

Peer Review

Review of: "Are Bidding Behaviors of Jeopardy! Gameshow Contestants Influenced by Gender/Sex?"

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Confidence, risk tolerance, and the dreaded null hypothesis

Review of Guidry et al. "Are bidding Behaviors of Jeopardy! Gameshow Contestants Influenced by Gender/Sex?"

This paper, I think, has not reached its potential. The authors focus on wagering in the gameshow *Jeopardy!*, looking for sex differences and finding none (like Leeds & Leeds, 2024). The general backdrop is the finding that men are overall more risk-tolerant than women (Byrnes et al., 1999). This sex difference likely taps a human universal as it emerges even among hunter-gatherers (Apicella et al., 2017). Even though not all empirical studies show this general sex difference, it is rash to conclude from the reported results that "the question of whether these differences exist remains unanswered."

At this stage of the research, theoretically meaningful moderator variables could be explored. There is no moderator variable in the present research, and yet the authors assert that "the fact that contestants' risk-taking behaviors did not significantly differ by sex/gender over some decades suggests a potential paradigm shift in how we perceive and analyze risk-taking in competitive environments." Now, the results of one study do not overturn meta-analytic estimates; at best, they modify them, and only modestly so if the meta-analyses sit on a large research base.

Perhaps we learn from this work that among highly selected top performers there will be no discernible sex differences in a memory task and because of this no differences in confidence and risk-taking. But to say that one null finding explains another does not make for strong inference. There is some evidence for better memory performance (at least of the episodic kind) among women (Herlitz & Rehnman, 2008).

Paired with men's generally greater risk tolerance, it would be striking if men were more risk-tolerant in a domain where they are in fact less skilled.

The use of selected top performers reduces the chances of finding sex differences – at least in domains where training and practice ultimately dominate biological predispositions. In contrast, when comparing the performance of the fastest men with the fastest women in the 100-meter dash, sex differences become accentuated. Not so, we suspect, in general learning tasks.

Then what of the lack of a sex difference in wagering? I think the research reported here has untapped potential. The data could be used to study risk-seeking along with *excessive* risk-seeking. The wagered sums could be taken as an indication of confidence, and the difficulty of the questions, which could be estimated with an additional general survey, could serve as a proxy for objective risk. In other words, with a bit more data, one could explore the association between (over)confidence and (excessive) risk-taking. With this expanded method, one could also revisit the sex-difference hypothesis, which, in turn, could be expanded to include the sex of the other contestants. Is it, for example, the case that overconfidence and risk-taking are greatest in groups of men? As to the association between confidence and risk-taking, I imagine that it should be positive given the conceptual overlap. Not all empirical research supports this expectation, however (Michailova et al., 2017).

Apicella, C. L., Crittenden, A. N., & Tobolsky, V. A. (2017). Hunter-gatherer males are more risk-seeking than females, even in late childhood. *Evolution and Human Behavior*, 38, 592–603.

Byrnes, J. P., Miller, D. C., & Schafer, W. D. (1999). Gender differences in risk taking: A meta-analysis. *Psychological Bulletin*, 125, 367–383.

Herlitz, A., & Rehnman, J. (2008). Sex differences in episodic memory. *Current Directions in Psychological Science*, 17, 52–56.

Leeds, M. A., & Leeds, E. M. (2024). I'll take gender differences for \$400: Using *Jeopardy!* to analyze attitudes toward risk. *Eastern Economic Journal*, 50, 374–399.

Michailova, J., Maciulis, A., & Tvaronaviciene, M. (2017). Overconfidence, risk aversion and individual financial decisions in experimental asset markets. *Economic Research*, 30, 1119–1131.

Declarations

Potential competing interests: No potential competing interests to declare.