Dear Editor Rima-Maria Rahal,

We appreciate the reviewer's constructive reviews on our manuscript #796. We have addressed the remaining comments of the Reviewers and revised the manuscript accordingly. Revised text in the manuscript is highlighted in blue.

Sincerely,

Valentin Foucher, Alina Krug, and Marian Sauter

Editor: Rima-Maria Rahal

Both reviewers are now mostly satisfyed with your revision, and only minor updates have been requested. Please address the issues in a revised version of your manuscript.

Response: Thanks for this feedback, the manuscript has been revised to address the last issues pinpointed by the reviewers.

_____

_____

Reviewer 1: Lisa Spitzer

I would like to express my appreciation to the authors, as I feel that all the points I have raised have been adequately addressed (especially sample size, description of analysis plans, description of open science practices). The only point that the authors should perhaps look at again is in the Study Design Table - here the *interpretation given different outcomes* is described with "Determine if neon fixation and saccade detection can be comparable to Eyelink 1000." Since frequentist methods are used, it is not possible to test for similarity, but only for difference. I would recommend clarifying this in the text. Otherwise, I find the manuscript to be clear, well structured and now sufficiently transparent. I am looking forward to the results of this study and recommend awarding an IPA.

Response: Thanks for this positive response. We adapted the Study Design Table accordingly and believe the new version is more precise.

_____

_____

Reviewer 2: Benedikt Ehinger

Thank you for the updated Manuscript. I only have very few minor things below, and I trust the authors & editor to address them without me needing to see the manuscript again.

- L1 Abstract: "testtestest" - test was successful ;)

Response: We are embarrassed and fixed it :)

_____

- Figure 1: I still find it unintuitive that the icons are different to small grid. Also, in our study we did not use a fixation cross, but this (supposedly) microsaccade reducing fixation   **symbol**

Response: We agree and adapted the Figure accordingly, now depicting the respective fixation cross separately (Figure 1. A) and in the trial sequence (Figure 1. B). We adapted the figure description accordingly and added a more detailed description of the fixation cross in the respective Methods section.

"(A) Fixation cross used in the large and small grid tasks, blink task, and the head yaw task. (B) This figure illustrates the task sequence within each experimental block."

"For the large and small grid task, blink task, head yaw task, and head roll task a fixation cross was used that has been shown to reduce miniature eye movements (Thaler, 2013). It was composed of a 1.5 x 1.5° black disc, superimposed by a white cross (1.5 x 1.5°, linewidth 0.2°) and a smaller black disc (0.2 x 0.2°). The fixation cross is depicted in Figure 1."

——————

- For the PL manual gaze correction, I think you should specify in the paper how it works (pupil labs docs will be vastly different in 5 years time). Is there no other way than using your finger on a mobile phone to adjust the circle? E.g. a QR marker or something that pupil lab can easily detect (I assume the answer is no - but that is a bit ridiculous by pupil   labs;))?

Response: Thanks for this comment, we added some precisions about how to perform this gaze offset correction in the Eye-Tracker Calibration section. However, communication with Pupil Labs revealed only two ways to perform it: either by performing the correction from the Companion App before the recording or post-hoc in the Cloud after the recording. We finally decided to choose the latter option to benefit from a slightly higher precision since the drag & drop of the gaze circle on the target is performed with a mouse on a computer screen and not a finger on a phone screen.

"This gaze offset correction is a linear adjustment applied uniformly across the field of view to the gaze estimation. Thus, it doesn't vary at different eccentricities and will correct for general offsets across the whole visual field. This offset correction was achieved on Pupil Cloud according to the procedure described by Pupil Labs, which consists in fixating a single target at the center of the screen. If the gaze circle from the raw Neon's gaze estimate does not fit the target location, the gaze circle is manually dragged onto the center of the target. The fixation point used for this offset correction was the last central fixation point from the validation procedure."

——————

- I would recommend putting in the filter settings for remodnav - or at least mention how   you   will   find   out   what   good   filter   settings   are.

Response: Thanks for this feedback. We precised this in the manuscript in the Saccade Classification section.

"The filter settings will be optimized by systematically adjusting parameters to minimize false positives in saccade detection and improve the accuracy of fixation identification, starting from REMoDNaV default values."

_____

- Does PL return regularly sampled data? If no, will you generally resample them?

Response: From the manufacturer's description and confirmed by a dataset we have from another experiment, the Neon seems to regularly sample the data and does not need to be resampled.

_____

- L483 - there is a / missing in between nested subject / block in the LMM formula "| subject block)"

Response: Fixed.