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Editorial introduction to the special issue

"Advances in the Measurement and Evaluation of Creativity"

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Creativity measurement: Where we were and where we are going

Twenty-four years ago, Plucker and Runco (1998) wrote that the death of creativity measurement had been largely exaggerated. Drawing from the past and interpreting the trends in the creativity research at that time, the two authors were able to forecast the current flourishing of research in creativity, which is strongly driven by the need to develop increasingly reliable methods to assess creative behavior. Indeed, there has been a substantial advance in methodological approaches to the study of creativity in the 24 years since they made this statement. The perceived weakness and low quality of creativity measures (Plucker & Renzulli, 1999) has been progressively substituted by the use of robust psychometric approaches and the application of diverse sets of instruments and techniques to creativity assessment (e.g., Dul, Karwowski, & Kaufman, 2020; Forthmann & Dumas, 2022; Qian, Plucker, & Yang, 2019). The illusion, inherited from the intelligence research, of finding a "g" factor of creativity and an accompanying measure to assess it (Piffer, 2012) has been forsaken in favor of a more precise theoretical and empirical understanding of the creativity construct, of the related phenomenology, and of the relationship with other closely-related constructs (see for example the study of serendipity, wonder, inspiration, possibility, etc.; Glăveanu, 2018; Glăveanu, 2019; Mastria et al., 2022; Ross & Vallee-Tourangeau, 2021). The awareness that intelligence and creativity represent two separate constructs has definitively taken root because of the common effort of the creativity research community to understand the

relationship between the two (Corazza & Lubart, 2020; Karwowski et al., 2016; Kaufman, 2015; Weiss et al., 2020). In addition, creative cognition begun to find its own place within the domain of human cognition (Benedek & Fink, 2019), supported by a more precise understanding of the functional brain mechanisms underlying specific creative behaviors (in particular idea generation, Beaty et al., 2019; Benedek et al., 2018), giving rise to the creativity neuroscience approach (Saggar, Volle, Uddin, Chrysikou, & Green, 2021).

Current trends in the creativity measurement

Instead, therefore, of searching for the most parsimonious way to identify creativity, researchers accepted the inner complexity of the creativity concept embracing the dynamic (Corazza et al., 2022), multidimensional (Lubart, 2001), and the socio-cultural nature (Glăveanu et al., 2020) of the phenomenon. In the act of dissecting the inherent complexity of such phenomenon, creativity researchers started to learn more about the assessment and measurement of different creative thinking modalities (i.e., divergent thinking or convergent thinking), the stages of the creative process (e.g., problem finding, information processing, idea generation, idea evaluation, etc.), the interactive dynamics between key elements defining a creative performance (e.g., context, personality trait, memory, attention, etc.), and the brain dynamics associated with diverse creative performances and achievements. This flourishing of research is not however free from difficulties related to the emerging of new methodological issues. Although it has not been long since the last recent special issue dedicated to creativity measurement and, in particular, to the pitfalls that researchers should avoid in the measurement of this multi-dimensional construct (Barbot & Reiter-Palmon, 2019), new trends in the quantification of creativity are constantly emerging; the need to collect them together to develop new ideas, discussions, and research directions for the future is a fundamental contemporary request. In 2021 the Marconi Institute for Creativity (MIC) Conference, whose mission is to provide a global and multidisciplinary forum for presenting and discussing new visions in creativity studies, was specifically devoted to gather the new trends in the creativity evaluation, culminating in the idea of this Special Issue. The creativity research community

responded enthusiastically to the call for papers, testifying to the contemporary focus on the relevance of creativity measurement. The Special Issue is divided into two Volumes, the current one published in 2022 and the next one in 2023, both showcasing a series of works dedicated to the current trends in creativity measurement.

Reviewing the works submitted and published in the two volumes three evident trends specifically emerged, which are already well represented by the current volume. The first marked trend is related to the need to reduce the subjectivity in the measurement of idea generation by automatizing the scoring of generated ideas. Hocevar in 1981 highlighted that the first critique of the measurement of creativity is related to the judgements about products, ideas or other people. He specifically said that "this technique presents a particular problem since the researcher must decide who the judges should be and what the judges should be looking for" (Hocevar, 1981, p. 455). In recent year, especially in the domain of divergent thinking, several researchers proposed various approaches to automatize the scoring of generated ideas, strongly reducing the issues related to the subjectivity of judges scoring (e.g., Beaty et al., 2022; Dumas et al., 2021; Forthmann et al., 2019). Interestingly, within this trend, Weinstein et al. (2022) proposed a new computational approach to extract the criteria defining creativity in a sentence generation tasks. Along the same line, Xie et al., (2022) demonstrated that, compared to the use of human ratings, the objective measurement of creativity based on natural language processing combined with neuroimaging methods provides an opportunity to produce highly replicable findings to quantify creativity, at the cognitive and at the neural level.

The second trend is related to the need of establishing the validity of the creativity measurements. As a first contribution to this trend, Ivcevic (2022), focusing on the relationship between creativity and emotion, through the illustration of several methodological and conceptual examples, demonstrated the need for specificity in creativity research to make reliable and comparable conclusions. Moreover, several creativity measurement methods now have a sufficiently long tradition to allow meta-analytic inferences as well as to be tested with robust

statistical approaches. For instance, based on a large sample of participants (N > 26000), Zielinska et al. (2022) used an item response theory approach to test the structure and the reliability of the Short Scale of Creative Self (Karwowski et al., 2018), one of the most frequently used scale for the measurement of creative self-concepts.

The third trend emerges from the need to quantify creativity within a broader system of measures. This trend answers to the call by Plucker and Runco (1998) to rely on batteries of assessment to capture the multi-dimensional nature of creativity. Del Missier et al. (2022) adopted a multi-measure approach showing how creative thinking can be explored in a special population (i.e., schizophrenic patients) using a wide array of measures joining the divergent and convergent thinking tests with the measurement of a variety of cognitive, affective, and response inhibition dimensions. Moreover, considering the varied phenomenological expression of creativity, Smith et al. (2022) explored the role of daily creative activities on personality and subjective well-being, including daily diary methods into a wider assessment of individual personality and well-being. In the same vein, Lloyd-Cox et al. (2022) showed how approaching the study of idea evaluation with a wide assessment of the contextual and interpersonal factors influencing idea estimation can shed new light on the understanding of the concepts of novelty and usefulness.

It is with great enthusiasm that we dedicated the two volumes of this Special Issue to the current trends in the measurement and evaluation of creativity. In the attempt to understand where we stand and to foresight the future of creativity research, we hope you will enjoy the first volume of this Special Issue.

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No potential con!ict of interest was reported by the authors.

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