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**NOVELTY-SEEKING MIGHT UNDERLIE CURIOSITY AND THE
NOVELTY DIMENSION OF CREATIVITY, BUT NOT THE
USEFULNESS DIMENSION**

Forthcoming in *Behavioral and Brain Sciences*

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ABSTRACT

We question the perspective that curiosity and creativity stem from a shared novelty-seeking process. We emphasize that creativity has two distinct dimensions: novelty and usefulness, each involving separate cognitive processes. These dimensions may not necessarily mutually reinforce each other. We contend that a more comprehensive model that encompasses the full scope of the creativity construct is needed.

NOVELTY-SEEKING MIGHT UNDERLIE CURIOSITY AND THE NOVELTY DIMENSION OF CREATIVITY, BUT NOT THE USEFULNESS DIMENSION

In their article, Ivancovsky, Baror, and Bar (2023, p. 1) posit that curiosity and creativity are “manifestations of the same novelty-seeking process.” Although their proposed novelty-seeking model is thought-provoking, we advocate for a more nuanced perspective that acknowledges the significant differences between the two core dimensions of creativity—novelty and usefulness. We argue that their proposed model may be valid for novelty but its applicability to usefulness is uncertain.

Central to the author team’s argument is a shared cognitive and motivational basis for curiosity and creativity. However, prior research has documented substantial differences in terms of how identical cognitive and motivational constructs affect novelty and usefulness (e.g., Acar, 2018; Baas, De Dreu, & Nijstad, 2008; Mehta & Zhu, 2016; Miron-Spektor & Beenen, 2015). For example, Miron-Spektor and Beenen (2015) found that learning achievement goals, likely common among many curious individuals (as discussed in Ivancovsky et al.), drive novelty, through increased cognitive flexibility, but not usefulness. In contrast, performance achievement goals drive usefulness through cognitive closure, but not novelty.

Ivancovsky and colleagues seek to resolve this issue by distinguishing between two forms of curiosity—diversive and specific—and connecting (i) novelty to diversive curiosity, exploration, and divergent thinking, and (ii) usefulness to specific curiosity, exploitation, and convergent thinking. While potentially promising, this perspective raises several issues. First,

the empirical foundation for these proposed connections is not sufficiently established. Second, the theoretical rationale behind connecting specific curiosity to other constructs remains unclear. For instance, it is unclear how specific curiosity aligns with convergent thinking, which requires accuracy, logic, and risk aversion (Cromptley, 2006)—qualities that typically contradict novelty-seeking. It is also unclear why specific curiosity should be more closely connected to exploitation rather than exploration. Third, since creativity entails both novelty and usefulness, it is implied that both diverse and specific curiosity must coexist in creative pursuits, raising questions about whether this can consistently be the case. These issues do not directly refute the authors' propositions but highlight the need for a more precise theoretical development and stronger empirical evidence.

Furthermore, we question whether the authors' portrayal of novelty and usefulness as mutually reinforcing represents the entire body of creativity literature. Notably, Miron-Spektor and Erez (2017), whom the authors cite to support their perspective, later state that "novelty and usefulness also derive from distinct, incongruent psychological processes" (p. 7). In fact, a considerable body of research suggests that novelty and usefulness are inherently incompatible and may even be negatively correlated (e.g., Diedrich, Benedek, Jauk, & Neubauer, 2015; McCarthy, Chen & McNamee, 2018; Paletz & Peng, 2008; Runco & Charles, 1993; Steele, Hardy, Day, Watts, & Mumford, 2021; Sullivan & Ford, 2010). For example, Diedrich et al. (2015) found strong and significant negative correlations between novelty and usefulness across two different tasks ($r_s = -.55$ & $-.48$; $p_s < .01$). It is therefore not surprising that individuals frequently struggle to reconcile these two dimensions, sometimes even perceiving them as contradictory (e.g., Rietzschel, Nijstad, & Stroebe, 2010; Zhou et al., 2019)—while individuals often appreciate useful ideas, they tend to be negatively biased against novel ones (e.g., Mueller, Melwani & Goncalo, 2012). A major strand of

creativity research does not perceive the connection between novelty and usefulness as 'paradoxical,' nor does it assert that they are mutually reinforcing; instead, this body of research regards these two dimensions as independent contributors to creativity (see Harvey and Berry, 2023, for a review of different perspectives on how usefulness and novelty are related).

Importantly, there are reasons to expect that novelty-seeking might be unrelated to, or even detrimental to, usefulness. Curious individuals might have a higher motivation to maximize the creation of novel experiences, rather than focusing on what is appropriate or valuable in a given context. In essence, curiosity might encourage creating novel solutions which might come at the expense of producing useful content. This perspective aligns with motivational accounts of creativity. Amabile (1996), for example, suggests that curiosity and interest, which are components of intrinsic motivation, are crucial in the initial creative phase but become less dominant in later stages, where an idea's usefulness often determines its creative value. Moreover, after reviewing a diverse set of empirical studies, Grant and Berry (2011) concluded that intrinsic motivation drives the generation of novel ideas but not necessarily useful ones. They also referred to an early study by Barron (1936), which demonstrated that many intrinsically motivated architects struggled to produce creative outputs because they prioritized the novelty of their designs over their practicality. This argument is also consistent with empirical research showing that individuals with a strong motivation to acquire new knowledge generate less useful solutions to innovation problems (Acar, 2019).

In conclusion, while the authors' novelty-seeking model presents an interesting perspective on the relationship between curiosity and creativity, it may not sufficiently account for the complexity of the creativity construct. This line of argumentation aligns with the views of

other creativity scholars who, recognizing this complexity, have suggested that the generation of creative outcomes requires multiple processes and components (e.g., Amabile, 1996; Baas et al., 2008; Batey & Furnham, 2006; Gruys, Munshi, & Dewett, 2011). We believe that the applicability of the proposed novelty-seeking model may be more suited to domains where usefulness is less of a priority, such as artistic creativity. We also believe that a more nuanced model that recognizes the distinction between novelty and usefulness is essential for a more comprehensive understanding of the creative processes in various domains.

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