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Mission statement and objectives

The scope of *International Journal of Psychology: A Biopsychosocial Approach* is to study the phenomena of human mental processes and behaviour, based on the viewpoint that both mind and behaviour originate, develop and function due to close interaction of biological and psychological factors with social environment. Such holistic understanding of mental phenomena as well as human behaviour stresses the necessity of integration of different branches of science. Therefore, the priority will be given to the topics, analysing psychological issues within the broader context, including biological, psychological, and social aspects.



International Journal of Psychology: A Biopsychosocial Approach encourages discussions between scientists and academic communities of Lithuania, USA and other countries, strives for collaboration of scientists, representing various scientific fields and branches, in order to promote the development of Psychology, and to expand practical implementation possibilities enabling to find the most appropriate solution of problems faced both by the individual and the community within the rapidly changing social milieu.

The authors are encouraged to submit original empirical as well as theoretical articles, with diverse methodology and methods of statistical analysis, which would expand the knowledge in the field of Psychology, and (or) have importance for practical psychologists.

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A COMPARISON OF NON-VERBAL CREATIVITY BETWEEN LITHUANIAN AND MEXICAN ADOLESCENTS

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Abstract. Background. The purpose of this work was to explore non-verbal creativity (free from language influences) between Mexican and Lithuanian adolescents. **Methods.** This is a cross comparative study of 354 high school students (average age 17.2 years) from Lithuania and Mexico who were asked to complete four tasks from the 2 non-verbal sections of the Multifactorial assessment of creativity test, EMUC (*Evaluación Multifactorial de la Creatividad*, Sánchez, García, Valdes, 2009). The first section explored visual-spatial creativity associated with vocational choices such as architecture and graphic design. The second explored inventive associated with realistic vocational choices such as engineering and practical handcraft. **Results.** No significant differences were noticed in the procedures of administering, interpreting and using test results in these two countries. In general, Lithuanians show more fluidity and flexibility, whereas Mexicans show more originality. Results indicated a poor relationship between high creative potential and vocational choices that demand creativity (i.e. design, music, etc.). Consistent gender differences were observed depending upon the type of creativity assessed. Women showed higher creativity on visual-spatial tasks, while men in originality for inventive tasks. **Conclusions.** Results underline the difficulties in assessing and comparing creative products from different cultures. They underline the importance of context specific criteria to judge creativity in an ipsative fashion. Furthermore, overall results suggest that visual-spatial tasks in this age range should focus on originality and elaboration, whereas the ingenuity task should focus on flexibility and fluidity.

Keywords. EMUC, visual-spatial creativity, inventive creativity, culture.

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INTRODUCTION

Testing creativity has been considered difficult due to the lack of reliable instruments and the inherent difficulty to test divergent thinking and originality. Creativity testing has various and solid challenges regarding validity issues. Hardship in measuring creativity lies in the fact that measurement theory is usually based on comparing a given observation against a norm, whereas when estimating a degree of creativity, one seeks to establish the deviation from the norm or even the existence of something that has no norms (originality). Indeed, creativity testing has been associated with divergent thinking that requires the test taker to use imagination and explore solutions in many different directions, sometimes with no single right answer. Thus, efforts to develop a creativity quotient similar to the intelligence quotient (IQ) have been unsuccessful since they depend on many more contextual factors than intelligence (Ferrando, Prieto, & Sánchez, 2005).

Historically, the most systematic assessment of creativity in elementary school children has been conducted by Torrance and his associates who have developed and administered the Torrance Test of Creative Thinking (TTCT, 1960) which included routines on divergent thinking and problem-solving skills that were assessed in four dimensions:

1. Fluency: the total number of interpretable, meaningful, and relevant ideas generated in response to the stimulus;
2. Flexibility: the number of different categories of relevant responses;
3. Originality: the statistical rarity of the responses;
4. Elaboration: the amount of detail in the responses.

The third edition of the TTCT in 1984 eliminated the Flexibility scale from the figural test but added Resistance to Premature Closure and Abstractness of Titles. Torrance called the new scoring procedure Streamlined Scoring. Evaluating creativity then involved five norm-referenced measures: fluency, originality, abstractness of titles, elaboration, and resistance to premature closure, and 13 criterion-referenced measures which included emotional expressiveness, story-telling articulateness, movement or actions, expressiveness of titles, syntheses of incomplete figures, synthesis of lines, of circles, unusual visualization, extending or breaking boundaries, humor, richness of imagery, colorfulness of imagery, and fantasy. Torrance (1980) grouped the different subtests of the Minnesota Tests of Creative Thinking (MTCT) into three categories:

(1) verbal tasks using verbal stimuli, (2) verbal tasks using non-verbal stimuli, and (3) non-verbal tasks. Despite the fact that Torrance Test of Creative Thinking (TTCT) is probably the most commonly used in cross-cultural studies (Lubart, 1990), other tests claim to be valid also, for example, the Creativity Achievement Questionnaire which is a self-report that explores creative achievement across 10 domains. Nonetheless, despite many efforts to assess creativity around the globe, there is still skepticism in the academic community on whether standardized tests can be used to measure creativity (Carson, Peterson, Higgins, 2005).

Difficulties in judging creative products have lead researchers to use personality traits as indicators of creative potential. For example, independence of judgment, self-confidence, attraction to complexity, aesthetic orientation and risk-taking have been associated to creativity. In this perspective, a meta-analysis by Feist (1999) showed that creative people tend to be open to new experiences, unconventional, self-confident, self-accepting, driven, ambitious, dominant, hostile and impulsive.

Beyond this individual approach based on personality, creativity has also been the focus of various cross-cultural studies. As Lubart (1990) claimed, creativity must be understood beyond personal variables including cultural and environmental variables. According to this author, culture interacting with personality regulates the general level of creativity. In this perspective, Ramos and Puccio (2014) compared Western and Eastern cultures and found that both cultures have implicit belief that creativity is thinking out of the box, something new, innovative, unusual and different, however, Americans link creativity with arts more frequently than Singaporeans. Zhou, Shen, Wang, Neber & Johji (2013) also observed that creativity is depicted as divergent thinking and linked with novelty in Germany and China, but German teachers think creativity is less likely to be expressed in mathematics, whereas Chinese teachers dispute the potential to exhibit creativity in literature. Hence, the perception of creativity is influenced by cultural factors.

Creativity and intelligence

There has been debate in the psychological literature whether intelligence (as measured by IQ) and creativity are part of the same mental process (the conjoint hypothesis) or represent distinct mental processes (the disjoint hypothesis). Evidence from correlational studies since the 1950s has not settled this issue to the satisfaction for most scholars.

While some researchers believe that creativity is the outcome of the same cognitive processes as intelligence (Feist & Barron, 2003), others believe that creativity is, in fact, a mental process that has to do more with emotions, intuition, or spirituality (Janescic, 2001; Corry, Mallet, Lewis, & Abdel-Khalek, 2013). Actually, Einstein's statements regarding creativity and intelligence have left this issue open to debate for many years: "The true sign of intelligence is not knowledge but imagination" and "creativity is intelligence having fun."

The *threshold hypothesis* proposed by Torrance posits that a high degree of intelligence appears to be a necessary but not sufficient condition for high creativity (Torrance, 1988). That is, while there is a positive correlation between creativity and intelligence, this correlation disappears for IQs above a threshold of around 120. Such a model has found acceptance by many researchers, although it has not gone unchallenged.

Neurobiology of Creativity

An emphasis on biological factors related to creativity has been noted in recent years. Heilman, Nadeau, & Beversdof (2003) assert that highly creative people who excel at creative innovation tend to differ from others in three functions based in the frontal lobe: they have a high level of specialized knowledge, they are capable of divergent thinking, and they are able to modulate neurotransmitters such as norepinephrine. Thus, the frontal lobe appears to be the part of the cortex that is most important for creativity. Flaherty (2005) suggested that the creative drive results from an interaction of the frontal lobes, the temporal lobes, and dopamine from the limbic system. She asserted that whereas the frontal lobes can be seen as responsible for producing ideas, the temporal lobes are known for their editing and evaluation. Thus, abnormalities in the frontal lobe (such as depression or anxiety) generally decrease creativity, while abnormalities in the temporal lobe often increase it. High activity in the temporal lobe typically inhibits activity in the frontal lobe, and vice versa. High dopamine levels increase general arousal and goal directed behaviors and reduce latent inhibition, and all three effects increase the drive to generate ideas (Cromie, 2007). This new neurobiological evidence further supports the notion that creative potential is a construct rather inconsistent in time and context dependent in nature.

EDITORIAL

It is with great pleasure that we are able to recognize the dedication and hard work of the outgoing Co-Editor in Chief from the University of Nebraska at Kearney, USA, Dr. Max McFarland, and the Co-Associate Editor from the University of Nebraska at Kearney, USA, Dr. Teara Archwamety. Dr. McFarland and Dr. Archwamety have been involved with the International Journal of Psychology: A Biopsychosocial Approach since its inception. The many hours spent by Dr. McFarland and Dr. Archwamety in conjunction with the Co-Editors from Vytautas Magnus University, Lithuania, Aukse Endriulaitiene and Loreta Gustainiene led to the first publication of the journal in 2008. The efforts of the founding editors of the journal have invested much time and energy into ensuring this journal is of high quality. The journal is peer-reviewed, published twice a year and can be found in the Ulrich's Periodicals Directory, the Index Copernicus database, in EBSCO Academic Search Complete database, LITUANISTICA databases, and in the PsycINFO Journal Coverage List. Dr. McFarland and Dr. Archwamety were instrumental in making the life of this journal a success.

Dr. McFarland and Dr. Archwamety recently retired from the University of Nebraska at Kearney and their roles as co-editors of the journal have shifted to other faculty within the UNK Counseling and School Psychology department. Dr. Tammi Ohmstede is the new Co-Editor in Chief from UNK and Dr. Carmelo Callueng is the new Co-Associate Editor from UNK. On behalf of the faculty in the Counseling and School Psychology department at UNK, we want to thank Dr. McFarland and Dr. Archwamety for having the foresight, knowledge and drive to work with their counterparts in Lithuania to develop the ideas, create the possibilities, and continue the work necessary to publish a successful journal.

*Ph.D., NCSP Tammi B. Ohmstede,
Co-editor-in-chief*

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