

## عنوان مقاله:

History Dependence of Freely Chosen Index Finger Tapping Rhythmicity

## محل انتشار:

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## خلاصه مقاله:

Highlights: Voluntary, rhythmic, stereotyped, automated motor activities are basic to humans Participants did initial submaximal tapping at low and high target tapping rates Subsequently, they tapped at a freely chosen rate The freely chosen rate was relatively low following the initial low tapping rate The freely chosen tapping rate was found to be history dependent Objective: To test the following hypothesis. Initial submaximal tapping at preset relatively low and high target tapping rates causes a subsequent freely chosen tapping rate to be relatively low and high, respectively, as compared with a reference freely chosen tapping rate. Methods: Participants performed three 3-min bouts of submaximal index finger tapping on separate days. In one bout (C, considered reference), the rate was freely chosen, throughout. In another bout (A), initial tapping was performed at a relatively low target rate and followed by freely chosen tapping. In yet another bout (B), initial tapping was performed at a relatively high target rate, followed by freely chosen tapping. Results: At the end of bout A, the rate was  $14.6 \pm 23.7\%$  lower than the reference value during bout C ( $p = 0.023$ ). At the end of bout B, the rate was similar to the rate during bout C ( $p = 0.804$ ). Conclusions: Initial tapping at a preset relatively low target rate caused a subsequent freely chosen rate to be lower than a reference freely chosen rate. The observation was denoted a phenomenon of motor behavioural history dependence. Initial tapping at a preset relatively high target rate did not elicit history dependence

## کلمات کلیدی:

Motor Behavior, Motor Control, Plasticity, Preferred Tapping Frequency, Rhythmic Movement

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