Comparing methods of analysis in pupillometry: application to the assessment of listening effort in hearing-impaired patients.

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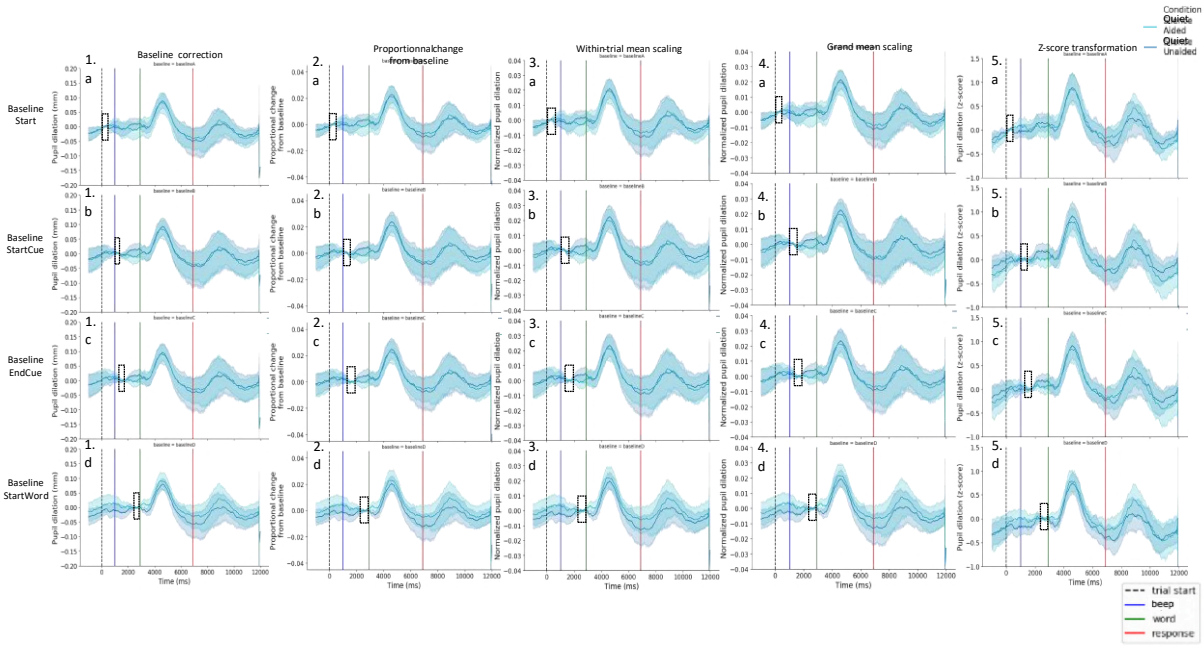
SUPPLEMENTARY DATA

Figure S1

Group pupil dilation in the Quiet condition according to different normalization methods and baseline periods: correct trials only and 500ms baseline periods



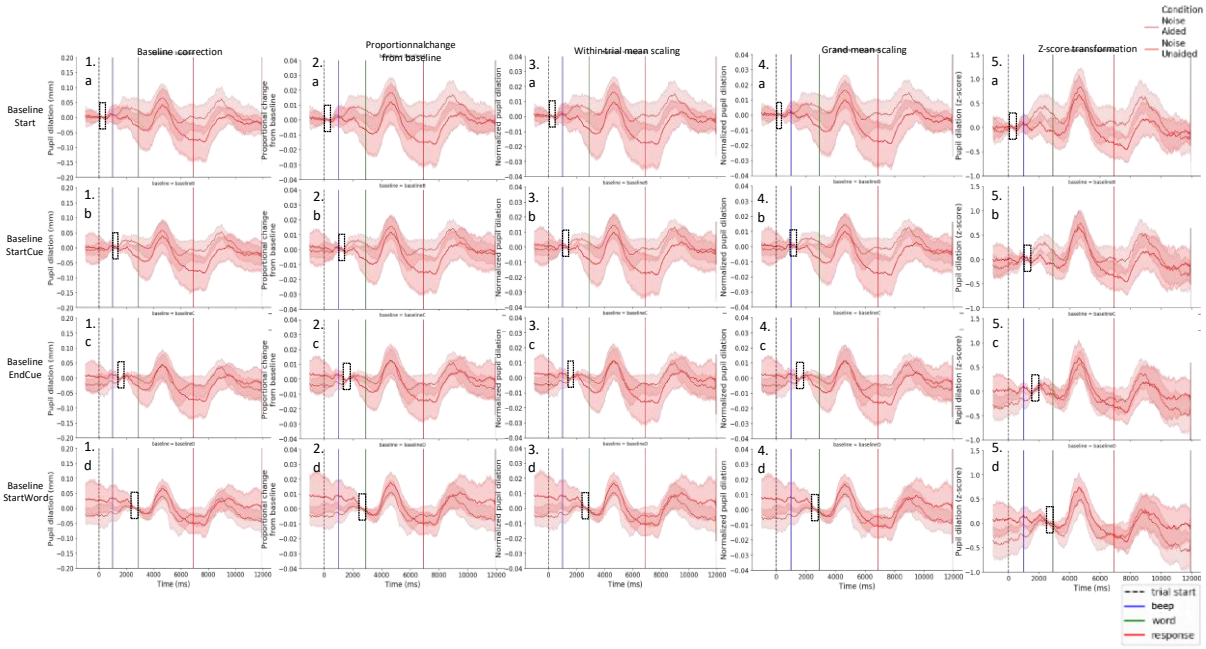
Pupil traces obtained by averaging the correctly answered trials of the 10 last trials of each block (the 2 first trials are excluded) in the Quiet conditions (N=20). Light blue traces were obtained in the Quiet Aided condition, dark blue traces were obtained in the Quiet Unaided condition. Traces were computed using several normalization methods (1: baseline correction only, 2: proportional change from baseline, 3: within-trial mean scaling, 4: grand mean scaling, 5: z-score transformation) and several baseline periods (dashed rectangles) (a: *Start*: from start (dashed black line) to the auditory cue before word presentation (blue line), b: *StartCue*: starting at the beginning of the auditory cue before word presentation (blue line), c: *EndCue*: starting at the end of the auditory cue before word presentation, d: *StartWord*: ending at the beginning of the word (green line)) with a 500ms baseline duration. Shaded areas represent 95% confidence intervals.

according to different normalization methods and baseline

Figure S2

Group pupil dilation in the Noise condition periods:

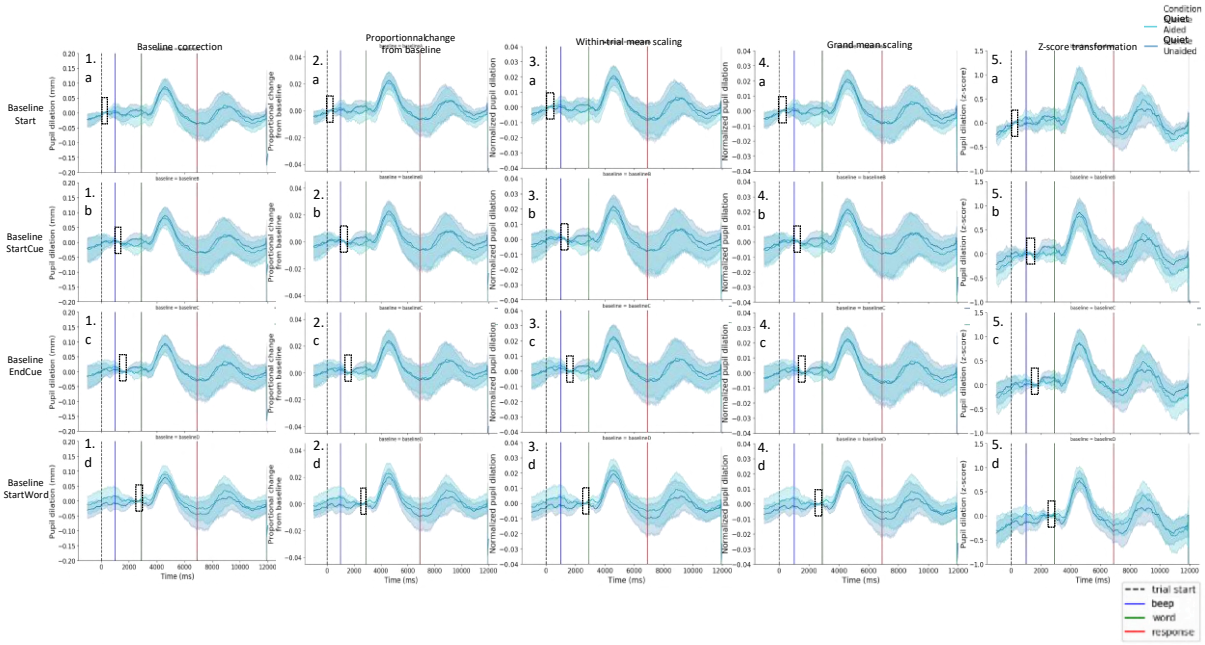
correct trials only and 500ms baseline periods



Pupil traces obtained by averaging the correctly answered trials of the 10 last trials of each block (the 2 first trials are excluded) in the Noise conditions (N=20). Light red traces were obtained in the Noise Aided condition, dark red traces were obtained in the Noise Unaided condition. Traces were computed using several normalization methods (1: baseline correction only, 2: proportional change from baseline, 3: within-trial mean scaling, 4: grand mean scaling, 5: z-score transformation) and several baseline periods (dashed rectangles) (a: *Start*: from start (dashed black line) to the auditory cue before word presentation (blue line), b: *StartCue*: starting at the beginning of the auditory cue before word presentation (blue line), c: *EndCue*: starting at the end of the auditory cue before word presentation, d: *StartWord*: ending at the beginning of the word (green line)) with a 500ms baseline duration. Shaded areas represent 95% confidence intervals.

Figure S3

Group pupil dilation in the Quiet condition according to different normalization methods and baseline periods: all trials and 500ms baseline periods



Pupil traces obtained by averaging the last 10 trials of each block (the 2 first trials are excluded) in the Quiet conditions (N=20). Light blue traces were obtained in the Quiet Aided condition, dark blue traces were obtained in the Quiet Unaided condition. Traces were computed using several normalization methods (1: baseline correction only, 2: proportional change from baseline, 3: withintrial mean scaling, 4: grand mean scaling, 5: z-score transformation) and several baseline periods

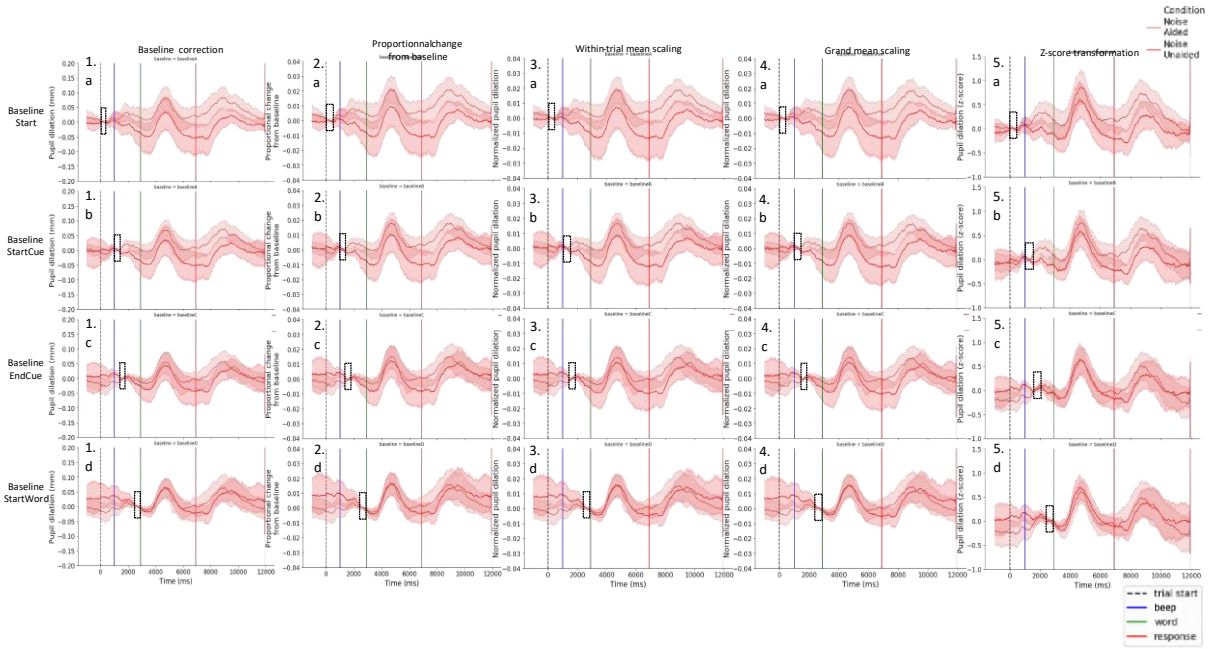
(dashed rectangles) (a: *Start*: from start (dashed black line) to the auditory cue before word presentation (blue line), b: *StartCue*: starting at the beginning of the auditory cue before word presentation (blue line), c: *EndCue*: starting at the end of the auditory cue before word presentation, d: *StartWord*: ending at the beginning of the word (green line)) with a 500ms baseline duration. Shaded areas represent 95% confidence intervals.

according to different normalization methods and baseline

Figure S4

Group pupil dilation in the Noise condition

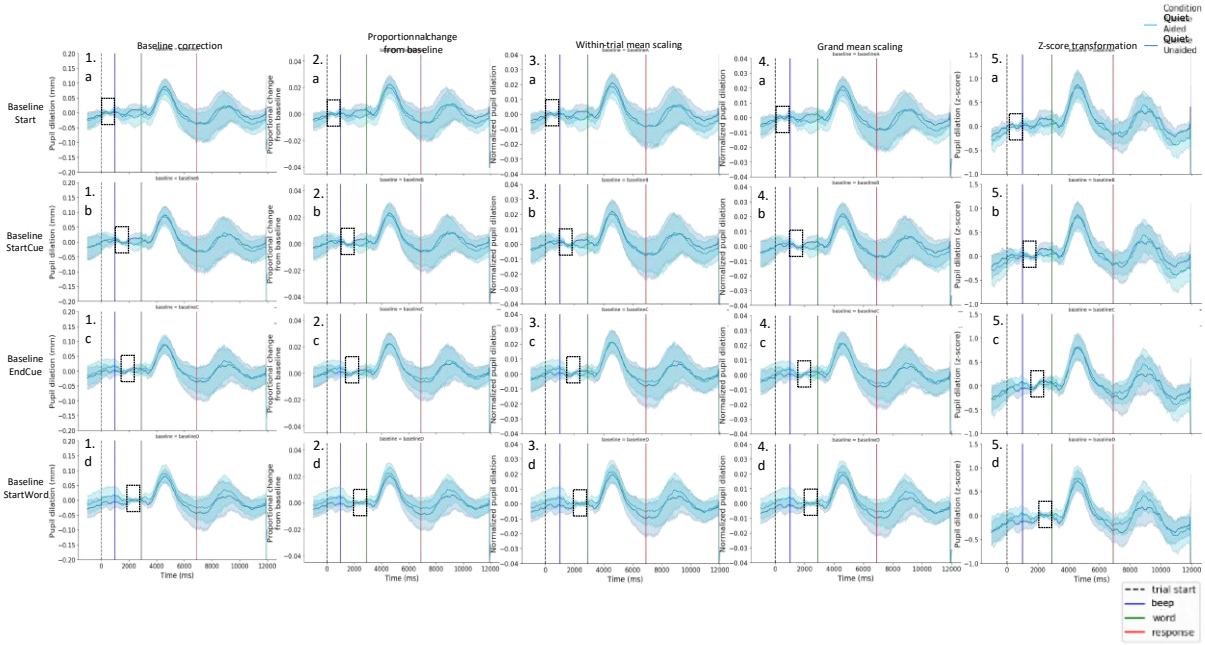
periods: all trials and 500ms baseline periods



Pupil traces obtained by averaging the last 10 trials of each block (the 2 first trials are excluded) in the Noise conditions (N=20). Light red traces were obtained in the Noise Aided condition, dark red traces were obtained in the Noise Unaided condition. Traces were computed using several normalization methods (1: baseline correction only, 2: proportional change from baseline, 3: within-trial mean scaling, 4: grand mean scaling, 5: z-score transformation) and several baseline periods (dashed rectangles) (a: *Start*: from start (dashed black line) to the auditory cue before word presentation (blue line), b: *StartCue*: starting at the beginning of the auditory cue before word presentation (blue line), c: *EndCue*: starting at the end of the auditory cue before word presentation, d: *StartWord*: ending at the beginning of the word (green line)) with a 500ms baseline duration. Shaded areas represent 95% confidence intervals.

Figure S5

Group pupil dilation in the Quiet condition according to different normalization methods and baseline periods: all trials and 1000ms baseline periods



Pupil traces obtained by averaging the last 10 trials of each block (the 2 first trials are excluded) in the Quiet conditions (N=20). Light blue traces were obtained in the Quiet Aided condition, dark blue traces were obtained in the Quiet Unaided condition. Traces were computed using several normalization methods (1: baseline correction only, 2: proportional change from baseline, 3: withintrial mean scaling, 4: grand mean scaling, 5: z-score transformation) and several baseline periods

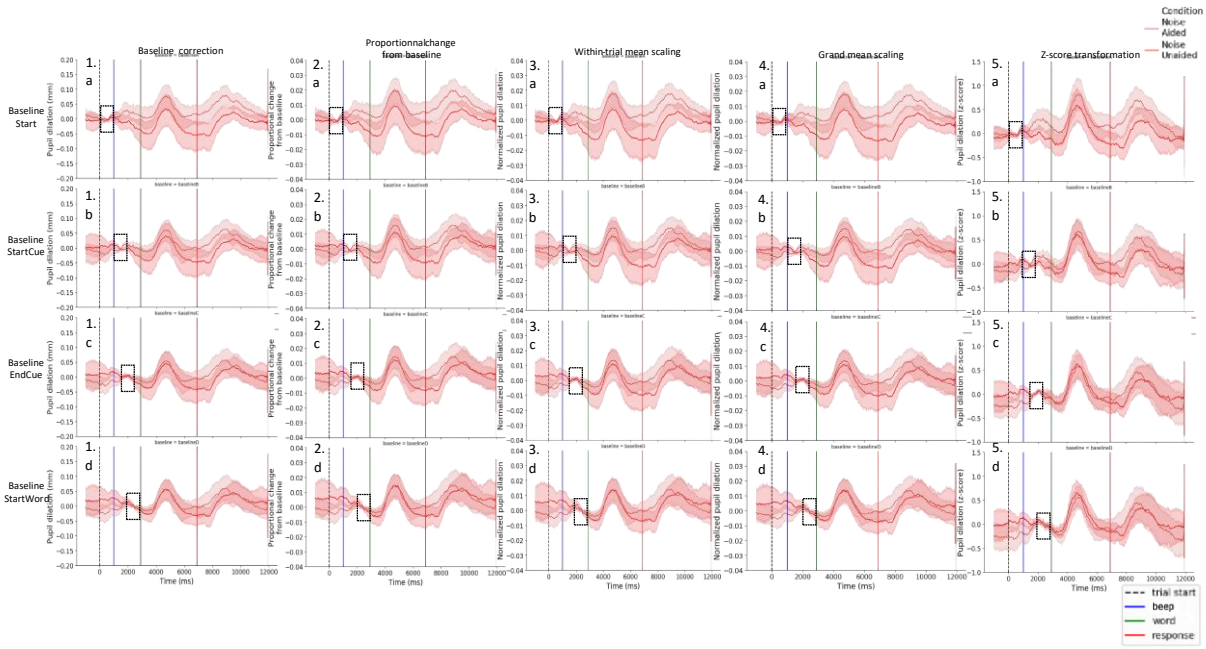
(dashed rectangles) (a: *Start*: from start (dashed black line) to the auditory cue before word presentation (blue line), b: *StartCue*: starting at the beginning of the auditory cue before word presentation (blue line), c: *EndCue*: starting at the end of the auditory cue before word presentation, d: *StartWord*: ending at the beginning of the word (green line)) with a 1000ms baseline duration. Shaded areas represent 95% confidence intervals.

according to different normalization methods and baseline

Figure S6

Group pupil dilation in the Noise condition

periods: all trials and 1000ms baseline periods



Pupil traces obtained by averaging the last 10 trials of each block (the 2 first trials are excluded) in the Noise conditions (N=20). Light red traces were obtained in the Noise Aided condition, dark red traces were obtained in the Noise Unaided condition. Traces were computed using several normalization methods (1: baseline correction only, 2: proportional change from baseline, 3: within-trial mean scaling, 4: grand mean scaling, 5: z-score transformation) and several baseline periods (dashed rectangles) (a: *Start*: from start (dashed black line) to the auditory cue before word presentation (blue line), b: *StartCue*: starting at the beginning of the auditory cue before word presentation (blue line), c: *EndCue*: starting at the end of the auditory cue before word presentation, d: *StartWord*: ending at the beginning of the word (green line)) with a 1000ms baseline duration. Shaded areas represent 95% confidence intervals.