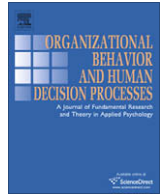




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## Organizational Behavior and Human Decision Processes

journal homepage: [www.elsevier.com/locate/obhdp](http://www.elsevier.com/locate/obhdp)Understanding the relationship between mood and creativity: A meta-analysis<sup>☆</sup>Mark A. Davis<sup>\*</sup>

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## ABSTRACT

A meta-analysis of 62 experimental and 10 non-experimental studies was conducted to evaluate the positive-mood-enhances-creativity generalization. While the results demonstrate that positive mood enhances creativity, the strength of that effect is contingent upon the comparative or referent mood state (i.e., neutral or negative mood) as well as the type of creative task. Further, the pattern of effect sizes supports a curvilinear relationship between affective intensity and creative performance. In general, a contextual perspective of mood–creativity relations is supported.

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A large body of theoretical and empirical work testifies to the keen interest in how affective states influence work-related cognition and behavior (Forgas & George, 2001). One domain that has received considerable attention is the relationship between affect and creativity. The current emphasis that many firms place on enhancing creativity, a key to organizational effectiveness and competitive advantage (Amabile, 1996; Woodman, Sawyer, & Griffin, 1993), is a strong impetus for creativity research. Further, there is general agreement that tasks of creative thinking are mood sensitive. Unfortunately, whether positive or negative moods facilitate or inhibit creativity is an ongoing debate in the literature. On the one hand, a number of studies support the view that positive mood facilitates creativity across a range of tasks (e.g., Forgas, 2000; Hirt, 1999; Isen, Daubman, & Nowicki, 1987) leading some researchers to conclude that “pleasant moods promote original thinking” (Lyubomirsky, King, & Diener, 2005). On the other hand, findings that contradict the positive mood–enhanced creativity perspective have been reported. In fact, some studies demonstrate that positive moods can inhibit creativity and negative moods can facilitate it (George & Zhou, 2002; Kaufmann & Vosburg, 2002). Consequently, Kaufmann, 2003 contends that a positive-mood-promotes-creativity generalization is premature; rather, researchers should adopt a contingency view that incorporates contextual characteristics and conditions likely to moderate mood–creativity relationships.

To shed some light on this debate, this paper presents a meta-analytic review of mood–creativity research. Given the conflicting perspectives on the relationship, a primary objective of the research is to provide evidence for the direction and magnitude of mood effects on creativity, and investigate moderator variables with the potential for altering those effects. The criteria for including or excluding studies for any meta-analysis necessitate a coherent definition of the focal constructs. In fact, varying theoretical and empirical definitions employed in mood–creativity studies may explain some of the inconsistent results in this literature. Accordingly, the paper begins with an overview of creativity. Next, concepts and definitions of mood are addressed. Lastly, theory and hypotheses linking mood and creativity are presented.

## Conceptualizations of creativity

When discussing creativity, it is useful to distinguish creative outcomes from creative processes. Amabile (1983, 1996) and others define creative performance in terms of the creative outcome: “Creativity means a person’s capacity to produce new or original ideas, insights, restructuring, inventions, or artistic objects, which are accepted by experts as being of scientific, aesthetic, social, or technological value (Vernon, 1989, p. 94).” This definition describes creativity in terms of results, which are judged on the dual standards of (1) novelty or uniqueness and (2) usefulness or value. Although standards for recognizing creative outcomes are essential, an obvious question remains “what processes bring about creative outcomes?” Runco and Chand (1995) posit a two-tiered componential model of creative thinking that may be useful for understanding these processes. The

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primary tier includes three controlling components of creative thinking: problem finding, ideation, and evaluation. Knowledge (declarative and procedural) and motivation (intrinsic and extrinsic) are components comprising the secondary tier. In effect, knowledge and motivation are seen as contributing rather than controlling factors in creative thinking. Runco and Chand relegate knowledge and motivation because each can be dependent on the primary factors. For instance, intrinsic motivation is often contingent upon certain judgments or appraisals (Lazarus, 1991). Nonetheless, Runco and Chand regard motivation and knowledge as critical to creative thinking and suggest that empirical research can “treat them as adjacent to or in-line with the primary components (p. 246).”

With respect to the primary tier, problem finding involves identifying, defining, and working toward a solution to the problem. Problem identification and problem definition are particularly important subprocesses. The former implies that the individual recognizes there is a hurdle or challenge to overcome, while the latter involves defining and redefining the problem into a form that allows solution.

Ideation involves a family of skills including fluency (production of ideas), originality (uniqueness of ideas), and flexibility (variety of ideas). Three tasks that rely upon this ideation component appear extensively in mood–creativity research: divergent thinking, categorization and remote associates tasks. Divergent thinking tasks emphasize fluency, originality, and flexibility, whereas categorization tasks deal primarily with cognitive flexibility. For instance, categorization tasks frequently require sorting concepts into categories or listing similarities and differences among concepts (e.g., \*Hirt, Melton, McDonald, & Harackiewicz, 1996; \*Murray, Suján, Hirt, & Suján, 1990). Finally, the Remote Associates Test (RAT; Mednick, 1962), the prototypical remote associate task, gauges the ability to discern relationships among remote ideas. Given much creativity research relies upon tests of divergent thinking (Runco & Chand, 1995), it is worth mentioning that the value of divergent thinking is subject to intense debate. Opposing perspectives view divergent thinking as either synonymous with or completely unrelated to creativity. Between these camps, some researchers characterize divergent thinking as an estimate of the potential for creativity. In large part, divergent thinking tasks capture the standard of novelty, but neglect the criterion of usefulness espoused by many creativity theorists. This exclusive focus on novelty probably accounts for much of the criticism surrounding these tasks.

According to Runco and Chand (1995) evaluation or appraisal is the most neglected and misunderstood component of creativity. Interestingly, this component provides an important link to the standard of usefulness. Runco and Chand argue that evaluation works in concert with ideation to ensure that ideas are both original and fitting or useful. The creativity literature employs a number of creative problem-solving tasks such as the Dunker Candle Problem (Dunker, 1945) and Maier’s Two String Problem (Maier, 1931). The significance of these insight problems is that the tasks approximate both standards for creative performance: novelty and usefulness. That is, individuals may offer unique approaches to problem solution without actually solving the problem, but only approaches that *solve* the problem constitute creative performance. It stands to reason that evaluation or judgment is particularly important for problem-solving tasks as the individual must determine whether the ideas generated are useful, or at least have potential for solving the problem.

In sum, creativity can be described in terms of problem finding, ideation, and evaluation processes. Measures of divergent thinking or associative processes, which dominate much creativity research, largely reflect the ideation component of creativity (i.e., fluency, flexibility, and originality). By comparison, insight problem-solving

tasks likely incorporate ideation and evaluation components of creativity inasmuch as creative solutions invoke the dual standards of novelty and usefulness.

### Conceptualizations of mood

For purposes of this review, the term affect denotes a generic or superordinate category of phenomena that encompasses the concepts of mood and emotion. According to Frijda (1994) there are two primary bases upon which one can distinguish affective phenomena: whether the phenomenon implies a relationship with a particular object and whether it refers to a response state or an enduring disposition. Other distinctions include the specificity, intensity, and duration of the affective experience. In practice, defining the concept of mood involves distinguishing moods from emotions.

To begin, emotions typically involve a relationship with some object or event in the individual’s environment that directs attention and encourages action. In addition, numerous specific emotions exist in nature and each is related to a relatively narrow range of responses. Thus, one is angry at someone, happy about something, or afraid of somebody. In contrast, moods are more diffuse or generalized affective states that are not usually directed at any particular object or event. In addition, most theorists view moods as typically less intense than emotions (Morris, 1989). The lack of specificity, a defining characteristic for some researchers (e.g., Isen, 1993), suggests a self-regulatory function in which mood conveys ongoing information about one’s general state of being. In line with this self-regulatory function, empirical studies frequently discern two broad, independent dimensions of affective experience, positive and negative. Although some researchers have posited additional dimensions (e.g., four rather than two) and more elaborate, hierarchical structures that feature specific feeling states nested under both positive (i.e., joviality, attentiveness, and self-assurance) and negative (i.e., fear, guilt, and hostility) moods, the majority of the mood–creativity literature applies the two-factor perspective (Hullett, 2005).

Some researchers maintain that moods are experienced over a longer period than emotions (e.g., Watson & Clark, 1994). For instance, an angry episode may last a few seconds to a few minutes, whereas an irritable mood may persist for several hours or a few days. Yet, Lazarus (1994) argues that duration may not be a suitable basis for distinguishing moods and emotions. For instance, some moods can be experienced as brief or fleeting and emotional episodes can persist over time with more acute and less acute phases of affective experience succeeding one another. Applying the duration criterion is complicated by the fact that emotions and moods can mutually influence each other. For example, a strong emotion of joy can prolong itself and create a positive mood over several days. Similarly, an irritable mood can predispose one to react angrily to petty frustrations. Undoubtedly, deciding when an emotion ends and a mood begins is problematic. Furthermore, moods as well as emotional episodes can be prolonged. In brief, the duration of affective experiences is a common, but imperfect criterion for distinguishing moods and emotions.

The notion that moods are experienced over longer periods of time brings to mind the view of mood as a disposition or trait. In general, emotional states (e.g., state-anxiety) have been defined as transitory responses or feelings; whereas emotional traits (e.g., trait-anxiety) refer to stable individual differences in the *likelihood* that a person would experience particular emotions. Strictly speaking, moods and emotions should be regarded as response states (Lazarus, 1994). Nevertheless, empirical research evidences significant individual differences in the tendency to experience negative or positive moods. In addition, studies demonstrate that these

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