



## Approaching novel thoughts: Understanding why elation and boredom promote associative thought more than distress and relaxation<sup>☆</sup>



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### HIGHLIGHTS

- Approach states promote more associative thought than avoidance states.
- The valence of the affective state cannot account for the data.
- Deactivated states can alter associative thought as much as activated states.
- Boredom and relaxation, two deactivated states, exert differential effects.

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### ABSTRACT

Research indicates that an affective state's valence (positive/negative), orientation (approach/avoidance), and activation level (activated/deactivated) can influence people's ability to make creative associations. Unfortunately, how these features influence associative thought has not been fully tested because researchers typically do not examine deactivated states. In three studies, respondents in either elated (positive, approach, activated), relaxed (positive, avoidance, deactivated), bored (negative, approach, deactivated), or distressed (negative, avoidance, activated) states completed measures of associative thought. Consistent with the orientation hypothesis, respondents in approach-oriented states (elated/bored) performed better on two measures of associative thought than those in avoidance-oriented states (distressed/relaxed). These effects stemmed from the approach states promoting a desire for new experiences, as sensation seeking mediated these results (Study 3). The data indicate that not only can deactivated states alter thought, but their effect depends on whether they are associated with approaching or avoiding new experiences.

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### Introduction

People's feelings influence their ability to make creative associations (Ashby, Isen, & Turken, 1999; Baas, De Dreu, & Nijstad, 2008). A recent meta-analysis on affect and creativity, for instance, identified 102 different effect sizes that examined this issue (Baas et al., 2008). However, very few of these effect sizes focused on how deactivated (low arousal) states, like feeling relaxed or bored, altered the creative process. This oversight is surprising given that relaxation and boredom are key achievement-related emotions (Pekrun, 2006). Additionally, these deactivated affective states play a critical role in testing extant theories for why and how affect influences creative thought. The purpose of this

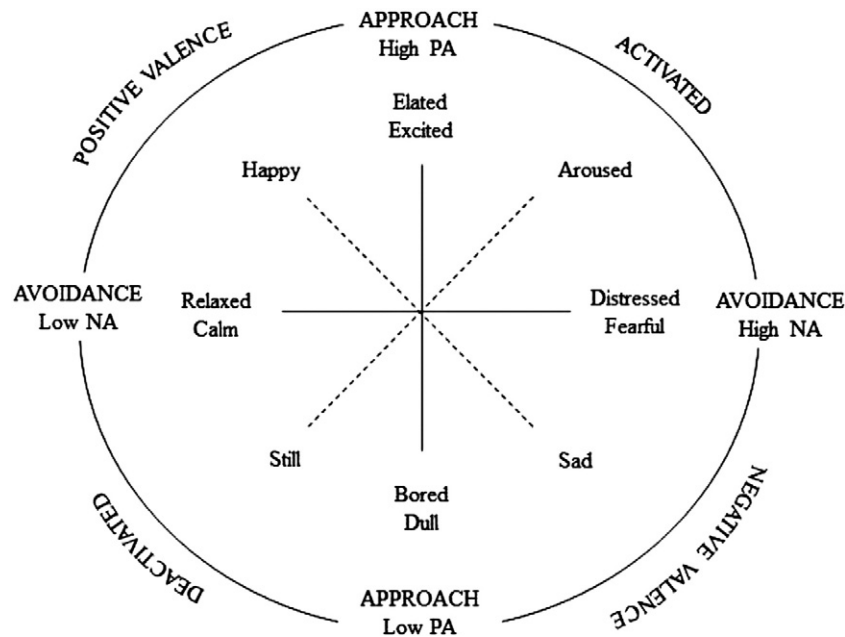
paper is to examine how states that vary in valence, activation, and orientation (specifically, elation, distress, boredom, and relaxation) shape the way that affect alters the process of making novel, broad, unusual, and useful associations between concepts – a key component of creativity (Mednick, Mednick, & Mednick, 1964) – which we refer to as associative thought.

Theories on how affect alters creativity differ in terms of whether they argue that an affective state's valence, activation, or orientation are important. Valence refers to whether the affective state is positive (e.g., elation, happiness, or relaxation) or negative (e.g., distress, sadness, boredom). Activation refers to the degree to which the states produce attention, alertness, and arousal (Baas, De Dreu, & Nijstad, 2011). These two dimensions can be combined to form a circumplex model of affective experience (Russell, 2003), depicted in Fig. 1. The diagonal lines in the circle depict the valence (top left to bottom right) and activation (top right to bottom left) dimensions. Orientation is reflected in the vertical and horizontal dimensions, and it indicates whether the state focuses on approaching rewards or avoiding threats. The placement of the orientation dimension stems from Watson, Wiese, Vaidya, and Tellegen's (1999; see also Remington, Fabrigar, & Visser, 2000) research. They argue that instead

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**Fig. 1.** Three affective dimensions: Valence, orientation, and activation. Adapted from "Toward a Consensual Structure of Mood," by D. Watson and A. Tellegen, 1985, *Psychological Bulletin*, 98, p. 221. Copyright 1985 by the American Psychological Association.

of focusing on valence and activation, the circumplex should be turned 45° and focus on positive activation (PA): a state both positive and activated, which indicates an approach orientation; and negative activation (NA): a state both negative and activated, which indicates an avoidance orientation, depicted as the horizontal and vertical axes in Fig. 1 (Watson et al., 1999). PA or approach-oriented states arise when people are focused on whether obtainable rewards are present, which can produce elation (a high PA state), or absent, which can produce boredom (a low PA state).<sup>1</sup> NA or avoidance-oriented states arise when people focus on whether threats that should be avoided are present, which can produce distress (a high NA state), or absent, which can produce relaxation (a low NA state). With these definitions in mind, we now discuss how these dimensions may explain the role that affective states play in associative thought.

### Valence hypothesis

Research indicates that positively-valenced affective states – like happiness, elation, and enthusiasm – spark associative thought (Ashby et al., 1999; Baas et al., 2008; Clore, Gasper, & Garvin, 2001; Isen & Daubman, 1984; Isen, Johnson, Mertz, & Robinson, 1985; Wyer, Clore, & Isbell, 1999). These effects may arise because positive affective states indicate that all is well within the environment (Carver, 2003; Clore et al., 2001; Schwarz & Clore, 2003), signaling that one can engage in pursuits that promote growth and exploration (Fredrickson, 1998; Fredrickson &

Branigan, 2005). Consistent with this view, Wyer et al. (1999) argue that positive affective experiences may operate like a "go signal," for they indicate that one should rely on whatever comes to mind. This reliance on what pops into one's head can promote finding and using unusual associations. In contrast, negative affective states may signal that there is a problem with the environment (Clore et al., 2001; Schwarz & Clore, 2003; Wyer et al., 1999). They may operate like a "stop signal," indicating that one should be wary and systematic to handle the issue (Wyer et al., 1999). This wariness may decrease associative thinking by encouraging people to be cautious about making new connections (Gasper, 2003, 2004). Thus, the *valence hypothesis* is that positive affect facilitates associative thinking more than negative affect.

Other research, however, suggests that a valence hypothesis may be incorrect, for the effects of negative affective states on creativity are mixed (Ashby et al., 1999). A recent meta-analysis found no differences between negative and neutral states, and negative and positive states on flexible thought (Baas et al., 2008). One reason for the null result could be due to the practice of examining a wider variety of negative than positive affective states. Research on negative affect has included such states as sadness, fear, distress, and anger. Making conclusions across this particular set of affects is problematic because these states differ in terms of orientation and activation, both of which could differentially alter associative thought. In contrast, research on positive affect typically only examines happiness making it unclear to what extent the valence hypothesis generalizes to other positively valenced states, especially those that involve different orientation and activation levels than happiness.

### Orientation hypothesis

Indeed, research indicates that approach orientations promote more flexible and associative thought processes than do avoidance orientations (Friedman & Förster, 2000, 2002, 2008). An approach orientation activates a broad, global style of thought, which facilitates being open to new experiences and encourages finding novel associations (Baas et al., 2011; De Dreu, Nijstad, & Baas, 2010; Friedman & Förster, 2002, 2008). An avoidance orientation activates a more narrow style of thought, which facilitates focusing on threats, but limits finding novel associations (Friedman & Förster, 2008). Approach and avoidance orientations can stem from either positive or negative states (Carver, 2004). For example, approach can be sparked by negative, deactivated

<sup>1</sup> The control value theory of achievement emotions discusses boredom as an avoidance emotion (Pekrun & Stephens, 2010; Pekrun et al., 2010). It makes sense that if one is bored by a specific task, then one may want to avoid that task. We are examining boredom as a general affective state, rather than as a specific emotion, in that it lacks a clear referent. We view this general state of boredom as activating approach, in that it sparks seeking out rewarding activities. Pekrun et al. (2010) acknowledge that boredom can have this effect, writing: "Boredom functions to withdraw attention from activities lacking in value and to redirect attention toward more rewarding stimuli and activities" (Pg. 535). In addition, Pekrun et al. (2010) also discuss what they call a "lack of interest," which taps into the approach dimension, writing: "Lack of interest and enjoyment entail a lack of approach motivation; whereas boredom promotes avoidance motivation" (Pg.533). It may be that what we are assessing is akin to a lack of interest. We use the term boredom, however, rather than a lack of interest, due to the fact that boredom lies at the low end of the PA dimension (Remington et al., 2000), others (Rule, 1998; Schubert, 1978; Vodanovich, 2003) argue that it may spark approaching rewards, and our data indicate the our manipulations and measures concern feelings of boredom.

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