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Toward a Metaphor-Enriched Personality Psychology

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Conventional wisdom on metaphor suggests that it is the province of poets, metaphor is an optional way of thinking, and/or that metaphor merely serves communication purposes. In this chapter, we show that such wisdom is at variance with how human beings actually think and function. We first provide a brief overview of the metaphor representation perspective. We then make a case for the utility of this perspective in understanding how people differ from each other and do so within a broader context of how personality has traditionally been assessed. We then present four lines of personality research inspired by the metaphor representation perspective. We finally conclude with a discussion of the challenges and unanswered questions involved in translating the metaphor representation perspective to personality psychology.

A Brief Overview of the Metaphor Representation Perspective

Our view of metaphor is heavily influenced by the writings of Lakoff and Johnson (1980; 1999), a linguist and philosopher respectively. We term their set of ideas the metaphor representation perspective (Meier & Robinson, 2005) and contrast it with three more conventional perspectives of metaphor. First, it might be thought that metaphor is the particular province of poets, lyricists, or expressive writers. However, this is simply not the case as linguistic metaphors appear to be commonly used by virtually everyone (Gibbs, 1994). Second, it might be thought that there are as many metaphors as there are figures of speech that are metaphoric. This is not the case in that the same conceptual metaphors (e.g., LIFE IS A JOURNEY, THE SELF IS A CONTAINER) seem to motivate multiple specific linguistic expressions (Lakoff & Johnson, 1999). For example, the phrases “I’m feeling up”, “things are looking up”, and “that was an uplifting movie” are not unrelated, but rather all capitalize on the same conceptual metaphor, mostly generally GOOD IS UP.

Third, it might be thought that metaphors are only about communication. Lakoff and Johnson (1980), however, made the novel and fundamentally interesting suggestion that we use metaphors in speech because we often *think* metaphorically. That is, language use follows from the manner in which our minds work. From this perspective, the phrase “I’m feeling up” captures how people think about their happiness, even in the absence of a communication context. A rationale for this idea is that many of our most important feelings and concepts – such as peace, love, or anger – lack a clear perceptual referent, which creates epistemic problems (Searle, 1998). People resolve such difficulties by scaffolding (Williams, Huang, & Bargh, 2009) abstract feelings and thoughts on perceptual dimensions – such as up-down, warm-cold, close-far, and dirty-clean – that are more concrete, immediate, and visceral, which in turn facilitates their intuitive understanding (Landau, Meier, & Keefer, 2010).

Lakoff and Johnson (1999) further suggested that metaphor representation processes guide our thoughts like “a hidden hand”. An important body of social psychology research has supported this idea (Landau et al., 2010). These studies have manipulated perceptual cues associated with prominent metaphors and shown that they result in metaphor-consistent outcomes. For example, Meier and Robinson (2004) showed that positive words were evaluated faster when presented higher on the computer screen and negative words were evaluated faster when presented lower on the computer screen, consistent with a GOOD IS UP conceptual metaphor. IJzerman and Semin (2009) showed that incidental manipulations of warmth influenced subsequent perceptions of interpersonal proximity, consistent with a CLOSENESS IS WARMTH conceptual metaphor. We could cite multiple other important studies here, but they will be cited in other chapters in the present volume. Also, for a fuller discussion of conceptual metaphors, see Gibbs (this volume) or Landau, Robinson, and Meier (this volume). Of more

importance for our chapter is the potential of the metaphor representation perspective to provide novel insights into personality functioning.

Toward a Metaphor-Enriched Personality Psychology

In understanding how and why people differ from each other, mid-century personality psychologists had an admirably broad view of assessment. Self-reports of personality were commonly used, but the same researchers used many implicit experimental tasks as well. For example, Allport's (1937) personality text contended that expressive style (e.g., in hand-writing) was informative of personality, McClelland's (1951) text contended that projective measures were crucial in discerning the social motives of individuals, and Bruner (1951) provided evidence for the idea that personal values were evident in basic perceptual tendencies.

Subsequently, Mischel (1968) published an important book in which individual differences were questioned in terms of their predictive validity. Although not desired (Mischel, 2009), this book was interpreted to suggest that behavior is a function of situations not personalities (Ross & Nisbett, 1991). A schism between social and personality psychology occurred as a result of this controversy (Kenrick & Funder, 1988). Personality psychology largely abandoned outcome predictions to focus on issues of taxonomy among self-reported traits. After many years of refining their measures, personality psychology rebounded by showing that individual differences are of substantial value in outcome prediction (e.g., Ozer & Benet-Martinez, 2006). The person-situation controversy is therefore a non-issue at the present time and it is now possible to revisit the wisdom of earlier personality psychologists – such as Bruner (1951) and McClelland (1951) – who insisted that personality psychology can only be complete to the extent that it focuses on implicit as well as self-reported assessments.

Implicit approaches to personality assessment have multiple benefits. Practically speaking, explicit and implicit assessments tend to be uncorrelated or only weakly correlated with each other (Robinson & Neighbors, 2006). Thus, implicit assessments of the person can reveal important insights concerning the individual that cannot be adequately captured by an exclusive reliance on self-reported traits. In addition, implicit personality variables moderate the manner in which self-reported traits function (Robinson & Gordon, 2011). Finally, and perhaps most fundamentally, implicit assessments are process-based in nature. They are not reliant on beliefs about the self (Robinson & Clore, 2002) and therefore provide insights into mechanism that self-reported traits cannot (Robinson & Gordon, 2011). For such reasons and others, we have suggested that personality psychology needs to embrace implicit assessments of the individual to a greater extent than it currently does (Robinson & Compton, 2008).

We think that the metaphor representation perspective, which can model personality processes in an implicit manner, possesses considerable value in understanding personality and individual differences. There is an important nuance to this work that should be mentioned up front, however. Manipulations of vertical position (Meier & Robinson, 2004), warmth (IJzerman and Semin, 2009), or visual backgrounds (Wilkowski, Meier, Robinson, Carter, & Feltman, 2009) might be quite irrelevant in understanding individual differences. Individuals, for example, do not have visual backgrounds (Wilkowski et al., 2009). Considerable creativity is therefore necessary to translate this perspective to the individual difference realm.

We have now presented a theoretical and historical background for our research on metaphor-related processes in personality. Four lines of research are reviewed, two of which use reaction times to probe the vertical dimension of space. Following these earlier lines of research,

we show how prominent metaphors can be translated into preference or forced choice judgments in a way that implicitly probes variations in personality.

Evidence for a Metaphoric View of Personality

Depression and Vertical Attention. There are two dictionary definitions for depression. The first refers to a downward indentation. The second refers to a condition marked by sadness, lethargy, and hopelessness. From a metaphor representation perspective, it is not likely a coincidence that we use the same word to characterize both states. Rather, the latter dictionary meaning likely borrows from the former and does so in relation to the conceptual metaphor SADNESS IS DOWN. Indeed, the adjective “down” is often used to refer to sad feelings. From an embodied perspective, the body droops when it is tired, lays supine when this is especially so, and such covariations in experience are likely responsible, in part, for the genesis of thinking of depression as a downward vertical state (Tolaas, 1991).

Taking the metaphor representation perspective (Lakoff & Johnson, 1999) seriously, individual differences in depression might constrain and entrain attention in a downward vertical direction, independent of any communication context. This prediction was examined in two studies by Meier and Robinson (2006). In both studies, people were asked to respond as quickly as possible to spatial probes higher or lower on a computer screen and the location of these probes was varied in a fully randomized manner. In addition, we measured levels of depression using the well-validated Beck Depression Inventory. As hypothesized, individuals higher in depression were faster to respond to low spatial probes and individuals lower in depression were faster to respond to high spatial probes. There was thus a significant and consequential relationship between levels of depression and whether attention favors lower or higher areas of visual space, implicitly and cognitively so.

As to whether activated negative thoughts bias attention downward, they do according to the experimental results of Meier and Robinson (2004), which involved negative word evaluations. On the other hand, the results of Meier and Robinson (2006) are perhaps more profound in that they suggest that relatively chronic states of depression bias attention downward irrespective of positive or negative affective primes. In other words, vertical biases in selective attention may track levels of depression and in turn serve as a useful probe of depression levels. This idea warrants further research because probes of depressogenic cognition are considered quite valuable to the depression literature (Segal & Swallow, 1994), ours is a novel probe of depression levels, and there are now numerous results showing that manipulations of spatial attention (typically disfavoring threatening stimuli) are efficacious in reducing levels of psychopathology (MacLeod, Koster, & Fox, 2009). Accordingly, it would be valuable to examine whether training attention upward mitigates depression levels.

Dominance-Submission and Vertical Attention. Prominent linguistic expressions suggest that states of dominance and submission are conceptualized in terms of high and low vertical positions, respectively. For example, we refer to increasingly dominant individuals as “upwardly mobile”, “social climbers”, or “rising stars”. By contrast, we refer to individuals who are losing their social status as “headed for a fall” or on a “downward spiral”. Such metaphoric associations can explain why bosses in corporate buildings have offices that are typically on higher floors, why graphics for organizational structures typically place workers “under” their supervisors, and why standing (relative to seated) individuals are judged to be more dominant (Schwartz, 1981). Consistent with verticality metaphors, Schubert (2005) found that dominant animals (i.e., those “high” in the food chain) were categorized more quickly when presented higher on a computer

screen, whereas submissive animals (i.e., those “low” in the food chain) were categorized more quickly when presented lower on a computer screen.

In two studies, Robinson, Zabelina, Ode, and Moeller (2008) sought to examine whether personality variations in dominance can be understood from a verticality perspective. They assessed personality tendencies toward dominance using the adjective markers of Wiggins, Trapnell, and Phillips (1988). In these same studies, individuals also completed a vertical attention task. Consistent with metaphors for dominance versus submission, dominant individuals attended upward in visual space and submissive individuals attended downward. We have yet to show that such biases upward or downward in visual space predict more specific social behaviors, but this direction of future research can be advocated. For example, those biased upward in vertical attention may also engage in more coercive and domineering relationship behaviors and exhibit greater confrontation and less appeasement in response to provocations in daily life (Moskowitz, 2010). It also seems consistent with Fiske’s (1993) theory of power to suggest that placing individuals in more dominant (versus submissive) social roles may alter their vertical attention in an upward-favoring direction.

Although our depression- (Meier & Robinson, 2006) and dominance-related (Robinson et al., 2008) findings might be linked, we are inclined to suggest that they are not. The fact is that the up-down dimension appears to be recruited for multiple metaphoric purposes, including in morality, spirituality, happiness, and dominance domains (Meier, Hauser, Robinson, Friesen, & Schjeldahl, 2007). Individual differences in spirituality, for example, might also predict vertical selective attention, though results of this type would not likely be due to covarying levels of depression or dominance. It would seem useful to conduct a study in which multiple individual differences of a verticality type are assessed at the same time, thereby permitting multiple

regression tests of which dimension or set of dimensions is the most consequential one for vertical selective attention.

Prosocial Personality and Sweet Taste Preferences. We refer to nice gestures as “sweet”, nice people as “sweet”, and terms of endearment among relationship partners often borrow from this root conceptual metaphor (e.g., “cupcake”, “honey”, “sugar”, or “sweetheart”). Sweet tastes, of course, are gustatory in nature, whereas people are not entities to be eaten. Nonetheless, the ubiquity of such linguistic expressions suggested to us that the psychological domain of interpersonal niceness would draw from the metaphoric domain of sweet taste experiences. In Study 1 of Meier, Moeller, Riemer-Peltz, and Robinson (2012), pictured individuals stated liking a particular food item and one whose primary taste was sweet (e.g., ice cream), sour (e.g., lemons), bitter (e.g., grapefruit), salty (e.g., beef jerky), or spicy (e.g., curry). Persons expressing liking for a sweet food (but not other foods) were judged to be more agreeable (i.e., nice, friendly), but not more extraverted or neurotic.

The remaining studies focused on individual difference predictions, broadly construed. In Study 2 (Meier et al., 2012), we assessed the personality trait of agreeableness (e.g., “am interested in people”, “have a soft heart”). Higher levels of the personality trait of agreeableness predicted higher levels of liking for sweet foods, but not sour, bitter, salty, or spicy foods. We believe such results occurred not because agreeable individuals actually eat sweet foods more often, though they might, but rather because their typical thoughts are of a prosocial type (Graziano & Eisenberg, 1997). Such prosocial thoughts, in turn, are likely to recruit metaphoric interests consistent with them. It is for this reason, we suggest, that the food preferences of agreeable individuals gravitate toward sweet foods via a cognitive consistency mechanism (Gawronski & Strack, 2012).

The goals of Study 3 of Meier et al. (2012) were more ambitious. In this study, we dispensed with measuring agreeableness by self-report. Instead, the sole personality variable was the extent to which people liked sweet foods (e.g., candy, honey, maple syrup, and sugar). The laboratory session was one in which people could volunteer to help others in concrete ways. The first dependent measure asked individuals whether they would commit to flood cleanup efforts in the Fargo-Moorhead community, which had a historic flood during the time of the study. At the end of the study, we told participants that their extra credit was assured, but that an English professor needed volunteers to complete a media survey and deposit it three floors above the psychology department. We surreptitiously monitored which participants completed and deposited this very optional survey. We found that greater liking for sweet foods predicted both of these prosocial behaviors. Those who like sweet foods to a greater extent, thus, appear inclined and compelled to help others in the absence of significant incentives for doing so, an important criterion of prosocial functioning (Dovidio, Piliavin, Schroeder, & Penner, 2006).

Studies 4 and 5 of Meier et al. (2012) were manipulation studies and we highlight the results of Study 4 here. The personality literature has increasingly suggested that there are personality states as well as personality traits. For example, McNiel and Fleeson (2006) have shown that extraverted behaviors have the same correlates – and particularly positive affect – whether manipulated (by instructions to “act extraverted”) or measured in trait-related terms. Accordingly, we thought it possible that a sweet taste experience would render individuals psychologically more agreeable. Participants were randomly assigned to taste a sweet (Hershey’s Kisses) or less sweet (Altoid’s Tangerine Sours) candy prior to reporting on their personality levels of agreeableness. As hypothesized, participants randomly assigned to the sweet taste condition reported higher levels of agreeableness subsequently. This study, like the prior studies,

provides support for the metaphoric mapping of agreeableness to sweetness, but importantly does so in causal terms.

As others do (e.g., Bolger, Davis, & Rafaeli, 2003), we regard tendencies manifest in everyday life as the ultimate phenomenon to be explained by personality assessments. Although not yet published, we can report that sweet taste preferences predict prosocial reactions in everyday life. In a relevant study, we asked individuals to report on their liking of sweet, sour, bitter, salty, and spicy foods. Subsequently, the same individuals completed a 14-day experience-sampling study over the Internet. Among other findings, it was found that sweet-preferring individuals experienced greater positive emotions on days in which they engaged in prosocial behaviors (e.g., helped others), but that this same within-subject profile was markedly diminished among those not liking sweet foods. This illustrative finding is displayed in Figure 1. The important point here is that the individual difference assessments of Meier et al. (2012) should have wide utility in understanding individual differences in daily social functioning.

Rationality versus Emotionality and the Head-Heart Metaphor. Human beings are relatively unique animals in that they have capacities to apprehend the world and behave in both rational and emotional manners. Rational thinking is rule-driven, non-emotional, and intellectual (Kahneman, 2003). Emotional thinking is intuitive, impressionistic, and reactive (Epstein, 1994). Neither one is necessarily better. Rational thinking helps one solve important intellectual problems, but not all problems can be solved intellectually (Gigerenzer & Goldstein, 1996). Emotional thinking is reactive and error-prone (Epstein, 1994), but there is wisdom to emotional thinking, perhaps most prominently highlighted in the work of Damasio (1994) and in the emotional intelligence literature (Zeidner, Matthews, & Roberts, 2009). Rational and emotional

thinking would seem fundamental in understanding differences between people, yet this distinction is not well-captured by trait approaches to personality (Epstein, 1994).

Traditional attempts to understand this rational versus emotional distinction rely on brain process considerations. Rational, logical thinking styles are purportedly left hemispheric and emotional, reactive thinking styles are purportedly right hemispheric. It is true that the right hemisphere decodes emotion better (Heller, Schmidtke, Nitschke, Koven, & Miller, 2002), but attempts to link these two processing styles to left versus right hemispheric activity have not resulted in a very strong set of findings (Corballis, 1999). Alternatively, rational thinking is said to be cortical and emotional thinking is said to be sub-cortical (Miller & Cohen, 2001). Among human beings, however, these are highly interactive systems and it would be an oversimplification at best to suggest that the rational-emotional distinction can be mapped onto activation in cortical versus sub-cortical structures (Pessoa, 2009). For example, the frontal cortex plays a much more dominant role in generating emotional responding than can be appreciated on the basis of such brain-based frameworks (e.g., Canli et al., 2001).

As an alternative explanatory framework, we suggest that the classic metaphoric distinction between the head and the heart (mentioned by Plato, Shakespeare, and many others: see Swan, 2009, for a review) may have considerable value. Linguistically, we refer to rational individuals as “having their head on straight” and we encourage smarter decisions with the suggestion to “use your head”. By contrast, we refer to emotional individuals as “having a great heart” and encourage smarter decisions of this emotional type with the suggestion “follow your heart”. Fetterman and Robinson (2013) created a one-item metaphor questionnaire by asking the following question: “Irrespective of what you know about biology, which body part do you more closely associate with yourself?” Participants had to choose the “brain” or the “heart”. The

“brain” rather than the “head” was used because the brain, like the heart, is a particular bodily organ.

Across the six studies in which this measure was administered, two striking initial patterns were evident. The first was that a relatively equal number of people indicated that the self was located in the brain versus the heart. For example, in Study 1 of this paper, 58 (48%) picked the brain organ as the location of the self, whereas 62 (52%) picked the heart organ as the location of the self. Second, and consistent with sex stereotypes depicting women as the more “emotional” sex (Robinson & Clore, 2002), all of these six studies found that there were significant sex differences. For example, in Study 1 of this paper, it was found that males thought the self was located in the brain to a greater extent (58%), whereas females thought that the self was located in the heart to a greater extent (63%).

Of more importance were the outcomes predicted. In Study 1, heart-located individuals reported higher levels of affect intensity, femininity, and liking of intimacy. In Study 2, heart-located individuals reported higher levels of attention to emotion (Salovey, Mayer, Goldman, Turvey, & Palfai, 1995) and greater experiential (Epstein, Pacini, Denes-Raj, & Heier, 1996) thinking styles. In Study 3, heart-located individuals reported greater levels of agreeableness, emotionality, and warmth, along with lower levels of logical thinking. These studies, then, converge on the idea that a novel, metaphor-informed individual difference measure has great potential in understanding the relative emotionality of different individuals, at least in self-reported terms. Two further points can be made. The first is that heart-located individuals reported greater levels of emotionality, but also greater levels of agreeableness and warmth. Overall, then, we might wish to have heart-located individuals as interaction partners, despite

their apparent tendencies toward greater emotionality. The second important point is that the vast majority of such relations remained significant when controlling for participant sex.

Study 4 examined outcomes that should be higher among “head” people. Those who located the self in the head had higher GPAs and did better on trivia problems. Thus, there is evidence in favor of their greater intellectual functioning. Study 5 sought to pit rational versus emotional thinking tendencies against each other in a common set of social judgment problems. In this study, we administered moral dilemmas such as the classic trolley problem asking people whether they would actively kill one person to save several other individuals. Being an active agent in the death of the one person is a rational solution to the problem, but emotional considerations discourage such an act of calculated killing (Greene & Haidt, 2002). As hypothesized, head-located individuals were more likely to solve these problems in a rational manner, whereas heart-located individuals were more likely to solve these problems in an emotional manner. Thus, a simple one-item metaphor-informed individual difference variable was of substantial value in understanding social decision making.

Studies 1-3 had suggested that heart-located individuals are more emotional, but there was an important limitation to these results in that they all relied on trait-reported emotional tendencies. Such trait-reported tendencies often fail to predict how individuals react to emotion-relevant events in daily life (Barrett, Robin, Pietromonaco, & Eysell, 1998). In Study 6, therefore, we administered a daily diary protocol. We highlight one particular result here. For 14 days in a row, participants reported on the extent to which particular days were low or high in the occurrence of stressful events (e.g., “had a lot of responsibilities”). They also reported on their daily levels of negative emotion as stressors are a common elicitor of such negative emotional reactions (Chamberlain & Zika, 1990). Consistent with the purported emotionality of heart-

located individuals, they, relative to head-located individuals, exhibited stronger relations between daily stressors and daily negative emotion levels (see Figure 2). We emphasize the importance of these results in understanding the differential functioning of heart- versus head-located individuals in their daily lives.

Individuals are not differentially located in their hearts or heads, but they believe that they are and such beliefs are predictive of multiple outcomes in a metaphor-consistent direction. Additionally, the results of Studies 1-6 suggest that a manipulation of differential attention to the heart versus the head might alter decision making in an emotional versus rational manner. In Study 7 of this (Fetterman & Robinson, 2013) paper, we introduced a cover story which stated that our interest was in understanding responding using one's non-dominant hand. In a between-subjects manipulation, some individuals were asked to place their dominant index fingers on their temples and others over their hearts, in both cases to eliminate the temptation to use their dominant hands in responding. Thereafter, they completed trivia problems and moral dilemmas. As hypothesized, head-pointing individuals did better on the trivia problems and heart-pointing individuals were more likely to solve moral dilemmas in an emotion-favoring manner. Altogether, the findings of Fetterman and Robinson (2013), like those of Meier et al. (2012), establish the relevance of metaphoric considerations in understanding personality processes in a manner that greatly extends the earlier results of Meier and Robinson (2006) and Robinson et al. (2008).

We can also emphasize the broader significance of these findings. We did not ask individuals whether they were rational or emotional, but rather assessed such tendencies in an implicit, metaphor-informed manner. Doing so, we suggest, bypasses perennial concerns such as the social desirability of trait responding (Edwards, 1957). Of perhaps more importance, this

single-item measure was consequential in its predictive value across many individual differences – such as sex differences, thinking style preferences, emotionality, femininity, emotional intelligence, intellectual performance, etc. – that have hitherto been treated as largely separate literatures. From this perspective, the findings of Fetterman and Robinson (2013) possess an integrative predictive value that is largely unprecedented to the personality literature. Finally, of course, these findings point to the value of a metaphor-informed personality psychology, perhaps even more so than any previous investigations.

Investigating Metaphoric Processes in Personality

Landau et al. (2010) were able to review many studies in favor of a metaphor-enriched view of social psychology. In fact, social psychologists have conducted the vast majority of work in this area, as highlighted in the present volume. Personality psychology has lagged behind and it is probably safe to say that there are few investigators of metaphor whose primary interest is individual differences. This is true of the present authors as well, despite being self-described personality (first)-social (second) psychologists. There are challenges in translating the metaphor representation perspective to personality psychology, unanswered questions, and wisdom that we have only recently acquired. In this section, we consider such issues.

In a sense, every experiment is also a potential individual difference study (Kosslyn et al., 2002) and this is true in the metaphoric realm as well. One only has to examine variations across participants to realize that some individuals exhibit the predicted social cognitive pattern whereas others do not. In metaphor-related studies of a cognitive type, we have examined the potential moderating role of individual differences in visual imagery (Marks, 1973) on the basis of the idea that imagistic thinkers might be more metaphoric in their thinking (Paivio, 2007). We have yet to find moderating effects of this type. Many of our investigations have focused on affective

processes (Meier & Robinson, 2005). For this reason, we have examined the potential moderating role of attention to emotion (Salovey et al., 1995) in several studies. We have yet to find moderating effects of the latter type either.

Instead, our thinking is that individual differences in metaphoric cognition need to be examined more directly than in past studies, for example on the basis of appreciation for conceptual metaphors. We are just beginning this line of research and we have crafted a relevant questionnaire, which is preliminary at the present time. It will ask individuals to decide whether an initial statement (e.g., related to sad feelings) is better characterized in literal or metaphoric terms. By including a number of such items, we hope to develop a reliable and valid scale of individual differences in metaphoric thinking. We hypothesize that a greater frequency of metaphor-related endorsements may moderate many of the metaphoric effects documented in the social psychology literature (Landau et al., 2010), though this has yet to be determined.

By contrast, the assessment of individual differences of a metaphor-specific type might be served by assessing the extent to which the individual displays preferences consistent with prominent metaphors. For example, Meier et al. (2012) asked individuals to self-report their liking for sweet foods. Those who liked sweet foods to a greater extent were more prosocial in their personalities and behaviors. It therefore appears to be fruitful to extend this line of research in assessing other metaphor-specific individual differences. For example, the color black has been shown to facilitate negative evaluations (Meier, Robinson, & Clore, 2004), speed categorizations involving immoral words (Sherman & Clore, 2009), and result in more aggressive behavior (Frank & Gilovich, 1988). Accordingly, asking individuals whether they prefer the color black or the color white may have untapped value in diverse outcome domains.

We are currently developing a number of individual difference measures of this type and expect them to have predictive value in future personality-related studies.

Additionally, it is notable that metaphors for the same concept often seem to possess very different implications. It would therefore be of value to pit different metaphors against each other in the study of individual differences. Fetterman and Robinson (2013) essentially did so by asking individuals whether they thought of the self as a heart- or head-located entity. Individuals differed quite a bit in how the self was conceptualized and such differences had systematic implications for their personality traits, emotionality, thinking styles, and intellectual performance. This assessment approach can be extended. For example, we would expect individuals viewing love as a “game” to be more promiscuous and less committed to their romantic partners than those viewing love as a “flower” (Lakoff & Johnson, 1999). Similarly, we might expect individuals viewing anger as a “beast” to be less prone to aggression than those viewing anger as “fire” because beast-related metaphors are arguably more pejorative (Gibbs, 1994). In short, there appears to be value in contrasting different metaphors for the same concept by asking individuals to choose which conceptual metaphor seems more apt. There is little doubt, to us at least, that investigations of this type would yield additional insights into the manner in which individual differences function.

Although the focus of the present chapter was on our own investigations, necessarily so because they have been unique in focusing on vertical attention, taste preferences, and head-heart metaphors, individual differences have proven their worth in other investigations in the embodiment literature. Perhaps most straightforwardly, Stefanucci and Proffitt (2009) found that people fearing heights to a greater extent were more prone to overestimating distances downward from a high vertical position. Schnall, Haidt, Clore, and Jordan (2008) found that disgust

manipulations (e.g., completing the study in a filthy room) led to harsher moral judgments particularly so among individuals higher in sensitivity to their own bodily sensations. More recently, Bargh and Shalev (2012) found that especially lonely individuals seek (Study 1) and benefit (e.g., Study 3) from physical warmth sensations. Whether all such individual difference findings converge is arguable because they seem to be focusing on different mechanisms and processes. Regardless, findings from our investigations converge with these other investigations in highlighting the importance of individual differences in understanding how and why metaphor-consistent manipulations work.

Conceptual metaphors are likely to have a bodily basis to them (Tolaas, 1991). This bodily basis may yield other directions for individual differences research. For example, what is important is big according to prominent metaphors (Lakoff & Johnson, 1999). For this reason, tall, big people may come to have a greater sense of social potency and others may treat them with greater respect than short, small people. White is good and black is bad according to prominent metaphors (Meier & Robinson, 2005). Such considerations may help explain why darker-skinned individuals are the frequent target of prejudice and discrimination. There are multiple other ways in which bodies differ such as their strength, perceptual acuity, and age that – too – may prove explanatory in the individual difference realm. Concretely so, Bhalla and Proffitt (1999) found that stronger, more fit individuals were less likely to overestimate the slant of a hill (Study 3) and that older individuals (Study 4) were more likely to overestimate the slant of especially steep hills. Although their explanation was based on bodily resources and capacities, their findings encourage a broader focus on how differences between bodies, perhaps through the locus of the metaphor representation perspective, may influence judgment and decision making in ways that have yet to be determined.

Conclusions

We believe that the metaphor representation perspective (Lakoff & Johnson, 1980; 1999) can provide many insights into personality functioning that a trait self-report perspective cannot. In this sense, we echo earlier calls for a multi-method assessment of personality (Allport, 1937; Bruner, 1951; McClelland, 1951), but importantly do so in a novel and metaphor-informed manner. In the present chapter, we primarily focused on the results of four investigations, but also considered the interface of personality and social psychology, the optimal manner in which personality processes of a metaphoric type can be assessed, and the limitations of standard assessment approaches in personality psychology. In the latter case, for example, there are significant concerns that trait-outcome relations may often reflect tautologies, such as when (trait) self-reported negative affect predicts (state) self-reported negative affect (Cervone, 1999). A metaphoric view of personality processes can avoid such tautological relations. In addition, it can provide potential insights into how a history of bodily experiences (such as those linking low energy levels to lower vertical positions, as in fatigued states or sleep) are drawn upon in conceptualizing one's personality tendencies.

Moreover, individual difference investigations can point to novel social cognitive manipulations. Studies 2 and 3 of Meier et al. (2012) revealed that individuals who liked sweet foods to a greater extent were more prosocial in nature. Such results led to manipulation studies in which participants savored either a sweet or non-sweet food and this manipulation caused individuals to be more prosocial. It is doubtful whether results of this type would have been found as quickly were it not for the individual difference findings. Similarly, the multiple individual difference findings of Fetterman and Robinson (2013) led to a manipulation study in which individuals pointed to their heads or hearts prior to completing trivia problems and moral

dilemmas. Were it not for the earlier individual difference findings, Study 7 of this paper would not have been conducted. In sum, a personality-process perspective of conceptual metaphor can result in novel manipulations and findings that might not be discovered otherwise.

Of final importance, we emphasize the value of individual difference studies for two additional reasons. First, there are always concerns as to whether social cognitive manipulation effects (perhaps excepting reaction time effects) are due to demand characteristics. An individual difference perspective can circumvent such concerns because relevant relations are established in the absence of potentially more transparent priming manipulations (Robinson & Neighbors, 2006). Second, although individual difference results are ambiguous with respect to cause and effect (McNiel & Fleeson, 2006), such studies are beneficial in establishing that a relevant relationship is actually consequential to the manner in which individuals live their lives (Robinson & Compton, 2008). For such reasons, we advocate future studies of the metaphor representation perspective in which individual differences are accorded a central role.

References

- Allport, G. W. (1937). *Personality: A psychological interpretation*. Oxford, England: Holt.
- Bargh, J. A., & Shalev, I. (2012). The substitutability of physical and social warmth in daily life. *Emotion, 12*, 154-162.
- Barrett, L. F., Robin, L., Pietromonaco, P. R., & Eysell, K. M. (1998). Are women the 'more emotional' sex? Evidence from emotional experiences in social context. *Cognition and Emotion, 12*, 555-578.
- Bhalla, M., & Proffitt, D. R. (1999). Visual-motor recalibration in geographical slant perception. *Journal of Experimental Psychology: Human Perception and Performance, 25*, 1076-1096.
- Bolger, N., Davis, A., & Rafaeli, E. (2003). Diary methods: Capturing life as it is lived. *Annual Review of Psychology, 54*, 579-616.
- Bruner, J. S. (1951). Personality dynamics and the process of perceiving. In: R. R. Blake & G. V. Ramsey (Eds.), *Perception: An approach to personality* (pp. 121-147). New York: Ronald Press Company.
- Canli, T., Zhao, Z., Desmond, J. E., Kang, E., Gross, J., & Gabrieli, J. D. E. (2001). An fMRI study of personality influences on brain reactivity to emotional stimuli. *Behavioral Neuroscience, 115*, 33-42.
- Cervone, D. (1999). Bottom-up explanation in personality psychology: The case of cross-situational coherence. In: D. Cervone & Y. Shoda (Eds.), *The coherence of personality: Social-cognitive bases of consistency, variability, and organization* (pp. 303-341). New York: Guilford Press.

Chamberlain, K., & Zika, S. (1990). The minor events approach to stress: Support for the use of daily hassles. *British Journal of Psychology*, *81*, 469-481.

Corballis, M. C. (1999). Are we in our right minds? In: S. D. Sala (Ed.), *Mind myths: Exploring popular assumptions about the mind and the brain* (pp. 25-41). New York: John Wiley & Sons.

Damasio, A. R. (1994). *Descartes' error: Emotion, reason and the human brain*. New York: Grosset/Putnam.

Dovidio, J. F., Piliavin, J. A., Schroeder, D. A., & Penner, L. A. (2006). *The social psychology of prosocial behavior*. Mahwah, NJ: Erlbaum.

Edwards, A. L. (1957). *The social desirability variable in personality assessment and research*. Ft. Worth, TX: Dryden Press.

Epstein, S. (1994). Integration of the cognitive and the psychodynamic unconscious. *American Psychologist*, *49*, 709-724.

Epstein, S., Pacini, R., Denes-Raj, V., & Heier, H. (1996). Individual differences in intuitive-experiential and analytical-rational thinking styles. *Journal of Personality and Social Psychology*, *71*, 390-405.

Fetterman, A. K. & Robinson, M. D. (2013). Do you use your head or follow your heart? Self-location predicts personality, emotion, decision making, and performance. *Manuscript submitted for publication*.

Fiske, S. T. (1993). Controlling other people: The impact of power on stereotyping. *American Psychologist*, *48*, 621-628.

- Frank, M. G., & Gilovich, T. (1988). The dark side of self- and social perception: Black uniforms and aggression in professional sports. *Journal of Personality and Social Psychology, 54*, 74-85.
- Gawronski, B., & Strack, F. (2012). *Cognitive consistency: A fundamental principle in social cognition*. New York: Guilford Press.
- Gibbs, R. W. Jr. (1994). *The poetics of mind: Figurative thought, language, and understanding*. New York: Cambridge University Press.
- Gigerenzer, G., & Goldstein, D. G. (1996). Reasoning the fast and frugal way: Models of bounded rationality. *Psychological Review, 103*, 650-669.
- Graziano, W. G., & Eisenberg, N. (1997). Agreeableness: A dimension of personality. In: R. Hogan, J. A. Johnson, & S. R. Briggs (Eds.), *Handbook of personality psychology* (pp. 795-824). San Diego, CA: Academic Press.
- Greene, J., & Haidt, J. (2002). How (and where) does moral judgment work? *Trends in Cognitive Sciences, 6*, 517-523.
- Heller, W., Schmidtke, J. I., Nitschke, J. B., Koven, N. S., & Miller, G. A. (2002). States, traits, and symptoms: Investigating the neural correlates of emotion, personality, and psychopathology. In: D. Cervone & W. Mischel (Eds.), *Advances in personality science* (pp. 106-126). New York: Guilford Press.
- IJzerman, H., & Semin, G. R. (2009). The thermometer of social relations: Mapping social proximity on temperature. *Psychological Science, 20*, 1214-1220.
- Kahneman, D. (2003). A perspective on judgment and choice: Mapping bounded rationality. *American Psychologist, 58*, 697-720.

- Kenrick, D. T., & Funder, D. C. (1988). Profiting from controversy: Lessons from the person-situation debate. *American Psychologist*, *43*, 23-34.
- Kosslyn, S. M., Cacioppo, J. T., Davidson, R. J., Hugdahl, K., Lovallo, W. R., Spiegel, D., et al. (2002). Bridging psychology and biology: The analysis of individuals in groups. *American Psychologist*, *57*, 341-351.
- Lakoff, G., & Johnson, M. (1980). *Metaphors we live by*. Chicago, IL: University of Chicago Press.
- Lakoff, G., & Johnson, M. (1999). *Philosophy in the flesh*. Chicago, IL: University of Chicago Press.
- Landau, M. J., Meier, B. P., & Keefer, L. A. (2010). A metaphor-enriched social cognition. *Psychological Bulletin*, *136*, 1045-1067.
- MacLeod, C., Koster, E. H. W., & Fox, E. (2009). Whither cognitive bias modification research? Commentary on the special section articles. *Journal of Abnormal Psychology*, *118*, 89-99.
- Marks, D. F. (1973). Visual imagery differences in the recall of pictures. *British Journal of Psychology*, *64*, 17-24.
- McClelland, D. C. (1951). *Personality*. New York: William Sloane Association.
- McNiel, J. M., & Fleeson, W. (2006). The causal effects of extraversion on positive affect and neuroticism on negative affect: Manipulating state extraversion and state neuroticism in an experimental approach. *Journal of Research in Personality*, *40*, 529-550.
- Meier, B. P., Hauser, D. J., Robinson, M. D., Friesen, C. K., & Schjeldahl, K. (2007). What's 'up' with God? Vertical space as a representation of the divine. *Journal of Personality and Social Psychology*, *93*, 699-710.

- Meier, B. P., Moeller, S. K., Riemer-Peltz, M., & Robinson, M. D. (2012). Sweet taste preferences and experiences predict prosocial inferences, personalities, and behaviors. *Journal of Personality and Social Psychology, 102*, 163-174.
- Meier, B.P., & Robinson, M.D. (2004). Why the sunny side is up: Associations between affect and vertical position. *Psychological Science, 15*, 243-247.
- Meier, B. P., & Robinson, M. D. (2005). The metaphorical representation of affect. *Metaphor and Symbol, 20*, 239-257.
- Meier, B. P., & Robinson, M. D. (2006). Does 'feeling down' mean seeing down? Depressive symptoms and vertical selective attention. *Journal of Research in Personality, 40*, 451-461.
- Meier, B. P., Robinson, M. D., & Clore, G. L. (2004). Why good guys wear white: Automatic inferences about stimulus valence based on brightness. *Psychological Science, 15*, 82-87.
- Miller, E. K., & Cohen, J. D. (2001). An integrative theory of prefrontal cortex function. *Annual Review of Neuroscience, 24*, 167-202.
- Mischel, W. (1968). *Personality and assessment*. Hoboken, NJ: John Wiley & Sons Inc.
- Mischel, W. (2009). From Personality and Assessment (1968) to personality science, 2009. *Journal of Research in Personality, 43*, 282-290.
- Moskowitz, D. S. (2010). Quarrelsomeness in daily life. *Journal of Personality, 78*, 39-66.
- Ozer, D. J., & Benet-Martinez, V. (2006). Personality and the prediction of consequential outcomes. *Annual Review of Psychology, 57*, 401-421.
- Paivio, A. (2007). *Mind and its evolution: A dual coding theoretical approach*. Mahwah, NJ: Lawrence Erlbaum Associates.

- Pessoa, L. (2009). How do emotion and motivation direct executive control? *Trends in Cognitive Science, 13*, 160-166.
- Robinson, M. D., & Clore, G. L. (2002). Belief and feeling: Evidence for an accessibility model of emotional self-report. *Psychological Bulletin, 128*, 934-960.
- Robinson, M. D., & Compton, R. J. (2008). The happy mind in action: The cognitive basis of subjective well-being. In: M. Eid & R. J. Larsen (Eds.), *The science of subjective well-being* (pp. 220-238). New York: Guilford Press.
- Robinson, M. D., & Gordon, K. H. (2011). Personality dynamics: Insights from the personality and social cognitive literature. *Journal of Personality Assessment, 93*, 161-176.
- Robinson, M. D., & Neighbors, C. (2006). Catching the mind in action: Implicit methods in personality research and assessment. In: M. Eid & E. Diener (Eds.), *Handbook of multimethod measurement in psychology* (pp. 115-125). Washington, DC: American Psychological Association.
- Robinson, M. D., Zabelina, D. L., Ode, S., & Moeller, S. K. (2008). The vertical nature of dominance-submission: Individual differences in vertical attention. *Journal of Research in Personality, 42*, 933-948.
- Ross, L., & Nisbett, R. E. (1991). *The person and the situation: Perspectives of social psychology*. New York: McGraw-Hill Book Company.
- Salovey, P., Mayer, J. D., Goldman, S. L., Turvey, C., & Palfai, T. P. (1995). Emotional attention, clarity, and repair: Exploring emotional intelligence using the Trait Meta-Mood Scale. In: J. W. Pennebaker (Ed.), *Emotion, disclosure, and health* (pp. 125-154). Washington, DC: American Psychological Association.

Schnall, S., Haidt, J., Clore, G. L., & Jordan, A. H. (2008). Disgust as embodied moral judgment.

Personality and Social Psychology Bulletin, *34*, 1096-1109.

Schubert, T. W. (2005). Your highness: Vertical positions as perceptual symbols of power.

Journal of Personality and Social Psychology, *89*, 1-21.

Schwartz, B. (1981). *Vertical classification: A study in structuralism and the sociology of knowledge*. Chicago, IL: The University of Chicago Press.

Searle, J. (1998). *Mind, language and society: Philosophy in the real world*. New York: Basic Books.

Segal, Z. V., & Swallow, S. R. (1994). Cognitive assessment of unipolar depression: Measuring products, processes and structures. *Behaviour Research and Therapy*, *32*, 147-158.

Sherman, G. D., & Clore, G. L. (2009). The color of sin: White and black are perceptual symbols of moral purity and pollution. *Psychological Science*, *20*, 1019-1025.

Stefanucci, J. K., & Proffitt, D. R. (2009). The roles of altitude and fear in the perception of height. *Journal of Experimental Psychology: Human Perception and Performance*, *35*, 424-438.

Swan, T. (2009). Metaphors of body and mind in the history of English. *English Studies*, *90*, 460-475.

Tolaas, J. (1991). Notes on the origin of some spatialization metaphors. *Metaphor and Symbolic Activity*, *6*, 203-218.

Wiggins, J. S., Trapnell, P., & Phillips, N. (1988). Psychometric and geometric characteristics of the Revised Interpersonal Adjective Scale (IAS-R). *Multivariate Behavioral Research*, *23*, 517-530.

Wilkowski, B. M., Meier, B. P., Robinson, M. D., Carter, M. S., & Feltman, R. (2009). “Hot-headed” is more than an expression: The embodied representation of anger in terms of heat. *Emotion, 9*, 464-477.

Williams, L. E., Huang, J. Y., & Bargh, J. A. (2009). The scaffolded mind: Higher mental processes are grounded in early experience of the physical world. *European Journal of Social Psychology, 39*, 1257-1267.

Zeidner, M., Matthews, G., & Roberts, R. D. (2009). *What we know about emotional intelligence: How it affects learning, work, relationships, and our mental health*. Cambridge, MA: MIT Press.

Figure 1

Liking of Sweet Foods as a Predictor of Relations between Daily Prosocial Behavior and Daily Levels of Positive Emotion

Figure 2

Head versus Heart Self-Locations as a Predictor of Relations between Daily Stressors and Daily Levels of Negative Emotion



