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The Eye-Tracked Brief Evaluation of Receptive Aphasia: a new tool to assess residual language comprehension abilities in post-comatose patients

Aubinet C.,^{1,2} Mazué L.,³ Mulero M.,³ Arrigo J.,⁴ Schwab D.,⁴ Majerus S.² & Gosseries O.¹

¹ GIGA Consciousness, Coma Science Group, University and University Hospital of Liège, Belgium

² Psychology and Neuroscience of Cognition Research Unit, Université de Liège, Belgium

³ Centre de Formation Universitaire en Orthophonie, Université Toulouse III – Paul Sabatier, France

⁴ Laboratoire d'Informatique de Grenoble, Université Grenoble Alpes, France

Introduction

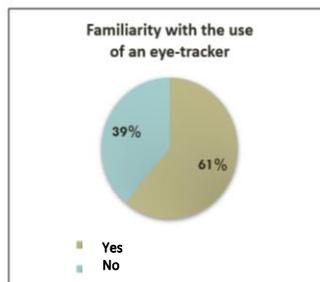
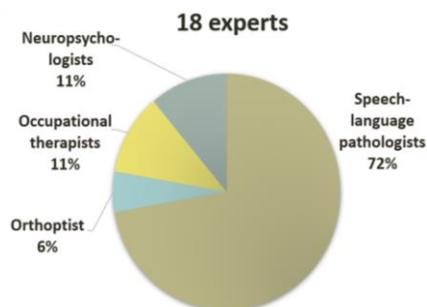
The assessment of verbal comprehension after a coma in patients with severe brain injury seems essential to improve their diagnosis and care. Recently, a specific tool has been developed, the *Brief Evaluation of Receptive Aphasia* (BERA), based on visual fixation responses.* Yet judging these fixations by simple observation is often complex and open to interpretation. The use of an eye-tracking setting to accurately and objectively examine eye movements seems the most interesting to improve the sensitivity and reliability of the BERA tool.

Methods



Based on the Delphi method, we investigated the relevance of an eye-tracker in the assessment of verbal comprehension in post-comatose patients, using a computerized version of the BERA assessment (GazePlay-Eval).

Results



Feasibility criteria

Content criteria

Clarity

Relevance

Utility

Form criteria

Temporal accessibility

Ease of handling

Adaptability

Restriction of distractors

Objectification of visual fixations

Human factor

Repeatability

- 100% highlight the need for new tools to specifically assess language comprehension in this population
- 100% consider that the use of an eye-tracker is appropriate in this context
- Both assessment duration and visual distractors should be reduced

Conclusion

The 'eye-tracked BERA' is a promising tool to examine the language profile of post-comatose patients.

Future studies are needed to test and validate the proposed modifications in this challenging population.

Aubinet C, et al. (2021). The Brief Evaluation of Receptive Aphasia test for the detection of language impairment in severely brain-injured patients. *Brain Injury*, 35(6), 705-717.

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