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REPLY TO WENZEL AND KUBIAK:

Neuroticism is best defined by mean levels of negative emotion, not emotional variability

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Wenzel and Kubiak (1) reanalyze our data (2) and conclude that 1) there is overlap between the relative SD (RSD) (3) and mean of negative emotion and 2) after controlling for this overlap, the RSD weakly but significantly predicts neuroticism. We question both points and note that these findings leave our conclusions unchanged.

Overall, the mean and RSD of negative emotion are unrelated, but Wenzel and Kubiak (1) find significant between-study variance in this relationship. They also show that, in studies with a stronger RSD–mean association, the RSD is more strongly related to neuroticism (although $n = 11$ studies). Thus, they argue, we do not account for the RSD–mean overlap. This argument is a nonsequitur: While there is significant between-study variability in the RSD–mean relationship, the RSD–neuroticism relationship does not vary between studies ($\chi^2 = 2.02$, $P = 0.365$), so it is unclear what variance is left to explain.

Following this, the authors (1) control for the mean and find a small, but statistically significant, positive RSD–neuroticism relationship. However, this relationship is opposite to what would be expected given their first analyses: If mean and RSD are positively related, controlling for the mean should decrease (not increase) the relationship between the RSD and neuroticism.

We see three other challenges to the meaningfulness of this result. First, mean negative emotion is a suppressor: It is uncorrelated with RSD overall, and is thus improving prediction by suppressing variance in neuroticism irrelevant to RSD, rather than by shaping the RSD–neuroticism relationship. As with all suppressor effects, this should be interpreted with strong caution (4). Second, this analysis is not addressing any confound between the mean and RSD: Since they are (on average) uncorrelated at the between-person level, there is no confound to explain.

Third, and most importantly, in mixed models controlling for the mean, Wenzel and Kubiak (1) report that adding RSD increased variance explained in neuroticism by 2.1%. The method cited for calculating R^2 is best practice (5), but their code indicates that they used a simpler method that does not match the cited paper. We recalculated the reported metric ($R_t^{2(f)}$), using R-code provided in ref. 5, and found that the RSD explained only 0.91% additional variance in neuroticism. In addition, Wenzel and Kubiak made two nonstandard analytic choices that deviated from our initial analysis (controlling for positive emotion, transforming emotion). Excluding these nonstandard choices, RSD explains only 0.73% additional variance. This is a small effect by any standard: With 1,205 participants, many effects will be statistically significant without being practically meaningful.

To end, this analysis does not change our original conclusion: Overlap between the mean and variability of negative emotion creates the illusion of a robust variability–neuroticism association that is primarily driven by individual differences in mean levels. Wenzel and Kubiak's (1) reanalysis demonstrates a suppressor effect, and one that is substantially smaller than the effects of the uncorrected SD. Thus, we stand by our original arguments that 1) neuroticism is best characterized by elevated mean levels in negative emotion and 2) variability should not be investigated without reference to mean levels.

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Author contributions: E.K.K., S.C.M., and M.M. analyzed data; and E.K.K., S.C.M., P. Koval, B.B., and P. Kuppens wrote the paper.

The authors declare no competing interest.

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First published November 24, 2020.

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