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On the Causal Interpretation of Race

To the Editor:

VanderWeele and Robinson's article "On the causal interpretation of race in regressions adjusting for confounding and mediating variables"¹ is surprisingly uninformed regarding work on health inequities and injustice more broadly.

Consider the following statements, all appearing with nary a supporting citation:

- "The notion of an effect of race is ambiguous: the effects may vary depending on what is meant by race. It may include skin color and its perceptions by others, parental skin color, and its perceptions by others, cultural context, or genetic background – all considered separately or jointly."¹ (p. 474)
- "However, race is not something we can intervene on, and the associated counterfactual queries generally strike researchers as meaningless. The question of what would a black person's health outcome have been had they been white seems like a strange one to pose."¹ (p. 474)
- "Our discussion has focused on differences in outcomes across racial groups ... A similar approach might also be used with other nonmanipulable exposures such as sex."¹ (p. 480)

Really? On what scholarship are these assertions based? And who, by the way, is this "we" who decides what is "nonmanipulable" or feasible?—or designs or enacts interventions?

One would never know, from this article or its citations, that an enormous body of work in health and social sciences, biology, philosophy, and the humanities has already addressed the article's counterfactual confusions and has torn apart—conceptually, methodologically, and empirically—the article's unsubstantiated claim that "race" is an a priori innate biological (ie, genetic) property of individuals²—and also has rebutted its deeply erroneous approach to conceptualizing "sex" with zero mention of "gender" (a word entirely absent from the article and its commentaries; forget even thinking about transgender!).² Indeed, per Rawls, the question of whether whites would fare as badly as blacks, or men as women, if subjected to the same types of social injustice, has been repeatedly posed, since at least the early 1800s,² by many working, in Kaufman's concise causal terms, "to redraw the DAG, such that we would live in a society in which there is no longer an arrow going from race to SES at all."³(p. 487)

Perhaps it is a fitting irony that the empirical study published alongside this article and its commentaries and rejoinder focused on Jim Crow and health inequities.⁴ Generations of hard-fought action infused by democratic values have changed US race relations, race classifications, and racial/ethnic health inequities. "Non-manipulable"—really?

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The authors respond:

We would like to respond to the various points in Nancy Krieger's letter¹ as follows:

The statements we made² concerning ambiguity and modifiability are common positions in the causal inference literature that we cited on the topic of the effects of race. The causal inference literature was the primary literature with which our article was in dialog, with some interaction with the health disparities literature as well. We apologize for, and regret, what are certainly numerous omissions concerning other literatures. The topic is broad, encompassing numerous disciplines,

and our own contribution was specific and narrow, focusing on a smaller set of methodological questions, and connecting those to the formal literature on counterfactuals.

Contrary to Krieger's indication, our article does not depict race, or the effects of race, as "an a priori innate biological (ie, genetic) property of individuals." Our description of the "effects of race" included also the effects of cultural context, discrimination and, depending on what was controlled for, economic background. We understand Krieger's concern with a position that conceptualizes race as principally genetic, but our article simply did not do so.

Concerning the "non-manipulability of race," we agree with Krieger that racial inequalities and differential treatment of racial groups can (and should) be altered by social action; we also agree that the categories of race and perceptions of race can likewise be modified. The point we were making was that, with any fixed set of racial categories used by a researcher analyzing individual-level data in a limited time period and location, there is not in general an intervention on the individual (rather than on the categories) that moves a person from one racial category to another. Such an intervention on an individual is usually, although perhaps not always, inconceivable. An intervention that alters the racial categories themselves is of course conceivable, but, from a potential outcomes causal inference standpoint, this is more akin to altering the definition of the variable, rather than altering the value of the variable with the definition fixed. However, again, we agree with Krieger that racial categories, differential perceptions and treatment of racial groups, and associations between race and health outcomes are modifiable.

The comment we made about similar approaches being possible with sex was simply to indicate that

similar analyses and interpretations could be performed with other types of inequalities.

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Uncertainty of Statistical Heterogeneity in Meta-analyses

To the Editor:

Aune and colleagues¹ recently published a systematic review and meta-analysis of nonrandomized studies on the topic of physical activity and the risk of developing preeclampsia during pregnancy. The authors presented separate meta-analyses according to several measures (ie, high versus low activity, MET hours per week, and per hour of activity per day) and timing (ie, prepregnancy and during early pregnancy) of physical activity, to reduce clinical heterogeneity. Results were also stratified by study type (ie, cohort or case-control study) to address design heterogeneity. Statistical heterogeneity was assessed using Cochran's Q , in which the

P value was reported (but not the corresponding value of the χ^2 statistic), and the I^2 statistic, in which the value was reported (but not a 95% confidence interval [CI]).

In their meta-analyses, the authors overwhelmingly found I^2 values of 0% and P values exceeding 0.05, frequently interpreting these results as providing "no evidence" or "no indication" of statistical heterogeneity. However, it has been noted that such tests are underpowered,^{2,3} particularly when the number of studies in a given analysis is small,² as was the case in several of the meta-analyses in this article.¹ Reporting the degree of uncertainty associated with the I^2 value has been recommended for clarifying any inference concerning statistical heterogeneity in meta-analyses.³ The 95% CI for I^2 can easily be computed using the "heterogi" module in Stata, ideally as a reporting requirement for future authors; however, at the least, providing the value of Cochran's Q along with the number of studies would permit calculation by interested readers. In this article, neither was provided.

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