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Uncomfortable Truths in the Science of Sex Differences: Review of Bleske-Rechek et al. (2024)

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In their illuminating new paper, Bleske-Rechek and colleagues (2024) present a fascinating exploration of people's reactions to an unpopular explanation for gender disparities in STEM. The unpopular explanation can be broken into three parts: (1) Discrimination is no longer a major cause of current STEM gender gaps; (2) sex differences in interests and other psychological traits are now the main causes of the gaps; and (3) these differences aren't just a product of culture but are also partly innate (Ceci et al., 2014; Ceci & Williams, 2011; Pinker, 2016).

Taken together, this explanation for the gender gaps found in STEM is among the most taboo ideas in psychology (Clark et al.). The question of why it's so taboo is of special interest to me, because having done a deep dive into the literature on the topic, I've come to the view that the unpopular explanation is probably true. Not only that, but a few years ago, I wrote a paper with the physiologist Lewis Halsey making the case for this position (Stewart-Williams & Halsey, 2021), and in doing so, obtained some direct personal experience of the kind of reactions the unpopular explanation engenders. Let's just say that the paper wasn't greeted with open arms, at least in certain circles.

In their new study, Bleske-Rechek and colleagues (2024) explored several variables that might help to account for the unpopularity of the unpopular explanation. The two main ones were the sex of the person exposed to the explanation and the sex of the person conveying it: the "messenger," as they put it. The researchers exposed a college sample and a (somewhat older) community sample to the unpopular explanation via a fictitious handout supposedly provided by a professor during a presentation on the causes of STEM gender gaps. For some participants, the professor was male, for others female. After reading the handout, participants were quizzed about their responses to it.

The results were somewhat mixed, perhaps in part because the sample size for the community

sample was modest (*N* = 154). The general thrust of the results, however, was broadly in line with expectations. Female participants were less receptive than males to the unpopular explanation, and more inclined to censor it, especially when the messenger was a man. In addition, people on the political left, and those who believe words can cause harm, were less receptive and more inclined to censor the offending explanation.

Bleske-Rechek et al. argue that the aversion to the unpopular explanation is driven by its perceived harmfulness to women (see, e.g., Reynolds et al., 2020). The aversion is stronger in women than men, perhaps because as a protected group, women are more sensitive to the potential misuses of claims about sex differences, especially by the male of the species. Interestingly, the researchers found that the aversion was particularly pronounced among college women, who were notably less receptive and more censorious than any other group, including college men and community members of both sexes. This, they suggest, may be because younger women have been persuaded by faculty and others that women face extreme discrimination in the modern world, even though discrimination is considerably less common today than it was in previous generations.

The Bleske-Rechek findings fit nicely with research conducted by my own lab exploring reactions to research on sex differences (Stewart-Williams et al., 2021; Stewart-Williams et al., 2024; Stewart-Williams et al., 2022). The main findings of our research are that both sexes react less positively to research that puts men rather than women in a better light, that this tendency is sometimes stronger for female than male participants, and that the effect is sometimes exacerbated when the lead researcher is a man. The effect is also stronger among those who lean left and who think that men are greatly privileged over women. One of the main drivers of the aversion to male-favoring findings is the concern that they might be harmful to women (Stewart-Williams et al., 2024; Stewart-Williams et al., 2022).

If I could make any changes to Bleske-Rechek and colleagues' (2024) study, the change at the top of my wish list would be that they'd included some comparison conditions. Specifically, I would like to have seen a neutral condition (i.e., a handout unrelated to STEM or to sex differences) and a reversed condition (i.e., a handout arguing that the sex difference is due to discrimination rather than psychological sex differences). Adding those conditions would fill in several gaps in the story.

First, although women were less receptive and more censorious than men toward the unpopular explanation for STEM disparities, technically we don't know whether this is because women are less keen on that explanation specifically, or just because women are less keen on all explanations for STEM disparities or all scientific explanations full stop. Only with the inclusion of a neutral condition could we know for sure. Certainly, based on other research, it seems entirely plausible that women are more averse than men to the unpopular explanation specifically. However, the Bleske-Rechek study itself doesn't show this. It also doesn't tell us whether women would react more positively to the discrimination explanation for STEM gaps than the unpopular explanation. Again, it seems entirely plausible that they would – but again, the study doesn't speak to this either way.

Adding neutral and reversed conditions would also fill in some gaps regarding men's reactions to the handout. As mentioned, men responded more positively than women to the unpopular explanation. But would they respond *less* positively than women to the discrimination explanation? Maybe so – but maybe they wouldn't respond differently than women or would

again respond more positively. We don't know. We also don't know whether men would react the same way to the neutral condition as to the unpopular explanation. As a result, we don't know whether men dislike the unpopular explanation more than they do the average scientific explanation, like it just as much, or perhaps like it even more. It's hard to get a fix on exactly what's going on, beyond the fact that women are more averse to the unpopular explanation than men.

A second change on my wish list would be that Bleske-Rechek and co. had included some direct measurements of the constructs they suggest underpin people's reactions. The idea that the aversion is due to perceived harm to women is certainly plausible (Reynolds et al., 2020). However, it would be good to see this demonstrated, and good to see how much of the variance perceived harm explains. Future research might also evaluate the hypothesis that exposure to narratives of female victimization among younger women heightens the effects demonstrated in the present study.

Leaving aside these issues, however, Bleske-Rechek and colleagues (2024) have produced a great paper, which stands as a valuable contribution to the emerging literature on people's reactions to scientific explanations that clash with political pieties. I hope the study inspires more research in a similar vein. Of course, the results of the study itself suggest that the study's results might not be popular, potentially slowing progress in the area. Still, I remain optimistic that this won't be a permanent affliction, and that ultimately people will come to accept what the data are telling us.

References

Bleske-Rechek, A., Dobson, R. T., Lay, P. S., Johnson, W. N., & Bernstein, M. H. (2024). Women and men, harm and censoriousness: Sex-differentiated reactions to information about sex differences. *Journal of Open Inquiry in the Behavioral Sciences*.

Ceci, S. J., Ginther, D. K., Kahn, S., & Williams, W. M. (2014). Women in academic science: A changing landscape. *Psychological Science in the Public Interest, 15*, 75-141. https://doi.org/10.1177/1529100614541236

Ceci, S. J., & Williams, W. M. (2011). Understanding current causes of women's underrepresentation in science. *Proceedings of the National Academy of Sciences, 108*, 3157-3162. https://doi.org/10.1073/pnas.1014871108

Clark, C. J., Fjeldmark, M., Lu, L., Baumeister, R. F., Ceci, S., Frey, K., . . . Tetlock, P. E. Taboos and self-censorship among U.S. psychology professors. *Perspectives on Psychological Science*. https://doi.org/10.1177/17456916241252085

Pinker, S. (2016). The blank slate: *The modern denial of human nature* (Rev. ed.). Penguin.

Reynolds, T., Howard, C., Sjåstad, H., Zhu, L., Okimoto, T. G., Baumeister, R. F., . . . Kim, J. (2020). Man up and take it: Greater concern for female than male suffering. *Organizational Behavior and Human Decision Processes, 161*, 120-141. https://doi.org/10.1016/j.obhdp.2020.05.002

Stewart-Williams, S., Chang, C. Y. M., Wong, X. L., Blackburn, J. D., & Thomas, A. G. (2021). Reactions to male-favoring vs. female-favoring sex differences: A pre-registered experiment and Southeast Asian replication. *British Journal of Psychology, 112*, 389-411. https://doi.org/10.1111/bjop.12463

Stewart-Williams, S., & Halsey, L. G. (2021). Men, women and STEM: Why the differences and what should be done? *European Journal of Personality, 35*, 3-39. https://doi.org/10.1177/0890207020962326

Stewart-Williams, S., Leong, C. X. R., Seto, S. A., Thomas, A. G., & Wong, X. L. (2024). The harm hypothesis: How perceived harm to women shapes reactions to research on sex differences. *International Journal of Psychology, 59*, 495-504. https://doi.org/10.1002/ijop.13101

Stewart-Williams, S., Wong, X. L., Chang, C. Y. M., & Thomas, A. G. (2022). Reactions to research on sex differences: Effect of sex favoured, researcher sex and importance of sex-difference domain. *British Journal of Psychology, 113*, 960-986. https://doi.org/10.1111/bjop.12580