## Overview

Researchers at Ohio University have developed a method for assessing language and related cognitive function through analysis of eye movements. A majority of stroke and traumatic brain injury victims have motoric and/or perceptual deficits that impair their ability to comprehend and respond to basic stimuli, which has consequences in how they are managed as patients. Linguistic comprehension and other linguistic and cognitive processing deficits in such patients are often overestimated by experimental data, test results, and clinical judgment. In some cases, caregivers and significant others may overestimate how much an individual actually understands. The invention provides a means for caregivers to accurately gain information about intact comprehension and cognitive ability of inexpressive patients, and thereby make well-informed patient management decisions.

The technology works by presenting a patient with written or auditory stimuli, and tracking the patient's eye movements in response to these stimuli with recording devices. The data generated by the recording devices is converted into a number of measurements and are analyzed through custom software to indicate valid responses, indicating whether the patients have understood the written or auditory verbal stimuli.

Commercial Applications

- Medical industry, specifically in high-trauma situations
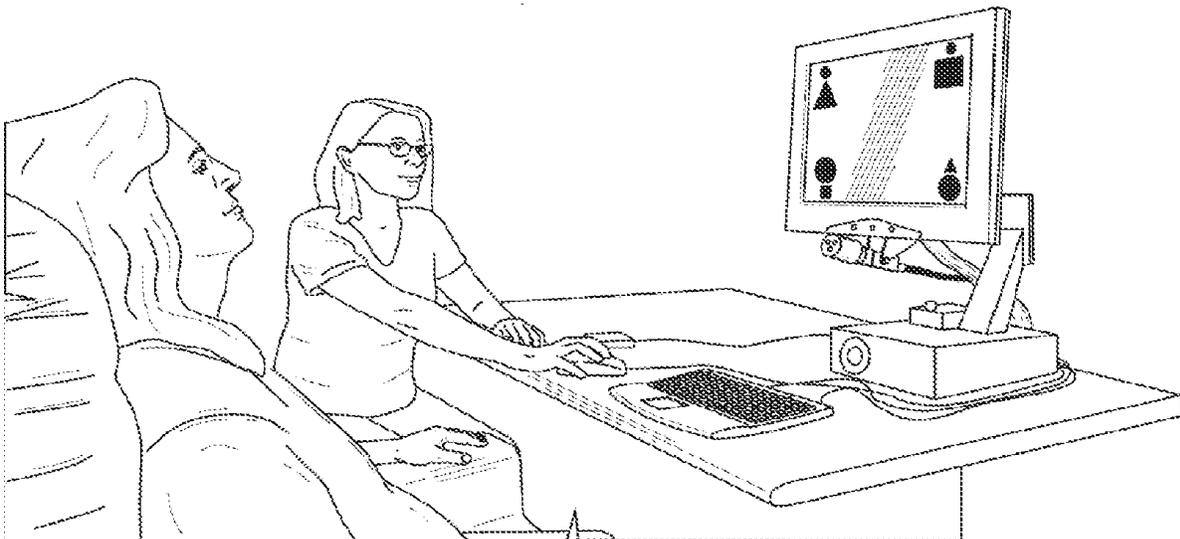
Benefits

- Allows more accurate differential diagnosis of an inexpressive patient's comprehension level than the current best practices
- Allows for a finer resolution of comprehension level besides binary "correct" or "incorrect" response
- Establishing the comprehension level of patients who are unable to express themselves using conventional means
- Translate the wishes and intentions of inexpressive patients to their caregivers who are otherwise unable to accurately assess the desires of the patient

Inventors

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