

**BAR-ILAN UNIVERSITY**

**The Effect of Exposing to a Creative Environment on  
Novel Metaphor Generation**

Shahar Himan Heltai

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## Abstract

Creativity has importance at a personal level as well as at a social level. At a personal level “Little C” refers to solving personal and professional problems. At a social level “Big C” can lead to findings, originality in problem-solving, and innovation within different fields (Kaufman & Beghetto, 2009). Figurative language is one of the most common expressions of verbal creativity, and the use of metaphors is one of the most important sources of verbal innovation. Therefore, this field serves as a fertile ground for the exploration of creative thinking. Metaphor generation requires managerial abilities that include selection, inhibition, and knowledge retention, combined with assessment ability, use of working memory along with fluency, and divergent thinking ability. Novel metaphors, such as those that appear in poetry, are metaphorical expressions whose use expands and integrates into original and innovative ways concepts from different fields of knowledge. In contrast, conventional metaphors are familiar metaphorical expressions that are stored in the mental lexicon and are frequently used in everyday language.

According to the multivariate approach to creativity, the factors influencing creativity are cognition (cognitive abilities and knowledge), environmental and emotional characteristics (mood and affect), and personality traits. Thus, creativity depends on factors that depend on the person himself, and at the same time, on factors related to the environment in which the person operates (Mastria et al., 2018). Various studies have found that personality components have a significant effect on creative production, and in particular the character trait openness to new experiences. In addition, there is a higher probability that creative production will take place in exposure to an environment that encourages creativity. The uniqueness of the environmental factor over the personality components is that it is an external factor that is independent of the person himself.

The current study has two aims: first, to examine if generation of novel metaphors as an expression of verbal creativity is influenced by exposure to a creative environment i.e., a creative verbal environment or a visibly creative surrounding. The second aim of this study is to determine the contribution of personality traits to creative production with or without exposure to a creative environment.

We assume that subjects who have been exposed to a creative environment (both verbal and visual), will generate more novel metaphors than the control group (with no exposure). In addition, we assume that with regard to conventional metaphor generation no differences will be found between the study groups. Furthermore, it is assumed that positive connections will be found between personality traits, and in particular, openness to experience and creative metaphorical generation. Finally, we hypothesize that exposure to a creative environment and personality traits will be found to be related to creative production.

132 subjects were divided into three study groups. The first group was exposed to a verbal creative environment (exposure to novel metaphors generated in a previous study). The second group was exposed to a visually creative environment (abstract and figurative works of art). And the third group, the control group, in which participants were not exposed to any environment of metaphors or artwork.

The different groups answered two research questionnaires: The Big Five Inventory Personality Questionnaire (John et al., 1991), and the Creative Production Questionnaire (Kasirer & Mashal, 2014) in which participants were asked to describe a number of emotions. The answers

were coded according to the number of novel and conventional metaphors generated by the participants.

The results showed that there is an effect of exposure to a creative environment on novel metaphor generation: The control group created a lower number of novel metaphors in comparison to conventional metaphor generation. As expected, the visually creative environment exposure group generated a greater number of novel metaphors in comparison to conventional metaphors.

Also, in accordance with our hypothesis, a significant positive connection was found between the personality trait "openness to experience" and creative production. However, regression analyses have shown that exposure to a creative environment contributes to the generation of conventional metaphors beyond personality traits. This finding was not accepted for the generation of novel metaphors. In fact, the degree of openness as a personality trait has more influenced the generation of novel metaphors, beyond exposure to a creative environment.

In conclusion, the results of the current study show that the creative environment (especially those exposed to visual stimuli) has an immediate impact on the generation of novel metaphors and that there is a connection between openness to experience and creative production. However, the results show that the personality factor influences more than the exposure to a creative environment, so the more openness the participants are characterized by, the greater number of novel metaphors they generate.