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The neural bases of the Machiavellians' decision making

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Machiavellians are regarded as skilled manipulators who use flexible behavioral strategies for misleading others. Although previous research has revealed a number of social and cognitive components of the Machiavellians' decision making processes, less attention has been given to the neural correlates of manipulative tactics in various interpersonal relationships. In the present study, we used an fMRI technique to examine individuals as they played the Trust game in fair and unfair situations. Our results revealed that the social environment involving opportunities for exploiting others may be more demanding for Machiavellians who showed elevated brain activities in the fair condition (where the partner made a cooperative initiation) but not in the unfair condition, whereas non-Machiavellians showed an opposite trend. This result coincides with the Machiavellian Intelligence hypothesis stating that manipulative cognitive equipment might be an important selectional force in the development of the human mind. Regarding the specific activated brain areas in the fair condition, the high Machs' anterior dorsolateral prefrontal cortex (DLPFC) was responding, which is likely to be involved in the inhibition of the prepotent social-emotional response to the partner's cooperative initiative. Furthermore, we found increased activity in the high Mach subjects' inferior frontal gyrus (IFI), compared to low-Machs, that plays a crucial role in the evaluation of the signals associated with the others' social behavior, especially when the player faces a cooperative partner. Alternatively, although Machiavellians are regarded as poor mind readers, inferior frontal gyrus may be effective in anticipating their partner's subsequent decisions in the social dilemma situation.

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Motor recovery of the severely impaired paretic upper limb after mirror therapy in sub-acute stroke- A randomized controlled trial

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This study investigated on the effectiveness of high-dose-mirror-therapy (HDMT) on the motor recovery of severely impaired paretic upper limb (UL) in patients during sub-acute stroke. It was a prospective assessor-blind randomized-controlled-trial. Patients admitted for first supratentorial stroke for less than a month were included if they aged > 35, presented with severe to moderate UL impairment and able to follow instructions. The exclusion criteria were visual impairment, cognitive impairment, aphasia, visual neglect, and history of impaired UL function. Subjects were randomized to HDMT or control (CT) group. In addition to conventional rehabilitation treatment, HDMT group received 2 sessions of 30 minutes MT daily, 5 days a week for 4 weeks. During MT, subjects performed a standardized bilateral ULs exercise (BULE) while watching the reflective image of the non-paretic UL from a mirror placed between the ULs. The CT practiced the same BULE without mirror. The outcomes were Fugl-Meyer Assessment Upper Extremity (FMA-UE) and Wolf Motor Functional Test (WMFT) performed before and after the intervention. Within- and between group differences were analyzed by SPSS version 17 with level of significance at 0.05. Thirty-four subjects (HDMT=15, CT=19) completed the study. There was no difference between HDMT and CT in the demographic characteristics and baseline outcomes. Both HDMT and CT showed within-groups improvement in FMA-UE and WMFT after program but no between-groups difference showed. HDMT was not superior in promoting motor recovery of the severely impaired paretic UL of patients during sub-acute stroke when compared to CT involving similar intensity of BULE.

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