Is It Fair to Blame Confucianism as a Detrimental Factor of Creativity?

Kuan Chen Tsai

University of the Incarnate Word

ABSTRACT: *A number of scholars have argued that the main reason for lower creativity scores in Asian students is rooted in the traditional Confucian-heritage cultures (CHC). However, this argument has at least three flaws. First, the definition of creativity between the East and the West is dissimilar to some extent. Second, these cross-cultural creativity studies utilized creativity tests that were developed by Western researchers. So it may not a appropriate method to assess creativity. Finally, several cross-cultural empirical studies used divergent thinking tests as a criterion to assess creativity; however, the literature has revealed that divergent thinking abilities are not related to real world creativity. The purpose of this article was to pose a more positive view of the CHC toward creativity. First, the perspectives of creativity between the East and the West are discussed. Then, examples of eastern artists' creative process are explored. Finally, a balanced view of Confucianism in creativity is presented.*

KEYWORDS: *Confucian-heritage cultures, creativity, cross-cultural studies*

I.   INTRODUCTION

In the West, creativity is usually associated with innovation and uniqueness, but in the traditional Confucian-heritage cultures (CHCs; China, Taiwan, Hong Kong, Japan, Korea, and Singapore), creativity is viewed as a somewhat different construct (Goleman, Kaufman, & Ray, 1993). Western cognitive psychologists believe that, creativity is a form of special thinking (e.g., divergent thinking, Guilford, 1950; remote associated thinking, Mednick, 1962). In traditional Chinese culture, creativity stems from a deeper source or a higher level of consciousness.

A number of scholars have argued that the main reason for lower creativity scores in Asian students is rooted in the CHC (Ho& Ho, 2008; Kim, Lee, Chae, Anderson, & Laurence, 2011; Ng, 2003). Nevertheless, this argument has three flaws. First, the definition of creativity between the East and the West is dissimilar to some extent. If the ideology is different, how is it possible to use one perspective from one culture as a criterion to judge or to validate another one? Second, these cross-cultural creativity studies utilized creativity tests that were developed by Western researchers, and the assumption of these tests is rooted in Western perceptions of creativity—for example, originality and appropriateness. So, how is it possible to use assessments from one culture to reflect or to capture creativity from another culture? Finally, several cross-cultural empirical studies used divergent thinking tests as a criterion to assess creativity; however, the literature has revealed that divergent thinking abilities are not related to real world creativity (Weisberg, 1986). Therefore, these divergent thinking tests, also known as creativity tests, are problematic and should not be used to justify findings that differentiate who is creative and who is not.

The purpose of this article was to pose a more positive view of the CHC toward creativity. As identified, two fundamental issues—the definition and assessment—skewed the perspective of the traditional value of Confucianism toward creativity. As a consequence, it is believed that alternative creativity tests that fit local culture norms should be developed, which in turn might authentically reflect real results of creativity for those target groups. The structure of this article is as follows: first, the perspectives of creativity between the East and the West are discussed. Then, examples of eastern artists' creative process are explored. Finally, a balanced view of Confucianism in creativity is presented.

Difference in Conceptual Maps of Creativity Between the East and the West

According to Niu, Zhang, and Yang (2006), they stated that the influence of culture on creativity can be manifested in at least four aspects: (a) definition of creativity, (b) creative expression, (c) methods of nurturing creativity, and (d) social expectation and evaluation of creative individuals, creative activities, and creative products (p. 289). Equally important, Ng (2003) believed that "to nurture individual creativity, one should address the issue of culture, instead of ignoring it" (p. 230). Because different variables could contribute to

individual creative performance, creativity per se is complex phenomenon. To date, a significant number of research energy has been invested in the research community. Various scholars have made efforts to investigate different perspectives of creativity in order to expand our understanding of creativity.

The concept of creativity between the East and the West is similar in that they both value the positive dimension of creativity and praise creative individuals (Leong, 2011; Matsunobu, 2011). For example, in India, God Vishvakarma, represents the spirit and power of the creative process (Lubart, 1990). Some scholars believed that perspectives of creativity stem from cultural creation myths (Lubart, 1990). For instance, the Oriental common theme of creativity includes development, and it is an ongoing process toward the cosmic creation. Contrary to the West, novelty does not play a central role in creativity (Albert & Runco, 1999; Niu & Sternberg, 2006; Rudowicz, 2003). The focus is more on inner development and an inner state of fulfillment. Creativity is a journey of self-discovery and an intuitive approach rather than the manifestation of a worldly product (Matsunobu, 2011; Rudowicz, 2003). An individual could thus achieve a high level of creativity. This value-based viewpoint also exhibits a social and moral realm (Lubart & Sternberg, 1998; Niu& Sternberg, 2003, 2006). In traditional Chinese belief systems, mostly reflected by Taoism, the world was created by the interaction of yin-yang movement (yin meaning negative force; yang meaning positive force), which in turn differentiates this world and its being. Yin-yang is, therefore, the ultimate creative source of everything (Niu & Sternberg, 2006). Creativity is not isolated but conceptualized in a comprehensive universal power within and without a person. Furthermore, there are two approaches on how to develop creativity: meditation (Taoist method) and self-cultivation (Confucian method; Niu & Sternberg, 2003; Shi, Qu, & Lin, 2007). In short, as Niu and Sternberg (2006) wrote:

> According to Confucian philosophy, highly creative activity always embraces goodness . . . .The process of creativity in Confucianism is the process of investigating this natural creativity from man's mind. Confucians viewed humans in terms of creative potentiality, in which humans are born with the potential to learn and a free will with which to determine their future. (p. 32)

In the West, on the other hand, Judaic and Greek philosophers viewed creativity as an unexpected occurrence by outsiders to bring order and maintain harmony in the universe (Lubart, 1990). According to this Western view, human beings cannot create things but only mimic the glory of God or be inspired by the Muses (Ludwig, 1992; Niu & Sternberg, 2003). The biblical story of Genesis also illustrates God's creation of earth (Albert & Runco, 1999). Another example is that the word *inspiration* in Latin means *breathe in*, which reflects the notion that the gods breathed creative ideas into people. To summarize, "humans do not create; God does" (Niu & Sternberg, 2006, p. 22). The notion of creativity under the umbrella of a divine entity was dominant in the history of the Western mindset for a long period of time. After the Enlightenment, the concept of creativity shifted from the divine to the individual, followed by achievements in science and technology (Albert & Runco, 1999; Niu & Sternberg, 2006). This shift from myths to human invention is also reflected in the definition of creativity in the English dictionary. In 1678, for example, *creative* was first introduced in the English language with its main synonym of "originative," whereas in 1803, at the peak of the Enlightenment, the main synonym was changed to "productive" (Bleakley, 2004, p. 466). In short, when comparing the traditional root of creativity between the East and the West, Leong (2011) observed the following:

> Western divine creativity and Chinese natural creativity (dao) share three common characteristics of representing the ultimate origin of everything, in which there are endless producing and renovating changes and the creating of all goodness. The significant difference between the two conceptions lies in the definition of the production (Western) and non-production (Eastern) of something new. (p. 58)

II. CREATIVE EXPRESSION INTHE EAST

Creative expression among different cultures is not a homogeneous entity (Rudowicz, 2003). For example, Rudowicz (2003) reported that in Arab Islamic culture, creative verbal expression instead of the visual arts is supported because of the orthodox canon restrictions. Misra, Srivastava, and Misra (2006) contended that Indian mentality has been shaped by the doctrine of karma, which regulates the cycle of destruction as well as construction. Creation is viewed as the manifestation of self-extension and is part of the process of transformation. Misra et al. (2006) wrote:

> The creator is like a person in search of liberation. Creation implies immediately the feeling of a need to create some product or other. The need for creation is located in the need for people's adjustment to their environment, as required by the struggle for survival. (p. 426)

Rudowicz (2003) suggested that in Eastern cultures, the idea of creativity does not necessarily contradict conformity; rather, creativity may be viewed as a series of modifications and adaptions. This notion is supported by several observations from Asian artists (Leong, 2011; Matsunobu, 2011). Leong (2011) pointed out that in comparison to Western creativity, Chinese creativity demands different types of expression and training:

> Craftsmanship is important to enable the hand and the mind to connect during the creative process. The zenith of the arts is attained when the artist skillfully creates what is in the mind. A peaceful and stable emotional state provides the conditions that are conducive for inspiration to be captured. Related basic knowledge and professional field knowledge are prerequisites for cultivating creativity. Without them, creative endeavors become meaningless random thinking and unconstrained thinking, which cannot be transformed into real creativity. (p. 60)

Matsunobu (2011) observed Japanese artistic training approaches and found a similar situation:
> creative force [in this system] is given to mastering the form, kata, through which the practitioner explores his or her inner experience, participates in the community of practice, and develops spiritual maturity. . . . Using an art form as a mirror, the artist faces his or her internal condition and engages in self-development. This process is recursive and involves a series of self-reflection of the artist. (p. 51)

In brief, creativity from a CHC point of view is a reinterpretation of ideas, whereas the West views creativity as a major break from its tradition. In statistical terms, creativity in the West has more standard deviations. In addition, the East emphasizes the inner experience of the creative process, and subsequently, creative products are the reflection of self-fulfillment. This attainment is achieved only by mastering skills and continuous practice.

It should be noted that the focal point of creativity is not originality as expressed by Western thought; rather, "for Confucianism, the process of individual creativity is the process of self-cultivation toward enlightenment" (Niu & Sternberg, 2006, pp.32–33). This belief system, in turn, reflects creative expression and products in the CHC. Therefore, using originality as a criterion to judge creativity in CHC people is problematic. After analyzing creative contributions from artists, Sternberg, Kaufman, and Pretz (2001) identified eight types of contributions: (a) replication, (b) redefinition, (c) forward incrementation, (d) advance forward incrementation, (e) redirection, (f) reconstruction, (g) reinitiation, and (h) integration (pp. 79-80). According to their propulsion model of creative contributions, traditional CHC artists might be located in the category from replication to forward incrementation. More specifically, according to Sternberg et al. (2001), traditional CHC artists are not less creative than their Western counterparts; rather, the biggest difference is their expression and styles.

III. A BALANCEDVIEW OF CONFUCIANISM IN CREATIVITY

Several scholars have argued that there are three reasons why creativity development of CHC students is inhibited (Dineen & Niu, 2008; Ho & Ho, 2008; Kim et al., 2011; Ng, 2003; Ng & Smith, 2004; Niu & Sternberg, 2003). First, collectivism, as a reverse of individualism, emphasizes social order and harmony. Thus, this social influence leads to an attitude of interdependence of each member. In a sense, conformity developed by this group will place more weights on norms and accept the status quo, which is believed to be detrimental to the generation of new ideas. Second, the tight hierarchical relationship between teacher and student gives the teacher more authority. In the Confucian tradition, students are expected to respect, listen, and obey the teacher. From a learning perspective, this is a disciplined environment. When a student in such an environment is not given the opportunity to question or challenge a teacher's authority, the student is unable to engage with the teacher in a free exchange of information and is discouraged from experiencing autonomy, independence, exploration, curiosity, and risk-taking, all of which Western researchers believe to be conducive to creativity. Finally, teaching and learning approaches emphasize memorization and rote learning. The fundamental method of learning is trial and error, as embraced by Confucian scholars. Thus, the notion that continuous practice makes perfect is embedded in the framework of the Confucian teaching philosophy. Scholars argue that this pedagogical practice focuses on basic knowledge acquisition and analytical skills at the expense of creativity, which leads students to miss the opportunity of exploratory and experimental attitudes. Therefore, this ideological conservatism (Ho& Ho, 2008) developed by the CHC might lead to "a closing of the Asian mind" (Ng & Smith, 2004, pp. 325-326).

However, this negative view of Confucianism on creativity embraced by scholars to some extent is incorrect. Several cross-cultural empirical studies reported in the literature utilized divergent thinking tests,

especially the Torrance test of creative thinking (TTCT; Torrance, 1974). Although the TTCT enjoys its well-known reputation in creativity research, its major deficiency is the lack of validity. In other words, this paper-and-pencil assessment does not guarantee real-life creativity (Houtz & Krug, 1995; Runco, 2006). For example, research indicates that scientific creative thinking is not related to divergent thinking. Most scientists who obtained higher scores in their divergent thinking tests are not the most creative people in their fields (Weisberg, 1986). Taken as a whole, in order to evaluate individuals' creativity, researchers should consider the following: seeking alternative assessments to replace divergent thinking tests will be more judicious, and creativity tests should take culture and context into consideration.

Interesting enough, when Kim et al. (2011) used the TTCT as a criterion for comparing creativity between American and Korean educators, the results showed that Americans had higher adaptive style scores (elaboration and titles) than their counterparts, but Korean educators had higher innovative style scores (fluency and originality) than Americans (see Table 6, p. 364). This study seems to contradict the assumption that CHC members are less creative. With regard to academic performance, several studies have reported that CHC students outperformed their Western counterparts in several academic performance and standardized tests (Niu, Zhang, & Yang, 2006). According to these notable results, does it mean East Asian students are smarter than others? The answer is probably no. The reason is not because of different intellectual abilities between them, but because of different expectations and attitudes about education, teaching, and learning approaches in Asian cultures. This finding has an important implication for the creativity issue discussed in this article. When we compare different psychological constructs between people from different ethnic groups, it would be better to take cultures and contexts into consideration in order to arrive to a logical conclusion.

It has been noticed that the Confucians pedagogy stresses more efforts on knowledge acquisition. This traditional Confucian-based practice has been criticized for being didactic and controlling. Nevertheless, the critique against the so-called Confucian educational pedagogy is a misunderstanding of Confucius's initial ideas of learning. In fact, the Chinese terms of knowledge—xue wen (literally, learn and ask) and zhishi (know and understand)—suggest questioning and understanding are keys to the learning process. In other words, learning is not a passive process but involves posing questions (Leong, 2011). Additionally, knowledge should not be viewed as a detrimental factor of creativity. In fact, it might be the cornerstone of creativity. Many researchers tend to believe the 10-year rule of significant creative production (Kaufman & Kaufman, 2007). According to these researchers, creators need to master their fields for at least 10years in order to have important creative breakthroughs (Simonton, 1999; Sternberg & Lubart, 1995). Csikszentmihalyi and Nakamura (2006) noted that "creativity in any form does not come cheap: it requires commitment and perseverance" (pp. 252-253).Without a doubt, knowledge is not sufficient to produce creative contributions (Simonton, 2006), but it is necessary. In order to attain a higher level of creative achievements, creators are required to possess enough knowledge in that field; thus, the process of knowledge acquisition seems unavoidable in the creativity journey. A number of researchers have argued that the important role of knowledge in creative thinking (Boden, 2001; Feldhusen, 2006; Weisberg, 1999). Creative thinking involves synthesizing, generating, and evaluating novel solutions to problems (Fasko, 2006). In order for an individual to solve poorly defined problems, the individual should have a base of knowledge from which to build new ideas (Weisberg, 1986). This seeking process is "facilitated by the breadth, depth, and fluidity of one's domain-specific knowledge base" (Feldhusen, 2006, p.139).Weisberg (2006) further pointed out the following:

> The role of preparation in creative thinking might be seen in the necessity for domain-specific training before one made a significant contribution to a creative domain. Preparation would also be seen if individuals undergo formal or informal training before they make original contributions. (p. 9)

The preparation Weisberg mentioned, in fact, is the stage of knowledge acquisition. After enough training and knowledge, individuals who master their specific fields and become experts have a greater chance of making significant contributions in that field. Therefore, under the banner of CHC, stressing knowledge acquisition to develop creativity may not be such a bad thing. In fact, the fourChinese inventions of papermaking, the compass, gunpowder, and printing were major contributions to human development. Indeed the traditional Confucian pedagogy did not impair the Chinese creativity mind! The main reason why the Chinese stopped moving forward in their astonishing technology development was not because of Confucianism but because of the attitudes and lack of support from the emperors. This phenomenon not only existed in Chinese society, but it also happened in the West. Simonton (1975, 1999), in fact, found that political issues played an important role in the creativity development in Western history.

IV. EPILOGUE

Gardner seems to hint that for Westerners the concept of creativity is prone to revolutionary change, whereas the Asian cultures perceive it in an evolutionary sense (as cited in Misra et al., 2006, p. 423). Similarly, using Kirton's (1976) terms, creativity in the CHC traditional arts could be viewed as more "adaptive-orientation," whereas Western creativity is more often related to "innovative-orientation." From the Westerners point of view, it seems Easterners do not posses "original ideas," which are viewed as an important hallmark of creativity. However, as this article suggests, this cross-sectional analysis is problematic. Based on Western criteria, scholars have misinterpreted the evidence of creativity in students who products of Confucian thinking. However, creativity in Confucian thinking deserves more positive comments.

Ng (2003) recognized that "culture asserts an indirect influence on creativity by shaping the psychological makeup of the individual" (p. 230). He also admitted that numerous creativity-training programs developed by the Westerns are not necessarily valid to Easterners because of the culture issue. When examining Indian creativity research, Misra et al. (2006) noted that the majority of the studies were inspired by a Euro-American psychometric paradigm. However, they suggested it is necessary to go beyond this limit because of cultural qualities inherited in study units. In a similar vein, this article calls for more appropriate creativity tests developed by local scholars to take contexts into consideration, thereby more accurately capturing real creative performances of those specific members.

Overall, it is clear that a need for additional empirical validation and theoretical refinement will fully yield to a more integrated theoretical perspective of creativity. The interest in placing cross-cultural research has broadened the investigation of creativity from a unidimensional focus on mechanisms to the consideration of values, beliefs, and contexts that shape creative behaviors. Again, an important topic for future research will be to determine the conditions under which changes in the manifestation of creativity are associated with social context, motivation, beliefs, emotions, and life experiences. Finally, as a closing remark, I would like to share with you Csikszentmihalyi's (1990) friendly reminder about studying creativity:

> I am convinced that it is not possible to even think about creativity, let alone measure it, without taking into account the parameters of the cultural symbol system (or domain) in which the creative activity takes place, and the social roles and norms (or field) that regulate the given creative activity. (p. 190)

REFERENCE

[1]. Albert, R. S., & Runco, M. A. (1999). A history of research on creativity. In R. J. Sternberg (Ed.), *Handbook of creativity* (pp. 16-31). New York, NY: Cambridge University Press.

[2]. Bleakley, A. (2004). Your creativity or mine? A typology of creativities in higher education and the value of a pluralistic approach. *Teaching in Higher Education, 9*(4), 463-475. doi:10.1080/1356251042000252390

[3]. Boden, M. A. (2001). Creativity and knowledge. In A. Craft, B. Jeffrey, & M. Leibling (Eds.), *Creativity in education* (pp. 95-102). New York, NY: Continuum.

[4]. Csikszentmihalyi, M. (1990). The domain of creativity. In M. A. Runco & R. S. Albert (Eds.), *Theories of creativity* (pp. 190–212). Newbury Park, CA: SAGE.

[5]. Csikszentmihalyi, M., & Nakamura, J. (2006).Creativity through the life span from an evolutionary systems perspective. In C. Hoare (Ed.), *Handbook of adult development and learning* (pp. 243- 254). New York, NY: Oxford University Press.

[6]. Dineen, R., &Niu, W. (2008). The effectiveness of Western creative teaching methods in China: An action research project. *Psychology of Aesthetics, Creativity, and the Arts, 2*(1), 42-52. doi:10.1037/1931-3896.2.1.42

[7]. Fasko, D. (2006). Creative thinking and reasoning: Can you have one without the other? In J. C. Kaufman & J. Baer (Eds.),*Creativity and reason in cognitive development* (pp. 159-176). New York, NY: Cambridge University Press.

[8]. Feldhusen, J. F. (2006). The role of the knowledge base in creative thinking. In J. C. Kaufman & J. Baer (Eds.),*Creativity and reason in cognitive development* (pp. 137-144). New York, NY: Cambridge University Press.

[9]. Goleman, D., Kaufman, P., & Ray, M. (1993). *The creative spirit*. New York, NY: Dutton.

[10]. Guilford, J. P. (1950). Creativity. *American Psychologist, 5*(9), 444-454. doi:10.1037/h0063487

[11]. Ho, D. Y. F., & Ho, R. T. H. (2008). Knowledge is a dangerous thing: Authority relations, ideological conservatism, and creativity in Confucian-heritage cultures. *Journal for the Theory of Social Behavior, 38*(1), 67–86.

[12]. Houtz, J. C., & Krug, D. (1995). Assessment of creativity: Resolving a mid-life crisis. *Educational Psychology Review, 7*(3), 269-300.

[13]. Kaufman, S. B., & Kaufman, J. C. (2007). Ten years to expertise, many more to greatness: An investigation of modern writers. *Journal of Creative Behavior, 41*(2), 114-124.

[14]. Kim, K. H., Lee, H. E., Chae, K.-B., Anderson, L., & Laurence, C. (2011). Creativity and Confucianism among American and Korean educators.*Creativity Research Journal, 23*(4), 357–371. doi:10.1080/10400419.2011.621853

[15]. Kirton, M. (1976). Adaptors and Innovators: A Description and Measure. *Journal of Applied Psychology, 61*(5), 622–629.

[16]. Leong, S. (2011). Creativity and the arts in Chinese societies. In J. Sefton-Green, P. Thomson, K. Jones, & L. Bresler (Eds.), *The Routledge international handbook of creative learning* (pp. 54-62). New York, NY: Routledge.

[17]. Lubart, T. I. (1990). Creativity and cross-cultural variation. *International Journal of Psychology, 25*(1), 39-59.

[18]. Lubart, T. I., & Sternberg, R. J. (1998). Creativity across time and place: Life span and cross-cultural perspectives. *High Ability Studies, 9*(1), 59-74.

[19]. Ludwig, A. M. (1992). Culture and creativity. *American Journal of Psychotherapy, 46*(3), 454-469.

[20].   Matsunobu, K. (2011). Creativity of formulaic learning: Pedagogy of imitation and repetition. In J. Sefton-Green, P. Thomson, K. Jones, & L. Bresler (Eds.), *The Routledge international handbook of creative learning* (pp. 45-53). New York, NY: Routledge.
[21].   Mednick, S. A. (1962). The associative basis of the creative process. *Psychological Review, 69*(3), 220-232.
[22].   Misra, G., Srivastava, A. K., & Misra, I. (2006). Culture and facets of creativity. In J. C. Kaufman & R. J. Sternberg (Eds.), *The international handbook of creativity* (pp. 421-455). New York, NY: Cambridge University Press.
[23].   Ng, A. K. (2003).A cultural model of creative and conforming behavior. *Creativity Research Journal, 15*(2/3), 223-233.
[24].   Ng A., K., & Smith, I. (2004). The paradox of promoting creativity in the Asian classroom: An empirical investigation. *Genetic, Social & General Psychology Monographs, 130*(4), 307-330.
[25].   Niu, W., & Sternberg, R. J. (2003). Societal and school influences on student creativity: The case of China. *Psychology in the Schools, 40*(1), 103-114. doi:10.1002/pits.10072
[26].   Niu, W., & Sternberg, R. J. (2006). The philosophical roots of Western and Eastern conceptions of creativity. *Journal of Theoretical and Philosophical Psychology, 26*(1), 18-38. doi:10.1037/h0091265
[27].   Niu, W., Zhang, J. X., & Yang, Y. (2006). Does culture always matter: For creativity, yes, for deductive reasoning, no! In J. C. Kaufman & J. Baer (Eds.),*Creativity and reason in cognitive development* (pp. 282-296). New York, NY: Cambridge University Press.
[28].   Rudowicz, E. (2003). Creativity and culture: A two way interaction. *Scandinavian Journal of Educational Research, 47*(3), 273-290.
[29].   Runco, M. A. (2006). Reasoning and personal creativity. In J. C. Kaufman & J. Baer (Eds.), *Creativity and reason in cognitive development* (pp. 99-116). New York, NY: Cambridge University Press.
[30].   Shi, J., Qu, X., & Lin, T. (2007). Creativity and its cultivation. In A.G. Tan (Ed.), *Creativity: A handbook for teachers* (pp. 65-75). Hackensack, NJ: World Scientific Publishing.
[31].   Simonton, D. K. (1975). Sociocultural context of individual creativity: A transhistorical time-series analysis. *Journal of Personality and Social Psychology, 32*(6), 1119-1133.
[32].   Simonton, D. K. (1999). *Origins of genius: Darwinian perspectives on creativity*. New York, NY: Oxford University Press.
[33].   Simonton, D. K. (2006). Creative genius, knowledge, and reason: The lives and works of eminent creators. In J. C. Kaufman & J. Baer (Eds.), *Creativity and reason in cognitive development* (pp. 43-59). New York, NY: Cambridge University Press.
[34].   Sternberg, R. J., Kaufman, J. C., & Pretz, J. E. (2001). The propulsion model of creative contributions applied to the arts and letters. *The Journal of Creative Behavior, 35*(2), 75-101.
[35].   Sternberg, R. J., & Lubart, T. I. (1995). *Defying the crowd: Cultivating creativity in a culture of conformity*. New York, NY: The Free Press.
[36].   Torrance, E. P. (1974). *Torrance tests of creative thinking: Norms-technical manual*. Bensenville, IL: Scholastic Testing Service.
[37].   Weisberg, R. W. (1986). *Creativity: Genius and other myths*. New York, NY: W. H. Freeman and Company.
[38].   Weisberg, R. W.(1999). Creativity and knowledge: A challenge to theories. In R. J. Sternberg (Ed.), *Handbook of creativity* (pp. 226-250). New York, NY: Cambridge University Press.
[39].   Weisberg, R. W. (2006). Expertise and reasoning in creative thinking: Evidence from case studies and the laboratory. In J. C. Kaufman & J. Baer (Eds.), *Creativity and reason in cognitive development* (pp. 7-42). New York, NY: Cambridge University Press.