

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

Nathan Crilly<sup>1</sup>

<sup>1</sup> University of Cambridge

**Potential competing interests:** The reviewer has a manuscript under consideration with a short book series edited by the author of the article.

Anna Abraham's article (here reviewed as preprint version 1) aims to challenge the 'standard definition' of creativity and proposes a modification: "a creative idea is one that is both novel and satisfying". I welcome such attempts to challenge the concepts that underlie research activities, and it is clear from the reviews already provided that some productive discussion is already taking place. As such, I'm grateful to the author for sharing the article, and for doing so in this public way.

Some of the author's responses to existing reviews indicate that a future revision of the article can be expected, and so I frame my comments in the hope of usefully contributing to that.

## What exactly is being defined?

The article seems to be inconsistent on what is being defined. Is it 'creativity', 'creative act', 'creative idea', or 'creative process'? Clearly, these things will be related to each other, but a definition of one of them shouldn't be presented as a definition of another one.

In proposing a modification to the standard definition of creativity, it would be useful to state that definition clearly at the outset. The abstract says, "The standard definition of creativity holds that a creative idea is one that is novel and useful." However, this isn't a definition of creativity. It seems more like a definition of the creative idea, and the relationship between creativity and the creative idea is not clarified. Saying that a definition of one thing "holds that" another thing has two attributes is not a definition of the first thing.

In the introduction, the article quotes Runco and Jaeger (2012) as saying, "The standard definition is bipartite: Creativity requires both originality and effectiveness" (p. 92). This also isn't a definition of creativity because Runco and Jaeger are simply describing what Stein's definition requires.

Stein's definition does not appear until about halfway through the present article (§ 'A new definition'). There it says, "Let us review the original Stein (1953) definition again – 'The creative work is a novel work that is accepted as tenable or useful or satisfying'". This is, in fact, the first statement of Stein's definition in the article, so we are reviewing it for the first time, even though other parts of this passage have already been quoted. Is this the standard definition that is being referred to throughout the earlier work, or is the standard definition somewhat more vague, including many different

definitions that require novelty and usefulness? It would be useful to understand that.

The above quote from Stein reads more like a definition of the creative work (seemingly meaning ‘output’ or ‘product’), not of creativity more generally. This present article makes a modification: “the definition of creativity ... – a creative idea is one that is both novel and satisfying”. However, it remains unclear whether it is creativity that is being defined (as promised in the opening of that sentence), or the creative idea (as delivered at the end). If creativity is understood as the production of (or recognition or selection of) the creative idea, then that should be stated.

Although the article emphasises swapping out the term ‘useful’ for ‘satisfying’, compared to Stein’s definition, what is seemingly proposed here is more like reducing three words (“tenable or useful or satisfying”) to one (“satisfying”). As such, perhaps what is offered is an abbreviation of Stein’s definition rather than a proposal for a new definition? Either way, when the article discusses the merits of just using the term ‘satisfying’ (either as a replacement or an abbreviation), it does not give similar attention to replacing ‘work’ with ‘idea’. The proposed definition of creativity is framed entirely in terms of ideas, and this is not explained. It could be that ‘idea’ is meant in such a broad way that it includes ‘works’, ‘products’, or ‘behaviors’, but that is not stated. I see this framing of creativity exclusively in terms of ideas to be one of the more contentious aspects of the article, but because the term ‘idea’ is not discussed in detail, it is hard to assess this properly.

When examples are chosen that include the two components required in the standard definition, it is notable that they define creativity as an “activity ... (National Advisory Committee on Creative and Cultural Education, 1999, p. 30)” and as an “interaction ... (Plucker et al., 2004, p. 90)”. So, if it is indeed the definition of creativity that is the target, then what kind of thing is it? An activity, interaction, ability, capacity, inclination, experience...? At present, I think someone reading the title of the article might expect an answer to that, but won’t find one. Or, if the creative idea is what is being defined, how is that idea connected to the concept of creativity more generally? Of course, it could be that the general concept of creativity is not what is focussed on here, but then some aspects of the article could be usefully edited to avoid such expectations. I don’t think it would take much work to bring all of this into alignment, and that would improve the article.

### **What are the requirements of the definition?**

In an article entirely devoted to definition, it would be valuable to give more formal attention to the concept of definition. Definitions are described in the article as needing to be “representative and valid,” but I don’t know what ‘valid’ means here. I would think of a set of examples as being representative, but of a definition as being suitably inclusive and exclusive. In any case, there are useful discussions to draw on for the requirements placed on definitions (in general), their different types, their sources, and the purposes they are put to. For example, see the entry by Gupta and Mackereth (2023), or see the early work by Bernard (1941), Dubs (1943), and Pap (1964).

The author briefly points to a definition of memory as an example of one that is effective, and perhaps representative and valid: “Memory is defined as the ability to retain information over time.” The definition of memory is seemingly not static,

though (Madan, 2020; Zlotnik & Vansintjan, 2019), which is not surprising. Any concept that is examined closely is hard to define, and so ‘creativity’ is not a special case in this regard. (Note here that memory is being defined as a kind of ability. Just like creativity might be defined as a kind of ability, or experience, etc., it’s quite common to define things by first stating the general class of thing they belong to and then differentiating them from other members of that class.)

It might be valuable to examine how scholars in other fields trying to advance definitions structure that work. For example, decades of work to define ‘function’ include efforts aimed at establishing the requirements that such a definition must satisfy (the *desiderata*) as well as assessments of how well different definitions perform in tests against those requirements (e.g., see Preston, 2003).

In the present article, some requirements for the definition of creativity are distributed through the text (e.g., covering the arts and the sciences, covering expert and novice practice), while others might remain implicit. Having the requirements neatly assembled in one place assists readers in assessing the extent to which they find those requirements acceptable. Valuable work can then be done in refining the requirements, not just the definitions. For example, should the proposed definition include or exclude accidental acts? Should it include or exclude work by computational agents? Should it include or exclude biological processes, such as evolution? Or, even, is the production of an idea required for creativity to be identified? Again, see Preston’s response to Vermaas and Houkes for just one example of how the specification of requirements can clarify the development of definitions.

In the abstract, it says that “The standard definition of creativity holds that a creative idea is novel and useful [... But] any definition of creativity needs to be one that can be reasonably applied whether following an internal frame of reference of the creative experience or an external frame of reference of the creative product. With these aims in mind, I propose the following amendment to the definition of creativity ... – a creative idea is one that is both novel and satisfying.” This seems to suggest that a concept of satisfaction is more applicable to internal and external frames of reference than a concept of utility. Later, with reference to Stein, it is claimed that “the term ‘satisfying’ [...] can be applied from the standpoint of an internal or external frame of reference. But so can ‘useful’”. I think the argument here is less about what one word or another allows (or ‘can’ do), and more about how those words have tended to be interpreted or applied. A problem might be that for those researchers inclined to apply external frames of reference to the study of creativity, nothing would stop them from interpreting the ‘satisfying’ component as pointing to the satisfaction of external judges, and they could thus neglect any satisfaction experienced by the creative person. As such, if flexibility on frames of reference is a key requirement for the standard definition, perhaps it would be best to mention those frames of reference in the definition.

### Who and what is the definition for?

A definition might be seen as a tool, one that is used by particular people for particular purposes (see earlier references for theories of definition). Although the present article refers at the outset to “scholars in the field of creativity” and “studies that follow from the standard definition”, it would seem that more specific groups of users and applications are the focus here. Later references to the “test battery”, “participants,” and “external judges” suggest that the focus is actually on

something like experimental lab-based research on creativity, and perhaps the design and analysis of such research. If so, that could be clearly established earlier so that those readers who won't infer that focus from the writing or references can be better directed in their interpretations.

For those readers coming from more qualitative field-based research on creativity (for example), much of the discussion in the article might seem confusing or confused because external frames of reference do not dominate everywhere. It is important for readers to understand who "we" are when the article makes claims like "we have fundamentally conflated the act of creative idea generation with the act of creative idea reception". This is especially true when the reader might not feel included in whoever that "we" refers to. Of course, such community affiliations are more clearly signaled in conference and journal publications, but without that context, some more explicit signposting might be required.

### **What is the relation between internal and external frames of reference?**

The article helpfully reminds us to pay attention to internal and external frames of reference (as Stein did, which is acknowledged). However, certain branches of creativity research have long focused on both, including design creativity research. In that research area, concurrent and retrospective protocol studies are common, sometimes combined with external assessment. For example, one of the most cited studies of design creativity compares designers' individual perceptions of the novelty of their own ideas with the researchers' understanding of which ideas were common across designers (Dorst & Cross, 2001).

Dorst and Cross' study is one of many where the perspectives of the people being creative are tracked throughout the creative process (for accounts from outside the lab, see Crilly, 2019; Crilly & Moroşanu Firth, 2019). They might not be the target audience, but to readers familiar with such work, claims about a lack of attention to internal frames of reference might be confusing. For example, claims like these: "At no point is the person generating the creative idea asked whether they have generated an idea that they themselves deem to be creative" and "we make claims about the generative experience of the creator (or maker or explorer) who is coming up with ideas based on the receptive experience of the recipient who encounters these ideas." I see that other reviewers have commented on this sort of thing, but perhaps it can be addressed by more precisely defining the community being focused on, as discussed above.

Even among those considering both internal and external frames of reference, it is not so common to relate those frames of reference to each other, at least explicitly. For example, people asked to undertake a creative task might consider the external frames of reference that will be used to judge their work. This is the case in the real world, where, for example, designers might expect that their clients will judge the creativity of the solutions according to their own standards. It is also potentially a problem in lab settings, where participants undertake a task in a way that they expect will satisfy the researcher. In experimental creativity studies, that might mean participants are acting in ways that they anticipate will conform to the experimenter's concept of creativity (for a general discussion of these 'demand characteristics' in the lab, see Orne, 1962).

The above paragraph relates to when the internal frame of reference points to the external one. But the opposite is

possible too: the external frame of reference can point to the internal one. For example, someone judging creative work might consider not just their own standards of novelty (and other criteria), but also the standards of the creative agent who undertook the work. Again, this applies in the real world and in the lab. Such inferences of intentionality are considered to be a fundamental part of how we interpret artefacts (e.g., see Bloom, 1996; Crilly, 2011), and the assessment of creative work or ideas won't be an exception to that. I focus on all this because the present article seems to be well placed to consider (or at least point to) relations between internal and external frames of reference in this way, but at present, such considerations are limited.

It is worth noting that there are definitions of art that combine internal and external frames of reference, which might be interesting to consult (e.g., Levinson, 1989; 1993). More generally, like the work on the definition of 'function' mentioned earlier, there might be something to learn from how decades of scholarship on the meaning of 'art' have been structured. Art, like creativity (and really almost everything else), is difficult to define. However, especially relevant here is that definitions of art have always been concerned with how both production and reception play a role, and with how those roles are related.

### Minor comments

The writing is direct and engaging, but there are some typos and missing words, which might distract readers from attending to the arguments being made.

It would be useful to establish at the outset what the costs are of not having an appropriate definition. This is addressed in the conclusion, but could provide some additional motivation in the introduction.

### References

- Bernard, L. L. (1941). The Definition of Definition. *Social Forces*, 19(4), 500–510. <https://doi.org/10.2307/2571207>
- Bloom, P. (1996). Intention, history, and artifact concepts. *Cognition*, 60(1), 1–29.
- Crilly, N. (2011). The Design Stance in User-System Interaction. *Design Issues*, 27(4), 16–29. [https://doi.org/10.1162/DESI\\_a\\_00102](https://doi.org/10.1162/DESI_a_00102)
- Crilly, N. (2019). Creativity and fixation in the real world: A literature review of case study research. *Design Studies*, 64, 154–168. <https://doi.org/10.1016/j.destud.2019.07.002>
- Crilly, N., & Moroşanu Firth, R. (2019). Creativity and fixation in the real world: Three case studies of invention, design and innovation. *Design Studies*, 64, 169–212. <https://doi.org/10.1016/j.destud.2019.07.003>
- Dorst, K., & Cross, N. (2001). Creativity in the design process: Co-evolution of problem–solution. *Design Studies*, 22(5),

425–437. [https://doi.org/10.1016/S0142-694X\(01\)00009-6](https://doi.org/10.1016/S0142-694X(01)00009-6)

Dubs, H. H. (1943). Definition and Its Problems. *The Philosophical Review*, 52(6), 566–577.

<https://doi.org/10.2307/2181259>

Gupta, A., & Mackereth, S. (2023). Definitions. In E. N. Zalta & U. Nodelman (Eds.), *The Stanford Encyclopedia of Philosophy* (Fall 2023). Metaphysics Research Lab, Stanford University.

<https://plato.stanford.edu/archives/fall2023/entries/definitions/>

Levinson, J. (1989). Refining Art Historically. *The Journal of Aesthetics and Art Criticism*, 47(1), 21–33.

<https://doi.org/10.2307/431990>

Levinson, J. (1993). Extending Art Historically. *The Journal of Aesthetics and Art Criticism*, 51(3), 411–423.

<https://doi.org/10.2307/431513>

Madan, C. R. (2020). Rethinking the definition of episodic memory. *Canadian Journal of Experimental Psychology / Revue Canadienne de Psychologie Expérimentale*, 74(3), 183–192. <https://doi.org/10.1037/cep0000229>

Orne, M. T. (1962). On the social psychology of the psychological experiment: With particular reference to demand characteristics and their implications. *American Psychologist*, 17(11), 776–783.

Pap, A. (1964). Theory of Definition. *Philosophy of Science*, 31(1), 49–54.

Preston, B. (2003). Of Marigold Beer: A Reply to Vermaas and Houkes. *The British Journal for the Philosophy of Science*, 54(4), 601–612.

Runco, M. A., & Jaeger, G. J. (2012). The Standard Definition of Creativity. *Creativity Research Journal*, 24(1), 92–96.

<https://doi.org/10.1080/10400419.2012.650092>

Zlotnik, G., & Vansintjan, A. (2019). Memory: An Extended Definition. *Frontiers in Psychology*, 10.

<https://www.frontiersin.org/articles/10.3389/fpsyg.2019.02523>