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Reports

Distance makes the metaphor grow stronger: A psychological distance model of metaphor use

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HIGHLIGHTS

- We propose and test a psychological distance model of metaphor use.
- We propose people rely more on metaphors to process concepts that are psychologically distant.
- Increasing temporal distance increases the metaphor effect on people's attitude toward immigration policy.
- Increasing spatial distance increases the metaphor effect on people's forecasts of stock market performance.

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ABSTRACT

Current research demonstrates that people rely on metaphors in comprehending abstract concepts, but leaves the situational or dispositional determinants of metaphor use largely uninvestigated. Based on Construal Level Theory, we propose that metaphor use increases as the concept becomes psychologically removed from the immediate self, because distance causes it to be construed more abstractly. Two studies tested this psychological distance model of metaphor use. In Study 1, people opposed an open immigration policy when they were motivated to protect their bodies from physical contamination, but only when they imagined reporting their attitudes in a distant, rather than near, future. In Study 2, metaphorically representing a stock market as an autonomous agent led to predictions that it would achieve its "goals" by continuing to increase (decrease) in performance following a bullish (bearish) day. This metaphoric effect, however, only happened when the stock market was spatially distant, either objectively or subjectively.

Introduction

Psychologists, marketers, and policy makers are perennially interested in the way people make sense of their environment. This is because forming a mental representation of a person, a consumer product, or a social issue is an integral part of the cognitive process that eventually determines whether the individual would ask for an attractive stranger's number, buy a sophisticated camera phone, or petition against an atrocious piece of government regulation. The conceptual metaphor theory (Gibbs, 1994; Lakoff & Johnson, 1980) suggests that people often rely on metaphors to construe stimuli. A metaphor entails a conceptual mapping between a *source* concept and a *target* concept. A target concept (e.g., friendliness) is usually an abstract concept that the individual strives to understand through its association with a superficially dissimilar but concrete source concept (e.g., physical warmth).

Indeed, a growing body of experimental research demonstrates that metaphors causally impact individuals' memory, perception, and evaluation of social and nonsocial objects (see Landau, Meier, & Keefer, 2010 for a review). For example, based on the metaphor that friendliness is physical warm, Williams and Bargh (2008) showed that individuals who incidentally held a cup of warm, as opposed to cold, coffee subsequently rated a target person as friendlier. Jostmann, Lakens, and Schubert (2009) likewise showed that individuals responding to a social issue survey attached to a heavy (compared to light) clipboard rated the social issues as more serious. Presumably, this is because social significance is metaphorically associated with physical weight (e.g., "His view carries a lot of weight"). Finally, the metaphorical link between power and higher spatial positions led Schubert (2005) to hypothesize that people identify labels of powerful groups (e.g., boss) faster if they are presented at the top, as opposed to the bottom, of the computer screen. This was exactly what he found.

As metaphors are increasingly recognized as a cognitive tool that people use to process stimuli, Landau et al. (2010) lamented that there was a relative dearth of research investigating the situational or dispositional factors that facilitate or inhibit people's reliance on metaphors. In other words, most of the extant findings in metaphor research are metaphor-specific and have limited transferability to different metaphors. Modeling and investigating factors that underlie a

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broad range of metaphor effects would tremendously enrich our understanding of when and how metaphors influence our cognitive processes. Heeding this call, we propose a psychological distance model of metaphor use. Specifically, we hypothesize that an increase in the psychological distance of the target concept will encourage a greater reliance on metaphors to represent and process the concept.

Construal Level Theory and psychological distance

According to Construal Level Theory (CLT; Liberman & Trope, 2008; Trope & Liberman, 2010), psychological distance is a fundamental dimension along which people organize their representation of the world. Psychological distance is an egocentric index of "removedness" from the immediate experience of the self, in here and now. So far, four dimensions of psychological distance have been identified: temporal distance, spatial distance, social distance, or hypotheticality. Just as we see forest from afar but trees in close-up, on any of these dimensions, CLT posits that people represent psychologically near (distant) objects in a more concrete (abstract) manner, or at a low (high) level of construal.

Most critically, this relationship between psychological distance and construal levels is likely to be overgeneralized, so that people represent the *same* object more concretely (abstractly) when it is deemed to be psychologically near (far). In other words, while our knowledge of the object remains unchanged, different (concrete versus abstract) aspects of it become salient according to its psychological distance to the self. For example, whereas imagining a company retreat *tomorrow* (near) conjures up concrete images of wine pouring and small talk, considering a similar retreat that is going to happen *a year later* (distant) calls to mind the abstract features of the event such as fostering company cohesion. Indeed, corroborating research has found that increasing psychological distance increases the influence of the abstract features of target stimuli on people's thoughts and behaviors (see Liberman & Trope, 2008; Trope & Liberman, 2010 for reviews).

Psychological distance and metaphor use

Our hypothesis for this paper is that psychological distance, by influencing people's levels of construal, determines whether metaphors will be used in understanding and processing concepts. The conceptual metaphor theory (Gibbs, 1994; Lakoff & Johnson, 1980) proposes that people rely on metaphors to understand abstract but not concrete concepts. Accordingly, we postulate that, as a greater psychological distance makes the mental representations of a target concept more abstract, it increases the epistemic motivation for the individual to understand the concept through metaphorically mapping it with more familiar and concrete concepts. This motivation drives the individual to seek metaphorically related source concepts that might inform processing of the target concept. On the other hand, as people represent a psychologically near concept in a relatively concrete way, the motivation to employ metaphors to understand it is reduced. In this case, the individual is less sensitive to the presence of potentially relevant source concepts and is less likely to employ metaphors.

We tested this psychological distance model of metaphor use in two source-target contexts. In Study 1, we examined the effect of temporal distance on the degree to which people's attitude toward immigration policy (target) was based on the metaphor of protecting the body from physical contamination (source). In Study 2, we investigated how spatial distance influences the extent to which people predicted the trend of a stock market (target) by metaphorically treating it as an autonomous agent (source). In both studies, we predicted that metaphor use would be a positive function of the psychological distance of the target concept, which would be evidenced in a greater influence of the source concepts on the evaluations and predictions of the target concepts in psychologically distant, as opposed to psychologically near, conditions.

Study 1: Temporal distance and political judgment

Landau, Sullivan, and Greenberg (2009) demonstrated that protecting one's country from an influx of immigrants could be metaphorically linked to protecting the body from physical contamination. Americans, once they construed the U.S. as a body, opposed a more open immigration policy when they wanted to protect their own body from harmful bacteria. Here, we patterned our design after Landau et al. but introduced a temporal distance manipulation (Liberman & Trope, 1998) such that participants imagined reporting their attitudes toward immigration either *tomorrow* or *a year later*. We aimed to show that the metaphoric effect was stronger in the temporally distant than in the temporally near condition. In addition, we also measured participants' mood following the temporal distance manipulation. This was to rule out the alternative explanation that participants in the two temporal distance conditions differed in mood, which might systematically affect their tendency to protect the body from physical contamination.

Procedure

A hundred and twenty-one American undergraduates (71 females) from Indiana University participated in the experiment. They first read two articles purportedly taken from various media sources. The first article constituted the contamination–threat manipulation. Participants in the high-threat condition read about the ubiquitous existence of harmful airborne bacteria, whereas those in the no-threat condition read a similar article describing airborne bacteria as harmless or even beneficial to people's health. Subsequently, all participants read an article describing the history of the U.S. Critically, the phrasing of the essay linked the U.S. to a physical body (e.g., "shook free from Britain's grip" "the U.S. tried to flex its military muscle"), which would enable the metaphoric transfer of the self-protective motive to the protection of the U.S. (Landau et al., 2009).

Participants were then presented with a pilot social issue survey, where the temporal distance manipulation was introduced. The pilot survey was described as part of a larger survey that the psychology department was planning to circulate around the campus either "in a few days" (temporally near condition) or "next year" (temporally distant condition). Before they responded to the pilot survey, participants were given 4 min to imagine their life either "tomorrow" or "on a day a year later," so as to simulate the situation in which the students would answer the survey. They were to imagine their specific as well as general life situation on this future day, and they were also asked to imagine filling out the social survey on that day. Their mood was assessed using the Brief Mood Introspection Scale (BMIS; Mayer & Gaschke, 1988) immediately after.

Participants received one of two versions of the pilot survey, which counterbalanced the sequence of presenting questions regarding immigration policy (e.g., "It's important to keep out immigrants with undesirable characteristics.") and a control issue for which no metaphor effects were expected, minimum wages ("Increasing the minimum wage is a moral responsibility"). For either topic, participants' expressed their attitude on six questions with a 9-point scale (1 = strongly disagree, 9 = strongly agree).

At the end of the experiment, participants verified the effect of the contamination threat manipulation on their self-protective motive by responding to the question "To what extent did the article on airborne bacteria increase your desire to protect your body from harmful substances?" on a 9-point scale (1 = not at all, 9 = very much so).

Results

Manipulation check and mood effects

On the manipulation check item, ANOVA found that participants in the high-threat condition ($M = 3.78$, $SD = 1.81$) felt a greater need to protect their body from contamination than those in the no-threat