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ARE THE LEAST KNOWLEDGEABLE UNAWARE OF IT? A STATISTICAL REVISITATION OF THE DUNNING- KRUGER EFFECT

ABSTRACT:

It has been argued that “no problem in judgment and decision making is more prevalent and more potentially catastrophic than overconfidence”, with Nobel laureate Daniel Kahneman going as far as stating that if he could eliminate just one judgement bias, overconfidence would be his choice. Most notably, Dunning and Kruger have shown that there is little to no correlation between knowledge and confidence, with the least knowledgeable also being more likely to overestimate their skills. This can play a role in misinformation control and science communication in general, as several studies have identified evidence of the Dunning-Kruger Effect (DKE) in highly controversial anti-science movements concerning vaccinations, biotechnology use, and climate change. However, both the original Dunning and Kruger paper and early subsequent work, have been revisited for different reasons including 1) being tested mostly on small populations, often of elite college students, 2) in the USA. More recent criticism focuses on methodological issues, namely 3) ignoring a possible expected regression to the mean effect, and 4) not discriminating between lack of metacognition or just having inappropriate priors. Finally, as knowledge levels often do not follow a perfect normal distribution, 5) presenting these results in quartiles, the common practice, might hide important variance, particularly in the most extreme quartiles, where several knowledge and confidence bins are treated as one.



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Joana has a degree in Physics Engineering from Instituto Superior Técnico – University of Lisbon, and a PhD in Systems Biology from NOVA – ITQB, having developed her thesis at Harvard University, USA.

In 2019, she was the recipient of an ERC Starting Grant to study human behavior using the online spread of “fake news” as a model system.