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| **Task** | **MOTOR** v20211216 |
| **Duration (s)** | 428 |
| **Volume #** | 428 (12 T1 stabilization, 416 usable, all 428 images saved) |
| **TR (s)** | 1.00 |
| **Stimuli** | Digitized hand-drawn hands, feet, tongue and glutes with text labels |
| **Stimuli manipulations** | Hands and feet have left and right versions |
| **Task requirements** | Participant performs repeated active movements: left/right finger taps (thumb to index and thumb to middle), left/right toes plantar flexion and dorsiflexion, tongue movements from right to left (touching the premolar upper teeth) or contraction and relaxation of the gluteal muscles. Before each movement, a visual cue of a drawn body part with a text label informs the participant to initiate one of the six movement types. The fixation crosshair then changes to include a flickering black circle around, indicating to continue the movement and its pace (black circle ON- thumb to index, toes plantar flexion, tongue to the right and glutes contraction. Black circle OFF- thumb to middle, toes dorsiflexion, tongue to the left and glutes relaxation). After 5 cycles, the word 'END' is shown on the screen and marks the participant to stop the movement. |
| **Other task notes** | During movement blocks, the black circle flickers on a 0.5 Hz cycle. ON for 1s and OFF for 1s. Movements are instructed to be timed with flickers. |
| **# of Runs** | 6 |
| **Design** | LH = left hand, RH = right hand, T = tongue, G = glutes, LF = left foot, RF = right foot<br><br><u>MOTOR1</u><br>[12s(+)] : [16s(+), (4+10)s(RH), (4+10)s(LH), (4+10)s(T), (4+10)s(G), (4+10)s(RF), (4+10)s(LF), 16s(+),(4+10)s(LH), (4+10)s(G), (4+10)s(RH), (4+10)s(LF), (4+10)s(T), (4+10)s(RF), 16s(+),(4+10)s(G), (4+10)s(LF), (4+10)s(LH), (4+10)s(RF), (4+10)s(RH), (4+10)s(T), 16s(+),(4+10)s(LF), (4+10)s(RF), (4+10)s(G), (4+10)s(T), (4+10)s(LH), (4+10)s(RH), 16s(+)]<br><br><u>MOTOR2</u><br>[12s(+)] : [16s(+), (4+10)s(LH), (4+10)s(G), (4+10)s(RH), (4+10)s(LF), (4+10)s(T), (4+10)s(RF), 16s(+),(4+10)s(G), (4+10)s(LF), (4+10)s(LH), (4+10)s(RF), (4+10)s(RH), (4+10)s(T), 16s(+),(4+10)s(LF), (4+10)s(RF), (4+10)s(G), (4+10)s(T), (4+10)s(LH), (4+10)s(RH), 16s(+),(4+10)s(RF), (4+10)s(T), (4+10)s(LF), (4+10)s(RH), (4+10)s(G), (4+10)s(LH), 16s(+)]<br><br><u>MOTOR3</u><br>[12s(+)] : [16s(+), (4+10)s(G), (4+10)s(LF), (4+10)s(LH), (4+10)s(RF), (4+10)s(RH), (4+10)s(T), 16s(+),(4+10)s(LF), (4+10)s(RF), (4+10)s(G), (4+10)s(T), (4+10)s(LH), (4+10)s(RH), 16s(+),(4+10)s(RF), (4+10)s(T), (4+10)s(LF), (4+10)s(RH), (4+10)s(G), (4+10)s(LH), 16s(+),(4+10)s(T), (4+10)s(RH), (4+10)s(RF), (4+10)s(LH), (4+10)s(LF), (4+10)s(G), 16s(+)] |

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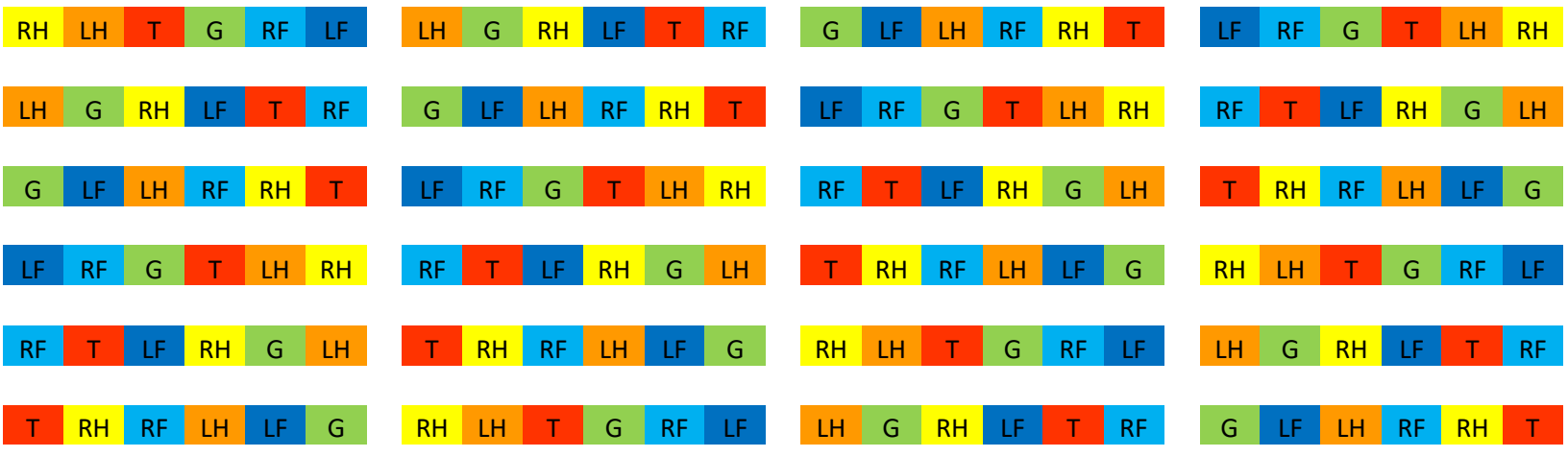
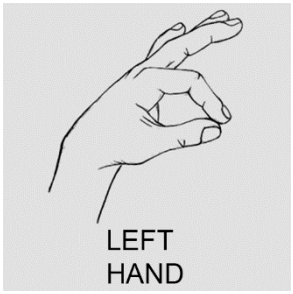
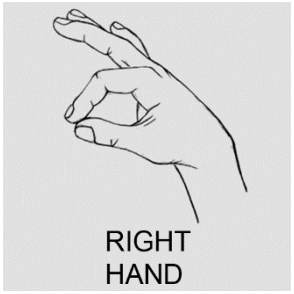
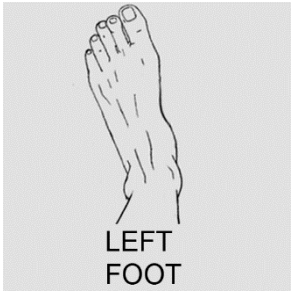
| | <u>MOTOR4</u><br>[12s(+)] : [16s(+), (4+10)s(LF), (4+10)s(RF), (4+10)s(G), (4+10)s(T), (4+10)s(LH), (4+10)s(RH), 16s(+),(4+10)s(RF), (4+10)s(T), (4+10)s(LF), (4+10)s(RH), (4+10)s(G), (4+10)s(LH), 16s(+),(4+10)s(T), (4+10)s(RH), (4+10)s(RF), (4+10)s(LH), (4+10)s(LF), (4+10)s(G), 16s(+),(4+10)s(RH), (4+10)s(LH), (4+10)s(T), (4+10)s(G), (4+10)s(RF), (4+10)s(LF), 16s(+)]<br><br><u>MOTOR5</u><br>[12s(+)] : [16s(+), (4+10)s(RF), (4+10)s(T), (4+10)s(LF), (4+10)s(RH), (4+10)s(G), (4+10)s(LH), 16s(+),(4+10)s(T), (4+10)s(RH), (4+10)s(RF), (4+10)s(LH), (4+10)s(LF), (4+10)s(G), 16s(+),(4+10)s(RH), (4+10)s(LH), (4+10)s(T), (4+10)s(G), (4+10)s(RF), (4+10)s(LF), 16s(+),(4+10)s(LH), (4+10)s(G), (4+10)s(RH), (4+10)s(LF), (4+10)s(T), (4+10)s(RF), 16s(+)]<br><br><u>MOTOR6</u><br>[12s(+)] : [16s(+), (4+10)s(T), (4+10)s(RH), (4+10)s(RF), (4+10)s(LH), (4+10)s(LF), (4+10)s(G), 16s(+),(4+10)s(RH), (4+10)s(LH), (4+10)s(T), (4+10)s(G), (4+10)s(RF), (4+10)s(LF), 16s(+),(4+10)s(LH), (4+10)s(G), (4+10)s(RH), (4+10)s(LF), (4+10)s(T), (4+10)s(RF), 16s(+),(4+10)s(G), (4+10)s(LF), (4+10)s(LH), (4+10)s(RF), (4+10)s(RH), (4+10)s(T), 16s(+)] |
| **Trials/Block/Run** | Movements occur across 6 sequential blocks of distinct movement types separated by fixation blocks. Multiple movements are made within each block. 4 blocks of each movement condition are presented in each run. 6 run orders. |
| **Trial timing** | 2s visual cue (body part), 10s active movement, 1s of the word ‘END’, 1s fixation, yielding 14s blocks (4+10)s. |
| **Randomization** | Each run has its own counterbalancing with counterbalancing across the set of 6 runs so that each condition appears exactly once in each of the run positions. |
| **Goal** | To explore the topographic organization of the hand, foot, tongue and glute representations. |

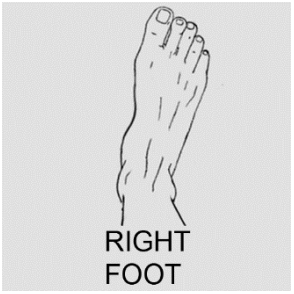


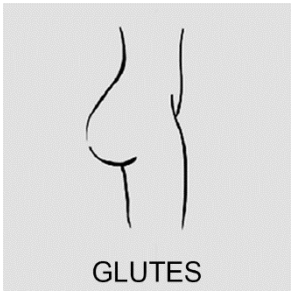
**Stimuli**

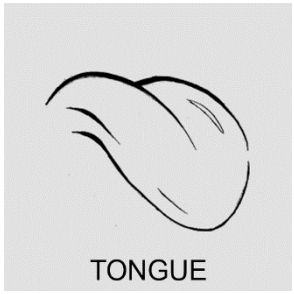


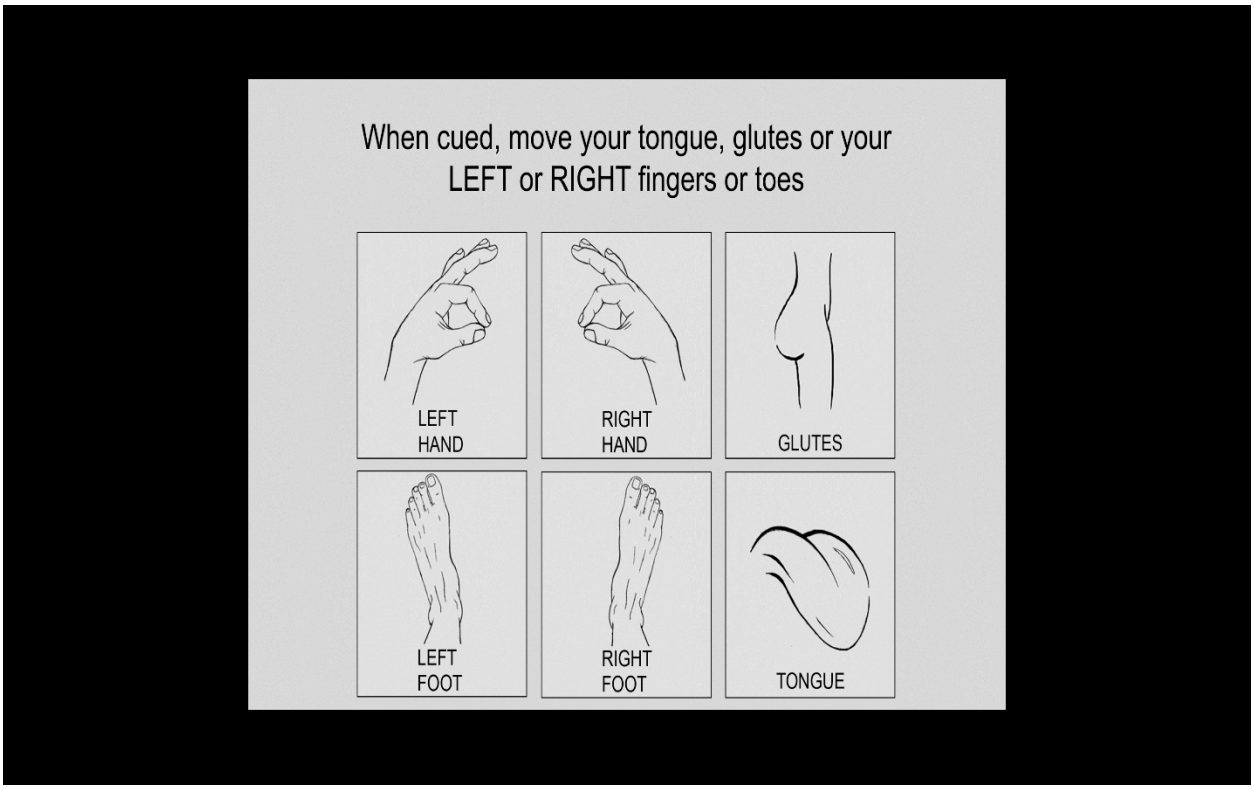



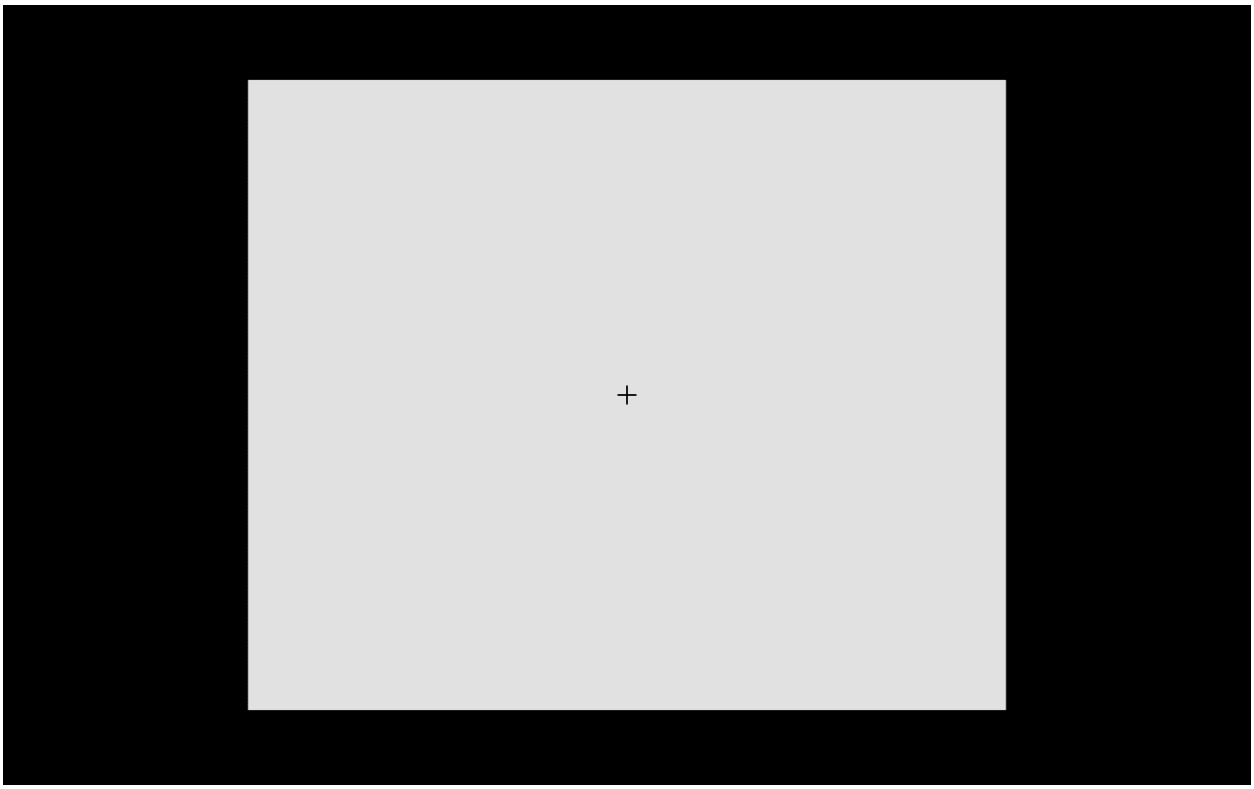




**Stay very still screen:**

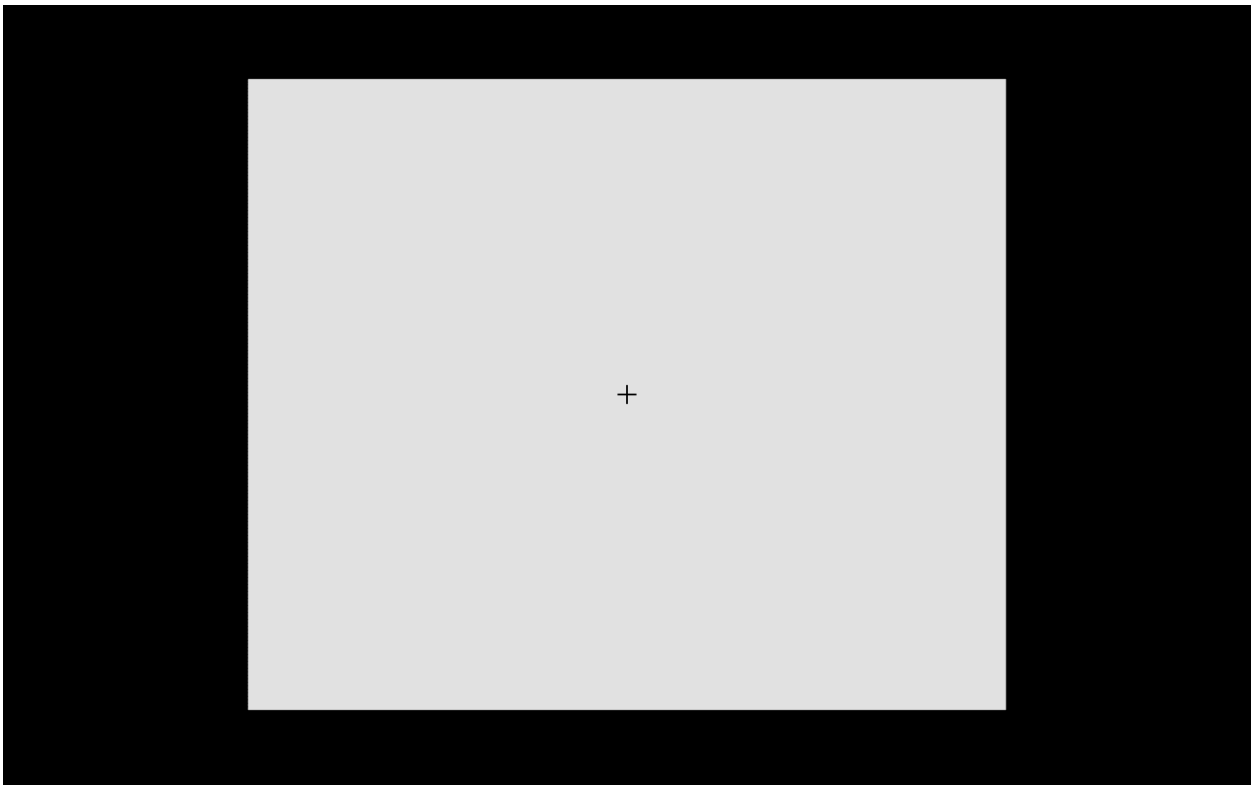
**Instruction screen:**

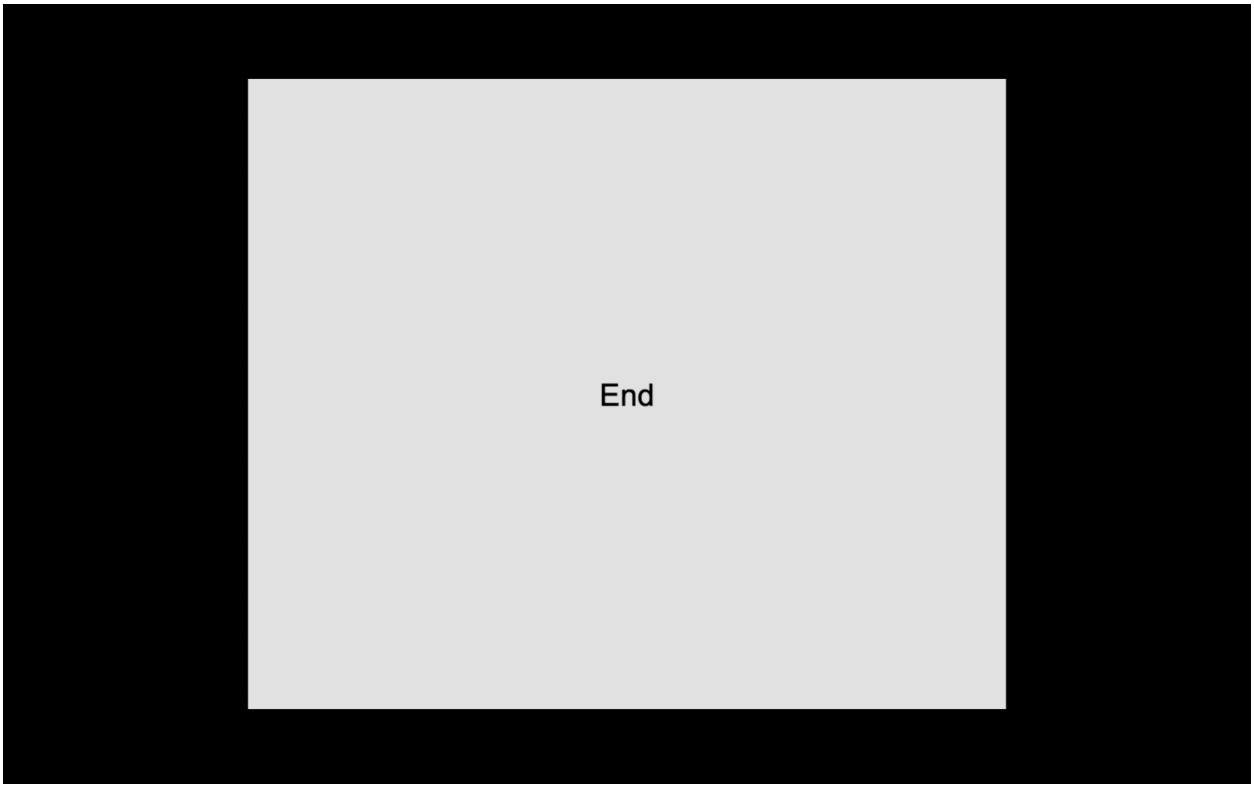



**Example trial screen:**



RIGHT
HAND




End