Review of: "Why the Standard Definition of Creativity Fails to Capture the Creative Act"

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I started following creativity research more than a half century go (Simonton, 2021). Because I entered the field of psychology from the natural sciences – especially chemistry and biology – I was somewhat surprised that researchers in this area had not really reached consensus on a precise definition of the very phenomenon that constitutes their subject matter. However, it was not until almost a dozen years ago that I first attempted to remedy this deficiency (Simonton, 2012). These efforts were partly motivated by my interest in developing Campbell's (1960) blind-variation and selective-retention theory of creativity (BVSR). Because Campbell had associated creativity with general "knowledge processes" (see also Campbell, 1974), I was led to a more epistemological treatment of creativity's definition (Simonton, 2013). In a nutshell, what is required for a person to go beyond what they already know? This analysis led to my preferred definition (Simonton, 2018; see also Simonton, 2023). Because Abraham (2023) is apparently unaware of all these efforts, I would like to make some comparisons between her definition and mine.

On the one hand, Abraham and I both agree that researchers should carefully separate personal judgments of creativity from consensual judgments (Simonton, 2016). This separation is especially crucial given that (a) only the former are closely connected to psychological processes and (b) the latter are highly heterogeneous and unstable, plus requiring that interpersonal and sociocultural processes be incorporated. The tendency for researchers to conflate the two has undermined progress in the field.

On the other hand, unlike Abraham I believe that a psychologically valid creativity definition requires three criteria, not two. Like Boden (2004), I add surprise, a criterion that inversely relates to the US Patent Office's use of "nonobvious." Essentially, surprise reflects the amount of new knowledge obtained regarding the utility of a given idea or response. Shogenji (2021) has already made a strong argument for separating surprise from originality, for something can be original without being surprising. In psychological terms, something original is unsurprising (or obvious) when it can be easily assimilated into what is already known, whereas something original is surprising (or nonobvious) when it requires a person to accommodate by overhauling what is known (Simonton, 2023). Knowledge is far more substantially increased by accommodation rather than assimilation. When Galileo first identified mountains on the moon and moons around Jupiter, he made discoveries that completely undermined both Ptolemaic astronomy and Aristotelian cosmology.

Another definitional contrast is equally important: According to my definition, both the criteria and their integration are quantitative. Specifically, creativity is defined as follows:

$$c = (1 - p)u(1 - v),$$

where p, u, and v each assume values between 0 and 1 (i.e., probabilities or proportions). Here p is the idea or response's initial probability, thus making (1 – p) its originality; u is its final utility at the time it enters the creative product (i.e., effectiveness, usefulness, value, appropriateness, meaningfulness, fit, etc.); and v is the prior knowledge of that final utility, so that (1 – v) becomes the surprise at the increment in what is known. The specification that the three components are multiplied rather than added has some critical implications, not the least being that c is itself quantitative, ranging from 0 to 1. In contrast to an additive integration, by this definition creativity is impossible if an idea or response is unoriginal, useless, or obvious, and the distribution of creative outcomes will be highly skewed, with the most creative outcomes by far the rarest. Lastly, because the prior knowledge value v is inversely related to blindness, BVSR logically follows from the definition, for a selection stage is required to determine the actual utility.

Two points should be made about the utility u. First, it is used in a similar sense as in economics, where it indicates an individual's total satisfaction with some outcome (see also Tsao, Ting, & Johnson, 2019). Hence, its meaning is not incompatible with Abraham's. Second, u is defined as the person's *final* utility assessment at the time it enters or is embodied by the creative product. Accordingly, it's stable rather than unstable, removing a common objection. All decisions are final. Of course, consensual judgments of utility will not boast this property.

One concluding observation: Although Abraham does a pretty good job reviewing alternative definitions, she also overlooks some others besides my own contribution. One example is Tsao, Ting, and Johnson, 2019), who provide a far more mathematically sophisticated take on my definition, as given in the above equation. Put simply, they separate the prior utility knowledge v into two parts, a point estimate and an interval estimate. More recently, Green, Beaty, Kenett and Kaufman (2023) have defined creativity in terms of process rather than product, a definition that is more compatible with contemporary neuroscientific studies of the phenomenon. And Runco (2023) has even updated his own rendition of the Standard Definition to deal with recent advances in Artificial Intelligence (cf. Runco & Jaeger, 2012). Finally, I know of a manuscript currently in a revise and resubmit that argues for a totally new creativity definition! As a referee I cannot say more.

All in all, relative to the neglect I saw more than 50 years ago, researcher creativity in the definition of creativity seems to be entering a Golden Age!

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