

Research Article

# Metaphors and creativity: Direct, moderating, and mediating effects

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## Abstract

Through five experiments, this research advances knowledge about the influence of metaphors on creative cognition by showing that perceiving images that carry metaphoric meaning can alter consumers' creativity. While the results of Experiment 1 reveal that positive metaphors representing ideas like "Thinking outside the box" increase creative output, Experiment 2 uncovers that a negative metaphor conveying "*I am burnt out*" decreases it. Experiment 3 shows that the metaphor–creativity link is moderated by analogical reasoning skills, and Experiments 4a and 4b reveal the mediating role of creative intent. In addition to implying that marketers can use metaphors to enhance consumers' creative feedback in areas like new product development, this research also makes important theoretical contributions by showing (1) that metaphors that are visually conveyed (in addition to tangible objects or physical exercises) can not only raise but also lower creative output, (2) that a unique cognitive skill alters the metaphor–creativity link, and (3) that consumers' creative intent contributes to that relationship.

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## Introduction

What if marketers could get more creative feedback from their customers—for example, during focus group meetings, through their lead users, or via their brands' online communities—by simply exposing them to images that carry metaphoric meanings? The goal of the present research is to investigate the effect of images that convey metaphoric meanings on consumers' creative output, as well as to better understand a moderating condition and a mediating mechanism related to that effect. From a business perspective, this research provides insight into whether and how marketers can utilize metaphors to increase consumers' creative

feedback, which has a considerable impact on new product development according to prior research (e.g., Madhavan & Grover, 1998; Zaltman, 1997). From a theoretical viewpoint, the existence of a metaphor–consumer creativity link would provide support for the notion that consumers' cognition and behavioral acts are grounded in their sensory systems (e.g., Krishna, 2010; Reimann et al., 2012; Schwarz, 2004), which are thought to be accessed through the use of metaphors (Krishna, 2012; Lee & Schwarz, 2012, in press).

Indeed, the ideas that cognition and behavior are both shaped by early interactions with the physical world and grounded in sensory perceptions, and that cognition and behavior are driven in part by conceptual metaphors, have recently sparked interest in the research areas of consumer psychology (e.g., Chandler & Schwarz, 2010), judgment and decision making (e.g., Lee & Schwarz, in press; Reimann et al., 2012), and social psychology (e.g., Lee & Schwarz, 2012; Meier, Schnall, Schwarz, & Bargh, 2012). However, the discussion surrounding the identification of new phenomena wherein metaphors shape consumer behavior has distracted researchers from some fundamental questions (Lee & Schwarz, 2012; Reimann et al., 2012). Thus, the present

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research will not only look at how metaphors can positively and negatively shape consumer behavior, but will also return to some of these deeper questions of what moderates and mediates such metaphoric effects. By doing so, we hope to enrich the literature and the understanding of the role of metaphors, specifically in consumer psychology, for which systematic investigations have only very recently been initiated.

In order to investigate the role of metaphoric effects on consumer behavior, we turn to a specific context—the embodiment of creativity—which has lately sparked attention outside the field of consumer psychology (Friedman & Förster, 2000, 2002; Leung et al., 2012; Slepian, Weisbuch, Rutchick, Newman, & Ambady, 2010). In particular, we consider metaphors within the context of consumer creativity in new product development. This is a highly relevant but understudied topic in marketing and consumer research (Burroughs, Moreau, & Mick, 2008; Prahalad & Ramaswamy, 2000; Sethi, Smith, & Park, 2001). Indeed, only in recent years has the consumer research literature started to investigate consumer creativity more systematically, including studies on the effects of situational involvement (Burroughs & Mick, 2004), input and time constraints (Moreau & Dahl, 2005), and situational variables such as ceiling height (Meyers-Levy & Zhu, 2007) and ambient noise (Mehta, Zhu, & Cheema, 2012) on consumer's creative output.

In five experiments, the present research provides evidence (1) that images that carry positive metaphoric meaning (e.g., an image of a box and a brain, resembling the metaphor “Thinking outside the box,” see Appendix A) can increase consumers' creative output, (2) that images that carry *negative* metaphoric meaning (e.g., “I am burnt out”) can decrease consumers' creative output, (3) that a key cognitive capacity—analogue reasoning skills—strengthens (moderates) the metaphor–creativity link, and (4) that consumers' creative intent underlies (mediates) that relationship.

## Conceptual background and hypotheses

### *Grounded/embodied cognition, metaphors, and behavior*

Grounded cognition theory (Barsalou, 2008) and, to a similar extent, embodied cognition theory (Anderson, 2007) both provide theoretical insight into the unification of perception and cognition, stressing the importance of the influence of early experiences in the external world on individuals' cognitive processes and behavior. These influences may extend to consumers' judgments and choices (for a recent review, cf. Reimann et al., 2012). While some views of grounded/embodied cognition (e.g., Barsalou, Niedenthal, Barbey, & Ruppert, 2003) and, to a similar extent, neuroscientific investigations of decision making (Bechara & Damasio, 2005; Damasio, 1994; Reimann et al., 2012) stress that bodily states trigger cognition and down-stream behaviors, the aspect of grounded/embodied cognition most relevant to our present research is the role of mental simulation. According to this concept, a previous cognitive state (i.e., a state that an individual was in prior to the present time, while in contact

with certain perceptual, motor, and introspective stimuli) can be mentally simulated when the individual comes into contact with these stimuli again (Barsalou, 2008).

In a similar vein, cognitive metaphoric theory provides a relevant framework, suggesting that metaphors (i.e., figures of speech in which words are used in a nonliteral manner) may have been embedded in our minds since infancy and may generate nonconscious, neurally rooted cognitive and behavioral responses (Lakoff & Johnson, 1980, 1999). Accordingly, individuals interpret the world largely through metaphors, which enable them to understand abstract ideas in terms of concepts that are easier to comprehend (Lakoff & Johnson, 1980; Landau, Meier, & Keefer, 2010). Indeed, metaphoric expressions are common in everyday speech, are quickly understood without special effort, and are often used by people to make sense of many aspects of their lives (Glucksberg & Keysar, 1990). Hence, metaphors can be thought of as stimuli that, either via environmental or embodied interactions, exert a profound impact on our behavior (for reviews, cf. Chandler & Schwarz, 2010; Lee & Schwarz, 2010, 2012; Xu, Zwick, & Schwarz, 2012). Here, we focus on the role of metaphors in consumer creativity.

### *Metaphors in consumer creativity*

Creativity is a cognitive process that has been studied since Guilford (1950) first made the claim for its importance in the middle of the 20th century. Since then, various studies have examined different facets of creativity and cognition, each reiterating the importance of refining the definition of creativity. On the basis of a meta-analysis of 25 years' worth of creativity research, Baas, De Dreu, and Nijstad (2008) conceptualized creativity as the generation of novel ideas, insights, or solutions that are both original and appropriate. Both convergent thinking (i.e., pushing for the single best idea, which is possibly the “correct” answer) and divergent thinking (i.e., generating many alternative ideas through branching off in several possible directions) are cornerstones of creativity (Guilford, 1967; Guilford & Hoepfner, 1971).

Friedman and Förster (2000, 2002) were among the first to study creative insight from the perspective of embodied cognition, generating a series of experiments to test the relationship between the body and creative insight. In particular, the authors explored the effects of flexing or extending one's arm on creative insight, showing that flexing enhanced it. More recently, Slepian et al. (2010) found that priming participants with a tangible, illuminated light bulb had a positive influence on insight. Specifically, the authors denoted that having a light turned on in a room enhanced mathematical, verbal, and problem-solving skills. Further, similar to Friedman and Förster's (2000, 2002) work, Leung et al. (2012) indicated that physical exercises with metaphoric, embodied meaning (e.g., asking participants to combine two stacks of paper, which possibly embodies the idiom “putting two and two together”) can lead to more creative insights. These prior investigations represent important groundwork for our research, as they indicate

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