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The impact of emotions, moods and other affect-related variables on creativity,  
innovation and initiative in organizations

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We can now conceive what an emotion is. It is a transformation of the world. When the paths before us become too difficult, or when we cannot see our way, we can no longer put up with such an exacting and difficult world. All ways are barred and nevertheless we must act. So then we try to change the world. (Sartre, 1939/2002, p. 39)

Creativity, innovation and initiative can be described as psychological processes that facilitate transitions into desired future states, including transformations of individual work roles, teams and entire organizations (Rank, Pace & Frese, 2004). As the introductory quote suggests, emotions may reflect transformations of one's world. Whereas Jean-Paul Sartre's existentialist emotion theory depicted the experience of emotion as an escapist choice to deliberately change one's perception of reality, recent research suggests that both positive and negative affect may contribute to actual transformations of reality by influencing creativity, innovation and change-oriented behavior (Amabile, Barsade, Mueller, & Staw, 2005; Anderson, De Dreu, & Nijstad, 2004; George & Zhou, 2002; Huy, 2005; Kiefer, 2005). The purpose of this chapter is to review and integrate the literature on the influence of affect-related variables on creativity, innovation and initiative in organizations.

The relationship between affect and creativity is one of the most fascinating and puzzling areas of enquiry in psychology and organizational behavior (Higgins, Qualls & Couger, 1992; James, Brodersen & Eisenberg, 2004; Russ, 1999). Creativity is typically defined as the development of novel and useful ideas, products or problem solutions (Amabile et al., 2005; Feist, 1999; Madjar, Oldham, & Pratt, 2002). Amabile (1996, p. 35) proposed the following conceptual definition: "A product or response will be judged as creative to the extent that (a) it is both a novel and appropriate, useful, correct or valuable response to the task at hand, and (b) the task is heuristic rather than algorithmic" (p. 35), i.e. it does not have a clear and readily identifiable path to solution.

In the beginning of the 20<sup>th</sup> century, psychodynamic theorists (Freud, 1910; Jung, 1912) asserted that emotional and creative processes are inextricably intertwined. The pathway to creative insight proposed in these models is the ability to gain access to unconscious affect-laden material via associative processes, which were called primary-process thinking in Freud's psychoanalysis (Russ, 2000) and fantasy thinking in Jung's analytical psychology (Chodrow, 2006). Central to Freud's view of creativity is his concept of sublimation, a higher-level defense mechanism transforming repressed libido associated with anxiety-laden desires into socially acceptable outcomes such as scientific

or artistic pursuits. In Jung's analytical psychology, the therapeutic process of active imagination involves the creation of symbolic images and stories that express problematic moods or emotions in a more bearable way. As Chodrow (2006) recently noted in her discussion of this Jungian concept, "active imagination and creative imagination are basically the same process. Both involve the expression and transformation of the emotions" (p. 216). Although the value of these psychodynamic approaches is debatable, the notion that negative affect may facilitate creativity under certain circumstances has reemerged in contemporary creativity studies (e.g., Kaufmann & Vosburg, 1997; Russ, 1999; George & Zhou, 2002).

In the beginning of the 21<sup>st</sup> century, sophisticated new approaches also suggest a strong impact of affect on creativity. For example, the Affect Infusion Model (Forgas & George, 2001) implies that novel and complex tasks require the use of open-ended substantive information processing strategies that are particularly amenable to mood influences (Ashkanasy & Ashton-James, 2005). As Higgins and coauthors (2002) concluded, "creative productivity is likely to be particularly sensitive to the disruptive and enhancing effects of emotion" (p. 127). However, the available empirical evidence is inconclusive. Whereas several studies identified positive mood as a facilitator of creativity (e.g., Amabile et al., 2005; Estrada, Isen & Young, 1994; Isen, Daubman & Nowicki, 1987; Madjar et al., 2002), a few studies have revealed positive relationships between negative moods and creativity (Kaufmann & Vosburg, 1997; George & Zhou, 2002). One of the most recent efforts in this domain has further demonstrated the complexity of this issue by demonstrating that emotional ambivalence (i.e., the simultaneous experience of positive and negative moods) was positively associated with creativity (Fong, 2006).

Even more startling than the inconclusiveness of findings regarding the link between affect and creativity is the lack of research on the impact of affect-related variables on innovation. In contrast to creativity, which is primarily an intraindividual cognitive process, innovation is defined as the actual intentional implementation of new and beneficial ideas for work products or processes at the individual, group or organizational level (Anderson & King, 1993; West & Farr, 1990). Innovation is critical to effectiveness in our era of rapid technological change and increased global competition (Baer & Oldham, 2006; Ford & Gioia, 1995). However, creative ideas are not necessarily translated into successful innovations (Amabile, 1988). Affective

variables may be relevant to innovation, because idea implementation frequently involves the need to overcome resistance to change and other barriers (Farr & Ford, 1990), which may involve the experience of negative affect such as anger, anxiety or frustration.

The influences of affective phenomena on a third relevant variable, namely personal initiative, are also largely unknown. Frese and Fay (2001) defined personal initiative (PI) as “work behavior characterized by its self-starting nature, its proactive approach, and by being persistent in overcoming difficulties that arise in the pursuit of a goal” (p. 134). Personal initiative is an important behavioral performance construct within the domain of proactivity research (Crant, 2000), which deals with change-oriented behaviors that involve an anticipation of future developments. Fay, Sonnentag and Frese (1998) distinguished personal initiative and innovation by arguing that initiative does not necessarily entail an application of novel ideas, but that it is always self-started and beyond formal requirements. As we previously discussed (Rank, Pace, & Frese, 2004), personal initiative may play an important facilitative and moderating role within the innovation process. A few recent studies suggest that personal initiative positively predicts individual and team-level innovation, that creative ideas are more likely to be implemented when personal initiative is high and that implemented process innovations result in enhanced financial performance only when there is a climate for initiative, i.e. when shared perceptions of initiative in a work group are high (Baer & Frese, 2003; Rank, Boedeker, Linke & Frese, 2004).

The remainder of this chapter unfolds as follows: In the first two sections, we discuss the impact of positive and negative affect on creativity, innovation and initiative. Subsequently, we consider the role of discrete emotions (e.g., anxiety, guilt, pride, surprise and hope) for these outcomes. In the fourth and final section, we briefly consider implications of a wider range of individual-level affect-related variables (e.g., emotion control, emotional intelligence, affective tone). Because only a few field studies have examined the impact of affect variables on creativity, innovation and initiative (e.g., Amabile et al., 2005; George & Zhou, 2002; Madjar et al., 2002), we will not only review the limited empirical evidence and summarize recent theoretical work, but also provide suggestions for new research endeavors in each of these four sections.

As Russ (1999) noted, “although creativity scholars have long recognized the importance of emotion and affect in the creative process, only recently has research

investigated the role of affect in creativity” (p. 659). Most of these studies have considered relationships of positive or negative moods with creativity. Moods are described as relatively transient generalized affective states that are typically not directed at any particular object or behavior, experienced over the short run, potentially affected by contextual factors, and best characterized by the two dimensions positive and negative (George & Brief, 1992; Madjar et al., 2002; Watson, Clark & Tellegen, 1988). As George and Brief emphasized, moods at work are not focused on any particular object, event, individual or behavior, do not demand complete attention and do not necessarily interrupt ongoing thought processes or behaviors. Similar to most other authors, we use the term affect as a generic label comprising both mood and emotion. In contrast to moods, which are diffuse and lack a clear cause or referent, emotions are more discrete affective states that are perceived by the individual to have an identifiable cause or referent (Pirolo-Merlo, Haertel, Mann & Hirst, 2002).

#### The impact of positive affect on creativity, innovation and initiative

As George and Brief (1992) noted, “workers in positive mood states are more likely to be creative and innovative” (p. 316). A frequently cited series of experiments (Isen et al., 1987) examined whether positive mood, induced via the presentation of a comedy film or the provision of a small gift, facilitated creative problem-solving, as assessed with ingenuity tests including Duncker’s candle task and the Remote Associates Task. Given a box of tacks, a candle and a book of matches, participants completing the candle task are asked to attach the candle to the wall in such a way that it burns without dripping wax on the table or floor. The Remote Associates Task requires respondents to name a word related to each of three other words presented. Overall, the results indicated that individuals in whom positive affect had been induced performed significantly better than those in the control group, those in which negative affect had been induced through the presentation of a tragic film, and those in which neutral arousal was induced through physical exercise. The authors concluded that positive mood enhanced individuals’ ability to see relatedness in diverse stimuli and to overcome functional fixedness (i.e., the inability to consider alternative uses for an object). Hence, positive affect may facilitate the process of bisociation, which reflects a combination of two different frames of reference. Other laboratory studies showed that positive affect resulted in more unusual and novel associations, more inclusive categorizations of

stimuli, increased cognitive flexibility and heightened intrinsic motivation (Estrada, Isen & Young, 1994; Isen, 1993; Isen & Baron, 1991).

As Madjar and coauthors (2002) suggested, the view that intrinsic motivation facilitates creativity “includes a mood component in that individuals are expected to experience positive mood states when they are intrinsically motivated” (p. 758). Their field study of Bulgarian employees from three companies in the knitwear industry revealed a positive and significant .20 correlation between employees’ self-reported positive mood and supervisor-rated creativity, using the creativity scale by Oldham and Cummings (1996). Positive mood explained a significant increment in the creativity variance, after several control variables (e.g. education) and scores on the Creative Personality Scale (Gough, 1979) had been accounted for. Furthermore, positive mood mediated the positive relationships of support for creativity from work and nonwork sources with employees’ creative performance.

In one of the most comprehensive field studies of affect and creativity to date, Amabile, Barsade, Mueller and Staw (2005) analyzed more than 11,000 daily diary entries written by 222 employees from seven companies. These researchers revealed a linear positive relationship between positive affect and creativity. Drawing on Isen’s (1993) work, Simonton’s (1999) variation theory and the broaden-and-build model of positive emotion (Fredrickson, 2001), these authors argued that positive affect increases cognitive variation, i.e. the number of cognitive elements available for association and considered as relevant to the problem. Specifically, positive affect makes additional material available for processing, enhances the breadth of elements available for association by inducing a defocused scope of attention and increases the probability that diverse elements will become associated. The research participants completed an average of 52 daily electronic questionnaires, which included a positive mood scale as well as open-ended narrative accounts of daily events. These narratives were rated to produce measures of coder-rated positive mood as well as daily creative thought, which was identified in diary contents reflecting creativity-relevant incidents such as non-routine problem solutions or acts of searching for a discovery or insight. Additionally, peer assessments of creativity were collected once per month. The findings revealed that both self-rated positive mood and coder-rated positive mood were positively and significantly correlated with coder-rated same-day creative thought, although the low magnitude of these correlations should be noted (.03 and .02, respectively). The researchers also

identified a more substantial and significant .18 correlation between self-rated positive mood and monthly peer-rated creativity. Multilevel regressions involving control variables such as education and age corroborated these findings.

Interestingly, the coder-rated daily creative thought score was positively predicted not only by same-day self-reported as well as coder-rated positive mood, but also by the coder-rated positive mood score for the previous day and by the self-reported positive mood scores collected on the previous day and two days earlier. Additional analyses indicated that the relationship between positive affect and creativity was linear rather than curvilinear. Hence, Amabile and associates (2005) did not find any support for the proposition that particularly high or low levels of emotional intensity hinder creativity (James et al., 2004). Based on their results as well as previous findings, Amabile and coauthors (2005) proposed an affect-creativity model, which entails an interconnected cycle implying that positive affect facilitates cognitive variation, which in turn increases the likelihood that new associations will be formed after an incubation process. The resulting creativity may be accompanied by affect as a concomitant and may also engender emotion. Creativity may also lead to organizational events, including positive or negative reactions of others, which in turn provoke affective reactions and influence the subsequent affect-creativity cycle. Especially the latter links in this affect-creativity model should be examined in further quantitative research.

In comparison with creativity as the dependent variable, considerably less research has examined affect variables as predictors of personal initiative and innovative behavior. As Van Dyne, Cummings and MacLean Parks argued (1995) argued, the overall affective state conducive to challenging and promotive forms of discretionary employee behaviours (e.g., making constructive suggestions) is likely to be positive, because “the focus is on the possibility of a better solution rather than on stopping what is seen as inappropriate behavior” (p. 266). Some of the previously found effects of positive affect, including intrinsic motivation, cognitive flexibility, persistence, enhanced risk-taking and greater decision-making efficiency (Isen, 1993), may also be conducive to initiative and innovation. For example, Bunce and West (1995) identified both intrinsic motivation and rule independence as positive predictors of employees’ innovative behavior. Moreover, positive affect leads to more integrative approaches to negotiation (Isen & Baron, 1991), which may be helpful when innovative individuals need to persuade others in the organization to adopt new ideas (Anderson & King, 1993).

George and Brief (1992) proposed that positive mood facilitates organizational spontaneity, which includes voluntary behaviors relevant to initiative and innovation, such as making constructive suggestions, developing oneself, and helping coworkers. For example, individuals in positive moods are more likely to persistently in self-development, because they view themselves more favorably, experience greater self-efficacy and develop higher aspirations. The voluntary self-development dimension of organizational spontaneity clearly overlaps with the personal initiative facet “education initiative”, which captures employee participation in work-related education, as long as it is not triggered by company demands (Fay & Frese, 2001). With respect to helping behavior, George (1991) identified employees’ positive mood at work as a significant predictor of their prosocial behavior toward coworkers and customers. Interestingly, George found that these behaviors were significantly associated only with state affect, but not with trait affect. She argued that state positive mood facilitated helping behavior in social psychological studies and that individuals high in the personality trait positive affectivity may not necessarily experience positive moods at work if the situation is unfavorable. Although George’s findings may indirectly suggest that positive mood may also facilitate personal initiative, only helping behaviors not requested by others can be considered acts of initiative, as Frese and Fay (2001) pointed out.

Staw and associates (e.g., Staw & Barsade, 1993; Wright & Staw, 1999) found that dispositional rather than state positive affect significantly and positively predicted performance ratings. Staw and Barsade (1993) examined the influence of positive affect on MBA students’ assessment center performance. The positive affect variable, which was a composite of two self-report trait measures and an assessor rating, positively and significantly predicted a few of the decision-making variables as well as several dimensions of interpersonal performance that may be beneficial for initiative and innovation, including assessor ratings of leadership, participation and task engagement and peer ratings of contribution to group effectiveness. Further research should explicitly link positive affect to innovation and initiative and assess whether dispositional or state measures account for greater portions of the variance in these criteria.

Previous research has also identified several predictors of innovation and initiative, including control, self-efficacy and affective organizational commitment, that have been shown to be related to positive affect. For example, several studies demonstrated that employees’ perceptions of control and autonomy facilitate creativity,



innovation and personal initiative (e.g., Amabile et al., 1996; Frese et al., 1996; West & Anderson, 1996). Saavedra and Kwun (2000) found that task autonomy was positively and significantly related to activated positive affect. Rank, Carsten, Unger and Spector (in press) identified affective organizational commitment as a positive and significant predictor of supervisor-rated proactive service performance, a service-specific initiative variable defined as individuals' self-started, long-term oriented and persistent service behaviors that go beyond explicitly prescribed service requirements. Affective organizational commitment, which is typically related to positive affect (Meyer, Allen, & Smith, 1993), reflects one's emotional attachment to the organization and manifests itself in identification with and involvement in the organization. Morrison and Phelps (1999) demonstrated that individuals' generalized self-efficacy beliefs, i.e. their subjective estimates of their capacity to perform, were positively associated with employees' discretionary efforts to initiate workplace change, a variable they called "taking charge". Similarly, longitudinal research (Frese et al., 1996; Speier & Frese, 1997) identified work-related self-efficacy as a positive predictor of several behavioural forms of initiative (e.g., overcoming barriers, taking an active approach). In a study by Saavedra and Earley (1991), self-efficacy was higher among participants exposed to a positive affect manipulation than among participants exposed to a negative affect manipulation.

With respect to innovation as an outcome, positive affect may also influence negotiations about innovation proposals as well as innovation adoption decisions in mood-congruent ways, because affect infusion occurs most likely when substantive processing is needed (Ashkanasy & Ashton-James, 2005). "The conditions under which important managerial decisions occur are the very conditions in which substantive processing is most likely: high complexity, ambiguity, and uncertainty requiring extensive and constructive processing (Forgas & George, 2001, p. 27). Individuals in a positive mood are more likely to formulate optimistic expectations, to use more cooperative bargaining strategies and to actually produce more successful negotiation outcomes (Brief & Weiss, 2002; Forgas & George, 2001). Decision-makers may be more likely to adopt innovation proposals in positive mood states and to reject them in negative mood states, unless they are consciously aware of their moods and decide to adopt more motivated, self-serving judgmental strategies. The suggestion to revisit important decisions in differing affective states to gain a broader perspective (Forgas & George, 2001) may be particularly helpful when top managers have to make decisions

regarding the adoption of radical innovations. In sum, the previously discussed studies and theoretical considerations suggest that positive affect facilitates not only creativity, but also personal initiative and innovative behavior.

The impact of negative affect on creativity, innovation and initiative

Amabile and coauthors (2005) noted that the majority of studies indicates that positive rather than negative affect facilitates creativity. However, these authors as well as Russ (1999) and Eisenberg and James (2004) also pointed out that some researchers have posited a positive association between negative affect and creativity, because several studies have identified a higher incidence of affective disorders such as depression and bipolar disorder among creative individuals and their relatives compared to the general population. It should be noted, however, that this relationship appears to apply primarily to artistic creativity (Feist, 1999) and that the best creative work among individuals suffering from bipolar disorder appears to occur not in the depressed state, but during the hypomanic phase, when thinking is not too disorganized and positive affect is accompanied by increased risk taking (Russ, 2000). Isen and coauthors (1987) gave an interesting explanation why negative affect may facilitate creativity for those suffering from unipolar affective disorders (e.g., major depression): “It may be that for clinical depressives, compared with normal persons, more cognitive material is accessed by sadness; and it may also be that for such persons sadness cues more material than other affective states do” (p. 1130). Among non-depressed people who have frequently been in positive mood states, positive affect may facilitate access to a large range of material.

Regarding the general population, a few exceptional experimental studies found a positive influence of induced negative affect on creative problem-solving (e.g., Kaufmann & Vosburg, 1997), although most other laboratory studies found either no effect or a negative effect of negative mood on creative problem-solving (e.g., Isen et al., 1987). Russ (1999) noted potential detrimental effects of negative affect on creativity, including dichotomous thinking and a constriction of cue utilization. Similarly, Madjar and coauthors also argued that negative moods may constrain divergent thinking and inhibit an exploration of new cognitive pathways. A few studies also suggest a negative relationship between negative affect and innovation. For example, Howell and Shea (2001) found that the framing of an innovation as a response to a threat was significantly associated with lower levels of champion behavior and subsequently with reduced

project performance. The champion behavior measure reflected initiative and innovative behavior, as it captured the degree to which champions demonstrated conviction in the innovation, built involvement and support and persisted under adversity. The framing of innovations as a threat may be associated with negative affect, because “threats are associated with negative outcomes and expectations of loss” (p. 17).

Ashkanasy and Tse (2000) argued that supervisors experiencing little negative affect may be more likely to achieve creativity and innovation among themselves and their followers. They proposed that transformational leaders are more likely to engage in impression management and are hence less likely to be in a negative mood, and that this will subsequently lead to more creative decision-making among such leaders and ultimately to more creativity and innovation among their followers. This proposed sequence, which implies a spillover effect from leader to follower moods and creative endeavors, should be further examined in empirical studies. Transformational leadership, which has been shown to be positively associated with individual followers’ creativity (Jung, 2001) as well as organizational-level innovation (Jung, Chow & Wu, 2003), entails behaviors such as intellectual stimulation and inspirational motivation, including expressions of confidence and positive emotional appeals. Ashforth and Humphrey (1995) argued that the process in which transformational leadership affect change “is largely dependent upon the evocation, framing and mobilization of emotions” (p. 116). Such effects may not be limited to those occupying formal leadership positions. Howell and Higgins (1990) found that innovation champions, i.e. individuals who informally emerge in the organization and make a decisive contribution to an innovation by enthusiastically promoting its progress, exhibited more transformational leadership than nonchampions.

However, the notion that negative affect may also facilitate creativity, innovation and initiative by indicating a deficient status quo and an opportunity for improvement has recently gained in popularity. Regarding creativity, even authors generally arguing for detrimental effects of negative affect acknowledge that “negative emotions may be necessary to break down old expectations and paradigms” (Higgins, Qualls, & Couger, 1992, p. 122). Madjar and coauthors argued that feelings of tension and dissatisfaction may be needed for creative problem-solving (Madjar et al., 2002). Russ noted that negative affect may function as a motivating force for creativity indicating that tension needs to be reduced, as a cue that a problem exists that needs to be solved or as content

to be worked with in artistic productions. Anderson, DeDreu and Nijstad (2004) presented a distress-related innovation model, arguing that distress-related variables at the individual, group and organizational levels of analysis “act as a trigger for innovation” (p. 166). They cited studies demonstrating positive effects of an individual’s negative mood (George & Zhou, 2002) or job dissatisfaction (Zhou & George, 2001), of group distress associated with the experience of minority dissent (De Dreu & West, 2001), and of external demands such as a turbulent environment on the organization as a whole (West, 2002). In fact, an increasing number of field studies suggests that negative mood may sometimes facilitate creativity, innovative behavior and personal initiative (Fay & Sonnentag, 2002; George & Zhou, 2002).

One of the few field studies on affect and creativity (George & Zhou, 2002) found negative mood to be positively and positive mood to be negatively associated with creativity when both mood clarity and perceived recognition of creative performance were high. The latter variable reflected the perceived impact of exhibited creativity on pay raises and promotions. Mood clarity was defined as “an enduring tendency to monitor one’s feelings and to experience them lucidly” (p. 689). To measure positive and negative mood, the researchers used the 20-item PANAS scale (Watson, Clark & Tellegen, 1988), asking participants how they felt at work during the past week. According to the mood-as-input model, people use their current mood state as an informational cue signaling the level of effort needed to achieve satisfactory outcomes. Positive mood indicates that all is going well, whereas negative mood suggests that continued effort is necessary (Martin, Ward, Achee & Wyer, 1993). Drawing on this theory, George and Zhou (2002) argued that negative mood functions as a signal indicating that the status quo is problematic and that one must try harder to find a creative solution. As Sutton (2002) noted, “many successful ideas were invented because someone got upset about something and then did something about it” (p. 182). He went so far to suggest that companies should incite and uncover discomfort, for example by hiring people who make you feel uncomfortable. On the contrary, George and Zhou (2002) did not suggest that organizations should enhance negative affect, but rather wished to reveal the circumstances under which negative affect may be an energizing force for creativity and innovation.

Although these findings may appear to contradict the previously discussed laboratory findings (e.g., Isen et al., 1987), George and Zhou (2002) argued that their

logic could be reconciled with Isen's work. Whereas Isen and others used short-term tasks in which the level of effort may not be critical, the field study by George and Zhou captured longer-term creative performance, for which the differential effort expenditures predicted by the mood-as-input model may be crucial. One limitation of the George and Zhou (2001) study is that the specific source of negative affect was not isolated, although their rationale suggests that only work-related negative affect indicating a need for new and useful ideas facilitates creativity. Van Dyne, Jehn & Cummings (2002) examined relationships of employee-reported work strain and home strain on creativity. In this field study of hair salon stylists, work and home strain were operationalized as subjective affective responses to conflict and tension. Home strain negatively and significantly predicted supervisor-rated creativity, whereas work strain was unrelated to creativity. This pattern of findings indirectly suggests that the underlying causes for negative affect may be critical in determining whether it inhibits or potentially facilitates creativity. If negative affect results from problems not related to work, it likely hampers creativity. An interesting additional finding was that leader-member exchange moderated these relationships such that both home and work strain were less negatively associated with creativity when the quality of the relationship between supervisor and subordinate was high and entailed mutual trust and respect. Supervisors who experience high quality relationships with employees are more likely to accommodate unique subordinate needs and to express confidence in their subordinates, which may reduce the distracting aspects of strain (Van Dyne et al., 2002).

Baer and Oldham (2006) examined the relationship between creative time pressure and creativity in a sample of employees who worked in a company producing cereals. The time pressure variable used in this study explicitly captured creativity-related demands and was defined as "extent to which employees feel they have insufficient time to develop creative ideas at work" (p. 963). A significant three-way interaction implied a curvilinear inverted U-shaped relationship between experienced creative time pressure and creativity only for employees who were high in the personality trait openness to experience and additionally received support for creativity from supervisors and coworkers. The authors argued that employees who experience intermediate levels of creative time pressure will be fully engaged in their activities. It should be noted, however, that they also found a negative and significant zero-order correlation between creative time pressure and creativity. It is interesting that the

curvilinear effect was only found for employees high in openness who might experience greater negative affect if their job does not allow enough time for creative endeavors. This study indirectly suggests that negative affect associated with moderately high levels of time pressure may facilitate creativity under these circumstances. Together, the previously discussed studies (Baer & Oldham, 2006; George & Zhou, 2001; Van Dyne et al., 2002) suggest that experienced work-related demands may facilitate creative behavior, whereas negative affect resulting from demands that have nothing to do with work-related creativity (e.g., conflict at home) likely inhibit creativity, although these inhibitory effects may be alleviated by moderating variables such as high-quality leader-member exchange.

Although few studies have explicitly examined relationships between negative affect and innovation or initiative, the few studies that linked these outcome variables to the stress process are relevant, because stressors typically involve the experience of negative affect. According to Spector (1998), “a job stressor is considered to be a condition or situation that elicits a negative emotional response, such as anger/frustration or anxiety/tension” (p. 154). Spector noted that different stressors may induce negative emotions that change over time. An excessive workload, for example, “would lead to escalating emotion, perhaps starting with mild irritation and ending in stronger anger and/or anxiety” (p. 154). Spector’s (1998) Control Theory of the Job Stress Process posits that elicited emotions mediate the relationships between perceived stressors and strains and that these strains are additionally affected by the individual’s perceived control. Interestingly, Spector argued that “from the organizations perspective, behavioral strains can be considered counterproductive or productive” (p. 155). In particular, he noted that emotion-focused coping is frequently counterproductive, whereas problem-focused coping is often productive, for example when an employee responds to an increase in workload by suggesting a more efficient procedure to save time. This form of productive problem-focused coping may be considered an act of personal initiative or innovative behavior in response to perceived stress, suggesting that the elicited negative affect may sometimes positively influence initiative or innovation. As Lazarus (1991) noted, coping is “extremely important in the stressful transitions that take place in people’s lives over the life course”, including changes in work roles or organizational change. Lazarus defined coping as “the cognitive and behavioral efforts a person makes to manage demands that tax or exceed his or her personal resources” (p. 5).

Bunce and West (1994) argued that individuals may cope not only by adapting themselves to stressful environments, but also by adapting their workplaces. They referred to this subset of problem-focused coping responses as innovative coping, which occurs when “an individual perceives him- or herself intentionally to introduce and apply, alone or within a group, new skills or procedures, designed to significantly to benefit self, the group or the organization, with the result that recognized external demands appraised as taxing or exceeding resources are actually reduce or alleviated” (p. 320). Overall, 32% of respondents in their sample of 333 UK health care professionals reported a response that the researchers coded as innovative coping. The groups of stressors that elicited innovative coping most frequently were overwork, procedural difficulties (e.g., problems with administrative tasks) and interpersonal problems in dealing with others.

A field experiment testing the effects of stress management interventions (Bond & Bunce, 2000) demonstrated that an Innovation Promotion Program, aimed at enhancing innovative coping responses, resulted in greater propensity to innovate as well as reduced depressive symptoms, as measured with the Beck Depression Inventory. The Innovation Promotion Program encouraged participants to identify features of their work that led to strain and to innovatively change those features. Mediation analyses identified only work change (i.e., the extent to which people handled strain by modifying their work methods, processes and environments) as the underlying mechanism explaining the effects of the Innovation Promotion Program on propensity to innovate. On the contrary, a different stress management intervention, Acceptance and Commitment Therapy, led to increased acceptance of undesirable thoughts and feelings rather than work change. The authors suggested that an enhanced sense of control may explain why the Innovation Promotion Program also reduced depressive symptoms. This study shows that innovative behavior can be a response to experienced stress and related negative affect, particularly when such behavior is encouraged through a problem-focused stress management intervention.

Fay, Sonnentag and Frese (1998) discussed potential relationships of stressors with personal initiative and innovation. The theoretical contribution offer by Fay and coauthors was based on action theory (Frese & Rank, 2006), which conceptualizes stress as a disturbance of action regulation. Action theory entails a stressor taxonomy composed of the three categories regulation obstacles (i.e., interruptions and regulation

difficulties such as poor visibility or lack of information), regulation uncertainties (e.g., role ambiguity), and overtaxing regulations (e.g., time pressure). Fay and colleagues described three potential relationships between such stressors and innovation as well as personal initiative: First, stressors may reduce these behaviors by impeding goal development and planning activities and by engendering potentially unfavorable feelings such as insecurity. Second, innovation or initiative may cause stressors, for example time pressure or role conflict, when individuals devote too much time to initiative or when they cannot decide whether to engage in self-started or prescribed behaviors. Third, stressors may be viewed as options for innovation and initiative, when they serve as signals that a process is not optimal and can be improved. This view of perceived stress as a starting point corresponds to the “perceived need for change” identified by Farr and Ford (1990) as a precursor to innovation.

Fay and Sonnentag (2002) adopted a control theory framework, modeling personal initiative as an output function, i.e. a behavior shown in response to a perceived discrepancy between the current state and a desired state. In this model, a stressor is “regarded as a signal indicating that a process, procedure or design is below an optimal level” (p. 224). The anticipation that such a stressor may occur again may lead to self-started and long-term oriented behaviors preventing such a situation in the future. Interestingly, however, Fay and Sonnentag also argued that individuals will be most likely to take initiative not when stressors are acute, because resources are then fully taxed and mainly invested in more urgent task-performance related activities. Although stressors and accompanying negative affect may trigger initiative, this may happen with a considerable delay. The results of the German study by Fay and Sonnentag (2002) largely support this rationale: Two investigated types of stressors, namely situational constraints and time pressure, were significantly and positively correlated with subsequent increases in personal initiative over a two-year period. Multiple regression analyses also showed that these two stressors positively predicted changes in initiative, although each stressor emerged as a significant predictor in a different wave of the study. Consistent with the prediction, each stressor predicted initiative when it was, on the aggregate, experienced at moderate rather than very high levels. As Fay and Sonnentag argued, “a stressor that one encounters every day is less likely to be perceived as an option for initiative than a stressors that occurs more seldom” (p. 230). Fay and



Sonnentag concluded that workplace interventions aiming at stress reduction may be a double-edged sword if they also reduce personal initiative.

James and coauthors (2005) suggested that complex affective states composed of both positive and negative elements may positively influence creativity. Emotional ambivalence may be defined as the simultaneous experience of positive and negative emotion (Fong, 2006). Amabile and associates (2005) did not find evidence of a positive relationship between emotional ambivalence and creative thought. They disaggregated their coder-rated positive mood scores into positive and negative components by determining whether there was both positive and negative valence in each daily narrative. There were no systematic relationships between the occurrence of affective ambivalence and daily creative thought or between month-aggregated ambivalence and monthly peer-rated creativity. However, Fong (2006) conducted two laboratory experiments showing that individuals experiencing emotional ambivalence achieved higher scores on the Remotes Associates Task, which indicates that they were better able to recognize unusual relationships between concepts.

Fong (2006) argued that emotional ambiguity is interpreted as a signal that one is in an unusual environment and that this leads to an increased sensitivity for recognizing unusual associations. She provided an example of innovation-related emotional ambivalence: “An individual who is feeling excited about her contribution to a new product launch in her company, while also feeling frustrated that the process is not happening as quickly as hoped, is experiencing emotional ambivalence at work” (p. 1018). She noted that workplace situations often involve emotional complexity; for example when managers must discuss problems while also displaying confidence. Her second experiment revealed the positive relationship between emotional ambivalence and creativity only for participants who believed that emotional ambivalence is atypical. This is consistent with her assumption that the “atypicality associated with this emotional experience would be interpreted as an indication that one is in an unusual environment where other unusual relationships might also exist” (p. 1019), and that this increased ability to recognize unusual associations should raise creative performance, because creative products are often the result of new combinations of existing ideas.

#### The impact of discrete emotions on creativity, innovation and initiative

In comparison with moods, emotions are generally more intense and short-lived and typically arise in response to a specific event (Pirolo-Merlo et al., 2002; Salovey &

Mayer, 1990). Brief and Weiss (2002) criticized “the overemphasis of the study of mood at the expense of discrete emotions” (p. 297), which may have resulted from the ease with which Isen’s theoretical framework (e.g., Isen et al., 1987) and mood measures such as the PANAS (Watson et al., 1988) could be applied to organizational research. “Discrete emotions are important, frequently occurring elements of everyday experience” (Brief & Weiss, 2002, p. 297). Because of the dearth of research, we briefly summarize a few relevant studies that linked discrete emotions to change processes and then discuss further implications of discrete emotions for creativity, innovation and initiative.

Whereas most studies on emotions and change focused on a limited set of negative emotions linked to resistance, Kiefer’s (2002) investigation of Swiss service sector human resource managers during a merger revealed a wide variety of experienced positive emotions (including joy, hope, satisfaction, surprise, pride and relief) as well as negative emotions (such as frustration, anger, fear, disappointment and restlessness). Considering both the relational themes (Lazarus, 1991) associated with specific emotions as well as the action tendencies engendered by them (Frijda, 1986), Kiefer identified certain consequences of joy, fear and anger that imply different levels of initiative and innovative behavior. Her application of the models by Lazarus and Frijda represents a theoretical foundation for empirical research on the impact of discrete emotions on these outcomes. Kiefer’s (2002) findings suggest that joy, which reflects progress toward a goal (Lazarus, 1991) and typically leads to exuberance and action readiness (Frijda, 1986), was essential for sustained levels of active support for change initiatives, which reflects the persistence facet of personal initiative (Frese & Fay, 2001). On the contrary, fear frequently led to the avoidance and inhibition tendencies suggested by Frijda, as reflected in managers’ resulting reluctance to speak up or criticize the process, which reflects low levels of initiative. The consequences of anger were particularly multifaceted, because different respondents reported the two antagonistic action tendencies proposed by Frijda (i.e., removing obstacles or showing resistance). Whereas the first response implies a high level of organizationally functional initiative, the second reaction may lead to low levels of productive initiative. Hence, research identifying the circumstances under which anger leads to these different outcomes is desirable.

Another change-related study with implications for innovation and initiative (Matheny & Smellan, 2005) revealed that distinctive forms of change were associated with the experience of different discrete emotions. These researchers collected both

narrative accounts and quantitative data with regard to different change events and associated perceptions of justice and emotions. Considering the five emotions that were reported most frequently with respect to each change category, changes related to the physical setting as well as technological changes were related mainly to positive emotions, policy changes primarily to negative emotions, and social interaction changes to both positive and negative emotions. Interestingly, the three emotions reported most often in relation to technological change were high-arousal positive emotions (e.g., enthusiastic, excited, elated). Efforts to tailor such an approach specifically to the innovation domain may reveal whether different emotions are also associated with similar forms of innovation (e.g., technological and administrative forms of innovation; Anderson & King, 1993) and whether innovative and proactive contributions differ across these forms because of such distinctive effects on emotions.

With regard to creativity, Higgins, Qualls and Couger (1992) presented a model suggesting effects of five discrete emotions (anxiety, depression, anger, exhilaration and passion) on the four creativity phases preparation, incubation, illumination and verification. Interestingly, Higgins and coauthors described mainly negative effects of all of these emotions. Specifically, they argued that all five emotions may cause an individual to be unable to focus on the task in the preparation phase, when the problem needs to be thoroughly analyzed, or to engage in uninhibited information integration during the incubation stage. In the illumination phase, in which the “Eureka” is recognized, individuals experiencing negative emotions such as anxiety may devalue the insight, whereas those experiencing positive emotions such as exhilaration may overvalue it. Interestingly, Higgins and colleagues argued that this effect “is particularly troublesome for the organization because many ‘great ideas’ may be lost and other weaker ideas might receive disproportionate organizational attention” (p. 125). Finally, all five emotions may limit one’s ability to systematically analyze the value of the idea in the verification stage, which may sometimes lead to sponsorship of poor ideas or rejection of prematurely presented good ideas. Empirical studies testing these assumptions would be a useful addition to the literature, particularly because this model suggest reasons for detrimental effects of both positive and negative emotions on creativity, whereas most published studies have dealt with beneficial influences of positive or negative affect (Amabile et al., 2005; George & Zhou, 2002; Isen et al., 1987; Madjar et al., 2002). The influences of positive and negative affect in general as well as

discrete emotions in particular on specific creativity stages deserve further consideration. Although the model by Higgins and coauthors (1992) is based on the original four-stage model by Wallace (1926), these four stages are highly similar to the four phases included in Amabile's (1996) more recent nonsequential phase model, which constitutes a portion of her componential theory of creativity.

Anxiety or fear has also been proposed as a reason why brainstorming in groups leads to the generation of fewer and less creative ideas than the use of the nominal group technique, which requires individuals to work separately. For example, Thompson (2003) noted that members of brainstorming groups "may be cautious about their presentation of ideas and suggestions because they fear that others may negatively evaluate the ideas" (p. 102). It should be noted, however, that laboratory research indicated that the inferiority of traditional group brainstorming approaches is not caused by evaluation anxiety but rather by production blocking, because idea development may be interrupted as only one person can speak at the same time. The experience of task-related anxiety may also lead to a decision not to engage in discretionary behaviors (Beal, Weiss, Barros and MacDermid, 2005) "For example, anxiety experienced as a result of an approaching deadline may inform a worker that there is not enough time available for the typical level of helpfulness to other employees" (p. 1063). Similarly, an employee experiencing this negative emotion may decide not to exhibit personal initiative or voluntary forms of creativity or innovative behavior.

A recent contribution about courage and work (Worline, Wrzesniewski and Rafaeli, 2002) also bears interesting implications for the role of fear in initiative and innovation. According to these authors, an act may be considered courageous if it involves free choice, some sort of risk is present, the risk has been adequately appraised, and the action serves worthy aims. Considering that personal initiative is freely chosen and worthwhile (Frese & Fay, 2001), fearful situations may sometimes trigger courageous acts of initiative. Although courage is closely linked to fear, as it implies that someone takes action in a dangerous circumstance despite experienced anxiety, "courage is different from a 'pure' emotional state because it must involve certain kinds of cognitive judgments" (p. 297). A qualitative study of managers and employees in high-technology companies showed that those who witnessed others' courageous actions were more likely to overcome fear and act with courage themselves in a future situation (Worline et al., 2002). Worline and colleagues also explicitly discussed potential effects

of observations of others' courageous behavior on creativity, arguing that these effects will be positive when the experience of courage generates positive emotion, but negative when it generates negative emotion.

In addition to measuring positive and negative moods with the PANAS, George and Zhou (2002) also assessed the specific affective states of fear, joviality, attentiveness and self-assurance with measures by Watson and Clark (1992), asking participants how well each item (e.g., frightened, joyful) described how they felt at work during the past week. Of course, it is somewhat questionable whether this measure with the one-week time frame adequately captured discrete emotions. None of the four specific affect variables was significantly correlated with supervisor-rated creative performance. Regarding all of the four discrete affect variables, George and Zhou found support for the same pattern of three-way interactions as for the general affect dimensions. Fear positively related to creativity when mood clarity and recognition of creativity were high, whereas the three positive affect dimensions negatively related to creativity under these circumstances.

Particularly little research has investigated the role of self-conscious emotions (Tangney, 2003) for individuals' creativity, initiative and innovative behavior. Pride, embarrassment, guilt and shame are called self-conscious emotions, because they are evoked by self-reflection and self-evaluation. Pride is experienced when standards are met or exceeded, whereas the negative self-conscious emotions are felt when standards are violated. Whereas guilt involves a negative evaluation of a specific behavior, shame involves a negative evaluation of the global self (Tangney, 2003). Shame is typically accompanied by feelings of powerlessness and a desire to escape the situation. In comparison, guilt leads to regret and motivates reparative behavior, such as attempts to fix the situation. It is likely that shame may be considerably more detrimental to initiative and innovation than guilt, which may even promote these behaviors, because "guilt motivates people in a constructive, proactive, future-oriented direction, whereas shame motivates people toward separation, distance and defense" (p. 388). Tangney also noted that guilt may promote empathy because it highlights the consequences of one's behavior for distressed others, whereas the painful self-focus of shame may derail the empathic process. As Huy (1999) emphasized, empathy is critical when change agents try to convince others' to implement new processes

Perrewe and Zellars (1999) argued that individuals who experience guilt will exhibit problem-focused coping, whereas those experiencing shame will engage in emotion-focused coping. Drawing on Weiner's (1986) attribution-emotion model, Perrewe and Zellars (1999) argued that the two attributional dimensions locus and controllability will determine the type of experienced emotion. Guilt results from a controllable and internal attribution (i.e., a negative outcome is seen as caused by oneself), whereas shame results from an uncontrollable and internal attribution. Gratitude, which results from an external attribution of a positive event, is less likely to promote proactive and innovative behavior than pride, which results from an internal and controllable attribution in response to a positive event. Tangney (2003) distinguished between "alpha pride" (hubris or pride in the global self), which may result in maladaptive attempts to distort situations to enhance the self, and "beta pride" (pride in a specific action or behavior), which may be beneficial for initiative and innovative behavior. Pekrun and Frese (1991) noted that employees experience pride if they successfully overcome a barrier blocking the path to goal attainment, if this achievement is attributed to oneself. In general, anticipated emotions, such as the pride one expects to experience once hurdles are overcome, should be relevant to proactive and innovative behavior, which involve a need to anticipate future developments.

Finally, surprise and hope are two discrete emotions that may be highly relevant to idea development and implementation, but are rarely investigated in organizational studies. De Dreu and West (2001) considered the experience of surprise as the primary mechanism explaining why minority dissent increases creativity: "Minority dissent is surprising and leads majority members to wonder why the minority thinks the way it does [...] the tension produced by minority dissent and the majority's desire to resolve this tension produce divergent thinking" (p. 1191). The authors suggested that authentic minority dissent is more effective in facilitating creativity than devil's advocacy, which is unlikely to elicit the tension and surprise needed to induce creative thinking, because it involves role-playing behavior by a member who is known to disagree out of duty. The two Dutch field studies reported by De Dreu and West showed that minority dissent also leads to greater innovation if it is combined with high levels of participation.

Huy (1999) argued that individuals who experience hope are more likely to support change in their organizations. Hope may facilitate innovative endeavors and initiative, particularly people's perseverance in overcoming barriers: "Hope propels

people into taking actions that could improve their lot, it fuels their persistence, and, thus, it sustains mobilization efforts” (p. 338). Huy further argued that people with hope will be more likely to initiate difficult and uncertain tasks. However, social psychological research suggests that the nature and effects of hope may be more complex. As Cornelius (1996) noted, hope may be defined in terms of the expectations we have about particular states of affairs: “When a goal is important to us and the probability of attaining it is high, we experience high levels of hope” (p. 205). Hope is elicited when a beneficial object that is currently not present is judged to be attainable. However, Lazarus (1991) classified hope as a negative emotion, because it does not have a clear-cut action tendency, occurs in goal-incongruent situations and involves a desire to escape from a negative situation. Although hope may sustain constructive efforts, it may sometimes lead us to have unrealistic expectations and to remain committed to a course of action that we would be better off abandoning” (Cornelius, 1996, p. 206). Averill, Catlin and Chon (1990) noted that people tend to work harder and be more persistent in their efforts to bring about hoped-for events when they feel a sense of control over these events. Therefore, one reason why perceived control positively predicted personal initiative as well as creativity and innovation in several studies (e.g., Amabile et al., 1996; Frese et al., 1996; Speier & Frese, 1997) might be that it may be accompanied by the experience of realistic forms of hope rather than the problematic types of hope discussed by Lazarus (1991). In conclusion, field research examining the role of future-oriented emotions such as hope or anticipated pride for proactive and innovative behavior would be a particularly valuable contribution to the literature.

#### The impact of other affect-related variables on creativity, innovation and initiative

Because only very few studies have directly examined effects of other affect-related variables on creativity, innovation and initiative, we briefly summarize relevant implications of studies that included related outcomes variables, such as individuals’ receptivity to change (Huy, 1999, 2002). Specifically, we discuss the role of emotional intelligence (EI), emotion control and the group-level affect variables affective tone and emotional contagion. Although some approaches to EI are overly broad in scope and do not differ sufficiently from personality models, the four-branch theory and its associated abilities measure (Mayer & Salovey, 1997) can be viewed as a scientifically sound approach (Ashkanasy & Daus, 2005). EI involves the ability to monitor one’s own and others’ emotions, to distinguish between different emotions and to use this information

effectively to guide one's thinking and actions (Salovey & Mayer, 1990; Huy, 1999). The four aspects of EI covered by Mayer and Salovey (1997) concern emotion perception, its understanding, its assimilation to facilitate thought, and its regulation in self and others (Ashkanasy and Daus, 2005). EI may be beneficial when innovative individuals, particularly idea champions and change agents, have to persuade others to support the implementation of new approaches. Specifically, the ability to perceive others' emotions and to regulate them appears to be critical.

Huy (1999) proposed a model explicating how different facets of individual-level EI as well as the organizational-level concept "emotional capability" influence people's receptivity and mobilization concerning radical change, i.e. discontinuous change in the basic philosophy of an individual person or of the shared identity of organizational members at the macro level. "At the individual level, receptivity denotes a person's willingness to consider change, while mobilization "refers to the concrete actions taken by a person in the direction of change" (p. 329). Huy modeled empathy, i.e. one's ability to understand someone else's feelings and to re-experience them, as a central EI attribute that enhances receptivity to a proposed change. Huy also proposed that encouragement, defined as the organization's ability to instill hope among its members during a change effort, will lead to greater mobilization, and emphasized the key role of transformational leaders in this process.

As Huy (2002) found in a qualitative study conducted in a service-providing firm in the information technology industry, middle managers had to engage in emotional balancing by showing emotional commitment to change projects as well as concern about recipients' emotions to facilitate adaptation of their work groups in a period of radical change. Some managers promoted change projects by instilling high-arousal positive emotions such as excitement, while others attenuated high-arousal negative emotions such as anger to allow for continuity in delivering services. Huy concluded that the aggregate of these two emotion management patterns contributes to the balancing of organizational continuity and change. If only one of these two patterns was present, inertia (in the case of lacking emotional commitment) or chaos (in the case of lacking consideration of recipients' emotions) were observed.

In their review of the role of emotions in transformational leadership, Ashkanasy and Tse argued explicitly that EI involves the ability to utilize emotions in an appropriate way to allow flexible planning and creative thinking. Although these authors



acknowledged that one form of transformational leadership, namely intellectual stimulation, may require conventional intelligence, they argued that EI training may lead to an enhancement of the three other “Is” (inspirational motivation, idealized influence, and individualized consideration). EI may also exert a moderating influence on relationships between affect variables and different outcomes. For example, Paterson and Haertel (2002) proposed in their model of employee responses to downsizing that change anxiety will result in more constructive forms of coping among individuals high in EI than in those low in EI.

The study by Carmeli and Colakoglu (2005) is an interesting example of research exploring interactions between different affect-related variables with implications for interpersonal forms of personal initiative and individual innovation. They found that affective organizational commitment was considerably more strongly and positively associated with the altruism (but not with the compliance) component of organizational citizenship behavior (OCB) for employees high in EI. It should be noted that these results need to be interpreted with caution, because these researchers used self-reports of both EI and OCB. As Frese and Fay (2001) suggested, altruism may be considered personal initiative if it entails self-started helping behavior, whereas compliance is typically reactive and rarely involves initiative. Hence, an interesting extension of this research would be to assess whether affective commitment more strongly and positively predicts initiative and innovation for employees high in EI.

Emotion control reflects an individual’s self-regulatory capability to minimize detrimental emotional states and to maintain task-focused attention (Kanfer & Heggstad, 1997). Emotion control represents a central facet of emotion regulation, with the latter “defined broadly as the processes by which individuals and environments influence the experience, expression, and control of an individual’s emotion” (Kanfer & Kantrowitz, 2002, p. 433). Based on the view that attentional resources are limited, Kanfer and Ackerman (1989) proposed that performance will be higher if individuals are able to direct their attention to the task at hand. “Affective states, particularly emotion episodes, redirect attentional focus from the task to the circumstances surrounding the affective experience. Most of the time, such redirection of attention will be detrimental” (Beal, Weiss, Barros & MacDermid, 2005). Because emotion control is critical to novel and complex tasks (Kanfer & Heggstad, 1989), it may be relevant to creativity and innovative behavior. Attempts to implement new ideas in the workplace may not only

involve worries about the feasibility of the idea or about anticipated resistance, but also lead to anger resulting from setbacks or criticism (Farr & Ford, 1990). Based on these considerations, one may not only expect a positive main effect of emotion control on creativity, initiative and innovative behavior, but also a moderating effect in that the experience of negative emotions will less likely be detrimental for individuals high in emotion control. Individuals high in emotion control are able to regulate negative affect and to redirect attention to the task at hand (Kanfer & Ackerman, 1989).

Emotion regulation may also explain why transformational leaders are more likely to generate creativity and innovation among their followers (Ashkanasy & Tse, 2000). The specific process described by these authors implies that such leaders are better able to regulate their own emotions because they engage in superior emotional self-appraisal in terms of the EI model by Salovey and Mayer (1990). Consequently, transformational leaders exhibit greater emotional stability and lower levels of stress, which may then enable such leaders to engage in more creative decision-making and to generate more creativity and innovation among followers (Ashkanasy & Tse, 2000). Hence, outstanding leaders may serve as role models, demonstrating to followers how an acknowledgement and subsequent regulation of one's emotions may lead to positive outcomes such as enhanced creativity and innovation.

Although most of the previously discussed research concerns individual-level affect variables, many of these studies also have implications for the group level, where similar relationships may be observed. For example, George (1990) defined affective tone as "consistent or homogeneous reactions within a group" (p. 108) and found negative affective tone to be negatively related to the extent to which the group engaged in prosocial behavior. However, even if similar relations exist at the individual and group levels of analysis, the theoretical rationale for the group level should be based on a consideration of group-level processes (e.g., attraction, selection and attrition processes; George, 1990). The role of emotional contagion, which refers to "the processes whereby the moods and emotions of one individual are transferred to nearby individuals" (Kelly & Barsade, 2001, p. 106) in the innovation process should also be examined. For example, findings showing that those occupying important positions within the group and those high in nonverbal expressiveness are better able to transfer their emotions to others (Kelly & Barsade, 2001) may also apply to emotional contagion processes triggered by innovation champions.

Pirollo-Merlo and coauthors (2002) applied Affective Events Theory to the group level by proposing that “certain events impact on a collective sense of affect in the team, which subsequently influences attitudes and behaviors” (p. 564). These researchers examined the impact of technical obstacles (e.g., equipment failures) as well as nontechnical obstacles (e.g., supply problems) on team climate variables and subsequent project performance in Australian research and development teams. They argued that the four factors in the team climate inventory (West & Anderson, 1996) have strong affective components. For example, the factor participative safety “refers to a feeling that the team is interpersonally nonthreatening and encouraging of involvement. This relates to feelings of safety or, conversely, lack of fear” (p. 565). When obstacles were experienced constantly over a four-month period, lower levels of a few of the team climate factors, including participative safety, were reported. The researchers also identified team climate perceptions as a mediator between leadership (transformational and facilitative, with the latter reflecting success in facilitating positive interpersonal relationships) and team performance. Because the climate variables included in this study are not affect variables per se, future studies explicitly including variables such as affective tone or emotional contagion would be an interesting addition to the literature. The distress-related model by Anderson and coauthors (2004) also involves several potential effects operating across the individual, group and organizational levels. For example, they suggested that group-level distress resulting from minority dissent may stimulate individual-level creativity. Certainly, multi-level investigations examining potential cross-level effects would be particularly illuminating.

#### Conclusion

The research discussed in this chapter demonstrates not only that positive affect facilitates creativity and that it may promote initiative and innovation, but also that negative affect or emotional ambivalence positively influence these outcomes under certain circumstances. Shalley and coauthors (2004) concluded that research should “identify the entire set of conditions that need to be present if negative moods are to boost employee creativity” (p. 946). Similar efforts should be undertaken with respect to the outcome variables personal initiative and innovative behavior. Particularly relevant to the emotion domain may be studies exploring interactions among multiple affect-related variables. For example, the research summarized in this chapter suggests that negative affect may be more positively related to creative, innovative and proactive

contributions among employees who are high rather than low in emotional intelligence, emotion control or affective organizational commitment. The effects of various discrete emotions such as pride, guilt and surprise as well as those of affect-related variables such as emotional intelligence should also be investigated in future studies.

While the present chapter focused on the impact of affect on creativity, innovation and initiative, researchers should also consider the influence of these variables on subsequent affect. Amabile and coauthors (2005) found that most of the reported short-term reactions to creative thought events entailed positive emotional reactions such as joy, pride or relief. However, Anderson and coauthors (2004) suggested that innovative efforts aimed at reducing experienced distress may paradoxically trigger subsequent distress and team conflict. They noted that innovation may cause potential negative consequences at the individual, group and organizational level of analysis, including increased role ambiguity, group work load or turnover. In general, “the majority of research suggests that employees associate organizational change with negative emotional responses” (Ashkanasy & Ashton-James, 2005, p. 253).

In our age of ubiquitous change, it is encouraging that several studies discussed in this chapter suggest that negative affect may serve as a starting point for innovative improvements (Anderson et al., 2004; Fay & Sonnentag, 2002; George & Zhou, 2002; Huy, 1999). As suggested in the quote by Sartre, which preceded this chapter, emotions may not only be the result of change, but also trigger transformations of reality. Considering that the negative affect frequently associated with change processes may sometimes engender creativity, innovation and initiative, Jung’s (1912/1967) concept of active imagination appears relevant as a technique to make problematic emotions and moods more bearable (Chodrow, 2006). Hopefully, future research will further reveal how individuals in changing organizations can achieve the transformative creative process that Jung described poetically: “What on a lower level had led to the wildest conflicts and to panicky outbursts of emotions, from the higher level of personality now looked like a storm in the valley seen from the mountain top. This does not mean that the storm is robbed of its reality, but instead of being in it one is above it” (p. 38).

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