

UC Merced

Proceedings of the Annual Meeting of the Cognitive Science Society

Title

Motor Chunking During Sequence Learning in Grid-Navigation Tasks

Permalink

<https://escholarship.org/uc/item/5zn5g4r7>

Journal

Proceedings of the Annual Meeting of the Cognitive Science Society, 42(0)

Authors

Bera, Krishn

Shukla, Anuj

Bapi, Raju

Publication Date

2020

Peer reviewed

Motor Chunking During Sequence Learning in Grid-Navigation Tasks

Krishn Bera

IIIT-Hyderabad, Hyderabad, Telangana, India

Anuj Shukla

International Institute of Information Technology, Hyderabad, Telangana, India

Raju Bapi

IIIT Hyderabad, Hyderabad, Telangana, India

Abstract

Several canonical experimental paradigms (serial reaction task, mxn task, etc.) have been proposed to study the typical behavioural phenomena in a sequential motor key-press task. The repeated execution of visuomotor sequences in such paradigms lead to overall performance improvement such that the inter-response intervals in between certain sub-sequences decreases as compared to that across other sub-sequences. This efficient and hierarchical cluster organisation is called *motor chunking*. We provide empirical evidence for motor chunking in grid-navigation sequencing tasks. The participants performed Grid-Sailing Task (GST) [Fermin et. al., 2010] that required navigating a 10x10 grid from start to goal position while using a particular key-mapping between the 3 cursor movement directions and the 3 keyboard buttons. This study confirms the emergence of subject-specific, unique temporal patterns related to chunking after substantial practice.