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Status in Himba pastoralists: are causal claims warranted?

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Prall and Scelza (2023; henceforth PS) provide vital data on the understudied topic of women's status in a distinctive ethnographic context. However, their causal claims, particularly those regarding relationships between traits and status, are not warranted. In this commentary, I highlight instances of causal language throughout the paper, explain why causal language is not justified given the data and modeling strategy, and discuss alternative explanations for the observed results.

PS explicitly set up expectations for illuminating the "*causes* and *consequences*" of women's status among Himba pastoralists in the title, abstract, and methods section. PS's Table 1 further states that the goals of the analytic models are "predicting the *impact of* various predictors by sex" (M1) and "predicting the *influence of status on* women's desirability scores" (M2). Additionally, PS's caption to Fig. 1A describes the posterior distributions as representing "predictions of *the influence of … traits on status* ratings in men and women". [emphasis added to highlight causal language].

Causal inference using observational data poses difficult hurdles. For causal inference to be justified in observational data, the analytic strategy must effectively deal with the problem of endogeneity. PS's data — cross-sectional peer-ratings of status and other social traits (e.g., attractiveness, intelligence) — cannot provide causal insight without strong assumptions. Researchers should transparently communicate the assumptions that allow for causal inference, for example through directed acyclic graphs (for thorough explanations, see Pearl, Glymour, & Jewell, 2016; Rohrer, 2018).

PS's models do not rule out confounding variables (except age) and they cannot differentiate between the causal effect(s) of traits ➔ status vs. status ➔ traits. It is likely that each model captures different blends of each effect, depending on the trait. But PS's interpretations favor a singular causal interpretation (i.e., traits ➔ status), which may obscure consideration of alternative interpretations for their findings. Below, I examine their interpretation of the relationship between status and attractiveness to illustrate this issue; but note that similar problems apply to interpretations of associations between status and other peer-rated traits.

PS found that the positive association between peer-rated physical attractiveness and status is stronger among Himba men than women. They conclude that attractiveness has a "larger *effect on* status in men than women" (p. 4, Section 3.1; emphasis added). This is a causal claim, but it is not justified by the data and modeling approach.

In their discussion, PS juxtapose this finding with research by Buss et al. (2020), which found that attractiveness is more central to women's status than men's across 14 countries. But the quasi-experimental approach used in Buss et al. is potentially more causally informative than PS's study because it efficiently isolates the expected relative status impact of different characteristics (e.g., attractiveness, generosity). Other vignette experiments in samples from the USA and India further support the greater importance of attractiveness for perceptions of women's status in comparison to men (Krems et al., 2022).

PS note concerns about past vignette-style research that are valid and worth considering. PS's peer ratings of known individuals are certainly valuable for addressing some issues of vignette-based studies, such as ecological validity. Indeed, in a recent paper, my collaborators and I used data from a peer photo-ranking method to examine associations between status and personality traits in a horticultural-forager community (Lukaszewski, Patton, Durkee, Zerbe, & Bowser, 2023). As powerful as such methods are, they do not beget causal inference unless alternative explanations can be ruled out logically, methodologically, or statistically.

PS do not discuss the possibility that the larger status-attractiveness association in men could be driven by sex differences in how status affects peer ratings of physical attractiveness (status ➔ attractiveness), rather than sex differences in how attractiveness affects status (attractiveness ➔ status). This could occur through multiple paths. For

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instance, perceptions or judgments of attractiveness could be biased upwards as a function of ratee status more for men than women — judgments or perceptions of women's attractiveness, in contrast, may be less influenced by ratee status. Indeed, cross-cultural research suggests that status is more important for men's mate value than women's (Buss, 1989); to the extent that attractiveness perceptions function as summaries of mate value (Sugiyama, 2005), they should be expected to capture a focal individuals' status. These speculative but plausible alternative causal paths could result in observing a stronger correlation between status and attractiveness among men than women in PS's data. Ultimately, a study design or modeling strategy developed specifically to rule out third variables and tease apart the causal effect of attractiveness on status is necessary to support PS's stated causal inference goals and causal interpretations.

Causal overinterpretation is a pervasive issue in the social sciences (for reviews, see Antonakis, Bendahan, Jacquart, & Lalive, 2010; Grosz, Rohrer, & Thoemmes, 2020). Although PS's causal language is a striking example of this, they do contribute valuable data that can enhance our *descriptive* understanding of Himba women's status, and status more generally. I hope this comment is received as an opportunity to clarify assumptions that underly causal claims or to qualify such claims in the spirit of fortifying rigorous causal inference standards across the evolutionary human behavioral sciences.

Declaration of generative AI and AI-assisted technologies in the writing process

During the preparation of this work the author(s) used ChatGPT version 3.5 in order to obtain quick suggestions about how to improve the clarity and effectiveness of author-generated text. After using this tool/service, the author(s) reviewed and edited the content as needed and take(s) full responsibility for the content of the publication.

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