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Sternberg's triarchic theory of intelligence pdf

Intelligence is a complex feature of cognition. Many theories have been developed to explain what intelligence is and how it works. There is Sternberg's triarchic intelligence theory, which focuses on analytical, creative, and practical intelligence, but there is also Gardner's theory that intelligence consists of many factors. Other theories focus on the importance of emotional intelligence. Which of the theories is most correct? And how can intelligence be measured in the first place? This CrashCourse video gives a good overview of these topics: Learning objectives Explain the triarchic intelligence theory Explain the theory of multiple intelligences define creativity, divergent, and convergent thinking A four-and-a-half-year-old boy sits at the kitchen table with his father, who reads him a new story. He turns the page to read on, but before he can start, the boy says, Wait, Dad! He points to the words on the new page and reads aloud: Go, pig! Go! The father stops and looks at his son. Can you read that?, he asks. Yes, Dad! And he points to the words and reads again: Go, pig! Go! This father did not actively teach his son to read, even though the child constantly asked questions about letters, words and symbols they saw everywhere: in the car, in the shop, on television. The father wondered what else his son could understand and decided to try an experiment. He grabbed a sheet of blank paper and wrote several simple words in a list: mom, dad, dog, bird, bed, truck, car, tree. He put the list in front of the boys and asked him to read the words. Mom, dad, dog, bird, bed, truck, car, tree, he read and slowed down to pronounce bird and truck carefully. Then, did I do it, Dad? You certainly did! That's very good. The father warmly hugged his little boy and continued to read the story about the pig, wondering whether his son's abilities were an indication of extraordinary intelligence or simply a normal pattern of linguistic development. Like the father in this example, psychologists have wondered what intelligence is and how it can be measured. What exactly is intelligence? The way researchers defined the concept of intelligence has often changed since the birth of psychology. The British psychologist Charles Spearman believed that intelligence consisted of a general factor called g, which could be measured and compared among individuals. Spearman focused on the similarities between different intellectual abilities and emphasized what made everyone unique. Long before modern psychology developed, however, ancient philosophers such as Aristotle had a View (Cianciolo & Sternberg, 2004). Other psychologists believe that intelligence, rather than a single factor, is a collection of different abilities. In In In the 1940s, Raymond Cattell proposed a theory of intelligence that divided general intelligence into two components: crystallized intelligence and fluid intelligence (Cattell, 1963). Crystallized intelligence is characterized as acquired knowledge and the ability to retrieve it. If you learn information, remember it, and remember it, use crystallized intelligence. You use crystallized intelligence all the time in your coursework by showing that you are mastering the information covered in the course. Fluid intelligence includes the ability to see complex relationships and solve problems. If you navigate home after a detour on an unknown route because of road construction, you would fall back on your fluid intelligence. Fluid intelligence helps you overcome complex, abstract challenges in your daily life, while crystallized intelligence helps you overcome concrete, simple problems (Cattell, 1963). Other theorists and psychologists believe that intelligence should be defined in more practical terms. For example, what behaviors help you move forward in life? What skills promote success? Think about it for a moment. The ability to recite all 44 presidents of the United States to order is an excellent party trick, but will she know that this makes you a better person? Robert Sternberg developed another theory of intelligence, which he called the triarchic theory of intelligence, because it sees intelligence as three parts (Sternberg, 1988): practical, creative and analytical intelligence (Figure 1). Figure 1. Sternberg's theory identifies three types of intelligence: practical, creative, and analytical. Practical intelligence, as suggested by Sternberg, is sometimes compared to Street Smarts. Being practical means finding solutions that work in your everyday life by applying knowledge based on your experience. This type of intelligence seems to be separate from the traditional understanding of IQ: Persons who score in practical intelligence may or may not have comparable values in creative and analytical intelligence (Sternberg, 1988). This story about the 2007 Virginia Tech shooting illustrates both high and low practical intelligence. During the incident, a student left her class to get a soda in an adjacent building. She planned to return to class, but when she returned to her building after receiving her soda, she saw that the door she used to leave was now chained from the inside. Instead of thinking about why there is a around the door handles, she went to the window of her class and crawled back into the room. She possibly exposed herself to the gunman. Luckily, she wasn't shot. On the other side, a pair of students were walking on campus when they heard gunshots nearby. A friend said: Let's try it and see what's going on. The other student said: Away, we have to run away from the shots. You have done just that. This prevents both damage. The student crawling through the window demonstrated some creative intelligence, but not common sense. It would have little practical intelligence. The student who encouraged his friend to flee from the sound of gunshots would have much higher practical intelligence. Analytical intelligence is closely aligned with academic problem solving and calculations. Sternberg says analytical intelligence is demonstrated by the ability to analyze, evaluate, assess, compare and contrast. For example, if you read a classic novel for the teaching of literature, it is usually necessary to compare the motifs of the main characters of the book or to analyze the historical context of the story. In a science course such as anatomy, you need to study the processes by which the body uses different minerals in different human systems. To develop an understanding of this topic, use analytical intelligence. If you are solving a challenging mathematical problem, apply analytical intelligence to analyze various aspects of the problem and then solve it section by section. Test your analytical intelligence with the Prisoner Hat Puzzle: Creative Intelligence is characterized by the invention or idea of a solution to a problem or situation. Creativity in this area can include finding a novel solution to an unexpected problem or creating a beautiful work of art or a well-developed short story. Imagine for a moment that you are camping in the forest with some friends and realize that you have forgotten your camp coffee pot. The person in your group who finds a way to successfully brew coffee for everyone would be credited as having a higher creative intelligence. Multiple Intelligences Theory was developed by Howard Gardner, a Harvard psychologist and former student of Erik Erikson. Gardner's theory, which has been refined for more than 30 years, is a recent development among the theories of intelligence. According to Gardner's theory, each person has at least eight intelligences. Among these eight intelligences, one person usually excels in some and falters in others (Gardner, 1983). The following table describes each type of intelligence. Multiple Intelligences Intelligence Type Characteristics Representative Career Linguistic Intelligence Perceives different functions of language, different sounds and meanings of words, may easily learn multiple languages Journalist, novelist, poet, teacher intelligence Capable of seeing numerical patterns, strong ability to use reason and logic Scientist, mathematician Musical intelligence Understands and appreciates rhythm, pitch, and tone; can play multiple instruments or as a singer composer, performer Physical kinesthetic intelligence High ability to control the movements of the body and use the body to various physical tasks Dancer, athlete, athletic trainer, yoga teacher Spatial intelligence ability to perceive the relationship between objects and how they move around the room choreographer, sculptor, architect, aviator, sailor interpersonal intelligence ability to understand and sensitive to the different emotional states of others, consultants, social workers, salesperson intrapersonal intelligence ability to access personal feelings and motivations, and use them to direct behavior and personal goals to achieve the natural world , Ecologist, environmentalist Gardner theory is relatively new and needs additional research to establish better empirical support. At the same time, his ideas call into question the traditional idea of intelligence to include a greater variety of abilities, although it was suggested that Gardner simply referred to what other theorists called cognitive styles as intelligence (Morgan, 1996). Moreover, it is extremely difficult to develop traditional measures of Gardner's intelligences (Furnham, 2009; Gardner & Moran, 2006; Klein, 1997). To learn more, check out the BBC Documentary Battle of the Brains to see examples of how multiple intelligences are being tested. In the video, a musical prodigy, chess grandmaster, quantum physicist, fighter pilot, artist, playwright and IQ champion are taken through a series of tests to determine who would be considered the smartest. Horizon Battle of the Brains of Tatiana on Vimeo. Gardner's interpersonal and intrapersonal intelligences are often combined into a single type: emotional intelligence. Emotional intelligence includes the ability to understand the emotions of oneself and others, to show empathy, to understand social relationships and clues, to regulate one's own emotions and to react in a culturally appropriate way (Parker, Saklofske, & Stough, 2009). People with high emotional intelligence usually have well-developed social skills. Some researchers, including Daniel Goleman, the author of Emotional Intelligence: Why It Can Matter More Than IQ, argue that emotional intelligence is a better predictor of success than traditional intelligence (Goleman, 1995). However, emotional intelligence has been widely discussed, with researchers pointing to inconsistencies in their definition and description scant and questioning the results of studies on a subject that is difficult to measure and study empirically (Locke, 2005; Mayer, Salovey, & Caruso, 2004) Intelligence can also have different meanings and values in different cultures. If you live on a small island where most people Getting food by fishing boats, it would be important to know how to fish and how to repair a boat. If you were an exceptional angler, Peers would probably think you were intelligent. If you were also in the repair of boats, your intelligence could be known all over the island. Think of the culture of your own family. What values are important for Latino families? Italian families? In Irish families, hospitality and telling an entertaining story are a sign of culture. If you're an experienced storyteller, other members of Irish culture will probably think you're intelligent. Some cultures attach great importance to cooperation as a collective. In these cultures, the importance of the group replaces the importance of individual performance. When you visit such a culture, how well you relate to the values of that culture is an example of your cultural intelligence, sometimes referred to as cultural competence. What influence do you think emotional intelligence has in your personal life? Creativity What do they have in common: the drug penicillin, the Eiffel Tower, the film Lord of the Rings, the Anthem Amazing Grace, the iPhone, the novel Don Quixote, the painting The Mona Lisa, a recipe for chocolate fudge, the soft drink Coca-Cola, the video game Wii Sports, the West Coast offensive in football and the zipper? You guessed it! All of these articles were products of the creative spirit. None of them existed until anyone came up with the idea. Creativity is not something you can just pick from a tree like apples. Because creative ideas are so special, creators who come with the best ideas are often highly rewarded with fame, luck, or both. Nobel prizes, Oscars, Pulitzer prizes and other awards bring fame, and big sales and box office are bringing good fortune. But what is creativity anyway? Figure 2. People often have difficulty describing where their creative ideas came from. When you think of something creative, how do you usually get to it? Creativity arises when someone comes up with a creative idea. An example would be a creative solution to a difficult problem. But what makes an idea or solution creative? Creativity is the ability to generate, create or discover new ideas, solutions and possibilities. Very creative people often have intensive knowledge about something, work on it for years, look for new solutions, seek advice and help from other experts and take risks. Although creativity is often associated with the arts, it is indeed a vital form of intelligence that drives people in many disciplines to discover something new. Creativity can be found in every area of life, from the way you decorate your residence to a new way of how a cell works. Although psychologists have offered different definitions of creativity (Plucker, Beghetto, & Dow, 2004; Runco & Jaeger, 2012), is probably the best definition of the one that has recently been adjusted by the three criteria that the U.S. Patent Office uses to whether an invention can obtain patent protection (Simonton, 2012). The first criterion is originality. The idea must have a low probability. In fact, it should often be unique. Albert Einstein's special theory of relativity met this criterion. No other scientist came up with the idea. The second criterion is usefulness. The idea should be valuable or work. For example, a solution must solve the problem. An original recipe that produces a dish that tastes too horrible to eat can't be creative. In the case of Einstein's theory, his principle of relativity provided explanations for what would otherwise be inexplicable empirical results. Figure 3. Even with the three criteria for creativity (originality, usefulness and surprise), it can be difficult to determine whether art is creative. Especially with all the examples of artists whose work was considered creative only after their death. [Image: Linus Bohman] The third and final criterion is a surprise. The idea should be surprising or at least not obvious (to use the term of the patent office). For example, a solution that is a simple derivative of acquired expertise cannot be considered surprising, even if it were original. Einstein's theory of relativity was not a gradual departure from classical physics, but the theory was built on a new foundation that challenged the very basis of traditional physics. When applying these three criteria, it is important to recognize that originality, usefulness, and surprise are quantitative rather than qualitative attributes of an idea. In particular, we really need to talk about a degree to which an idea meets each of the three criteria. In addition, the three attributes should have a zero point, which means that it should be possible to speak of an idea that has no originality, usefulness, or surprise. Finally, we must assume that if an idea scores zero on a criterion, it does not have to have any creativity either. For example, someone who reinvents the wheel definitely produces a useful idea, but the idea has zero originality and therefore no creativity at all. Similarly, someone who invented a parachute made entirely of reinforced concrete would get a lot of recognition for originality – and surprise! – get, but none for usefulness. Figure 4. If you were tasked with thinking about so many uses for a brick stone by stone, how well would you do it? Would you have thought of smashing the brick in a sculpture? How about using it as a sidewalk chalk? [Image: Simon Hooks] Cognitive scientists have long been interested in the thought processes, creative ideas (Simonton & Damian, 2013). In fact, many so-called creativity tests are actually measures of thought processes that underlie the creative act (Simonton, 2003b). The following two measures are among the best known. Test Test own creativity with this link to make one of five common creativity tests. The first is the Remote Associates Test (RAT), which was introduced by Mednick (1962). Mednick believed that the creative process requires the ability to associate ideas that are conceptually very far apart. The RAT consists of elements in which the respondent must identify a word that can be associated with three fairly different stimulus words. For example, what word can be associated with the words widow, bite, monkey? The answer is spider (black widow spider, spider bite, spider monkey). This particular question is relatively simple, others are much more difficult, but it gives you the basic idea. The second measure is the Unusual Use (Guilford, 1967; Torrance. Here, the participant is asked to generate alternative uses for a common object, such as .B. a brick. The responses can be assessed in four dimensions: a) fluidity, the total number of uses generated; (b) originality, the statistical rarity of the indicated uses; (c) flexibility, the number of different conceptual categories resulting from the different uses; and (d) elaboration, the amount of detail specified for the uses produced. For example, using a brick as a paperweight is another conceptual category that uses its volume to save water in a toilet tank. The ability to produce unusual applications is just one example of the general cognitive ability to participate in divergent thinking (Guilford, 1967). Unlike converged thinking, which converges on the best answer or solution, diverging thinking offers several possibilities that can vary greatly in utility. Unfortunately, many different cognitive processes have been associated with creativity (Simonton & Damian, 2013). Therefore, we cannot use the singular, there is no creative process. Nevertheless, the various processes have one characteristic: all allow the person to think outside the box through routine thinking – to venture into an area that would otherwise be ignored (Simonton, 2011). Creativity requires them to go where you don't know where you're going. Dr. Tom Steltz, Sterling Professor of Biochemistry and Biophysics at Yale University, has spent his career studying the structure and specific aspects of RNA molecules and how their interactions coldly contribute to producing antibiotics and warding off disease. In 2009 he was awarded the Nobel Prize in Chemistry. He wrote: When I look at the and looking back on the progress of my scientific career, I am reminded of the importance of good mentorship in the early stages of one's career development and constant face-to-face conversations, debates and discussions with colleagues at all stages of research. Outstanding discoveries, findings and developments do not happen in a vacuum (Steltz, 2010, point 39). According to Steltz's comment, it becomes clear that a person's creativity, although an individual strength, benefits from interactions with others. Think of a time when your creativity was triggered by a conversation with a friend or classmate. How did this person affect you and what problem did you solve with creativity? analytical intelligence: oriented towards academic problem solving and calculations of convergent thinking: the opposite of divergent thinking, the ability to narrow down the only correct answer or solution for a particular question or problem (e.B. to give the right answer to intelligence tests) Creativity: ability to generate, create or discover new ideas, solutions and possibilities of creative intelligence: ability to produce new products , ideas or the invention of a new, novel solution to a problem crystallized intelligence: characterized by acquired knowledge and the ability to retrieve it cultural intelligence: ability with which people can understand and relate to different thinking in another culture: the opposite of converged thinking, the ability to explore multiple possible answers or solutions to a particular question or problem (e.B. with many different uses for an object) emotional intelligence : Ability to understand emotions and motivations within himself and other fluid intelligence: Ability to see complex relationships and solve problems Multiple IntelligenceTheory: Gardner's theory that each person possesses at least eight types of intelligence: aka Street Smart's triarchic theory of intelligence: Sternberg's intelligence theory; three facets of intelligence: practical, creative and analytical

