

Interview Article

An interview with Chen Yao Kao: about creativity

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Abstract

There are intersections between creativity research and gifted education. The opinions and experiences of important researchers in understanding creativity included in giftedness theories will contribute to the development of this field. In this interview with Chen Yao Kao, who has important works in the field of creativity, I contributed to this article by sharing with you his experience and knowledge on topics such as Janusian Thinking, Smilies and metaphors.

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Michael F. Shaughnessy: First of all, can you please tell us a bit about yourself and your education and experience.

Chen Yao Kao: completed both my master's and doctoral degrees in Educational Psychology at the University of Georgia (UGA). Presently, I serve as a full professor within the esteemed Department of Special Education at the National University of Tainan, Taiwan. My instructional portfolio encompasses a diverse array of graduate and undergraduate courses, with a specialized focus on creativity, intelligence, and gifted education. In terms of research, my scholarly pursuits have centered around the intriguing realms of analogy, creativity, and conceptual combination in recent years. Furthermore, I've embarked on collaborative ventures with former students, endeavoring to infuse elements of creative and affective education into the captivating world of picture books.

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Michael F. Shaughnessy: How did you first get involved with creativity?

Chen Yao Kao: When studying at UGA, I was fortunate to immerse myself in a rich array of graduate courses that delved deeply into the subject of creativity. The university's renowned Torrance Center further solidified my passion for this area of study. While my fascination with creativity and intelligence had already taken root prior to my enrollment at UGA, it was during my time there that this interest was truly nurtured.

Michael F. Shaughnessy: In your mind, how well do the schools around the world foster creativity?

Chen Yao Kao: Efforts to nurture creativity in schools worldwide are on the rise, marking a positive trend in educational practices. This shift can be attributed to various factors, including the recognition of creativity as a vital skill in today's dynamic global landscape. Many nations are actively pursuing initiatives to enhance creativity in education, driven by the desire to gain a competitive edge and assert leadership in an ever-evolving international arena.

Michael F. Shaughnessy: Who has influenced you and your work?

Chen Yao Kao: Basically, I followed "the inner voice of my heart" to do research. Because the topics related to analogy and creativity make up a major portion of my research, Dr. Dedre Gentner, an expert of analogy, influenced my work pretty much. In addition, since my research also involves topics about combining opposites, Dr. Arnold Rothenberg, who first proposed Janusian thinking, also had some impact on my work.

Michael F. Shaughnessy: In your most recent publication, you compared and contrasted opposites, irrelevant words, and irrelevant words. What have you found out?

Chen Yao Kao: Antonymy, a significant form of opposition, has garnered attention from numerous researchers for its role in language and cognition. Personally, I hold a strong interest in antonyms and enjoy exploring their implications in daily life. I find myself drawn to applying pairs of antonyms in various contexts, discovering how they manifest in different aspects of life. For instance, consider the antonyms "childlike and sophisticated." In my own pursuits, I find delight in crafting scholarly journal articles that exude sophistication and depth, while simultaneously immersing myself in the creation of "childlike" picture books. This juxtaposition allows me to explore contrasting facets of creativity and expression, embracing both the erudite and the whimsical in my endeavors.

Michael F. Shaughnessy: Who is doing the most important work in creativity at the present time?

Chen Yao Kao: Addressing this question presents a challenge for me. Within academia, there exists a spectrum where certain scholars are lauded with praise, while others perhaps do not receive the recognition they truly deserve. It's akin to the business world, where some researchers adeptly market and boast about their work, much like savvy entrepreneurs promoting their products. Conversely, there are those who quietly and diligently contribute to their respective fields without seeking the limelight. The discrepancy between overrated and underrated scholars often stems from visibility and self-promotion rather than the intrinsic value of their contributions. Those who excel at marketing themselves may garner more attention and accolades, even if their work is not necessarily groundbreaking. On the other hand, individuals who focus solely on their research and avoid self-promotion might not receive the recognition commensurate with their contributions. It's important to acknowledge and celebrate the achievements of all scholars, regardless of their visibility or marketing prowess. By recognizing the quiet contributors alongside the more outspoken ones, academia can foster a culture that values substance over self-promotion and ensures that true innovation and excellence are duly appreciated.

Michael F. Shaughnessy: What do you think are the best tests or measures of creativity currently?

Chen Yao Kao: It's undeniable that the Torrance Tests of Creative Thinking (TTCT) or its variations remain the predominant and influential tools for assessing creativity in various contexts. These tests have played a pivotal role in shaping our understanding of creativity and identifying individuals with exceptional creative abilities. However, despite their widespread use and influence, there are still some areas where these measures can be further refined and expanded upon.

Michael F. Shaughnessy: Has the internet impacted creativity in any way- positively or negatively?

Chen Yao Kao: In my view, the Internet represents a double-edged sword in the realm of human creativity. Its impact, whether positive or negative, hinges on how individuals choose to utilize it. When employed judiciously, the vast wealth of information available on the Internet can serve as a powerful catalyst for creativity. It provides access to diverse perspectives, resources, and inspiration, empowering individuals to explore new ideas and express themselves in innovative ways. Conversely, excessive reliance on the Internet can stifle creativity. Overindulgence in online content may lead to a passive consumption mentality, where individuals become accustomed to simply absorbing information rather than actively engaging with it. This passive consumption can inhibit imagination and hinder the development of original ideas, as individuals may become reliant on external stimuli rather than tapping into their own creativity.

Michael F. Shaughnessy: What are you currently working on in creativity?

Chen Yao Kao: I am currently working on the topics about the relationships between creativity and levels of abstraction. I am also very interested in the relationships between creativity and the process of categorization.

Michael F. Shaughnessy: Left-handed individuals- do they seem to be more creative than others and why is that?

Chen Yao Kao: I did not do much research on the relationships between the relationships between left-handedness and creativity. However, I believe that that left-handed people think differently from right-handed people because of the relatively higher activation of the right hemisphere of their brain, which is often associated with creative thinking.

Michael F. Shaughnessy: What other realms of creativity have to be explored?

Chen Yao Kao: In recent years, there has been a growing interest in understanding creativity from a neuroscientific perspective. While some research has begun to explore the neural mechanisms underlying creative thinking, there remains a substantial gap in our understanding, indicating the need for further investigation. Neuroscientific methods, such as functional magnetic resonance imaging (fMRI), offer a unique opportunity to observe the brain in action during creative tasks. By examining patterns of neural activity associated with different aspects of creative thinking, researchers can gain valuable insights into the cognitive processes underlying creativity. For example, studies using fMRI have identified brain regions involved in divergent thinking, idea generation, and creative problem-solving, shedding light on the neural basis of creativity. Looking ahead, another trend is the integration of artificial intelligence (AI) with creativity research. AI technologies, such as deep learning algorithms and generative models, have shown remarkable capabilities in mimicking human-like creative processes, such as generating novel ideas, creating art, or composing music. By leveraging AI tools, researchers can explore new avenues of creativity research, uncovering underlying patterns and mechanisms that may not be readily apparent through traditional methods alone.

Michael F. Shaughnessy: What do you mean by Janusian thinking?

Chen Yao Kao: The earliest presence of this term is found in Rothenberg's (1971) seminal article, "The Process of Janusian Thinking in Creativity." Janusian thinking can be concisely defined as a creative process that actively conceives "two or more opposite or antithetical concepts, ideas or images simultaneously" (Rothenberg, 1978, p. 175). Simply stated, Janusian thinking is a cognitive process of combining opposites simultaneously.

Michael F. Shaughnessy: How does it relate to creativity?

Chen Yao Kao: Instances of Janusian thinking are ubiquitous in our life. We can find its existence in diverse fields, but few people pay attention its existence, let alone its subtlety. Janusian thinking can be found in the creation of literary works, philosophical principles, paintings, architecture, music compositions, and more. Its influence also extends to the formulation of mathematical theorems and scientific axioms, often leading to significant discoveries or inventions (Rothenberg, 1973, 1978, 1996). Some examples of Janusian thinking Rothenberg presented are as follows. Arnold Schoenberg's twelve-tone scale was built on the principle that "consonance and dissonance were equivalent" (Rothenberg, 1971, p. 318). The mysterious smile of Mona Lisa looks both warm and cold, good and evil, happy and sad, etc. (Rothenberg, 1990). Frank Lloyd Wright embraced Janusian thinking in his concept of Organic Architecture,

which he described as "an affirmative negation." This paradoxical notion negates the traditional three-dimensional architectural concept while affirming it simultaneously (Rothenberg, 1971, p. 317). Even in the realm of physics, Janusian thinking finds resonance; Einstein's General Theory of Relativity proposes that an object can exist in a state of both motion and rest simultaneously (Rothenberg, 1978).

Michael F. Shaughnessy: Why look at 2 opposite concepts? Why is this important?

Chen Yao Kao: Combining two opposite concepts is a cognitive process important for human problem-solving and comprehension of complex phenomena (Paletz et al., 2018). This cognitive approach transcends disciplinary boundaries, manifesting diversely and adopting a range of technical terms. From the yin-yang theory in Eastern philosophy to the chiasmic, Janusian, and dialectical thinking frameworks in Western thought, these terms encapsulate distinct theories while sharing foundational principles. While differing in nuanced aspects, they collectively underscore humanity's propensity to bring together opposing forces in pursuit of understanding.

Michael F. Shaughnessy: Why study similes and metaphors? How do these things relate to creativity?

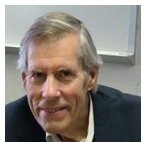
Chen Yao Kao: Metaphorical thinking, briefly defined as the cognitive process of finding parallels between seemingly unlike ideas, is a vital cognitive skill that fosters creative outcomes. From a cognitive science standpoint, metaphorical thinking closely aligns with analogical thinking. Similes and metaphors are actually two variants of analogy (Kao, 2016, 2021). Analogy, a process of establishing correspondences between concepts from different domains, is integral to many theories of creativity. Mednick's (1962) associative theory, for instance, highlights creativity as the bringing together of seemingly unrelated ideas. This entails surpassing surface-level similarities to discern common relational systems between distinct domains. Similarly, Koestler (1978) introduced the concept of bisociation, "perceiving a situation or event in two mutually exclusive associative contexts" (p. 130). This term was coined to distinguish the inflexible thinking fixed on a single plane from the creative thinking operating on more than one plane. The highest level of creative accomplishments involves "the endeavor to bridge the gap between the two planes" (p. 146). "To bridge the gap" can be viewed as establishing a common relational structure through mapping and "two planes" as two domains. In addition, Gordon's (1961) synectics underscores the significance of analogy in problem-solving. Synectics encompasses various analogical methods, including direct, personal, fantasy, and symbolic analogies. Direct analogy involves straightforward comparisons based on shared attributes, serving as the foundation of analogical reasoning. Personal analogy prompts problem solvers to empathetically engage with a problem by imagining themselves as a component thereof, fostering fresh perspectives. Fantasy analogy encourages the exploration of extremely unusual ideas to approach problems from novel angles. Symbolic analogy, or compressed conflict, involves the deliberate juxtaposition of conflicting concepts to stimulate innovative solutions. In essence, analogy serves as the linchpin of creative thinking, facilitating the synthesis of disparate ideas and the generation of innovative solutions across a spectrum of domains and contexts

Biodata of Chen Yao Kao



Chen Yao Kao is currently a full professor of the Department of Special Education at the National University of Tainan, Taiwan. He teaches the graduate and undergraduate courses regarding gifted education, multiple intelligences and creativity. His research interests include socio-emotional issues of gifted adolescents, creative thinking processes, multiple intelligences, and curriculum and instruction for gifted students. E-mail: leonardkao@yahoo.com

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