The development of a learning phase of basic actions required during interactions in a new virtual environment :

Preliminary results

Camara Lopez, Maïté [(1)], Degiorgio, Catherine [(2)], and Cleeremans, Axel [(1)].

[(1)] *CO3 - Consciousness, Cognition & Computation Group at CRCN - Center for Research in Cognition and Neurosciences and UNI - ULB Neurosciences Institute, Université Libre de Bruxelles (ULB), Brussels, Belgium.*

[(2)] *Hôpital Erasme - Université Libre de Bruxelles, Brussels, Belgium.*

mcamaral@ulb.ac.be

Over the last few years, a growing body of research has used virtual reality to assess cognitive function. However, there is a lack of information in the literature about how brain damaged patients become familiar with the navigation tool. In this context, our aim was to develop a standardized tutorial to learn the basic actions required for interactions in our new virtual house, Realistic Observations in Game and Experience in Rehabilitation (R.O.G.E.R). Brain damaged patients with cognitive impairment were selected for this study. Patients presented mild cognitive deficits due to various neurological conditions. Seven healthy adults matched with patients' sex, age and educational level were also included. The scenario is composed by 6 subtasks conducted by a scientist character in which participant was required to perform actions in order to familiarize them with the Nunchuk. Those preliminary results suggest that patients with cognitive impairments have a few more difficulties to realise the 6 movements during the encoding session but thanks to this familiarization task based on the principles of errorless learning the 2 groups correctly learned the basic actions required for interactions in the virtual environment. Thus, poor performance in a future cognitive task cannot be attributed to poor learning to use the nunchuk. These reports cannot be assured in a learning session based on a subjective feeling of confidence with the device. These findings highlight the beneficial effect of this familiarization task for future cognitive evaluation in the same virtual environment.

BIOGRAPHY

Maïté Camara Lopez is a phd student supported by a Greentic grant. She works on a novel neuropsychological assessment tool for person with cognitive disorders using virtual reality (Realistic Observations in Game and Experience in Rehabilitation, R.O.G.E.R. project). The purpose of this thesis is to assess the relevance of a more integrated assessment of cognitive functions in virtual reality. Indeed, by engaging the patient in environmental activities close to the reality, it will be able to better tackle the problems patients undergo in their daily life. This project will focus on prospective memory and on the influence of divided attention on the latter.

AUTHOR DETAILS

Full name: Camara Lopez Maïté
Contact number: 0032 499 19 77 01

Twitter account: /
Linked In account: /

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