Evaluative Metaphors: When Goodness is Up, Bright, and Big

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Abstract

People are constantly evaluating the world around them. This process of identifying and thinking

about value in the world appears to be aided by metaphor. In this chapter, we review the apparent

metaphorical mappings between goodness and verticality, brightness, and size. In doing so, we

argue that if the mappings reflect metaphors, and not merely associations, they will inevitably

involve a cluster of implied attributes that are transferred from the concrete domain to the

abstract one. With this consideration in mind, we discuss the various entailments of each

experiential dimension and the attributes that they may imply. We suggest, for example, that

highness implies precariousness, brightness implies purity, and bigness implies influence. Each

implied attribute has clear implications for understanding how people typically thinking about,

and experience, certain abstract valenced concepts such as moral standing, intelligence, and

social status.

Evaluative Metaphors: When Goodness is Up, Bright, and Big

In the realm of emotion, metaphors abound. This is true of how people talk about emotion (Kövecses, 2000), and perhaps of how people think about, and experience, emotion. Indeed, this is the central claim of conceptual metaphor theory (Lakoff & Johnson, 1980, 1999)—that metaphor is more than a linguistic or rhetorical phenomenon. In the current chapter, we examine this claim with respect to a particular often-studied type of emotion metaphor—*dimensional evaluative metaphors*. Dimensional evaluative metaphors involve the mapping between the valence dimension of emotion—good-bad—and a concrete physical dimension, such as *up-down*, *bright-dark*, or *big-small* (Crawford, 2009). Evaluative-experiential mappings of this form have been the focus of most psychological research on the topic of emotion and metaphor. In this chapter, we review what is known about these mappings, focusing on what it would mean for them to function as metaphors in the sense articulated by conceptual metaphor theory.

Evaluative-Experiential Mappings as Metaphors: Structuring Abstract Thought

Metaphors clarify the meaning of an abstract, unfamiliar concept by comparison to a more concrete, familiar concept (Boroditsky, 2000; Gentner, 1983; Lakoff & Johnson, 1980, 1999). More specifically, metaphor involves a structural or relational mapping which allows for the importing of knowledge or meaning from a well-understood domain into a less-well-understood domain. For example, by thinking about arguments through the lens of war ("she attacked my opinion"), one comes to understand that arguments have similar attributes to war (e.g., they are zero-sum games; Lakoff & Johnson, 1980). For evaluative-experiential mappings to be metaphorical in this sense, it would mean that people think of, and experience, goodness and badness as akin to the experiential dimensions to which they are linked. For example, to call

the goodness-brightness mapping a metaphor implies that people conceive of goodness as being akin to brightness, that is, as having similar attributes. Because there are various mappings, each involving a different set of entailments, how someone evaluates the world around them—the way he or she thinks about and experiences goodness or badness—will be shaped by the particular mappings that are operating in any given context. A critical question we address in this review is whether the available evidence supports this interpretation, and if not, what sort of evidence would be needed to bolster such a view.

Evaluative-Experiential Mappings as Consequences of Correlations between Value and Physical Attributes

An alternative explanation for people's tendency to find evaluative meaning in dimensions of experience is that value and certain physical attributes covary in nature. Evaluative reactions are concerned with identifying desired and undesired entities to be approached and avoided (Chen & Bargh, 1999). This process could be facilitated if there were a discernible pattern to the physical attributes and locations of valued objects. Indeed, the physical attributes of valued and disvalued entities may not be entirely random. Goodness has concrete, physical correlates, or at least people tend to assume that is does. For example, it is common for people to believe that good things tend to be elevated and/or brightly-colored; conversely, people often assume that objects low in space and/or dark are inherently less valuable, or even overtly harmful. For example, in many societies, such as among the Hua of New Guinea, food taboos specifically discourage eating foods that grow on the ground (e.g., some species of taro) or have dark interiors resembling dirt (Meigs, 1984). This association between the goodness and badness of foods and their spatial origins and brightness may derive from the fact the ground is a source of physical contamination. Given these patterns of covariation, the mental mapping of evaluation

to experience (e.g., good-bad to light-dark) can then act as a useful judgment heuristic. According to this explanation, there is no importing of knowledge from one domain to another. One need not see goodness as somehow akin to "highness" or "brightness." Rather, highness and brightness are simply attributes that covary with goodness in experience and are therefore used heuristically to infer the presence of valued or desired attributes.

Evaluative Metaphors and Types of Goodness

On the other hand, if evaluative-experiential mappings are metaphorical, and not merely associations reflecting the physical correlates of goodnesss, what particular function might they serve? As many theorists have argued, affect is ultimately about value – the goodness and badness of events, actions, and objects (Clore & Tamir, 2002; Ortony, Clore, & Collins, 1988). Critically, there are many ways in which something or someone may be good or bad. For example, a person may violate a moral standard (e.g., by cheating) or a performance standard (e.g., by failing a test). Both actions, and the individuals who perform the actions, are evaluated negatively. How that person is treated, however, and the particular inferences that a perceiver makes will depend on the particular type of badness under consideration. Dimensional evaluative metaphors, by specifying a detailed set of entailments and associated attributes, could play a particularly important role in this process. For example, if the good thing—such as one's elevated moral standing—is a state that is particularly fleeting and hard to maintain, then a certain metaphorical framework may encourage treating it as fragile and transient. For this reason, we think it is most useful to try to unpack the various dimensional evaluative metaphors with regard to specific attributes and specific valenced concepts, such as moral standing, social status, or intelligence.

To explore the potential metaphorical function of the various evaluative-experiential mappings, we consider three of the most well-studied mappings, focusing on whether evidence supports the claim that those mappings function as metaphors. First, we review evidence that the mapping exists. We then ask what entailments of the experiential dimension are psychologically salient (i.e., features that people grasp intuitively) and therefore plausible as candidates for structuring concepts of goodness. These entailments may be specific attributes or causal schemas associated with the dimension (Morris, Sheldon, Ames, & Young, 2007). Finally, we propose ways of testing these entailments and the extent to which metaphoric importing occurs. In each case, the proposed studies would test whether (1) strengthening, or simply making salient, the low-level evaluative-experiential associations or (2) giving participants direct physical experience with the experiential dimension (e.g., brightness, verticality) increases the likelihood that one thinks about goodness in a metaphor-consistent manner.

In their review of the role of metaphor in social cognition, Landua, Meier, and Keefer (2010) articulate this empirical strategy, which they call the *metaphoric transfer strategy*. We agree that this strategy is critical for providing support for conceptual metaphor theory. We do not believe, however, that most of the empirical studies conducted on evaluative-experiential mappings qualify as tests of whether metaphoric transfer has occurred. Instead, these studies primarily demonstrate the existence and relative automaticity of the evaluative-experiential mappings. The question of whether metaphoric transfer occurs in these cases is largely untested. Devising direct, compelling tests of metaphoric transfer will be critical for evaluating whether these associations operate as metaphors. When testing for metaphor transfer, the choice of dependent variable is critical. The outcome cannot simply be a measure of whether the target domain is active or accessible (e.g., elevated vertical position facilitating judgments of

positivity)—a purely associative, non-metaphoric link could account for the same effect. Instead, the outcome must assess a particular feature or aspect of the target domain that directly follows from one or more of the entailments of the experiential dimension. In other words, the test should not be whether, for example, experiencing or priming the idea of elevated physical position makes people think of positivity, but rather whether doing so makes people think of positivity *in a certain way* (i.e., as having similar attributes to elevated entities).

<div align="center">*The Metaphors*</div>

Verticality

In everyday language, it is common to refer to affectively-valenced concepts using language that references vertical space. The ubiquity of these valence-verticality associations has been demonstrated numerous times. Wapner, Werner, and Krus (1957) found that after experiencing success (vs. failure), participants tended to adjust their gaze upward. Meier and Robinson (2004) provided additional evidence that people automatically associate high vertical position and positivity. They found that participants were faster to recognize good words as good when those words appeared at the top of the computer screen and faster to recognize bad words as bad when those words appeared at the bottom of the computer screen. Later research demonstrated that these associations can influence memory (Crawford, Margolies, Drake, & Murphy, 2006): participants viewed positive and negative images in various locations. When asked to recall the location of each image, their memory for positive images was biased upward and their memory for negative images was biased downward.

The influence of these associations can extend to other sensory modalities: in one series of studies, participants categorized positive and negative words (Weger, Meier, Robinson, & Inhoff, 2007). After each word, they heard and judged a tone. Positive words biased judgments

toward higher pitch. Testing the opposite direction of influence, Horstmann and colleagues (Horstmann, 2010; Horstmann & Ansorge, 2011) found that the ability to mimic a smile was enhanced by a high-pitched tone, whereas the ability to mimic a frown was enhanced by a low-pitch tone. Supporting evidence also comes from research taking an individual differences approach. For example, individuals prone to depression are particularly likely to attend to lower regions of vertical space (Meier & Robinson, 2006). Similar associations with vertical space have been found for specific positively-valenced concepts such as divinity (Meier, Hauser, Robinson, Friesen, & Schjeldahl, 2007) and power (Schubert, 2005; Giessner & Schubert, 2007).

Because verticality involves spatial relations along a single spatial dimension, the most psychologically salient entailments of verticality are centered on changes in physical position, such as the nature and origin of the forces necessary to initiate a change in position, and the ease of movement in different directions. As a result, the good-up mapping may be representative of a broader metaphor in which one's level of an abstract, continuous, affectively-valenced attribute—such as moral goodness or social influence—is treated as if it were akin to a "position" along a vertically-oriented physical dimension (Brandt & Reyna, 2011; Haidt, 2003; Schubert, 2005). In this metaphor, the entailments of verticality provide structure for thinking about changes in one's position, which are treated as if they are movements along a vertical dimension in space. One's position may change; one may move up or down on the dimension. Elevated position on this dimension is a status that may be attained or lost, as people "rise" and "fall" along the dimension. This metaphor gives life to phrases such as "climbing the corporate ladder" and "a fall from grace." It is clear that people talk about various forms of status in terms of vertical position, but if this metaphor is a way of *thinking* about status, and not just a way of

talking about it, then people's basic conception of moral standing, power, and similar concepts should be shaped by the various entailments of verticality.

We identify several psychologically salient features of verticality, many of which derive from the fact the vertical dimension is aligned with gravitational force. For example, on account of gravity, there is an asymmetry in the ease of movement along the vertical dimension, such that moving up ("rising") is harder than moving down ("falling"). People appear to intuitively grasp this asymmetry, given the frequency of metaphorical sayings that use the term "uphill" to convey difficulty or resistance (e.g., "she is fighting an uphill battle"). This fact may influence how people conceive of certain forms of social status such as power and moral standing. Descents—movements from Up to Down—should be thought of as easier, more natural, and more likely than ascents, which must work against the force of gravity. For example, a loss of moral standing due to a moral transgression is commonly referred to as a "fall from grace." If a loss of standing is a fall, it should be thought of as rapid and hard to reverse once initiated. This metaphorical mapping could lead to the perception of power and moral standing as precarious states that are hard to achieve and easy to lose (Rozin & Royzman, 2001).

In a similar vein, because gravity impedes ascents but facilitates descents, movement up and down a vertical dimension may naturally engender different causal schemas (Morris, Sheldon, Ames, & Young, 2007). That is, descents (e.g., "falls") are largely passive events and can happen without the aid of willful, intentional intervention. Conversely, ascents may evoke an agentic causal model in which movement up the dimension (i.e., a "climb") is considered to be caused by the internal motivation and attributes of the individual. Within this general metaphorical framework there may be some flexibility. For example, one may conceive of an

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ascent as a "rise" rather than a "climb" thereby implying a more passive path to status in which the causal force may be attributed more to external, than internal, forces.

Finally, physical highness may imply certain physical attributes that are seen as consistent with that position, such as weight (highness implies lightness, lowness implies heaviness; Yu, 1995). Likewise, because DOWN is typically anchored on the ground and UP is anchored on the sky, lowness may be associated with physical dirtiness (e.g., the phrase "down and dirty") and darkness.

In sum, to be "UP" is a physical position/state that is hard to attain, easy to lose and characterized by physical lightness (weight), cleanliness, and brightness (color). "DOWN" is the converse: a physical position/state that is easily attained and maintained, and characterized by heaviness, dirtiness and darkness. Because of the various entailments of verticality, a simple metaphorical expression such as "I'm feeling up, today" may activate a cluster of experiential knowledge.

Analyses of the various entailments of verticality, such as the one discussed here, provides a starting point for testing whether the tendency to associate goodness with highness (Crawford et al., 2006; Meier & Robinson, 2004; Weger et al., 2007) reflects a metaphor. If these associations are indicative of the basic underlying structure of the concept of certain valenced attributes, such as moral goodness, then they should shape how one thinks about those attributes. A number of testable hypotheses follow from this. For example, if there are individual differences in the tendency to associate morality with up and down, then individuals for whom these associations are particularly accessible or strong should be particularly likely to regard moral goodness as a precarious state that is hard to achieve and easy to lose. Moreover, priming the associations experimentally may strengthen this particular conceptualization. Whereas most

previous research has focused on whether priming "up" actives "virtue" (and vice versa), the critical question for the metaphor interpretation is whether priming verticality changes how one thinks about virtue. For example, if verticality is primed, will people be especially likely to perceive a loss of moral standing as "like a fall" (i.e., rapid, hard to reverse, etc.)? More generally, this approach would seek to answer the question, "When the experiential dimension is primed, is one more likely to make metaphor-consistent inferences when thinking and reasoning about the particular type of goodness (or badness) under consideration?"

In sum, it is clear that the associations exist and that they run deep; it is not at all clear how they influence cognition, if at all. Is the way people think about goodness different because of these associations, as conceptual metaphor theory asserts? Answering this question requires an examination of the various entailments of verticality that appear to be central to people's experience of highness and lowness.

Darkness

Many studies have shown that people tend to associate positive concepts with brightness and the color white and negative concepts with darkness and the color black. Meier, Robinson, and Clore (2004) found that participants were faster to categorize good words as good when those words appeared in white and faster to categorize bad words as bad when those words appeared in white. This effect extends to affectively-valenced concepts such as morality (Sherman & Clore, 2009) and can influence perceptual judgments as well. For example, studies have found that participants judge (1) smiling faces as brighter than frowning faces (Song, Vonasch, Meier, & Bargh, 2012), (2) a shade of gray as darker after having categorized a negative word (Meier, Robinson, Crawford, & Ahlvers, 2007) and (3) a room as darker after recalling an unethical transgression (Banerjee, Chatterjee, & Sinha, 2012).

The ability of the darkness to prime "immorality" extends to moral behavior and decision making. In the domain of sports, several studies have found that athletes wearing darker uniforms are more likely to engage in aggressive or competitive behavior (Frank & Gilovich, 1988; Webster, Urland, & Correll, 2012). Likewise, another study found that participants were more likely to engage in unethical behavior if they were in a dimly-lit room or wearing sunglasses (Zhong, Bohns, & Gino, 2010).

What are the psychologically salient features of the light-dark dimension that might be applied metaphorically to understand the good-bad dimension? Answering this question requires first recognizing that darkness may refer to the (1) *luminance*, the amount of ambient light in a given space (e.g., a dimly vs. brightly lit room) or (2) *reflectance*, the amount of incident light a surface reflects (e.g., a black vs. white shirt).

 In the former sense, darkness impairs visibility and, as a result, serves a concealing function that may produce a sense of ignorance (e.g., "she was kept in the dark") or anonymity (Zhong et al., 2010). In this sense, light reveals truth or insight (e.g., "my experience was illuminating"), providing a basis for concepts like "enlightenment" (Lakoff & Johnson, 1999). Additionally, due to the close link between light energy and heat energy (Schubert & Kim, 2005), brightness may be experienced as implying physical warmth, an experiential dimension with its own links to abstract social thought (Williams & Bargh, 2010). Finally, bright things are highly visible, salient, and, therefore, likely to grab one's attention. For example, to call someone a "bright spot" is to say that they stand out in their goodness.

In the second sense of darkness (i.e., the relative lightness or darkness of physical material), the colors black and white play a central role, with white implying physical purity and cleanliness (Grieve, 1991; Sherman & Clore, 2009; Sherman, Haidt, & Clore, in press; Williams,

Morland, & Underwood, 1970) as well as innocence, youth, and fragility. Conversely, blackness may imply physical contamination, decay, or filth (Duncan, 1994). On account of their associations with cleanliness and filth, the entailments of white and black are essentially the entailments of the psychology of purity and contagion. A central feature of contagion is the marked asymmetry between positive and negative forces, with negative forces being far more potent (Rozin & Royzman, 2001). For example, as the principle of negativity dominance articulates, an otherwise appetizing substance can be thoroughly spoiled by the introduction of a negligible amount of an offending substance (Rozin & Royzman, 2001). Indeed, people are largely insensitive to degree of contamination: one drop of the offending substance is nearly as bad as 100 drops, a phenomenon termed dose insensitivity (Rozin & Nemeroff, 2002). The upshot of negativity dominance and dose insensitivity is that pure entities—often represented with the color white—are regarded as fragile and easily ruined. Altogether, the white-black dimension seems to readily imply various purity-related attributes.

On account of the purity-related entailments of the black-white dimension, any valenced concepts linked to that dimension should recruit the psychology of purity such that these concepts are conceptualized and experienced through the lens of purity. For example, a moral value that is extremely highly valued may become linked to the color white, a metaphorical mapping that would encourage thinking of that value as "sacred" or off-limits from being traded off with other kinds of value (Baron & Spranca, 1997; Tetlock, Kristel, Elson, Green, & Lerner, 2000).

The critical question becomes to what extent are these features of lightness—in either sense—applied to clarify various manifestations of positivity? What types of goodness evoke the metaphor most commonly? There are two types of goodness that seem most likely to be

structured in terms of the light-dark dimension: intelligence (she is very "bright") and moral standing ("he has a black heart").

Intelligence. The link between intelligence and the light-dark dimension seems to arise primarily from the tendency to conceive of knowledge as akin to brightness (Lakoff & Johnson, 1980). Conceiving of knowledge as brightness may encourage thinking of intelligence as a quality that illuminates. In this view, intelligence and knowledge serve a guiding function that enables one to venture into otherwise unexplored places. To test this possibility experimentally, one could give people physical experiences with lightness and darkness—effectively priming the experiential dimension—and then test whether this experience increases that likelihood that one will perceive intelligent individuals as capable of serving as guides (i.e., leaders). Since the luminance provides physical guidance, priming luminance should increase the perception of intelligence and leadership (a form of social guidance) as congruent.

The metaphor of intelligence as brightness may also have an incidental side-effect. Because physical brightness is linked with physical warmth (Schubert & Kim, 2005), conceiving of intelligence as physical brightness may encourage the perception of intelligent individuals as also socially warm (e.g., friendly; Williams and Bargh, 2008). Indeed, since physical brightness also implies warmth, the well-known halo effect (Kelly, 1955) may be strongest when the brightness metaphor is salient. However, the positive correlation between competence and warmth is seen mainly when judgments are made of individuals (Rosenberg, Nelson, & Vivekananthan, 1968). By contrast, when making comparative judgments of groups, competence and warmth judgments are typically negatively correlated (Aaker, Vohs, & Mogilner, 2010; Judd, James-Hawkins, Yzebyt, & Kashima, 2005).

Morality. The link between morality and luminance seems to reflect a metaphor in which good and evil are competing "forces." Because of the aforementioned link between brightness with knowledge, this evil-as-a-dark-force metaphor would seem to encourage one to think of evil as a form of ignorance. Alternatively, in the second meaning of darkness (i.e., reflectance), the association of moral goodness with the color white (e.g., Sherman & Clore, 2009) may be thought of as part of a broader purity metaphor, in which moral virtue is regarded as a "pure" state akin to physical cleanliness. There is ample evidence that people indeed think of morality in this way (Schnall, Benton, & Harvey, 2008; Zhong & Liljenquist, 2006; Zhong, Strejcek, & Sivanathan, 2010). The critical question, however, is whether the concrete physical experience of white and black and the automatic associations revealed in the aforementioned empirical research play a direct causal role in encouraging this conceptualization of morality. For example, does giving people experience with the colors black and white increase the tendency to think of moral transgressions as imparting an irreversible stain upon one's moral reputation? Likewise, would manipulations that strengthen the low-level mental associations (virtue = white, sin = black), such as an associative learning paradigm (Paivio, 1969), similarly encourage one to think and reason about morality in purity-centered ways?

The fact that there appear to be two different moral metaphors linking morality to the light-dark dimension provides an opportunity to use the *alternate source strategy* (Landau et al., 2010), which pits two different metaphors against each other. In this case, one could randomly assign people to receive one of two possible experiences: (a) an experience with luminance (e.g., have participants attend to fluctuations in the amount of ambient light in a room) or (b) an experience with reflectance (e.g., having participants attend to, or interact with, white and black substances). Afterwards, participants would be asked to make a variety of judgments about a

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given moral transgression. The particular physical experience that participants have should influence the specific moral inferences and judgments that they make. For example, since a loss of brightness (as luminance) is experienced as reversible (e.g., one simply need to locate a light source to make a dark room bright), exposure to this experiential dimension should encourage the view of a moral transgressor's reputation as reversible. A loss of whiteness (as reflectance), on the other hand, is commonly seen as impossible to regain once lost (e.g., once even a drop of black paint is added to a cup of white paint, there is nothing that can be done to return it to a "pure" white state), so that exposure to reflectance should lead participants to see such damage as irreversible.

Size

In a common idiom, bigger is said to be better. Consistent with this saying, people display a relatively basic size preference. Preference for larger objects has been found even for abstract geometric shapes and even in children as young as 3-years old (Silvera, Josephs, & Giesler, 2002). Other research presented positive and negative words in different font sizes and found that positive words could be identified as positive more quickly and accurately when presented in a larger font (Meier, Robinson, & Caven (2008). In addition, this study found that the intensity of evaluation was also affected by size, with positive words presented in larger fonts being seen as more positive.

The Entailments of Size

Although people associate positivity and largeness, it is not clear that this means that they think of goodness as similar to largeness. If this association is indeed indicative of a metaphor, what are the psychologically salient attributes of largeness that might be used to clarify goodness? Compared to small things, large things take up a lot of space and, as a result, are

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visually salient. Given that people infer that large entities are also heavy (Charpentier, 1891; Kloos & Amazeen, 2002), large things are also typically thought of as capable of exerting substantial force on other objects. That is, all things being equal, largeness may imply strong causal force. As a consequence, physical size is used to convey information about importance and influence. To say that someone is big in a social sense (e.g., "he's a big shot") implies that he or she exerts great influence just as physically large objects do. Similarly, because large entities are typically hard to move, physical largeness may imply some degree of permanence.

Power. Given these entailments, it is not surprising that power seems to be the social dimension most commonly linked to physical size in figurative language. Invoking the physical size metaphor may encourage thinking of an individual as both influential and firmly entrenched in his or her position. Empirically, an open question is whether priming individuals with physical largeness, or strengthening the good = large association, facilitates thinking about social status or power in this way. For example, one such study could have participants handle objects of various size—making the small-large dimension salient—and then have people estimate how difficult it would be to remove a given high status individual from their particular position. The prediction would be that priming people with physical size will encourage them to think about social status in terms of physical size, and that this in turn will lead them to regard high status individuals as particularly hard to displace.

Morality. Beyond its role in how people talk, and maybe think, about power, references to physical size are a common feature of the language people use to talk about certain forms of moral goodness. For example, terms such as "largesse" and "magnanimous," which are derived from Latin terms for large (e.g., magna), are often used to describe acts of generosity. It is not clear, however, whether this usage involves a metaphor for goodness or whether the language of

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physical size is simply being used to describe something that is "big" in a social sense (i.e., impactful, influential).

Metaphoric Transfer and Attribution

One way to distinguish the associative and metaphoric accounts we have discussed might involve their relative susceptibility to attributional alteration. It seems possible that a metaphoric mapping of concrete experience onto value might not be easily changed by an attributional manipulation. Consider an example in which experiences of lightness and darkness affect judgments of value. If a word (e.g., honesty) printed in a white font were evaluated as more moral than otherwise, one might explain the effect by assuming that the moral meaning implied by whiteness had been misattributed to (and added to) the moral meaning already inherent in the word.

The process would be similar to the case in which positive affect elicited by warm and sunny spring weather was found to influence judgments of life satisfaction (Schwarz & Clore, 1983). That experiment include an attributional manipulation in which the sunny weather was made salient for one group just before participants rated their life satisfaction. Making salient the true cause of their positive feelings in this way then eliminated any effect of mood on judgments of life satisfaction. The authors concluded that the mood effects had depended on misattributions so that affect from an irrelevant source (the weather) had been experienced as part of their assessment of their life satisfaction. Returning to the font color example, would a similar pattern be found if the whiteness (or the moral connotation) of the font were made salient before participants made judgments of the moral meanings of the words? Would participants be able to separate their experience of the two sources of moral meaning? If a common pattern in such attributional studies prevailed, it is possible that the word "honesty," for example, would be rated

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as less moral because the now salient whiteness of the font would be experienced as the source of the moral connotation.

Evidence is lacking concerning whether attribution plays a role in perceptions of goodness as up, bright, and big. However, research has recently been done on the effect of experiencing something as physically heavy or weighty and inferring that it is therefore important (Schwarz, Reinhard, & Chandler, 2012). The experimenters found that handling a copy of a novel (*Catcher in the Rye*) with a weight inside led people to see it as especially important in American literature. Of special interest is the fact that the experimenters did a subsequent study (Reinhard, Chandler, & Schwarz, 2012) in which they cautioned participants that the book was a display copy with a weight in it to allow it to stand unsupported in a display. When this alternative cause for the experience of weightiness was made salient, it was not mapped onto the idea of literary importance. It might be useful to determine the role of such misattribution in other examples of the effects of perceptual grounding on judgment, including those of the effects of experiencing things as up, bright, and big on evaluation.

Of course, it is quite possible that such attributional manipulations would have no effect in the examples we are considering. What if being up, bright, and big were not merely associated with goodness, and hence potentially separable, but were linked metaphorically? If an attribute suggests goodness metaphorically (white suggesting purity, bigness suggesting influence, and elevated location suggesting precariousness), then the inferred or implicit sense of purity, power, or precariousness might not be experienced in a separable way. Unlike mood that can be experienced as distinct and rated explicitly, the purity implied by brightness is perhaps implicitly inferred and not really experienced, so that it is not easily separated through an attributional manipulation.

If the relationship is metaphorical, an attribution manipulation might be successful only when applied upstream, with regard to whether or not the whiteness is allowed to be experienced as purity rather than simply as a color in the first place (and bigness as powerful, rather than just as sizable, and elevation as dominance rather than simply as a location). If so, perhaps part of the power of metaphor lies in the fact that it is difficult for the buyer to be wary of what he is buying, because the entailments of metaphors are utterly inherent in the metaphoric meaning, and cannot be easily disentangled once the metaphor has transformed the object in the Gestalt-like fashion that it does. Having seen the object in the new light provided, one cannot easily go back nor make after-the-fact deletions and substitutions of attributes.

Conclusion

In this chapter, we have reviewed three common mappings between concrete experience and evaluative processing (good = up, good = bright, and good = big). We have attempted to address the important question of whether these mappings reflect (a) metaphors that help clarify the nature of the particular form of goodness under consideration or (b) associations between value and physical attributes that aid in inferring the presence of desired entities. If they are truly metaphors, in the sense articulated by conceptual metaphor theory (Lakoff & Johnson, 1980, 1999), we believe it will be because the experiential dimensions imply specific attributes, such as precariousness, purity, and influence, which are transferred to the target domain, shaping how one thinks and reasons about abstract concepts such as intelligence, morality, and power.

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