

## Chapter 4

# The Science of Creativity

### ABSTRACT

*There is a common misconception that only certain individuals “have what it takes” to be creative and the rest of us are destined to lack creativity. However, a review of the relevant neurological and cognitive literatures suggests otherwise- that creative thinking is rooted in everyday cognitive mechanisms and processes. This chapter provides an overview of the neurological and cognitive bases of creativity, with a focus on the role of the pre-frontal cortex and inhibitory control in the creative process. The implication of the findings discussed in this chapter is that, although some people engage in more creative processes than others, we are all equipped with a brain that is complex enough for us to think creatively.*

### INTRODUCTION: CREATIVITY AND THE INDIVIDUAL

The idea that some people are creative and some people are not comes from at least three sources: (1) the admiration of the highly creative in our society, (2) daily life experiences, and (3) labeling certain fields as creative and others as non-creative. Consider for a moment that you conduct an Internet search for creative people: you will likely turn up websites about artists, authors, musicians and inventors and encounter various websites about people such as Leonardo da Vinci, Maya Angelou, Wolfgang Amadeus Mozart, and Albert Einstein. You will likely find information about their greatest works, their life experiences and typical daily habits that differentiate them from other, “less creative,” people. To be sure, there is something special about these

DOI: 10.4018/978-1-5225-4952-9.ch004

individuals and their creative works that should be admired. It is, indeed, common to think that such individuals were born with a gift that others could never possess or that the structure of their brains or genetic make-up are vastly different from the “average” person.

Although odds are that most of us have never met (or at least become intimately close to) famously creative individuals such as those mentioned above, we all know people in our every day lives who we consider to be more creative, and unique, than others. To illustrate this, let us consider an everyday example that has become a social media phenomenon- Pinterest (<https://www.pinterest.com/>). As many of us can attest, there is a difference between generating an idea to post on Pinterest, appreciating an idea on Pinterest, and successfully carrying out a Pinterest project. The very popularity of “Pinterest Fails” further perpetuates that some people are capable of creative endeavors and some are not. This is, in fact, a rather common misconception suggesting that there are those that are creative and those who are not with no possibility of change (Plucker, Beghetto & Dow, 2004; Treffinger, Isaksen, & Dorval, 1996).

To further perpetuate the idea that only certain individuals “have what it takes” to be creative, Carson (2010) notes that we often appreciate creativity in the arts and sciences (e.g., artists, designers, authors, inventors) and neglect the creativity involved in other fields (e.g., project management, education, stock trading, etc.). We would be remiss to discuss creativity only as it relates to the arts and sciences when, in fact, elements of creativity are a part of nearly everything humans do on a daily basis. Specifically, creativity is highly involved in the world of business where, at a minimum “you need to find creative ways to cut costs while maintaining quality, and provide an innovative product or service”(Carson, 2010, pg. 8). Even when creativity is discussed in the business world there is still a strong focus on those individuals considered to be creative (e.g., Steve Jobs) as compared to those who are not. This, again, further perpetuates the notion that some people “have it” and some people do not.

Our daily lives and experiences would certainly lead us to believe that creativity is an elusive trait that can only be possessed by individuals with certain brain characteristics and optimal genetics. Accordingly, those in search of defining the creativity “it” factor often turn to neuroscience and genetics to explain differences in the brains of those who are considered creative as compared to those who are not. It is tempting to think that there is “a creativity gene that makes the human species the most innovative one on the planet, or that genetic differences between people might make one person more creative

19 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage: [www.igi-global.com/chapter/the-science-of-creativity/191099](http://www.igi-global.com/chapter/the-science-of-creativity/191099)

## Related Content

---

### Building a Sustainable Talent Acquisition Model in a Dynamic Business Environment

Mamta Mohapatra and Priyanka Sahu (2018). *International Journal of Human Capital and Information Technology Professionals* (pp. 42-52).

[www.irma-international.org/article/building-a-sustainable-talent-acquisition-model-in-a-dynamic-business-environment/205651](http://www.irma-international.org/article/building-a-sustainable-talent-acquisition-model-in-a-dynamic-business-environment/205651)

### Human Resource Management on Social Capital

Macarena López-Fernández, Fernando Martín-Alcázar and Pedro Miguel Romero-Fernández (2012). *Professional Advancements and Management Trends in the IT Sector* (pp. 80-93).

[www.irma-international.org/chapter/human-resource-management-social-capital/64088](http://www.irma-international.org/chapter/human-resource-management-social-capital/64088)

### Examining the impact of Emotional Intelligence on Organizational Role Stress: An empirical study of the Indian IT sector

Shubhangini Rathore and Vandana Ahuja (2015). *International Journal of Human Capital and Information Technology Professionals* (pp. 51-63).

[www.irma-international.org/article/examining-the-impact-of-emotional-intelligence-on-organizational-role-stress/124219](http://www.irma-international.org/article/examining-the-impact-of-emotional-intelligence-on-organizational-role-stress/124219)

### Empirical Investigation for Assessing the Causality of Entrepreneurship Ecosystem With Entrepreneurial Behavior and Attitudes Across Countries

Ajay Kumar Singh and Bhim Jyoti (2024). *Cases on the Interplay Between Family, Society, and Entrepreneurship* (pp. 315-353).

[www.irma-international.org/chapter/empirical-investigation-for-assessing-the-causality-of-entrepreneurship-ecosystem-with-entrepreneurial-behavior-and-attitudes-across-countries/334619](http://www.irma-international.org/chapter/empirical-investigation-for-assessing-the-causality-of-entrepreneurship-ecosystem-with-entrepreneurial-behavior-and-attitudes-across-countries/334619)

### I Am More Committed to My Profession Than to My Organization: Professional Commitment and Perceived Organizational Support in Turnover

Mufitha Mohamed Buhari, Chen Chen Yong and Su Teng Lee (2020). *International Journal of Human Capital and Information Technology Professionals* (pp. 37-58).

[www.irma-international.org/article/i-am-more-committed-to-my-profession-than-to-my-organization/252846](http://www.irma-international.org/article/i-am-more-committed-to-my-profession-than-to-my-organization/252846)