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Review of Rohrer (2025)

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In this study, Rohrer demonstrates that U.S. adults systematically underestimate the performance gap between elite male and female athletes for three track events and one swimming event. For each of these events, the female world record is close to the world record for 14-year old males, yet for each of these events, more than 90% of the sample estimated the women's world record to be the world record for males of age 15 or above. Their estimates were, in the aggregate, way off.

Rohrer provides a rationale for doing this study. As he describes, some researchers have claimed that the sex differences in some running events will narrow or reverse over time, and that other researchers have asserted – counter to plenty of data - that females have the advantage over men in endurance contests such as ultramarathons. Moreover, these claims appear to be getting a whole lot of attention in the media. Although I am inclined to believe Rohrer that those claims are getting attention, especially given what I have read on James Nuzzo's substack (e.g., consider [these data](#) he posted, in comparison to the common narrative about women being under-represented in medical trials), I would appreciate it if he included an example of two of the news media's attention to incorrect claims about sex differences in athlete world records. I also think it would be useful if he included the supplementary tables in the paper proper – they provide very useful context and rationale for his chosen events and the claims discussed in the introduction.

Rohrer asked his participants the following question for each event: "In (e.g., the 100-m dash), the world record for professional women is closest to the world record for males of what age?" I found this specific phrasing to be a bit awkward, but I also could not come up with a better way of posing the question without changing the meaning. Regardless, the question he asked, the results Rohrer documented, and the actual sex gap for these events raise various thoughts.

First, regarding the question, did the word "women" influence survey respondents to assume the world record is held by an adult woman (as opposed to a female not yet an adult)? Is each world record held by an adult female, in fact? It appears from Table S1 that for each of these events the overall record is held by a male older than 16 because the men's record is higher than the

women's record and males age 13-16. For context, what is the age of the overall world record holders? Would it be useful to say to a sample of respondents: "For the 1500-m run, the female world record is held by a XX-year old who ran it in 3:49:04. What is the age of the youngest male to complete the 1500-m run in this time?"

Second, I think Rohrer could help his reader visualize the existing gaps. A 14-year old male is generally in 8th, *maybe* 9th grade. Do we expect these males to have been through puberty? At what age does the typical male begin and end puberty? Adding this context might be useful, as would (particularly in relation to Rohrer's discussion of female-identifying males in female-only sports) noting that sex gaps in track event performance are robust in youth (Atkinson et al., 2024). And when you look at the overall records for men and women, say for the 1500-m run, it looks like the time difference is equivalent to about half of a lap around a track for which the 1500 is 4 times around. Is that so?

Third, this study also made me wonder what the world record data, and naïve judges' *estimates* of male and female world records, look like for half marathons and marathons, which more Americans might have some exposure to. What is the age of the *oldest* male who has met or beat the female world record for these events?

I appreciate very much this research by Rohrer, and I look forward to hearing about where he goes next with this line of work!

References

Atkinson, M. A., James, J. J., Quinn, M. E., Senefeld, J. W., & Hunter, S. K. (2024). Sex differences in track and field elite youth. *SportRxiv*. <https://doi.org/10.51224/SRXIV.324>