

Supplemental Material S3. Criteria for measuring lateralizations from tongue displacement signal.

Several special considerations were involved in measuring lateralizations from the tongue displacement signal, so the following criteria was set and followed:

- a) Any lateralizations completed with the lips closed around the tongue (as noted from the video file at the Vicon stage of processing) were excluded from the analyses, since this was not consistent with the task and could influence performance;
- b) Slight hesitations/pauses in transit from a maximal lateralization on one side to the maximal lateralization on the other side were informally noted but otherwise ignored in the measurement process since they were not a focus of the current study;
- c) If two lateral motions occurred in rapid succession on the same side (i.e., a participant hit a lateral target twice, producing a “double peak” or “double trough” on the displacement trajectory), then the larger of the two was marked since this corresponded to the maximal lateralization;
- d) If a participant clearly reversed his/her pattern of alternating lateralization during the block (e.g., left [1] - right [2] - left [3] - right [4] - left [5] - right [6] - left [7] - right [8] - return to midline - right [9] - left [10]), then two consecutive points (e.g., 8 and 9) did not represent maximal lateralizations on opposite sides of the body and the distance between them was excluded from the analyses;
- e) Two out of the three youngest participants (Younger child 1 and Younger child 3) demonstrated periods of small, rapid “oscillatory” movements around midline during two of their four blocks that were not consistent with the task or how they performed the task during their other repetitions/blocks (i.e., with clear lateralizations from one side to the other). Therefore, these nonrepresentative regions were excluded from the measurement process and subsequent analyses.