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EFFECTS OF SUBCONSCIOUS-, NONLOCAL-, AND RETROACTIVE- INFORMATION ON PARTICIPANTS' CHOICE/DECISION AND NEURAL ACTIVITIES

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Background: Humans live in a world full of information. Besides information received in *subconscious* level, emerging evidences suggested that the neurophysiological and behavioral patterns can also be affected by information acquired in a *nonlocal* way or in a *retroactive* way, representing as *presentiment/precognition* that belongs to *PSI* abilities. However, it is still lack study to investigate these impacts in an “all inclusive” approach. In addition, previous researches indicated that the degree of participators’ *belief* in *PSI* phenomena is positively correlated with their performance in a *PSI* test. However, not all of *unselected* participators possess a strong *belief* in *PSI* including *precognition*. Here, we plan to develop a psychological method (see below) that is able to *let* participators *fully believe* in the existence of the imperceptible information and be open to its influence.

Aims: We aim to respectively investigate the effects of *subconscious-*, *nonlocal-*, and *retroactive-*information on participators’ *choice/decision* and *neural* activities (EEG signals) from both *spatial* and *temporal* aspects. By using a *pattern classification method*, we will find out the most important *cortical regions* that involve in processing three kinds of imperceptible information.

Methods and Result Analysis: By using a psychological technique named “*continuous flash suppression (CFS)*”, we make pleasant and unpleasant pictures *receivable but not perceivable*, acting as stimuli of *subconscious-*information. We let participators *convince* the existence of the subconscious stimuli and, *without* their knowledge, add two more conditions that involve the postulated *nonlocal-*information and *retroactive-*information respectively. We design two different blocks. In one block, participators are asked to try the best to make correct choices/decisions by “*following*” the instruction of the *subconscious-*information (and the other *two*). In the other block, the choice/decision is made by the *program* instead of participators. The behavioral performance and EEG will be analyzed to find out *whether and how* these three kinds of imperceptible information affect the choices/decision, and the most important *scalp-sites* and *time-bins* that involved in the “*predictive anticipatory activities*”. Next, we

manipulate the level of activity of specific brain regions by applying *transcranial direct current stimulation (TDCS)* to find out the relationship between *brain activity level* and effectiveness of influence of *subconscious-, nonlocal-* and *retroactive-*information.

Keywords: Subconscious-, nonlocal-, and retroactive-information; Presentiment/precognition; Continuous flash suppression; Classification algorithm; Transcranial direct current stimulation (tDCS)

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