

## Innumeracy problem at School Psychology Review and NASP

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To reschly@uga.edu, taeckert@syr.edu, rcodding@umn.edu, kellic@umd.edu, tcurby@gmu.edu, edowdy@education.ucsb.edu, sajanuary@sc.edu, burnsmk@missouri.edu, gresham@lsu.edu, pianta@virginia.edu, ssheridan2@unl.edu, robh@uoregon.edu, kstoiber@uwm.edu, randyk@uoregon.edu, lkellyvance@gmail.com, misty4lay@gmail.com, lpaid@lgta.net, kellypsyc@aol.com, wency.price@whrsd.org **Copy** jessika.bottiani@virginia.edu, cpb8g@virginia.edu, annereg@gsoapp.rutgers.edu, epas@jhu.edu, kjd2m@virginia.edu, reinkew@missouri.edu, hermanke@missouri.edu, crcook@umn.edu, kentm@uoregon.edu, aefiat@umn.edu, pullman@uw.edu, klarson3@jhu.edu, norma.dayvines@jhu.edu, huangf@missouri.edu, yolanda.anyon@du.edu, dcornell@virginia.edu, jlc7d@virginia.edu, tk2e@virginia.edu, edward.fergus@temple.edu, kathleen.fraysier@uga.edu

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Dear Editor Reschly, Consulting Associate Editor Eckert, Associate Editors and Scientific Advisory Panel member School Psychology Review, and members of the NASP board:

This forwards a July 26, 2018 note to the authors and guest editors of the special issue of *School Psychology Rev* "Closing in on Discipline Disproportionality."

The forwarded note explained that, contrary to a near universal belief, generally reducing adverse public school dis outcomes tends to increase, not reduce, relative racial differences in rates of experiencing the outcomes. It is a poi commonly illustrate, as in several references mentioned in the forwarded note, with normally distributed test score showing that lowering a cutoff, while tending to reduce relative differences between pass rates of higher- and lowe groups, tends to increase relative differences between the groups' failure rates. This is something that all school psychologists ought to know but, as discussed below, almost none may in fact know.

The third last paragraph of the forwarded note also discusses that general reductions in discipline rates tend to be accompanied by reductions in absolute differences between rates.

The various references in the note discuss, among many other things: (a) the near universal failure of researchers demographic differences to recognize that it is even possible for a relative difference in a favorable outcome and th difference in the corresponding adverse outcome to change in opposite directions as the prevalence of an outcome changes, much less that National Center for Health Statistics has recognized that this tends to occur systematically such pattern is evident in myriad data sets; (b) the seemingly near universal failure, even among persons specializ testing outcomes, to understand that lowering cutoffs (or improving test performance) tends to increase relative demographic differences in rates of failure to reach the cutoffs; and (c) the ways absolute differences between out rates tend to be affected by the prevalence of an outcome and the infrequent recognition that the relative differenc happens to be examining and the absolute difference have changed in opposite directions. The infrequent recognit referenced in (c) has mainly occurred in health disparities research, though such recognition has done nothing to n such research sound. See reference 3 and 4 of the earlier note and reference 1 to this note.

In research regarding educational outcomes, notwithstanding the utility of test score data for illustrating the pattern which measures tend to be affected by the prevalence of an outcome, I have never seen a study that recognizes th even possible for a relative difference and absolute difference to change in opposite directions. And, in contrast to health disparities research, I have never seen research involving educational outcome that recognized that it is pos the relative difference being examine and the absolute to change in opposite directions or that this in fact happene particular case. See my Educational Disparities page [2] and its various subpages regarding the way researchers s demographic differences in proficiency or nonproficiency using relative differences in favorable outcomes, relative differences in adverse outcomes, or absolute differences between rates, without ever recognizing ways that gener improvements in education affect the measure they are employing or that other measures would support opposite conclusions.

(I have suggested that the recognition by Sean Reardon of Stanford and Andrew Ho of Harvard of the pattern by w absolute differences between pass rates tend to be affected by a test cutoff may indicate a recognition of the way t