# FROM INTRINSIC MOTIVATION TO EMPLOYEE CREATIVITY: THE ROLE OF KNOWLEDGE INTEGRATION AND TEAM PSYCHOLOGICAL SAFETY

***Pengcheng Zhang***
***Samaneh Gheibi***
School of Management, Huazhong University of Science & Technology

**Abstract**

Although numerous researchers believe that intrinsic motivation drives creativity, research has offered ambiguous results. Considering componential theory of creativity, we suggest that employee intrinsic motivation moderates the relationship between knowledge integration and creativity. Additionally, we argued that there is a three-way interaction between the knowledge integration, intrinsic motivation and team psychological safety; the level of employee creativity is highest when all three dimensions are high.

**Keywords: E**mployee creativity, motivation, psychological safety

## Introduction

There is a mounting interest in comprehending how to boost creativity in organizations (for reviews, see Zhou & Shalley, 2008; Shalley et al., 2004), defined as the production of ideas that are both novel and useful (Amabile, 1996), which has been regarded as a foundation for achieving sustained competitive advantage (George, 2007). No surprisingly then, scholars have invested much effort seeking for the relevant psychological forces. Intrinsic motivation has emerged as such a core antecedent, which could stimulate employees to expend relatively enduring levels of involvement due to interest, curiosity, and a desire to learn (Ryan & Deci, 2000). Consequently, intrinsic motivation theory has been heavily relied on (Amabile, 1996) in extant creativity study.

Examination of the link intrinsic motivation to creativity, however, has yielded equivocal results (George, 2007). The bulk of study demonstrates intrinsic motivation triggers higher levels of creativity (Amabile, 1985; Janssen & van Yperen, 2004; Shin & Zhou, 2003), just as what psychologists

and organizational scholars have long expected. Meanwhile, evidence has accumulated showing intrinsic motivation is not significantly associated with creativity (Perry-Smith, 2006; Shalley & Perry-Smith, 2001). More recently, scholars have begun to tackle this theorized linkage by considering potential mediators, such as creative process (Zhang & Bartorl, 2010), interpersonal relations (Mueller & Kamdar, 2011), or moderators like prosocial motivation (Grant & Berry, 2011).

Despite their valuable contribution, many of these investigations have ignored key tenets of componential theory of creativity (Amabile,1983), the theoretical foundation of much work in this stream—describing any creative response requires a confluence of all components in and outside of the individuals (Amabile, 2012). In particular, this theory implies that intrinsic motivation may inspire individual creativity, provided the employee engages in creativity-relevant processes and supportive social environment. In comparison with too much emphasis on motivational component in previous research, little is known about the cognitive process that employees use and how this process may relate to actual creative performance (De Stobbeleir et al, 2011).

Hence, we propose one of emergent theme of creative process, namely, knowledge integration, and expand previous study from two folds. First, we argue that employee intrinsic motivation moderates the relationship between knowledge integration and creativity. In contrast, extant research has typically assumed intrinsic motivation as an independent precursor (Janssen & van Yperen, 2004; Shin & Zhou, 2003; Mueller & Kamdar, 2011). Second, we further examined the moderation role of intrinsic motivation is contingent on team psychology safety. Most of prior studies maintain that linkages between work contexts and creativity should be via intrinsic motivation. By combining interactional model of creativity (Woodman et al., 1993), and componential theory of creativity, in parallel, our study shed light on the interactions of these individual components and contextual one.

**Creativity**

Employee creativity has been introduced as the foundation for organizational innovation in order to attain competitive advantage (George, 2007; Zhang & Bartol, 2010). In the present century, t is essential for companies that strive to lead or adapt to change to foster the competencies of creativity and innovation (Amabile, 1988; Woodman, Sawyer & Griffen, 1993). Frequently described as a critical element for encouraging organizational innovation (Amabile, 1988; Woodman, Sawyer & Griffen, 1993), individual creativity generally denotes the implementation of ideas which are creative and is essential for the organization to survive and

succeed in the long-term (Kanter, 1983; Utterback, 1994; Amabile et al., 1996; Tushman & O'Reilly, 1997). Yet, creativity is a complex construct which makes it rather difficult to define. There is not a general consensus about its definition, however, consistent concepts can be found across existing definitions. Guilford (1950) argued that 'the creative person has novel ideas' and will submit 'uncommon, yet acceptable, responses' (p. 452). Similarly, Sternberg and Lubart (1999) stated that creativity is 'the ability to produce work that is both novel (i.e., original, unexpected) and appropriate (i.e., useful, adaptive concerning task constraints)' (p. 3). Likewise Barron and Harrington (1981) employed the terms 'novel', 'originality', and 'far-reachingness' to offer their definition of creativity (p. 442). And finally, Martindale (1989) opined that creativity 'must be original, it must be useful or appropriate for the situation and it must actually be put to some use' (p. 211). In light of the common themes in these definitions, it seems that the value of creativity in organizations may pertains to an ability to exploit new yet suitable ideas to the end of improving organizational efficiency, solving complicated problems and increasing overall effectiveness.

There are various methods to measure individual creativity ranging from the evaluation of the qualities and traits of very creative individuals to the assessment of creative goods and accomplishments. Furthermore, there are various models and studies based on comprehensive reviews of creativity that describe individual creativity dimensions (For example, Amabile, 1988; Woodman and Schoenfeldt, 1989; Ford, 1996). Among very common factors in these models are knowledge, divergent thinking (cognitive style), personality, autonomy and intrinsic motivation. Research findings, especially indicate that domain-specific knowledge is an essential prerequisite to ensure effective creative functioning (Weisberg, 1999). Social networks are often the hubs of the required knowledge and information that are vital elements in encouraging individual creativity (Kijkuit & van den Ende, 2007; Leenders, van Engelen & Kratzer, 2007). Direct measures such as intelligence tests (Brown, 1989) and indirect factors such as years of education (Simonton, 1992) have been used to assess the knowledge aspect of creativity. Similarly, Hocevar and Bachelor (1989) take into account divergent thinking (cognitive style) and personality inventories as two of the eight categories that they employed to index over 100 measures of creativity. The concept of creativity has been primarily studied in the context of work environment evaluations (for example, Amabile et al., 1996; Cummings & Oldham, 1997; Shalley, Gilson & Blum, 2000). Another important concept which may be associated with creativity is intrinsic motivation (for example, Maslow, 1970; Deci & Ryan, 1985; Amabile et al., 1994; Deci & Flaste, 1995; Bandura, 1997; Herzberg, Mausner & Snyderman, 2003). Some studies have suggested that creativity may positively contribute to intrinsic motivation and negatively to

extrinsic motivation (for example, Amabile et al., 1994). Some important factors that could affect intrinsic motivation include self-determination (e.g., Deci & Ryan, 1985), competence (e.g., Bandura, 1997), autonomy (e.g., Hackman & Oldham, 1975; Cummings & Oldham, 1997; Shalley, Gilson & Blum, 2000), challenge (e.g., Locke et al., 1984; Bandura, 1997; Shalley, Gilson & Blum, 2000), task involvement (e.g., Hackman & Oldham, 1975; Csikszentmihalyi, 1996) and interest (e.g., Bandura, 1997). Moreover, according to Tierney and Farmer (2002), creative self-efficacy, defined as 'the belief one has the ability to produce creative outcomes' (p. 1138), is another important factor that impacts intrinsic motivation and creativity.

The literature on organizational creativity deals mostly with two theoretical views: the componential model and the interactionist model. The componential theory of creativity introduced by Amabile (1996) underscores the role of motivation in enhancing or reducing individuals' creativity. Based on this theory, an individual could display higher levels of creativity when three components are present: (1) the individual needs to have pertinent knowledge and skills; (2) he/she should have relevant creativity skills and strategies, (3) h/she should be intrinsically driven to work on the task. Amabile (1996) defined intrinsic motivation as the kind of motivation that originates from individuals' interest and involvement in the task itself. The third component, intrinsic motivation is argued to be crucial for creativity, since it helps engage and persist in creative activities. The componential theory provides the ground for studying employee creativity using a motivational approach and highlighting the value of intrinsic motivation.

**Team Psychological Safety**

Team psychological safety refers to a shared belief that the team is safe for interpersonal risk taking. Largely, this belief tends to be implicit and the individuals or the team as a whole often fail to appreciate it or pay direct attention to it. While implicit beliefs about interpersonal norms are at times discussed directly in a team, this does not change the nature of team psychological safety. This construct stems from early research by Schein and Bennis (1966) on organizational change who reflected on the need to create psychological safety for individuals, in case they are to feel secure and have the ability to change. This term is not intended to indicate a casual sense of permissiveness or an unyielding positive affect but a sense of confidence that the team would not humiliate, reject, or punish anyone for expressing their opinions. This confidence is rooted in mutual respect and trust among team members. Researchers have long stressed the important of trust in groups and organizations (for example, Golembiewski and Mc-Conkie, 1975; Kramer, 1999). Trust involves the expectation that the future actions others will be beneficial to one's interests such that one approves to be susceptible to those

actions (Mayer, Davis, and Schoorman, 1995; Robinson, 1996). Team psychological safety encompasses interpersonal trust and more; it suggests a team climate distinguished by interpersonal trust and mutual respect in which individuals are comfortable being and take risks.

**Intrinsic Motivation**

Many researchers have reflected on an intrinsic motivational orientation as an important factor in creativity (Amabile, 1990; Barron & Harrington, 1981). Simon (1967) suggested that the main function of motivation was to control attention. Assuredly, much of the present research about motivation in industry revolves around attentional self-regulation (Kanfer, 1990). Moreover, many researchers have postulated that goals affect motivation through their effect on self-regulatory mechanisms (Kanfer & Ackerman, 1989). As motivational interventions such as evaluations and reward systems redirect attention away from heuristic aspects of the creative activities and toward the technical or rule-bound features of task performance, they are likely to negatively affect intrinsic motivation toward a creative task. Amabile (1979) showed that expectation of evaluation reduced creative performance while technical merits appeared unaltered. Although one may expect that actual positive evaluation improve creativity as a result of positive impacts on self-efficacy, such evaluation may negatively influence ensuing creative performance, for it conduces to expectations of future evaluation (Amabile, 1983). An individual's extrinsic reward has an interaction with his choice. Pecuniary reward that is offered in return for performance on a given task for which a person has no choice could improve creativity, however, when the person is given a reward for agreeing to perform the task, creativity may actually be reduced.

**Componential Theory of Creativity**

The literature on organizational creativity deals mostly with two theoretical views: the componential model and the interactionist model. According to the componential model of organizational creativity, individual creativity increases as a result of simultaneous increases in domain-relevant skills and knowledge, intrinsic motivation, and creativity relevant skills and processes (Amabile, 1988, 1996). Employee creativity can be improved owing to the work environment through incremental increases in these three major components. Domain-relevant skills are defined as an individual's expertise and knowledge in a given area. In the work environment, the domain-relevant knowledge may be recognized through the clarity of understanding of the processes on utilizes at work (Amabile, 1988; Sawyer, 1992). Intrinsic motivation springs from a "positive reaction to qualities of the task itself" (Amabile, 1996, p. 115). Therefore, an employee who is

intrinsically motivated is likely to be interested and enjoy his/her work on account of the inherent aspects of the work s/he performs. Creativity-relevant skills and processes are defined as a person's abilities, both innate and developed, to generate creative ideas and to creatively identify, explore, and solve problems. Processes related to creativity involve the ability to attend to creative thought and participation in prior creative experiences (involving creativity training).

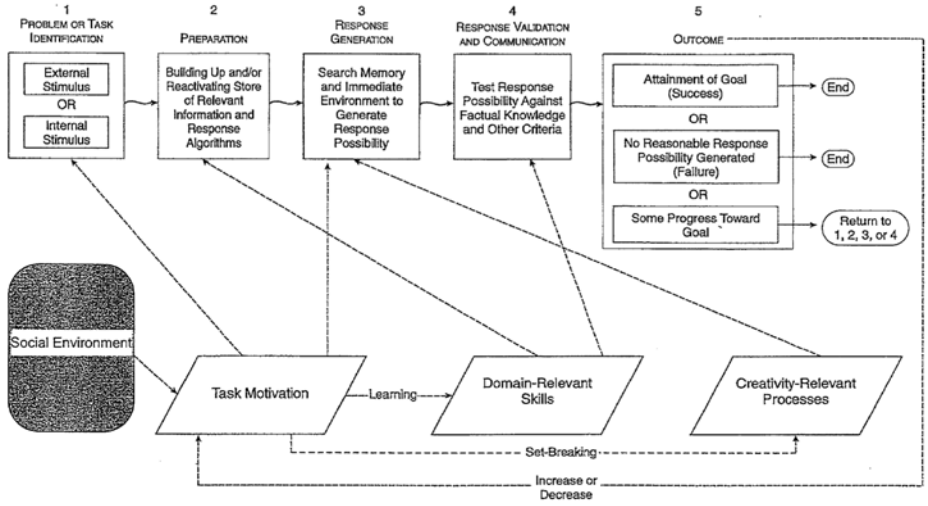


**Figure 1 – Componential Theory of Creativity (adopted from Amabile,2012)**

According to Amabile (2012) the creativity process is constitutes of five sub processes. 1) *Problem identification* in which the relevant problem is found, 2) *preparation*, which is made of building up of relevant information 3) *response generation*, which is made of searching memory and immediate environment to generate response possibility, 4) *response validation and communication*, which constitutes of test response possibility against factual knowledge or some other criteria, and in the end the 5) *outcome* can be success, failure, or some progress which leads to redoing the whole process.

## Theory Building

Based on aforementioned framework the following theoretical model was developed. Figure 1 depicts the theoretical model.

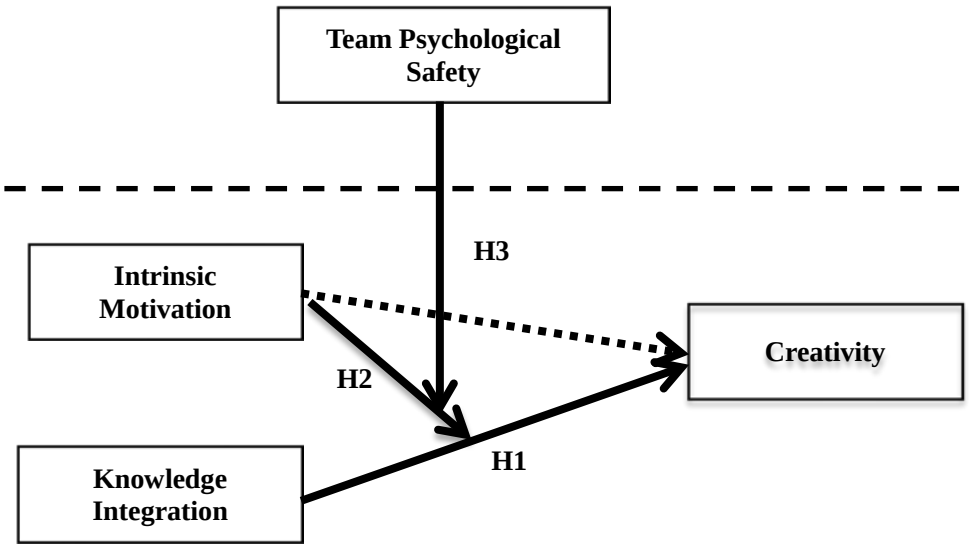


**Figure 2 – Theoretical Model**

Knowledge integration is individual self efficacy in combining knowledge from different sources (Tiwana, 2008). According to Amobile (2013) the creativity relevant process include the ability to use wide, flexible categories for integration information. So knowledge integration is a form of creativity relevant process. Creativity relevant process increases response generation, which in turn increases the creativity generation process. Therefore, knowledge integration increases the response generation step, which will increase the creativity as a result. So we can proposed:

*Proposition 1: Knowledge integration is positively associated with the employee creativity.*

Intrinsic task motivation is passion: the motivation to undertake a task or solve a problem because it is interesting, involving, personally challenging, or satisfying – rather than undertaking it out of the extrinsic motivation arising from contract for rewards, surveillance, competition, evaluation, or requirements to do something in a certain way. Increase in task motivation increases the response generation step in creativity process. We already mentioned that knowledge integration is positivity associated with response generation step. Therefore, increase in task motivation strengthens the relationship between knowledge integration and response generation step of creativity generation process.

There is another evidence, which roots in interactionist theory of creativity. Woodman and Schoenfeldt (1989, 1990) have proposed an interactionist model of creative behavior at the individual level. In this

model, they suggest that creativity is the complex product of a person's behavior in a given situation. According to this model there is interaction between different elements of creativity, such as intrinsic motivation and personality factors. Personality factor refers to personal trait such as broad interests, attraction to complexity, high energy, independence of judgment, self-confidence. Self-confidence is the belief that one has the knowledge and skills to produce creative outcomes (e.g., Gong, Huang, & Farh, 2009; Lim& Choi, 2009; Tierney & Farmer, 2002,2004, 2011).

On the other hand knowledge integration ability is define as individual self-efficacy in combining knowledge from different sources, therefore knowledge integration ability can be viewed as personality factor in interactionist theory. This provides another evidence for interaction of intrinsic motivation and knowledge integration. So we can proposed:

*Proposition 2: The positive association between knowledge integration and employee creativity is strengthened when the employee has high intrinsic motivation.*

Interactionist model of creativity is not limited to knowledge integration and intrinsic motivation, another important element in this interaction is social environment. Psychological safety is an important factor in social environment that affects the intrinsic motivation. According to Ednnondson (1999) team psychological safety a shared belief held by members of a team that the team is safe for interpersonal risk taking (Schein and Bennis, 1966). Increase in psychological safety increases the intrinsic motivation, which in turn moderates the relationship between knowledge integration and creativity. Therefore, there is a three-way integration between these three constructs.

On the other hand interactionist theory argue that social factors like psychological safety interact with personality factors like knowledge integration and intrinsic motivation, this provide another evidence on three way interaction among the main elements of creativity:

*Proposition 3:There is a three-way interaction between the knowledge integration, intrinsic motivation and team psychological safety: the level of employee creativity is highest when all three dimensions are high.*

## Conclusion

This conceptual study conceptualizes a new relational view of creativity. A number of researchers have studied how structural and behavioral dimensions of interpersonal relationships, such as social networks (e.g., Perry-Smith, 2006; Perry-Smith & Shalley, 2003) and communication styles (e.g., Amabile, 1979; Koestner et al., 1984; Shalley & Perry-Smith, 2001), influence creativity. This study complements these structural and behavioral approaches by documenting the importance of knowledge

integration and psychological safety in fueling creativity. We argued that there is a three-way interaction between the knowledge integration, intrinsic motivation and team psychological safety; the level of employee creativity is highest when all three dimensions are high.

**References:**

Afuah, A. N., & Utterback, J. M. (1997). Responding to structural industry changes: a technological evolution perspective. *Industrial and Corporate Change*, *6*(1), 183-202.

Amabile, T. (2012). *The social psychology of creativity*. Springer Science & Business Media.

Amabile, T. M. (1979). Effects of external evaluation on artistic creativity. Journal of Personality and Social Psychology, 37, 221-233.

Amabile, T. M. (1988). A model of creativity and innovation in organizations. In B. M. Staw & L. L. Cummings (Eds.), Research in organizational behavior (Vol. 10, pp. 123–167). Greenwich, CT: JAI Press

Amabile, T. M. (1990). Within you, without you: The social psychology of creativity, and beyond.

Amabile, T. M. (1996). Creativity in context. Boulder, CO: Westview Press. Amabile,

Amabile, T. M. (2001). Beyond talent: John Irving and the passionate craft of creativity. *American Psychologist*, *56*(4), 333.

Amabile, T. M. (2012). Componential Theory of Creativity.

Amabile, T. M. 1983. The social psychology of creativity: A componential conceptualization. Journal of Per- sonality and Social Psychology, 45: 357–376.

Amabile, T. M., Conti, R., Coon, H., Lazenby, J., & Herron, M. (1996). Assessing the work environment for creativity. *Academy of management journal*, *39*(5), 1154-1184.

Bailey, J., & Ford, C. (1996). Management as science versus management as practice in postgraduate business education. *Business Strategy Review*, *7*(4), 7-12.

Bandura, A. (1986). Social foundations of thought and action: A social cognitive theory. Englewood Cliffs, NJ: Prentice-Hall. Bandura,

Barron, F., & Harrington, D. M. (1981). Creativity, intelligence, and personality.*Annual review of psychology*, *32*(1), 439-476.

Brown, A. H. D. (1989). Core collections: a practical approach to genetic resources management. *Genome*, *31*(2), 818-824.

CHEN, T., LI, F., & LEUNG, K. (2015). When Supervisor Support Encourages Innovative Behavior? Opposite Moderating Effects of General Self-Efficacy and Internal Locus of Control. *Personnel Psychology*.

Cissel, J. H., Swanson, F. J., & Weisberg, P. J. (1999). Landscape management using historical fire regimes: Blue River, Oregon. *Ecological applications*, *9*(4), 1217-1231.
Conti, R., Coon, H., & Amabile, T. M. (1996). Evidence to support the componential model of creativity: Secondary analyses of three studies.*Creativity Research Journal*, *9*(4), 385-389.
Crompton, J. L. (2003). Adapting Herzberg: A conceptualization of the effects of hygiene and motivator attributes on perceptions of event quality. *Journal of Travel Research*, *41*(3), 305-310.
De Stobbeleir, K. E., Ashford, S. J., & Buyens, D. (2011). Self-regulation of creativity at work: The role of feedback-seeking behavior in creative performance. *Academy of Management Journal*, *54*(4), 811-831.
Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. Springer Science & Business Media.
Deci, E. L., Ryan, R. M., & Williams, G. C. (1996). Need satisfaction and the self-regulation of learning. *Learning and individual differences*, *8*(3), 165-183.
Dorfman, L., Martindale, C., Gassimova, V., & Vartanian, O. (2008). Creativity and speed of information processing: A double dissociation involving elementary versus inhibitory cognitive tasks. *Personality and Individual Differences*, *44*(6), 1382-1390.
Ednnondson, A. (1999). Psychological Safety and Learning Behavior in Work Teanns.
Furnham, A., Batey, M., Anand, K., & Manfield, J. (2008). Personality, hypomania, intelligence and creativity. *Personality and Individual Differences*,*44*(5), 1060-1069.
George, J. M. (2007). 9 Creativity in Organizations. *The academy of management annals*, *1*(1), 439-477.
Golembiewski, Robert T., and Mark McConkie 1975 "The centrality of interper- sonal trust in group process." In Cary L. Cooper (ed.). Theo- ries of Group Process: 131- 181, London: Wiley,
Gong, Y., Huang, J.-C., & Farh, J.-L. (2009). Employee learning orienta- tion, transformational leadership, and employee creativity: The mediat- ing role of employee self-efficacy. Academy of Management Journal, 52, 765–778. doi:10.5465/AMJ.2009.43670890 Hinsz,
Grant, A. M., & Berry, J. W. (2011). The necessity of others is the mother of invention: Intrinsic and prosocial motivations, perspective taking, and creativity.*Academy of Management Journal*, *54*(1), 73-96.
Hackman, J. R., & Oldham, G. R. (1975). Development of the job diagnostic survey. *Journal of Applied psychology*, *60*(2), 159.
Harackiewicz, J. M., & Sansone, C. (2000). Rewarding competence: The importance of goals in the study of intrinsic motivation.

Hocevar, D., & Bachelor, P. (1989). A taxonomy and critique of measurements used in the study of creativity. In *Handbook of creativity* (pp. 53-75). Springer US.

Janssen, O., & Van Yperen, N. W. (2004). Employees' goal orientations, the quality of leader-member exchange, and the outcomes of job performance and job satisfaction. *Academy of management journal*, *47*(3), 368-384.

Kanfer, R. 1990. Motivation theory and organizational psychology. In M. D. Dunnette & L. Hough (Eds.), Handbook of industrial and organizational psychology (2nd ed.), vol. 1: 75–170. Palo Alto, CA: Consulting Psychologists Press.

Kanfer, R. and Ackerman, P.L. (1989), "Motivation and cognitive abilities: an integrative/ aptitude-treatment interaction approach to skill acquisition", Journal of Applied Psychology, Vol. 74 No. 4, pp. 657-90.

Kijkuit, B., & Van Den Ende, J. (2007). The Organizational Life of an Idea: Integrating Social Network, Creativity and Decision-Making Perspectives*.*Journal of Management Studies*, *44*(6), 863-882.

Klijn, M., & Tomic, W. (2010). A review of creativity within organizations from a psychological perspective. *Journal of Management Development*, *29*(4), 322–343. doi:10.1108/02621711011039141

Koestner, R., Ryan, R. M., Bernieri, F., & Holt, K. 1984. Setting limits on children's behavior: The differen- tial effects of controlling vs. informational styles on intrinsic motivation and creativity. Journal of Per- sonality, 52: 233–248.

Kramer, Roderick M. 1999 "Trust and distrust in organi- zations: Emerging perspec- tives, enduring questions," Annual Review of Psychology, 50: 569-598, Palo Alto, CA: Annual Reviews, Lee.

Leenders, R. T. A., Van Engelen, J. M., & Kratzer, J. (2007). Systematic design methods and the creative performance of new product teams: Do they contradict or complement each other?. *Journal of Product Innovation Management*, *24*(2), 166-179.

Lim, H. S., & Choi, J. N. (2009). Testing an alternative relationship between individual and contextual predictors of creative performance. Social Behavior and Personality, 37, 117–136. doi:10.2224/ sbp.2009.37.1.117

Maslow, A. H., Frager, R., & Cox, R. (1970). *Motivation and personality* (Vol. 2). J. Fadiman, & C. McReynolds (Eds.). New York: Harper & Row.

Moneta, G. B., & Csikszentmihalyi, M. (1996). The effect of perceived challenges and skills on the quality of subjective experience. *Journal of personality*, *64*(2), 275-310.

O'Connor, E. S. (1995). Paradoxes of participation: Textual analysis and organizational change. *Organization Studies*, *16*(5), 769-803.

O'Reilly, C. A., & Tushman, M. L. (2008). Ambidexterity as a dynamic capability: Resolving the innovator's dilemma. *Research in organizational behavior*, *28*, 185-206.
Oldham, G. R., & Cummings, A. (1997). Enhancing creativity: Managing work for the high potential employee. *California Management Review*, *40*(1), 22-38.
Perry-Smith, J. E., & Shalley, C. E. (2003). The social side of creativity: A static and dynamic social network perspective. Academy of Management Review, 28, 89–106.
Perry-Smith, J.E. (2006), "Social yet creative: the role of social relationships in facilitating individual creativity", Academy of Management Journal, Vol. 49 No. 1, pp. 85-101
Robinson, Sandra L. 1996 "Trust and breach of the psychological contract." Adminis- trative Science Ouarterly, 41: 574-699,
Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American psychologist*, *55*(1), 68.
Sawyer, J. E. (1992). Goal and process clarity: Specification of multiple constructs of role ambiguity and a structural equation model of their antecedents and consequences. Journal of Applied Psychology, 77, 130-142.
Schein, Edgar H., and Warren Bennis 1965 Personal and Organizational Change via Group Methods, New York: Wiley.
Shalley, C. E., & Perry-Smith, J. E. 2001. Effects of social- psychological factors on creative performance: The role of informational and controlling expected evaluation and modeling experience. Organizational Behavior and Human Decision Processes, 84: 1–22.
Shalley, C. E., Gilson, L. L., & Blum, T. C. (2000). Matching creativity requirements and the work environment: Effects on satisfaction and intentions to leave. *Academy of Management Journal*, *43*(2), 215-223.
Shalley, C. E., Zhou, J., & Oldham, G. R. (2004). The effects of personal and contextual characteristics on creativity: Where should we go from here?.*Journal of management*, *30*(6), 933-958.
Shin, S. J., & Zhou, J. (2003). Transformational leadership, conservation, and creativity: Evidence from Korea. *Academy of management Journal*, *46*(6), 703-714.
Simonton, D. K. (1997). Creative productivity: A predictive and explanatory model of career trajectories and landmarks.
Sternberg, R. J., & Lubart, T. I. (1999). The concept of creativity: Prospects and paradigms. *Handbook of creativity*, *1*, 3-15.
Taylor, M. S., Locke, E. A., Lee, C., & Gist, M. E. (1984). Type A behavior and faculty research productivity: What are the

mechanisms?. *Organizational Behavior and Human Performance*, *34*(3), 402-418.

Tierney, P., & Farmer, S. M. (2002). Creative self-efficacy: Potential antecedents and relationship to creative performance. Academy of Management Journal, 45, 1137–1148. doi:10.2307/3069429

Tierney, P., & Farmer, S. M. (2004). The Pygmalion process and employee creativity. *Journal of Management*, *30*(3), 413-432.

Tierney, P., & Farmer, S. M. (2011). Creative self-efficacy development and creative performance over time. Journal of Applied Psychology, 96, 277–293. doi:10.1037/a0020952

Tierney, P., Farmer, S. M., & Graen, G. B. (1999). An examination of leadership and employee creativity: The relevance of traits and relationships. Personnel Psychology, 52, 591–620. doi:10.1111/j.1744-6570.1999.tb00173.

Tiwana, A. (2008). Do bridging ties complement strong ties? An empirical examination of alliance ambidexterity. *Strategic Management Journal*, *29*(3), 251-272.

Woodman, R. W., & Schoenfeldt, L. F. (1989). Individual differences in creativity. In *Handbook of creativity* (pp. 77-91). Springer US.

Woodman, R. W., & Schoenfeldt, L. F. 1989. Individual differences in creativity: An interactionist perspective. In J, A. Glover, R. R. Ronning, 8E C, R. Reynolds (Eds.), Handbook of creativity: 77-92. New York: Plenum Press.

Woodman, R. W., Sawyer, J. E., & Griffin, R. W. (1993). Toward a theory of organizational creativity. *Academy of management review*, *18*(2), 293-321.

Zhang, X., & Bartol, K. M. (2010). Linking empowering leadership and employee creativity: The influence of psychological empowerment, intrinsic motivation, and creative process engagement. *Academy of Management Journal*, *53*(1), 107-128.