# Divergent Effects of Metaphoric Company Logos: Do They Convey What the Company Does or What I Need?

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# Divergent Effects of Metaphoric Company Logos: Do They Convey What the Company Does or What I Need?

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Many corporate logos use pictorial metaphors to influence consumer attitudes. Priming concrete concepts—by means of logo exposure or other procedures—changes attitudes toward dissimilar abstract targets in metaphor-consistent ways. It is assumed, however, that observers apply a logo's metaphor *externally* to interpret the company and its service. This research examined the possibility that observers may instead apply that metaphor *internally* to interpret their current condition and hence their need for the company's service. We hypothesized that the same logo can have divergent effects on company liking depending on the direction of metaphor application. To test this possibility, we built on evidence that people apply available metaphors especially when they feel unsure about the target. We predicted that observers would apply a logo's metaphor externally when unsure about the company, but internally when unsure about themselves. Three experiments provide convergent support for hypotheses. We discuss implications for research and marketing.

Imagine that you walk by a new company offering "creative solutions," and pasted on their sign is a logo depicting a bright lightbulb. This is not a lighting company, so the logo must be a metaphor. But do you interpret that metaphor to describe the *nature of the company's service* or *your condition*? If the former, the logo signals that the company "illuminates" new solutions to your problems; hence, it addresses your needs, tempting you to inquire further. Yet if you implicitly associate the lightbulb with your internal state, you might perceive that you are sufficiently illuminated (i.e., aware of creative solutions). In this case, the company is irrelevant to your needs, and therefore less appealing.

This scenario connects to broader questions about how metaphors influence attitudes. Theorists contend that metaphor is a cognitive tool for understanding one concept in terms of a dissimilar concept. Accordingly, prior studies show that experimentally activating source concepts has metaphor-consistent effects on social and consumer judgments. More recent studies examine the impact of company logos that employ pictorial metaphors to convey select information about a company and the benefits of its product or service (hereafter, service).

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Despite its achievements, research has so far overlooked a basic theoretical question: What are the consequences of applying the meaning of an accessible metaphor to external stimuli versus the self? Many metaphoric logos, for example, are open to different interpretations, and which interpretation observers take will likely determine their attitudes toward the company. We might assume that observers' default tendency is to apply the logo's source concept (e.g., a lightbulb) to interpret the service *out there* (e.g., "*This company* will 'shed light' on my problems"). We propose a less intuitive possibility: Observers may instead apply the metaphor to themselves (e.g., "*I am 'bright'*"), potentially eliminating or even decreasing their interest in the company's service.

To test these divergent outcomes experimentally, we built on prior studies showing that people apply an available metaphor especially when they feel unsure about the target (due to, e.g., target uncertainty or abstractness). We predicted that when observers initially felt unsure about what a company does, they would apply the meaning of its metaphoric logo to evaluate the company; alternatively, if they initially felt unsure about how much they could personally benefit from the company's service, they would apply that metaphor to themselves.

## Theoretical and Empirical Background

Conceptual metaphor theory (hereafter, CMT) posits that metaphor is not a mere ornament of language, as traditionally thought. It is a cognitive tool that people often use to understand a concept (the *target*) in terms of a superficially dissimilar concept (the *source*) (Gibbs, 1994; Kövecses, 2010; Lakoff & Johnson, 1980). Metaphor operates at a conceptual level to map the target's features on analogous source features. This mapping enables the person to use her source knowledge as a framework for reasoning and forming attitudes about the target. To illustrate, using metaphor to understand a company's bankruptcy in terms of a vehicle accident (reflected in expressions such as "That company was *driving straight into a ditch*") would support the judgment that, just as drivers often bear responsibility for vehicle accidents, blame for the bankruptcy lies primarily with the highest-ranking individual in charge of that system (the CEO), not with the company's former employees (the "passengers"; Landau, Keefer, & Rothschild, 2014).

CMT has inspired researchers in social, cognitive, and consumer psychology to empirically test metaphoric influences on attitudes (as well as other basic psychological processes; for an overview, see Landau, Robinson, & Meier, 2014). The majority of this research tests variations on a *metaphoric transfer* hypothesis: If people understand a target in terms of a source (e.g., *social power is high vertical position*), then activating the source (priming upward motion) will transfer across the metaphor's mapping, changing target attitudes in a manner consistent with that metaphor (increasing perceived power). If, alternatively, metaphor does not shape attitudes, there would be no reason to expect such effects, because target representations would not be systematically structured around source knowledge.

Some studies have primed source concepts using embodied procedures. For example, Williams and Bargh (2008a) examined the metaphoric link between physical and interpersonal warmth. Participants who briefly held a warm (vs. cold) beverage subsequently perceived another person as interpersonally warmer (i.e., friendlier and more trustworthy). Related studies use semantic primes (e.g., words related to journeys prior to judging relationship satisfaction; Lee & Schwarz, 2014a) and imagistic primes (e.g., words presented in lighter vs. darker font colors prior to judging affect; Meier, Robinson, & Clore, 2004). Across procedures, subtle and even implicit

exposure to source primes produces metaphor-consistent changes in target attitudes, despite the two concepts' surface differences.

Researchers are now extending this work to examine the effectiveness of metaphoric logos. Corporate logos are not always literal descriptions of a company or its service. Rather, many employ metaphors that are designed to encourage observers to think of a company in terms of an unrelated thing or idea. For instance, a logo for a dating website may depict overlapping circles to metaphorically evoke romantic *union*, while a book store's logo depicts a hiker on a trek to invite customers to explore a *landscape* of knowledge. Does it work? Studies show, in fact, that company logos can effectively use metaphor to convey meanings such as dynamic movement (Cian, Krishna, & Elder, 2014) and environmental instability (Rahinel & Nelson, under review), with significant consequences for observers' attitudes toward the corresponding company.

Two findings in particular provide the background for the current research. First, some logos features metaphors that invite different, even opposite, interpretations. Hagtvedt (2011) showed, for instance, that incomplete typeface in a brand logo caused some consumers to perceive the brand as untrustworthy, but others to see it as innovative. Second, the effect of a metaphoric logo on attitudes depends partly on its match with the alleged purpose of the company (Bottomley & Doyle, 2006). For example, a "blossoming flower" logo might prompt positive attitudes toward an art school—which is congruent with themes of growth and development—while that same logo may have no effect on evaluations of a steel mill. The point is that a logo's influence on attitudes is not a simple function of its metaphoric meaning; instead, that meaning interacts with observers' knowledge about the corresponding company and its relevance to their personal needs.

Although illuminating, the aforementioned research rests on a seemingly uncontroversial assumption: When people are exposed to a source prime (e.g., a logo, a sensation, a movement), their default tendency is to apply that source to metaphorically construe an external stimulus—a person, relationship, or consumer product *out there* in the environment. Yet this may be only part of the picture.

## Applying Metaphor Externally/Internally

The notion that observers apply an available metaphor externally is intuitive and consistent with many published findings, but it is not the only possibility suggested by CMT. Another possibility is that observers apply that metaphor to interpret themselves and their relation to external stimuli. To illustrate, consider Williams and Bargh's (2008b) evidence that priming spatial distance (by having participants connect far-apart dots on graph paper) led participants to feel less emotionally attached to their families. It seems that participants applied the concept *spatial closeness* to construe families themselves. Yet CMT could also predict that participants apply that concept to interpret their own condition. That would produce the opposite effect: Participants would perceive an undesirable *distance* from close others, and they would compensate by *affirming* family ties.

This is not mere speculation. As research findings accumulate, the same or similar source primes produce divergent consequences that accord equally with CMT. For example, Schnall, Benton, and Harvey (2008) found that cleansing the self resulted in *less* punitive moral judgments, suggesting that physical cleanliness was assimilated into judgments of other people's

transgressions (external application); in contrast, Zhong, Strejcek, and Sivanathan (2010) found that cleansing the self resulted in *more* punitive moral judgments, suggesting that cleanliness was assimilated into perceptions of one's own moral value, leading to comparatively harsher judgments of others' transgressions (internal application).

In fact, such divergent effects have been observed in the same study. Kille, Forest, and Wood (2013) examined the metaphoric association between the abstract concept *relationship stability* and physical stability. They asked romantically unattached participants to report their preference for various traits in a potential romantic partner, and to rate the likelihood that well-known married couples (e.g., the Obamas) would divorce in the next 5 years. Some participants completed these tasks while sitting in a wobbly chair and writing on a wobbly table, while others were provided with a stable work station. Priming physical instability led participants to prefer traits indicative of relational stability in a potential partner (e.g., trustworthiness and reliability, not spontaneity), and to perceive less stability in other people's relationships. Here we see the same proprioceptive prime triggering different kinds of effects. When it came to their own preferences, participants *compensated* for their current instability by desiring contrasting *stable* personality traits; but when it came to perceptions of other people's relationships, they *assimilated* physical instability into their judgment, viewing those relationships as less stable.

The problem is that both types of effects are reported sporadically across the literature, and both are interpreted post hoc as consistent with CMT. What is missing is the specification of a priori hypotheses regarding the consequences of applying an available metaphor externally versus internally. The current research fills this gap using logo interpretation as a case study. A logo's metaphoric meaning can be applied externally to interpret the nature of the company itself (how it provides the purported service) or internally to interpret one's own condition and relation to the company (the extent to which the self stands to benefit from the company's service). Will it matter "where" the metaphor is applied?

We propose that people's overall attitude toward a company will be affected in divergent ways by the interaction of two variables: The direction in which the metaphoric meaning of that company's logo is applied; and whether there is a match or a mismatch between that logo's metaphoric meaning and the service that the company offers. To specify:

*Hypothesis 1*:  If observers apply the metaphoric meaning of the company's logo to the company itself, they will: (a) like the company especially when that meaning *matches* the company's purpose (e.g., a logo depicting upward movement, conveying empowerment, matches a service to increase social power, but (b) devalue the company if its logo's metaphoric meaning *mismatches* the company's purpose (e.g., a logo depicting downward movement mismatches an empowering service).

*Hypothesis 2*:  If, alternatively, observers apply the logo's metaphoric meaning to themselves and their relation to the company, they will like the company especially when that meaning *mismatches* the company's purpose. In this case, the logo's source concept (e.g., downward movement) is applied to construe one's own needs; hence a company that addresses those needs (e.g., by increasing social power) will seem more appealing and beneficial. Put in plainer terms, when the logo's metaphor is interpreted to signal a personal lack, a company that offers a "fix" (mismatch) will be well-liked.

## Overview of the Current Studies

To provide a strong test of our causal hypotheses, we sought a methodological framework that could be used to experimentally increase application of a metaphor in one direction or the other. We assumed that if metaphor use serves a psychological function, situational increases in the need for that function will increase metaphor use. Of course, metaphoric conceptualization serves diverse, often overlapping, functions at both individual and social levels (Gibbs, 2008). For example, members of a dyad or a group can employ metaphor to negotiate a shared understanding of an event (e.g., newlyweds working out the meaning of their marriage; Cameron, 2011; Gibbs, 2014).

At the individual level, metaphor use can satisfy a number of *epistemic motives*—desires to achieve and maintain particular types of knowledge (Kruglanski, 1989, 2004). Four epistemic motives have featured in cognitive-linguistic perspectives on metaphor (Kövecses, 2010; Lakoff & Johnson, 1980). One is a *motive for sureness* (also labeled the *need for nonspecific closure*): The desire to achieve and maintain a clear, confident understanding of a target, without a strong preference for one conclusion over another. A second, *consistency motivation*, is the desire to reach a conclusion that aligns with the specific beliefs and attitudes that one endorses. A metaphor can highlight select features of a target, and downplay others, to affirm preferred ideologies. A third, *accuracy motivation*, refers to the desire to achieve an accurate, truthful understanding of a given stimulus (e.g., in education, students seek metaphors to accurately grasp complex concepts; Low, 2008). Finally, engaging with metaphor can serve to promote *creative* thought by throwing a new light on a familiar concept and even destabilizing conventional meanings (Donoghue, 2014).

From this field of epistemic motives, we followed the lead of research on sureness motivation. The guiding empirical reasoning is as follows: People are motivated to maintain an adequate level of sureness—a subjective sense of possessing a confident understanding of a target (object, idea, situation, etc.). Sureness is threatened when people perceive a target to be uncertain, unfamiliar, abstract, complex, unstable, or obscure. To compensate, they apply an available metaphor to map the unsure target on a surer concept—one perceived to be relatively more certain, familiar, concrete, simple, consistent, or discernable.

Some prior studies experimentally reduced target sureness by directing participants' attention to aspects of the target about which they are *uncertain* (Keefer, Landau, Sullivan, & Rothschild, 2011; Landau et al., 2014). For example, Keefer et al. (2011) had university freshmen dwell on uncertainties about the value of their college experience or another aversive but certain topic. In an orthogonal manipulation, they asked the students to arrange the factors that influenced their decision to attend their university in an upward or a downward orientation. Consistent with the conventional metaphors *up is good/bad is down*, students reported being more (less) satisfied with their decision after arranging decision factors in an upward (downward) orientation. Critically, though, these effects emerged only among the group that had initially focused on college-relevant uncertainties. Those not induced to feel uncertain presumably felt adequately sure about the target, so they did not rely on the verticality primes to inform their attitudes.

Jia and Smith (2013) reduced target sureness by manipulating perceived target *abstractness*. They built on construal level theory's claim that people construe ideas in a more abstract manner when those ideas are psychologically *distant*, or removed from the immediate experience of the self in the here and now (Trope & Liberman, 2010). Supporting studies operationalize distance

in terms of time (in the remote future), space (far away), and reality (hypothetical), and reliably show that distant (vs. close) stimuli seem more abstract.

Going further, Jia and Smith reasoned that increasing the psychological distance (abstractness) of a target would encourage greater reliance on an available metaphor to interpret that target. In one of their studies, participants living in Indiana were asked to predict the behavior of the New York Stock Exchange. Half were reminded that the stock market of interest is located in New York City, "some 800 miles from here, all the way to the East Coast." The others were instead told that New York City is "less than a day's drive from here." When participants later read commentaries that framed the stock market as an autonomous agent (e.g., "Today the New York market *leaped and bounded higher*"), compared with an equivalent non-metaphoric framing, their market forecasts were much higher for days that showed an upward (vs. downward) trend. Participants seem to have applied the *intentional agent* metaphor, consequently inferring that price trends would continue along their current trajectory in the same manner that agents move with intention (replicating Morris, Sheldon, Ames, & Young, 2007). Crucially, however, this effect emerged only when the stock market appeared spatially far from the self, and hence abstract. When it appeared near, it seemed more concrete, obviating the need for metaphoric understanding.

In sum, research converges on the idea that reduced target sureness increases reliance on an available metaphor to interpret that target. We sought to expand this empirical paradigm. Prior studies manipulated whether or not a given target seemed unsure. The current studies manipulate which of two sources seem unsure in the current context.

We predicted that when participants initially felt unsure about how a company operates or what it does, they would apply the metaphoric meaning of the company's logo externally to interpret the company itself. This will produce the pattern of effects on company evaluation described in Hypothesis 1. But if participants initially felt unsure about their personal relation to the company (e.g., whether or not they stand to benefit from the company's service), they would apply the same metaphor internally to interpret their own condition, producing the effects described in Hypothesis 2.

The current studies provide convergent tests of these hypotheses using distinct, validated procedures for manipulating sureness. In Studies 1 and 2, we focused some participants on uncertainties about a company, others on uncertainties about their need for the company's service. In Study 3, participants were asked to think about their relation to a company that appeared spatially near versus far away, the latter condition having been shown to increase abstractness.

## Sample Size

Our procedure for terminating data collection was straightforward. For each experiment, we collected data until the end of semester with the goal of obtaining at least 20 observations per condition, as recommended by Simmons, Nelson, and Simonsohn (2011). This minimum cell size goal was met.

## STUDY 1

We presented undergraduates with a (fictional) online company labeled Vantia.com. For all participants, Vantia.com was described as a service that helps undergraduates create a professional

profile to gain employment after graduation. Its specific purpose, however, varied by condition. Half the undergraduates were told that Vantia.com helps them *diversify* their professional profile to present themselves as capable of performing many different kinds of tasks and workplace roles. The others were told that Vantia.com helps them create a *unified* profile, presenting them as focused and expert in one area. Both of these purposes would be reasonable objectives for an online company of this sort, but whether they appeal to students, we reasoned, depends on how they interpret the logo.

We created an animated pictorial logo that depicted a solid square breaking into smaller pieces that spread out. We assumed that this "diverging" imagery would metaphorically convey the concept *diversification* (we test this assumption in Study 2).

We predicted that participants made uncertain about the company would apply the diverging logo to interpret the company itself. Consequently, they would like the company particularly when its purpose is to diversify (vs. unify) profiles, because this purpose matches the metaphoric meaning of the company's logo. This is the matching effect specified in Hypothesis 1.

In contrast, participants uncertain about whether they stand to benefit from the company's service should apply the diverging logo internally, taking it to mean that their professional profile is diverse as it is. Consequently, they'll dismiss as superfluous a company that purports to diversify profiles. However, they will be attracted to a service that *unifies* their profile because it rectifies their (problematic) diversity. Stated differently, inducing uncertainty about the self should lead to a contrast effect whereby a company is more appealing when its logo's meaning *mismatches* its purpose (Hypothesis 2).

## Method

Participants were 137 undergraduates (58% women) at a large Midwestern university who received course credit (see Table 1 for race-ethnicity information for all current studies).[1] All participants viewed the same "diverging" logo metaphorically conveying diversification. We manipulated the company's purpose and the source of salient uncertainty. Thus, the design was a 2 (company purpose: diversify vs. unify one's professional profile) × 2 (uncertainty source: company vs. self) factorial.

### Company Purpose Manipulation

Participants were seated at computers and told that they would be evaluating a new start-up company in the area. Participants in the *company diversifies* condition read a description of Vantia.com stating that it serves to diversify a professional profile so as to convince employers that one is adaptive and capable of fulfilling many, shifting workplace roles. Participants in the *company unifies* condition read that Vantia.com serves to unify professional profiles so as

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[1]In all three studies, we obtained race-ethnicity and gender information to explore whether these demographic factors were associated with the outcomes or moderated the effect of our predictor variables.

Because Caucasian and Asian Americans formed over 80% of the sample for each study, our analysis of possible race-ethnicity effects lacked sufficient power to be interpretable. Hence, these analyses were not performed.

We did not find any main effects of gender ($ps > .31$) or interactions between gender and our predictor variables ($ps > .20$).

TABLE 1
Race-Ethnicity Information by Study[a]

| | Race-ethnicity (% of sample) | | | | | |
|---|---|---|---|---|---|---|
| Study | Caucasian American | Asian American | African American | Hispanic American | American Indian | Other |
| 1 | 87.6% | 3.6% | 5.1% | 1.5% | .7% | 1.5% |
| 2 | 86.1% | 2.4% | 5.4% | 5.4% | 0% | .6% |
| 3 | 90.5% | 4.5% | 4.5% | 0% | 0% | 0% |
| Total | 88.1% | 3.5% | 5 % | 2.3% | .2% | .7% |

Note. [a]Percentages may not sum to 100% across rows due to rounding.

to convince employers that one is capable of bringing focused attention and expertise to partic- ular workplace tasks. The full text of the company descriptions can be found in Appendix A. We matched the descriptions in length and tone and took efforts to portray both purposes as important for participants' job search.

### Uncertainty Source Manipulation

Following the company description, participants were asked to engage in a thought induc- tion exercise. Participants assigned to the *company uncertainty* condition received the following prompt:

Some people are uncertain about how such a service could work. They don't have a clear mental image of how such a service operates, and so they're not sure how Vantia.com will do what it claims to do. Think about uncertainties you have about what Vantia.com's service would do and how it could work. Take some time to think about which uncertainties are strongest for you.

Participants in the *self uncertainty* condition received this prompt:

Some people are uncertain about whether they really need such a service. They don't have a clear mental image of their own professional needs and goals, and so they're not sure how Vantia.com would benefit them. Think about uncertainties you have about how much you would personally ben- efit from Vantia.com's service. Take some time to think about which uncertainties are strongest for you.

Participants in both conditions were instructed to write a few sentences describing their uncertainties in detail.

We validated this manipulation in a pretest. Undergraduates ($N = 58$) from the same sub- ject pool completed either the company or self uncertainty inductions. Next, they indicated how they would interpret additional information about the company (received through online mes- sages, word of mouth, a company representative, and direct mail) on a 7-point bipolar scale ranging from "I would think mostly about what the company does" to "I would think mostly about how the company fills my needs." As expected, participants who completed the self uncer- tainty prompt felt that they would interpret additional company information more in terms of how the company might fulfill their needs as opposed to what the company itself does ($M_{self} = 4.26$ vs. $M_{company} = 3.84$, $t(56) = 2.01$, $p = .05$, $\eta^2_{partial} = .07$).

*Logo Presentation and Company Evaluation*

Participants next viewed the company's logo, presented with the company name, for 20 seconds. See Figure 1 for still images used in the animated sequence.

Finally, participants responded to three questions assessing their company evaluations: "To what extent do you think you, personally, could benefit from Vantia.com? To what extent do you think you would at least 'check out' Vantia.com? To what extent do you think Vantia.com would be useful to other business students in your major?" Responses were made on a 7-point scale (1 = *not at all*, 7 = *very much*) and were averaged to form composite company evaluation scores ($\alpha = .72$; $M_{grand} = 4.24$; $SD = 1.14$).

## Results and Discussion

Submitting company evaluation scores to a 2 (company purpose) × 2 (uncertainty source) ANOVA returned a significant interaction, $F(1, 133) = 8.10$, $p = .01$, $\eta^2_{partial} = .06$ (for both main effects, $p > .71$). In this and the following studies, we decomposed interactions by conducting pair-wise comparisons using Fisher's least significant difference.

As depicted in Figure 2, participants focused on uncertainties about the company itself liked a company with a diverging logo more when its purpose was to diversify profiles ($M = 4.47$, $SD = .19$) compared to unify profiles ($M = 3.97$, $SD = .19$), $F(1, 133) = 3.66$, $p = .05$.

We observed the opposite effect among participants focused on uncertainties about their need for the company's service. They liked a company with a diverging logo more when its purpose was to unify professional profiles ($M = 4.58$, $SD = .20$) compared to diversify profiles ($M = 4.00$, $SD = .19$), $F(1, 133) = 4.43$, $p = .04$.

Study 1 provides initial support for our claim that shifting the direction of metaphor application has divergent effects on attitudes. When participants were unsure about how a company performs its service, they appear to have applied its logo's metaphoric meaning of diversification to interpret the company itself. Consequently, when the company purported to diversify (vs. unify) profiles, there was a match between logo meaning and company purpose that increased company liking.

But when participants were unsure about their need for the company's service, they applied the logo's metaphoric meaning of diversification to interpret their own condition. As a result, they rated the company more positively when its purpose was to unify rather than diversify. This suggests that participants interpreted the metaphor to mean that their own professional profile was diverse; hence, they stood to benefit from a company that unifies profiles, but not one that diversifies profiles. In other words, when the logo is applied to the self, a *mismatch* between logo meaning and company purpose conveys that the company fulfills a personal need, which increases company liking.

## STUDY 2

While all participants viewed the same logo in Study 1, Study 2 goes further to include a manipulation of the logo's metaphoric meaning. Half of the participants viewed a "diverging" logo,

**Study 1**

Diverging Logo
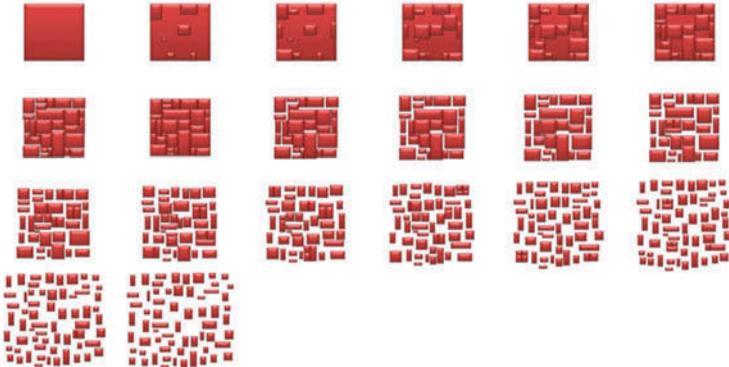
**Study 2**

Diverging Logo
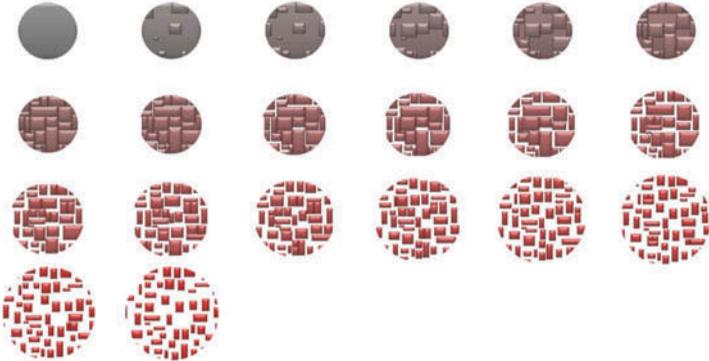
Merging Logo
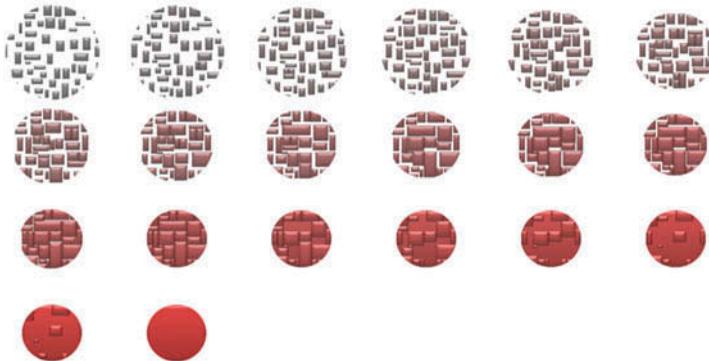
FIGURE 1  Company logo presentations: still images used in the animated sequences conveying diversification and unification; Studies 1 to 3.

**Study 3**

Diverging Logo
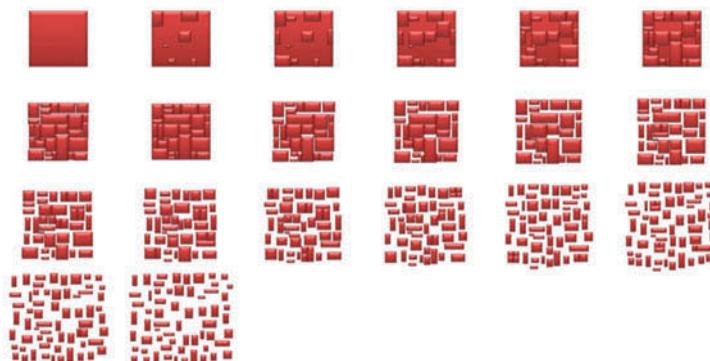
Merging Logo
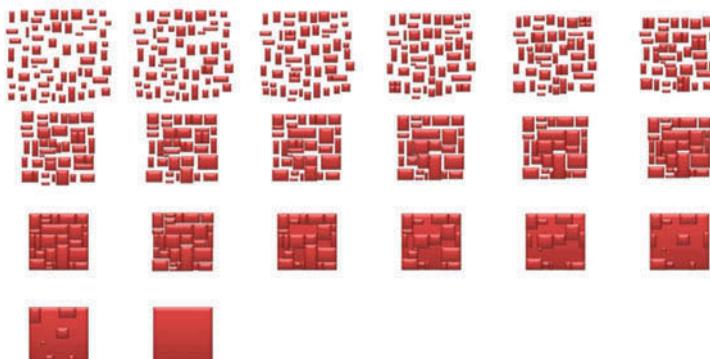
FIGURE 1 (Continued).

conveying diversification, as in Study 1; the other half viewed a "merging" logo (smaller parts merging into a whole) meant to convey unification. This allowed for a fuller test of our hypotheses regarding the three-way interactive effect of *unsureness source* and the (mis)match between a company's *purpose* and its logo's *metaphoric meaning*.

As in Study 1, the fictional company was described as an online service purported to help people create either a diverse or unified public image. Here, however, the company was an online dating site rather than an employment service. This allowed for converging tests of our hypotheses across two contexts in which it is equally realistic that a valuable service would diversify or unify public images.

We operationalized unsureness as uncertainty, as in Study 1. Participants made uncertain about how the company works should apply its logo's metaphoric meaning to interpret the company itself. Consequently, they will like the company more when its purpose matches
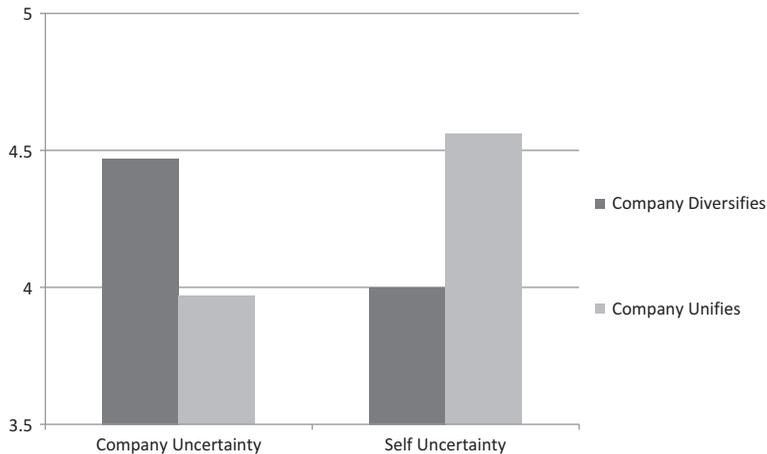
FIGURE 2  Liking for a company with a logo conveying diversification as a function of uncertainty source (company vs. self) and company purpose (diversify vs. unify one's professional profile; Study 1).

(vs. mismatches) the logo's metaphoric meaning. One match is when the company diversifies profiles and its logo diverges; the other is when the company unifies profiles and its logo merges.

We predicted a reversal of these effects among participants made uncertain about whether or not they could personally benefit from the service. They should apply the logo to interpret their own condition. Consequently, they will like the company more when it does the opposite of what its logo represents.

## Method

Participants were 166 undergraduates (67% women) at a large Midwestern university who received course credit. They were randomly assigned to conditions in a 2 (company purpose: diversify vs. unify one's dating profile) × 2 (uncertainty source: company vs. self) × 2 (logo: diverging vs. merging) factorial design.

### Company Purpose Manipulation

Participants were asked to evaluate a new online dating website.[2] Those in the *company diversifies* condition read that the website's service portrays the user as having diverse traits and interests, which potential dating partners will find interesting. Those in the *company unifies* condition read that the service portrays the user as having a stable, integrated personality that potential dating partners will remember and trust (see Appendix B for the full text).

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[2]Because the company's name includes information about the current authors' affiliation, we omit it for the sake of anonymity.

### Uncertainty Source Manipulation

Participants next wrote about uncertainties regarding how the company provides its service (*company uncertainty* condition) or their needs for such a service (*self uncertainty* condition). The writing prompts were identical to those used in Study 1 with the exception of the company name.

### Logo Manipulation

Participants viewed a logo depicting either a circle separating into parts (*diverging* logo conveying diversification) or many parts coalescing into a single circle (*merging* logo conveying unification). We used identical images to create the animated logos, varying only the order in which they were sequentially presented (see Figure 1 for still images used in the animated sequence).

Because we varied the logo in Study 2, we conducted a pretest to assess whether the logos conveyed the intended metaphoric meaning. Seventy undergraduates viewed both logos and rated each on five 7-point scales anchored by opposite qualities and randomized in order of presentation. As expected, participants rated the diverging logo as representing diversification (vs. unification) to a greater extent than the merging logo ($M = 5.29$ vs. $2.58$; $F(1, 68) = 38.56$, $p < .001$, $\eta^2_{partial} = .36$). In contrast, and supporting the specificity of the conveyed meaning, there were no differences in participants' ratings of the two logos on the other four dimensions: complexity vs. simplicity ($F (1, 68) = 2.13$, $p = .15$), attractiveness vs. unattractiveness ($F (1, 68) = 2.35$, $p = .13$), activity vs. inactivity ($F (1, 68) = .13$, $p = .72$), or innovation vs. tradition ($F (1, 68) = .76$, $p = .39$). Dimension type did not interact with presentation order ($F(1, 68) = .02$, $p = .90$).

### Company Evaluation

Finally, participants answered three evaluation questions that were slightly modified to fit the context of Study 2: "To what extent do you think you, personally, could benefit from [*company name*]? To what extent do you think you would at least 'check out' [*company name*]? To what extent do you think [*company name*] would be useful to people in the [*city name*] area?" Responses were made on a 7-point scale and averaged ($\alpha = .75$; $M_{grand} = 3.58$; $SD = 1.20$).

## Results and Discussion

Submitting company evaluation scores to an ANOVA returned the expected 3-way interaction between company purpose, uncertainty source, and logo, $F(1, 158) = 5.71$, $p = .02$, $\eta^2_{partial} = .04$.

Figure 3a depicts the means for participants induced with uncertainty about the company itself. If participants were told that the company serves to diversify dating profiles, they liked it more when its logo diverged to convey diversification ($M = 4.14$, $SD = .40$) compared to when its logo merged to convey unification ($M = 3.22$, $SD = .24$), $F(1, 158) = 3.75$, $p = .05$. When the company purported to unify dating profiles, we did not observe the predicted contrast between logo conditions ($F(1, 158) = 1.49$, $p = .22$).
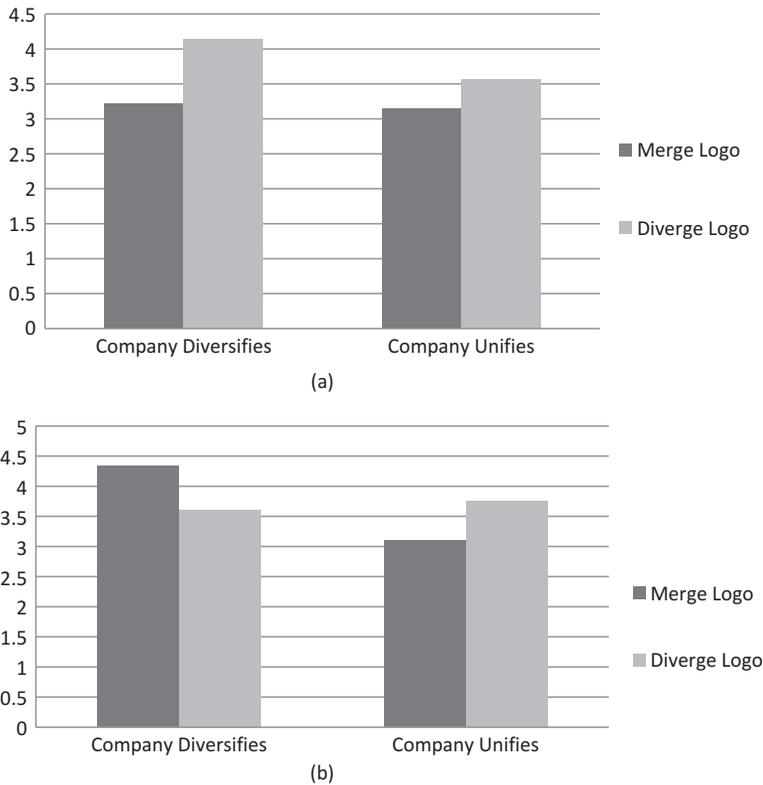
FIGURE 3A and 3B  Liking for a company as a function of company purpose and logo within company uncertainty condition (3a) and self uncertainty condition (3b; Study 2).

Figure 3b depicts the means for participants induced with uncertainty about their need for the company's service. As predicted, the effects observed in the *company uncertainty* condition switch direction. Participants told that the company diversifies dating profiles liked it more when its logo conveyed unification ($M = 4.33$, $SD = .25$) compared to diversification ($M = 3.64$, $SD = .22$), $F(1, 158) = 4.44$, $p = .04$. Yet those told that the company unifies profiles liked it marginally more when its logo conveyed diversification ($M = 3.75$, $SD = .25$) compared to unification ($M = 3.10$, $SD = .27$), $F(1, 158) = 3.05$, $p = .08$.

A plausible alternative interpretation of these results is that when participants see a logo that mismatches the company's purpose, they become confused and spend more effort in answering the questions about the company or their benefit from it. We assessed this possibility in a posttest. The design was the same as Study 2 except for the omission of the uncertainty source factor. Because we were interested in the interactive effect of company logo and purpose on effort, we tested how long 172 participants spent answering the dependent measures after viewing one of the logos and one of the company purposes. As expected, we observed no main effects or interactions of these factors on response times for any of the questions (all $F$s $< 1$, $p$s $> .34$).

Therefore, it is unlikely that participants spent more time or effort making judgments as a function of the (mis)match between company purpose and logo. As a follow-up, we asked participants how confusing and complex the logo was, as well as how much effort they put into understanding the logo (on 7-point scales). Here, too, we observed no purpose $\times$ logo interactions (all $F$s $< 1.2$, $p$s $> .27$). These null results cast doubt on the alternative possibility that the observed effects on company evaluation are simply due to between-condition differences in difficulty or fluency in processing company-relevant information.

The results of Study 2 replicate the divergent effects found in Study 1, and extend them with a manipulation of logo type. We again found that when salient uncertainty about the company prompts participants to apply the logo's metaphor to interpret the company itself, they liked the company more when it purported to diversify and its logo signaled diversification. But the logos had opposite effects among participants induced with uncertainty about their own needs. They seem to have applied the logos internally. Hence, when a merging logo signaled that they, personally, were unified, they were attracted to a service that could provide needed diversification; but when a diverging logo signaled that they were diverse, they liked a company that offered to lend unity to their public image.

## STUDY 3

Study 3 further tests the divergent effects of metaphor application direction using a converging method to manipulate application direction. Recall that our general methodological assumption is that observers will apply an available metaphor externally or internally depending on which direction addresses the source of reduced sureness. In Studies 1 and 2, we reduced sureness by focusing participants on uncertainties. In Study 3 we operationally defined unsureness as perceiving a target as abstract (vs. concrete).

We reasoned that when participants were induced to perceive their personal relation to a company in an abstract manner, they would rely on its logo's metaphor to gain a more concrete understanding of their own condition. This will lead them to interpret a diverging logo as signaling personal diversity, and will therefore increase their attraction to a company that serves to unify their public image (i.e., a *mismatch* between logo meaning and company purpose). A merging logo, in contrast, will signal personal unity, making participants less keen on a unifying service (i.e., a *match* between logo meaning and company purpose).

As discussed earlier, construal level theory posits that when people perceive a stimulus as distant relative to the self, they focus more on its abstract meaning than on its concrete details. Accordingly, Jia and Smith (2013) showed that people apply an available metaphor especially when the target seems spatially distant, hence abstract, presumably because metaphor use affords concrete knowledge and thus restores sureness.

Building on this work, we asked all participants to evaluate how well a company fits their professional needs. First, though, half were led to believe that the company was headquartered in a city halfway across the country, whereas the other half believed the company operated out of a nearby city. We expected participants to represent their relation to a spatially *distant* company in more abstract terms. Consequently, they would direct metaphor application internally, similar to the way participants responded in the *self uncertainty* conditions in Studies 1 and 2. This would produce the contrast effect described just above—increased liking when logo's meaning and the company purpose *mismatch*.

We did not include a manipulation of company purpose, as we did in Studies 1 and 2. Instead, all participants were told that the company offers to unify their public image. This enabled us to provide a targeted, parsimonious test of our predicted crossover interaction between unsureness and logo meaning. Focusing on the profile unification condition also allowed us to again test for the unexpected null contrast in Study 2. As depicted in Figure 3a, when unsureness about the self's relation to the company was low—that is, when salient uncertainties surrounded the company itself—and the company unified profiles, participants did not like the company more when its logo metaphorically conveyed unification (merging) compared to diversification (diverging).

We expected to observe this effect in Study 3. Specifically, when participants observe that the company is spatially near, their relation to it will feel more concrete, and they will not be motivated to apply the metaphor internally. The metaphor will be applied externally to the company itself, producing a straightforward assimilation effect: Participants will like a company purporting to unify profiles more when its logo matches that purpose (merging) compared to when its logo mismatches that purpose (diverging).

## Method

Eighty-four undergraduate participants (45% women) participated in exchange for course credit. All participants resided in Lawrence, Kansas, which is pertinent to the spatial distance manipulation. They were randomly assigned to conditions in a 2 (spatially far [abstract] vs. near [concrete]) × 2 (logo: diverging vs. merging) factorial design.

### Spatial Distance Manipulation

Participants were told that they would be evaluating a new start-up company (Vantia.com). However, before continuing directly to the description of the company, they were told that the company was headquartered either in Topeka, Kansas (*company-near condition*) or Gainesville, Florida (*company-far condition*), and that the new market would be in Lawrence, Kansas. They were also shown maps depicting this same information (Figures 4a and 4b). We chose Topeka and Gainesville because they are similar in size, recognition, and political orientation. In this way we could isolate the difference in their spatial distance to the participants' city of residence (approximately 26 miles vs. 1,100 miles, respectively).

### Company Purpose

All participants received the *unify* company description of Vantia.com used in Study 1 (Appendix A), reading that company serves to help job market candidates unify their professional profiles. They were instructed that, later in the study, they would be asked to rate how much they stood to benefit from Vantia.com's service. Therefore, they should evaluate the company description in light of their own professional needs.

### Logo Presentation and Company Evaluation

Next participants viewed the animated logo, presented with the company's name, for 20 seconds (Figure 1). Participants viewed a single iteration of the *diverging* logo (the same images and

(a)



(b)
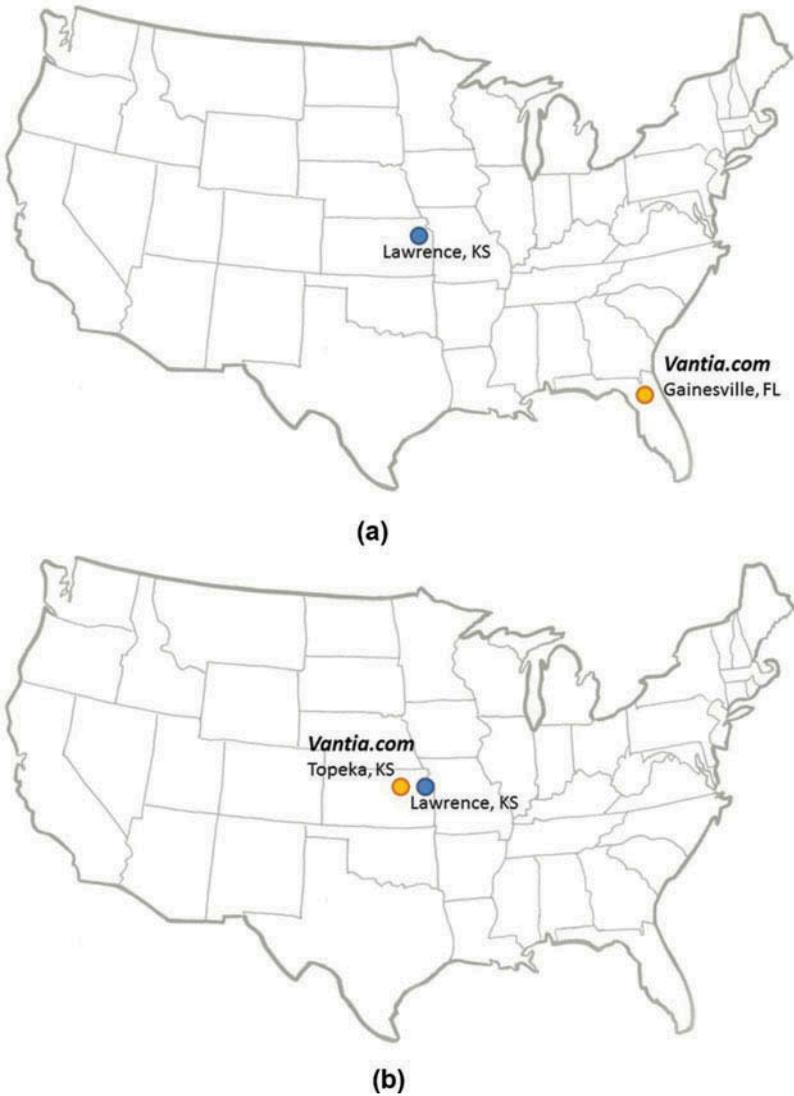
FIGURE 4A and 4B  Spatial distance manipulation with headquarters spatially near versus far from self (Study 3).

presentation specifications as in Study 1's materials) or a new *merging* logo created by animating the *diverging* logo in reverse order.

Finally, participants evaluated the company by answering the same three questions as in Studies 1 and 2. We also included an additional item to better capture how people evaluate companies in the real world. Specifically, we asked participants to indicate, on a sliding scale from 1 to 100, their answer to the following question: "If Vantia.com operated on a job-by-job basis

(i.e., you pay to have the service help you with an application one time), how much would you be willing to pay for one job?" Willingness-to-pay measures such as these are often used as an evaluative measure in contexts where consumers evaluate a company and/or its goods (Rahinel & Nelson, under review). Because the four measures of company desirability use two different scales, we standardized the responses and averaged them to form an index ($\alpha = .74$, $M_{grand} = 0.0$, $SD = 1.0$).

## Results and Discussion

Submitting company evaluation scores to an ANOVA returned a spatial distance × logo interaction, $F(1, 80) = 8.00$, $p < .01$, $\eta^2_{partial} = .12$.

As depicted in Figure 5, when participants were informed that the company headquarters was spatially near, they evaluated the company more favorably when its logo's metaphoric meaning matched the company's purpose (i.e., unifying; $M = .42$, $SD = .18$) as opposed to when it mismatched the company's purpose (i.e., diversifying; $M = -.05$, $SD = .15$; $F(1, 80) = 4.39$, $p = .04$). In contrast, when participants were informed that the company headquarters was spatially far, they evaluated the company more favorably when the logo's metaphoric meaning was mismatched to the company purpose (i.e., *diverging;* $M = .24$, $SD = .14$) instead of matched (i.e., *merging;* $M = -.20$, $SD = .15$; $F(1, 80) = 3.92$, $p = .05$).

These results replicate the divergent effects of metaphor application direction found in Studies 1 and 2 using a converging experimental method of reducing sureness and, theoretically, manipulating metaphor application direction. Participants induced to perceive their personal relation to a company as unsure (here, due to abstractness cued by spatial distance; Trope & Liberman, 2010) applied the logo's metaphoric meaning to themselves. As a result, they devalued a company offering to unify their professional profile when the company's logo depicted pieces
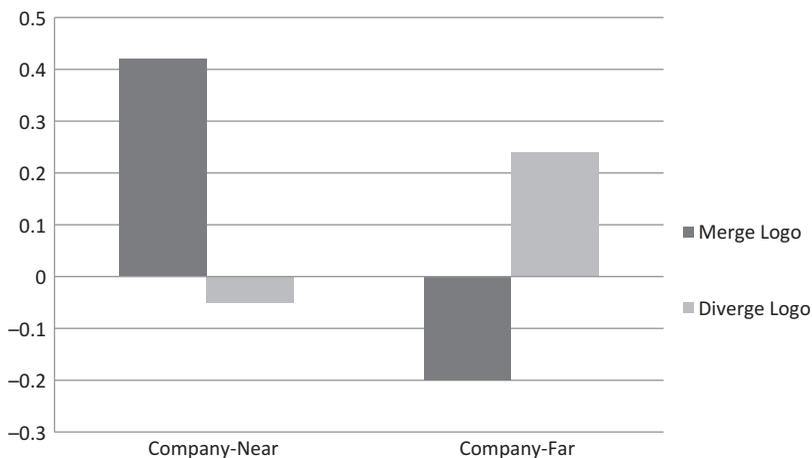


FIGURE 5  Liking for a company as a function of spatial distance and logo when company purpose is to unify profiles (Study 3).

merging into a whole, presumably because that logo signaled adequate personal unification and thus no need for the company's service. But when the company was spatially near, and hence its relation to the self was more concrete, participants did not apply the logo's metaphoric meaning to interpret their inner condition. Instead, they directed that metaphor outward to the company itself, thus evaluating the company more positively when its logo matched its purpose.

## GENERAL DISCUSSION

The results of three studies show that exposure to logos that use pictorial metaphors has divergent effects on evaluations of the associated company depending on the direction in which the logo's metaphoric meaning is applied—either externally to interpret the company's service or internally to make sense of one's own condition. We manipulated metaphor application direction by extending prior studies showing that people recruit available metaphors to interpret something particularly when they are unsure about it (e.g., Landau et al., 2014). We found that when observers were made unsure about the company itself, and thus prompted to apply its logo's meaning to interpret the company, they liked the company more when the logo's meaning and the company's purpose matched.

But when observers were instead rendered unsure about their own needs, we see a less intuitive contrast effect, such that liking was higher when logo meaning and company purpose *mismatched*. Under this condition, observers appear to have applied the logo's metaphor to interpret their own condition. Consequently, they liked a company more if it offered to "fix" their condition.

These effects of match (vs. mismatch) held across manipulations of both logo meaning and company purpose. Also, predicted effects were reliable across two converging operational definitions of unsureness (uncertainty in Studies 1 and 2; abstractness, via spatial distance, in Study 3) and two types of services (dating and professional profile support). Taken together, these findings show that people do not inevitably apply metaphor to interpret external stimuli. Under conditions when uncertainty about one's own internal states is likely to be high or when the stimulus is viewed in more abstract terms, people may be more likely to assimilate a metaphor into their self-concept. This can result in divergent effects of the same metaphor on attitudes.

### Theoretical Implications

Our results begin to answer lingering questions about research (reviewed in the introduction) that shows seemingly opposite effects using the same types of metaphoric primes (Schnall et al., 2008; Zhong et al., 2010). We found that a key moderating factor is what people are unsure *about*, and hence "where" they apply a metaphor's meaning. In response to salient unsureness about the external entity—here, a company's service—the metaphor is most useful when applied to the company, while being unsure about the self encourages people to use the metaphor provided by the logo to address that unsureness instead. This ability to alter the application of the metaphor supports a main tenet of conceptual metaphor theory in that these meanings need not be concretely tied to any specific object or entity (even if it is a logo representing a company); rather, the metaphor is used to help a person understand something about which they feel unsure; whether that be a feeling of uncertainty (Landau et al., 2014) or an abstract construal (Jia & Smith, 2013).

While we focused on the consequences of this divergent interpretation for company evaluation, its theoretical importance extends to a range of other important domains. Metaphoric imagery is a crucial component of political discourse (Mio, 1996), education (Low, 2008), and psychotherapy (Kopp, 1995). Our results suggest that situational variations in the source of unsureness will influence how, specifically, observers apply the metaphors made available in these domains. For example, a citizen unsure of how an immigration policy works may apply a "unification" metaphor to make sense of it, while another who is unsure how that policy will impact her own life may instead interpret the metaphor to mean that *she* is unified and thus disadvantaged by major societal changes. Across a wide array of practically important domains, people may be confronted with ambiguous metaphors that admit of multiple interpretations, each with unique consequences for thought and behavior.

Showing the divergent effects of applying a metaphoric logo to either an external or internal target is not only theoretically consequential, but important for marketing practitioners as well. Forceville (1996), among others, shows that pictorial metaphors play a critical role in advertising in part by permitting companies to convey vivid messages that can quickly communicate aspects of a product or service. While other research has explored the effects of metaphor for consumer decision making (for a summary, see Lee & Schwarz, 2014b) and factors that moderate interpretations of a metaphoric advertisement (Keefer, Landau, Sullivan, & Rothschild, 2014), the present studies present the first evidence that consumers can apply the same metaphor to make sense of either a service "out there" or their own needs and relation to that service.

This has several applications for marketing. Consider a context in which consumers encounter a start-up company, about which little is known, or a company that has recently undergone major changes. They may be confused about the company itself. In these cases, our findings suggest that a good logo for the company would be one that reflects the company's purpose (e.g., a forward-pointing logo for a company that claims to "move" business "forward"). On the other hand, there are plenty of contexts in which the consumer feels unsure about his or her own needs. Consider the tablet computer; these are often offered by companies with strong brand images, but because the offering was relatively innovative several years ago, the consumer may not have known if he/she actually would need or use such an unknown product. In such cases, a logo depicting the opposite of the product's purpose may be the best choice (e.g., a symmetrical logo, signifying balance, on an otherwise innovative product).

## Limitations and Future Directions

In Study 2, we did not observe the expected contrast between logo types within the condition where the company serves to unify public images and uncertainty about the company is induced. We suspect that this failure was study and/or context specific, as we do obtain statistical significance for that contrast in Study 3.

We believe future research can benefit from our distinction between external and internal metaphor application direction. The current studies focused on interpretations of pictorial metaphor, but the same essential factor can be examined in the context of metaphoric messages presented in other communicative modes and domains (e.g., those in public forums or media messages). Granted, the pictorial metaphors examined here are particularly ambiguous, lending themselves to different interpretation depending on situational factors. Will we see similar effects in the case of interpretation of linguistic metaphors? While metaphors in language are

often situated in enough context to prevent such ambiguity, decontextualized sound bites, off-hand comments, or other fragments of speech may permit the same ambiguity of interpretation that allowed the patterns observed in these studies to occur.

In discussing the conditions that heighten sureness motivation, we focused on variations in uncertainty and abstractness. Yet research has discovered other situational conditions that can enhance or attenuate this motive. For example, sureness motivation influences cognition particularly in situations where thinking involves a lot of effort or is otherwise unpleasant. If we feel that we are under time pressure to make a decision, if we have a lot of things on our mind (cognitive load), or if we are simply exhausted from a long day at work, we will be more inclined to terminate the thinking process early and reach closure on a "good enough" (i.e., simple, clear-cut, concrete) interpretation, regardless of the specific conclusions we reach. If, in contrast, we have a lot of cognitive resources at our disposal, we will be more tolerant of complexity and ambiguity, and we'll feel more comfortable gathering relevant information and deliberating on it before reaching a conclusion (Kruglanski, 1989, 2004).

Sureness motivation varies not only across situations but individuals as well (Kruglanski, 1989, 2004; Neuberg & Newsom, 1993; Thompson, Naccarato, Parker, & Moskowitz, 2001). Some individuals have a high need for nonspecific closure, meaning that they seek and prefer simple and clear knowledge and feel especially uncomfortable when confronted with ambiguous or confusing situations. By contrast, other people are more tolerant of complexity and ambiguity. In fact, they may view novelty, surprise, and uncertainty to be the very spice of life. In fact, some studies show that low structure-seeking individuals are actually motivated to interpret information in ways that *challenge* their familiar beliefs and attitudes (Vess, Routledge, Landau, & Arndt, 2009). Initial research into the role of individual differences finds that metaphoric messages in advertising are most influential among individuals who are high in need for cognition, that is, those who are more likely to invest effort into thinking about those messages (Chang & Yen, 2013). There may be fruitful implications here for understanding "who" uses metaphor and how metaphor is applied to make sense of the social world.

Expanding the empirical horizon further, recent lines of research show that confronting people with broad, existentially threatening realities such as meaninglessness and mortality instigate compensatory efforts to seek simple, clear-cut interpretations of social information (Landau et al., 2004; Sullivan, Landau, & Kay, 2012). What's more, research inspired by the meaning maintenance model shows that even brief exposure to stimuli that seem out of place or inconsistent with expectations (e.g., viewing nonsensical word pairs like "careful-sweaters") can make people more eager to reaffirm a global sense of meaning (Proulx & Heine, 2008, 2009). Future research could test whether people respond to such existential threats with compensatory efforts to apply metaphor in a targeted way to address focal concerns. For example, the threat of personal mortality might motivate the application of metaphor to lend coherent structure to the self, overriding a default tendency to apply that metaphor to interpret an external target.

Future research can also benefit from the broad methodological framework presented in the introduction. This framework allows researchers to look beyond sureness motivation and examine the moderating role of other epistemic motives, including the desire for worldview-affirming or accurate conceptions. What's more, they can look beyond the intrapsychic functions of metaphor use to model the utility of metaphor use at a dyadic or group level. We might expect, for instance, that if relationship partners are developing a shared metaphor to define the meaning of their relationship, they will apply (most likely at an unconscious level) concrete images, words, and

sensations to the relationship itself; if, in contrast, they are developing a metaphor to define where they stand in relation to an external event (e.g., financial hardship), they will apply those same concrete inputs externally.

## FUNDING

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APPENDIX A

Full Text of the Company Descriptions Used in Study 1's Company Purpose Manipulation

| *COMPANY DIVERSIFIES* | *COMPANY UNIFIES* |
| --- | --- |
| Vantia.com was created to help job applicants present themselves as having a diverse and multifaceted professional identity. In today's business world and job market, employers are looking for applicants with many different sides to themselves. They want an employee who can adapt, take on new roles, and switch roles. | Vantia.com was created to help job applicants present themselves as having a unified and integrated professional identity. In today's business world and job market, employers are looking for applicants with a clear, integrated identity. They want an employee to be the "go-to" person who will reliably fill a role. |
| The problem is that many applicants lack such a diverse identity because their training and experiences are too narrow. In your business program, you have a "core" curriculum—a preset series of classes focused on a few themes—and your training opportunities target specific professional roles. Although this type of training is valuable in some respects, employers might not see the *many-sided* "you" that they need. | The problem is that many applicants lack such a unified professional identity because their training and experiences are fragmented. In your business program, you have classes on a range of different subjects, and your training opportunities introduce you to diverse professional roles. Although this type of training is valuable in some respects, employers might not see the *1* "you" that they need. |
| Vantia.com is a new service that helps you prepare your job applications after you get a business degree so that you can present a diverse and multifaceted professional identity. Vantia.com knows that employers want new hires to flexibly fill many roles, and they help you present yourself in this way. | Vantia.com is a new service that helps you prepare your job applications after you get your business degree so that you can present a unified and integrated professional identity. Vantia.com knows that employers want new hires to fill a clear and specific role, and they help you present yourself in this way. |

APPENDIX B

Full Text of the Company Descriptions Used in Study 2's Company Purpose Manipulation

| *COMPANY DIVERSIFIES* | *COMPANY UNIFIES* |
|---|---|
| [company name] was created to help singles in the [city name] area present themselves as having a diverse and multifaceted personal identity. Research shows that, in today's dating scene, people are looking for someone with many different sides to themselves. They want a partner with an exciting mix of experiences and different aspects that they can discover. | [company name] was created to help singles in the [city name] area present themselves as having a unified and integrated personal identity. Research shows that, in today's dating scene, people are looking for someone with a clear, integrated identity. They want a partner with a well-defined personality that they can rely on. |
| The problem is that many people lack such a diverse identity because their modern lifestyles force them to be too narrow. Your busy life keeps you focused on a single career path, and you're expected to work so hard that you don't have time to travel, pursue new interests, or take on new roles. This makes it very hard to describe how wonderfully complex you really are on a dating site. As a result, potential partners might not see the many-sided "you" that they're looking for. | The problem is that many people lack such a unified identity because their modern lifestyles force them to be fragmented. Your busy life is filled with various types of activities. And as you shift from one situation to the next you have to take on various roles, show off different qualities, and essentially be different people. This makes it very hard to clearly describe "who you are" on a dating site. As a result, potential partners might not see the 1 "you" that they're looking for. |
| [company name] is a new service that helps you prepare your personal profile so that you can present a diverse and multifaceted identity. [company name] knows that there is someone special out there who is looking for a partner with many interesting sides that they can explore, and it helps you present yourself in this way. | [company name] is a new service that helps you prepare your personal profile so that you can present a unified and integrated identity. [company name] knows that there is someone special out there who is looking for a partner with a core identity that they can understand, and it helps you present yourself in this way. |