Introduction Aphasia is the main cause of communication disorders following stroke. The individual prognosis of aphasia recovery remind difficult to establish in the acute phase. The aim of this study was to investigate whether the motor evoked potentials (MEP) of the hand and the orbicularis oris in the acute phase of stroke could predict aphasia recovery.

Materials and methods This study is ongoing at the University Hospital of Bordeaux. All consecutive patients with aphasia, first left hemispheric stroke confirmed by imaging, right-handed, non-demented, have been proposed for inclusion. MEPs were collected after stimulation of M1 the abductor pollicis and the orbicularis oris, right and left. The assessment of language performed in the acute phase was composed of: Language Screening Test (LAST) and the aphasia severity rating scale (ASRS) of the Boston Diagnostic Aphasia Examination (BDAE). Three and six months later, the language assessment was composed by: LAST, ASRS and BDAE. Good recovery from aphasia was defined as a score of ASRS 4 or 5. The association between the presence of a MEP after stimulation and good recovery was studied by Fischer exact tests.

Results In our interim analysis, 46 patients were followed at 3 months, and 23 at 6 months. The presence of MEP of the right hand (left cortical stimulation) was significantly associated with good recovery 3 months (P = 0.003) and 6 months (P = 0.003) after a stroke. The presence of MEP of the right orbicularis oris (left cortical stimulation) was significantly associated with good recovery 3 months (P = 0.003) and 6 months (P = 0.011).

Conclusion MEP of hand and lips predict recovery from aphasia. This results suggest the importance of production systems in the recovery of language, suggesting a new approach compared semantic core highlighted in the old classic models such as Lichtheim.

Keywords Motor-evoked potential; TMS; Aphasia; Prognosis; Stroke

Disclosure of interest The authors have not supplied their declaration of conflict of interest.

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Anatomical predictors of recovery from visual neglect after prism adaptation therapy

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Aim Prism adaptation (PA) is a non-invasive and convenient technique to rehabilitate visual neglect, but for unknown reasons it is not effective in all patients. Chronic persistent neglect is associated with inter-hemispheric white matter disconnection

References

Further reading

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The behavioral and electrophysiological effects of posterior parietal cortex damage in spatial audio-visual conflict

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Introduction While conflict between instructions and distractors makes normally reactions slower, right inferior parietal lobule (IPL) damage associated with left spatial neglect leads, in a visuomotor task, to the paradoxical facilitation of rightwards movements in the presence of conflicting leftward response plans (Coulthard et al.,...
Results
Paradoxically, for right visual target with left auditory distractor, patients had a smaller reaction time “cost” than the control group. For healthy controls, two frontocentral ERPs negative components, N2 and N270, were elicited in all conflict conditions compared to congruent conditions. Whereas the amplitude of N2 and N270 was not different between the two groups for left targets, these components were not generated by the presentation of a right visual or auditory target with a left distractor in patients.

Discussion
N2 and N270 might be elicited by the detection of two incongruent response plans by the prefrontal cortex. Their suppression for left targets in patients supports the hypothesis that the right IPL might be a crucial site for automatic activation of competing motor plans generated by cross-modal conflicting stimuli. In patients, the behavioral facilitation for right visual targets only may be due to additional effect of visual dominance over audition in spatial tasks.

Keywords
Cross-modal conflict; Inferior parietal lobule; Spatial neglect

Disclosure of interest
The authors have not supplied their declaration of conflict of interest.

References

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Physical attractiveness elicits more stable interpersonal coordination
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Introduction
Nowadays, high-technology (utilization of avatars or robots) has been becoming widely used in medical rehabilitation programs. The biggest advantage of the high-tech agents is to help designing individualized rehabilitation plans and saving caregivers’ time. Since previous research in human-human interaction showed that the way individuals interact with others is influenced by the physical attractiveness of the other people (i.e. [1]), the present study aims to investigate whether interpersonal coordination is influenced by the physical attractiveness of virtual agents.

Methods
34 healthy participants coordinated with a physically attractive virtual agent and a less attractive virtual agent on a Wacom tablet. Agents were shown in a static (picture) or in a dynamic (video) form. Participants were instructed to perform in-phase or anti-phase coordination with the agents at the 100 or 150% of their own preferred frequency. At the same time, a reaction time task (on the agent’s forehead) was answered simultaneously to attract participants’ attention to the physical attractiveness of the agent.

Results
Results showed that when coordinating at the preferred frequency, participants showed the most stable interpersonal coordination with the moving attractive agent as compared to other static or moving agents.

Discussion
Our results suggest that it is critical to take into account the physical attractiveness of the agents when using them