On the structure of motor programming: an additive factors approach

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Abstract

There is wide consensus concerning the existence of a central motor programming stage wherein movement elements are assembled prior to movement execution. The present study involved a determination of which of two types of interaction were involved in the organization of motor parameters during motor programming. One possibility involves a unitary stage with interactions between different kinds of parameters. In the other possibility each parameter is set independently of the others. To distinguish between the two possibilities, participants performed choice reaction time tasks in three experiments. In these experiments the subjects responded to one of two kanji characters (logographic Chinese characters with the meaning of left and right) by tapping their left or right fingers, respectively, with different movement duration, hand placement, or sequence complexity. All factors yielded main effects of these parameters on reaction time (RT) but no interactions were seen. These findings support the assumption that independent stages (subprocesses) exist during motor programming.

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