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Creativity, Ordinary Thinking, and the Cultures of Creativity Research

Creativity: Understanding Innovation in Problem Solving, Science, Invention, and the Arts

By Robert W. Weisberg

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Among science's many joys is the devilish joy of contrarianism. It's a special treat to read a book that goes against conventional wisdom and that reinterprets past work in light of a new theory. Robert Weisberg's hefty, heterodox *Creativity* is a major work for the psychology of creativity. Weisberg's book appears in the same year as another textbook on creativity, Sawyer's (2006) *Explaining Creativity*. These books are naturally compared: they integrate a vast body of thought, show a level of scholarship that surpasses the typical textbook, and adopt contrary perspectives on the nature of creativity. Sawyer presents a grand integration rooted in sociocultural "confluence models" of creativity, concluding that cognitive and intrapersonal approaches never fulfilled their promise. Weisberg, in contrast, presents a grand integration rooted in cognitive psychology, concluding that confluence models misunderstand how people think creatively. The rift between these books reflects two cultures in the psychology of creativity: the psychology of eminent "Big C" creativity, and the psychology of everyday "little c" creativity.

When is Something Creative?

The typical treatment of creativity proposes that creative products are not merely novel. To be creative, something must also be useful, valued, or appropriate. Sawyer (2006), like most creativity researchers, advocates for the original-plus-appropriate position. Creativity models insist on an appropriateness criterion so they can discriminate between the innovative and the derivative, the groundbreaking and the retreading. Consider the difference between John Ashbery's (1975) book of poems *Self-Portrait in a Convex Mirror*, which won the triple crown of literary prizes (the Pulitzer Prize, the National Book Award, and the National Book Critics Circle Award), and a chapbook of tired love poems written by a disaffected college student. Both are novel, in the sense that neither the

creator nor anyone else had written identical books of poems before, but only Ashbery's book is valuable and appropriate in relation to contemporary language art.

Weisberg, in contrast, argues for creativity as *intentional novelty*. This definition follows from Weisberg's emphasis on creativity as *ordinary thinking*: creative thought processes are merely ordinary thought processes directed toward yielding an original idea. If someone intends to create something original, then an original response would be considered creative, even if the response merely duplicates the ideas and discoveries of other people. Appropriateness, usefulness, and value are immaterial: a creative product is something that is original for the creator, regardless of how useful or valued it turns out to be. The cognitive processes that yield original ideas are the conceptual center of creativity, not the audience's responses to the ideas.

In my view, there is little point in arguing about the merits of these definitions. Both positions are internally consistent, and both research traditions follow coherently from their definitions. If you believe that creativity is intentional novelty, then you would be taken to studies of everyday creativity, such as insight and problem solving. These domains offer incisive experimental methods for examining idea generation. But if you believe that creativity is an appropriate and original idea, then you would be taken to studies of eminent creativity. Appropriateness, usefulness, and value are sociocultural constructs, so requiring an idea to be appropriate entails studying sociocultural factors. The psychology of creativity should avoid catching a case of the reallies, to borrow Abelson's (1995) phrase, because arguments over whether something "really is" an instance of something else—Is interest *really* an emotion? Is a dyad *really* a group? Are merely novel ideas *really* creative?—are both fruitless and ceaseless.

Psychometric Studies of Creativity

Weisberg's ordinary-thinking approach and the sociocultural approach agree on a few things. Both approaches, for example, criticize the psychometric approach to creativity, particularly studies of divergent thinking. Models of divergent thinking presume that divergent thinking tests (e.g., unusual uses tests) assess stable individual differences in the potential for creativity (Runco, 1991) or in the ability to generate original ideas (Wilson, Guilford, & Christensen, 1953). The psychometric approach to creativity has fallen on hard times. From a sociocultural approach, the study of divergent thinking smacks of reductive cognitivism. Sawyer (2006, pp. 44–45) summarily dismisses divergent thinking, concluding that divergent thinking tests rarely predict creative accomplishment.

Weisberg dismisses divergent thinking, too, but for different reasons. He views divergent thinking tests as measures of non-ordinary thinking, which conflicts with his view of creativity as ordinary, top-down, and goal-directed. After reviewing the Guilford tradition of divergent thinking research, he writes "It should be clear from this discussion that the basic perspective outlined by Guilford and adopted by those who use tests to measure creative-thinking capacity is that creative thinking involves a set of traits that are different from those underlying ordinary thinking" (p. 470). Based on a thorough and critical review, Weisberg concludes that divergent thinking is less important than ordinary thinking to the psychology of creativity. His antagonism toward divergent thinking seems odd: after all, divergent thinking tasks measure ordinary, top-down, goal-driven thought. People are given a goal (e.g., to generate unusual uses for a knife), and to do this they must retrieve relevant knowledge, identify and generate useful strategies, inhibit obvious responses, and effectively use their knowledge and strategies. Research has shown that people respond more creatively when instructed to

be creative (Runco, Illies, & Eisenman, 2005), which indicates that people can exert some level of strategic control over their responses. This sounds goal-directed.

Furthermore, Weisberg mischaracterizes Plucker's (1999) reanalysis of Torrance's longitudinal research, a pivotal study in modern divergent thinking research. Using structural equation modeling, Plucker conducted a latent-variable analysis of how childhood divergent thinking scores (based on 3-year averages) predicted adult creative accomplishment. A general divergent thinking factor explained 40% of the variance in adult creative accomplishment (standardized $\beta = .61$) after controlling for intelligence: this is a compelling finding by any standard. Plucker pointed out that latent variable analysis is more powerful than conventional correlation and regression methods, and that it can model and control for pesky method variance (cf. Silvia, in press). As a result, it offers refined and relatively pure estimates of relationships.

Weisberg, however, describes this study as applying "multiple-regression analysis" (p. 481), and he reviews one of Plucker's exploratory models (i.e., a test of differences between verbal and figural fluency scores based on only 1 year of data) instead of Plucker's central, key finding. Furthermore, Weisberg later concludes "Plucker's methods are not available to rescue the validity of the divergent-thinking tests, because the researchers reporting negative findings did use multiple regression when they carried out their original analyses" (p. 482). To the contrary, regression analysis is a special case (and a less powerful case) of latent-variable analysis (Kline, 2005). Thus, Plucker's study—some of the best evidence for divergent thinking—was misrepresented in Weisberg's book. Most creativity researchers ought to agree with Weisberg that divergent thinking research is weak. Even contemporary research will make big claims based on small-sample studies that used only a

couple measures and applied inadequate statistics. Nevertheless, the best studies offer stronger support, and the psychometric study of creativity (like all fields) ought to be judged based on its best research.

A Third Way?

Weisberg's book and Sawyer's book highlight the differences between the cognitive approach and the sociocultural approach, and I suspect that creativity research could drift toward distinct subcultures of research. When faced with competing traditions, psychologists would do well to remember the work of George Kelly (1955), a creative psychologist according to both Weisberg's and Sawyer's definitions. He proposed that theories had a *range of convenience*, the broad swath of human behavior that the theory sought to say something about. Within the range, however, the theory had a *focus of convenience*, the narrow region in which the theory is most powerful, detailed, and incisive. Many theories share a range of convenience, according to Kelly, but the theories aren't in competition unless they share a focus of convenience. Psychology may thus use different theories pragmatically.

Weisberg's approach to creativity and the sociocultural approach to creativity have overlapping ranges of convenience: both seek to explain eminent creativity, creativity across diverse domains, creativity and mental health, and so forth. Within this range, however, the two approaches have different focuses of convenience. Weisberg's model works best when applied to cognitive processes that underlie creativity, such as reasoning, problem solving, analogical transfer, and strategy use. The sociocultural model, in contrast, works best when applied to understanding why some creators become eminent and how social and cultural factors propel and define creative accomplishments. George Kelly would point out that each approach works poorly when applied to the other theory's focus: Weisberg's approach has little to say about predicting whether a creator will

become eminent, and the sociocultural approach says little about the inner cognitive processes that generate original ideas. The psychology of creativity thus needs both approaches.

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