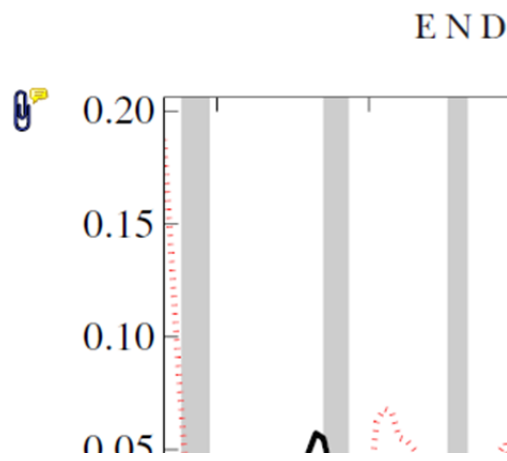
5. Attach File Tool – for inserting large amounts of text or replacement figures.



Inserts an icon linking to the attached file in the appropriate place in the text.

How to use it

- Click on the [Attach File](#) icon in the Annotations section.
- Click on the proof to where you'd like the attached file to be linked.
- Select the file to be attached from your computer or network.
- Select the colour and type of icon that will appear in the proof. Click OK.



6. Add stamp Tool – for approving a proof if no corrections are required.

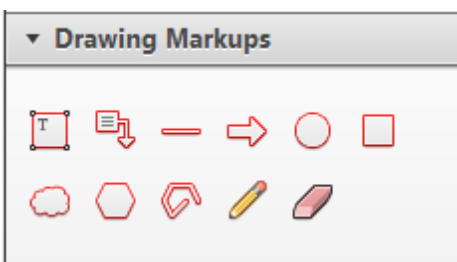


Inserts a selected stamp onto an appropriate place in the proof.

How to use it

- Click on the [Add stamp](#) icon in the Annotations section.
- Select the stamp you want to use. (The [Approved](#) stamp is usually available directly in the menu that appears).
- Click on the proof where you'd like the stamp to appear. (Where a proof is to be approved as it is, this would normally be on the first page).

of the business cycle, starting with the
 on perfect competition, constant return
 production. In this environment goods
 extra profits and the number of firms
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 otaki (1987), has introduced product
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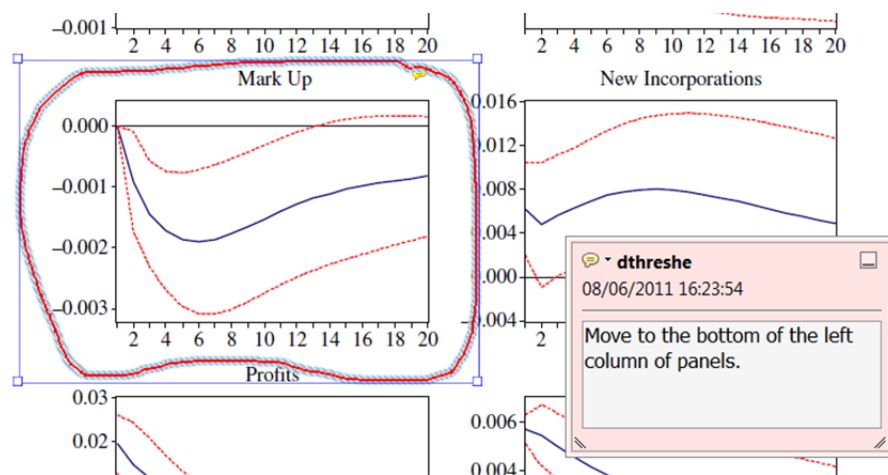


7. Drawing Markups Tools – for drawing shapes, lines and freeform annotations on proofs and commenting on these marks.

Allows shapes, lines and freeform annotations to be drawn on proofs and for comment to be made on these marks..

How to use it

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- Double click on the shape and type any text in the red box that appears.



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