

Understanding fingerspelling perception



Jonathan Keane & Leah C. Geer

jonkeane@uchicago.edu, leah.geer@utexas.edu

THE UNIVERSITY OF
TEXAS
AT AUSTIN



ASL fingerspelling is challenging for L2 learners^[1,2]. Student performance on comprehension tasks is better when the fingerspelling signal is modified to mask the **transitions** (time period between holds), as opposed to the **hold** (time periods where the entire hand configuration is stable), portion of the utterance^[3].

Methods

	Experiment 1	Experiment 2
Participants	63 ASL 3 students	80 ASL 3 students
Fingerspelling identification task in four conditions: clearA, holds only, transitions only, clearB	Single test to assess in which conditions students would perform the best	Pre-, post-, and post-post- test in the same paradigm. Pre- and post-tests separated by an <i>intervention program</i>
Stimulus Delivery	PsychoPy	Web-based delivery system

Intervention programs

Explicit training teaches about the structure of fingerspelling, variation frequently found in fingerspelling productions, overall shape

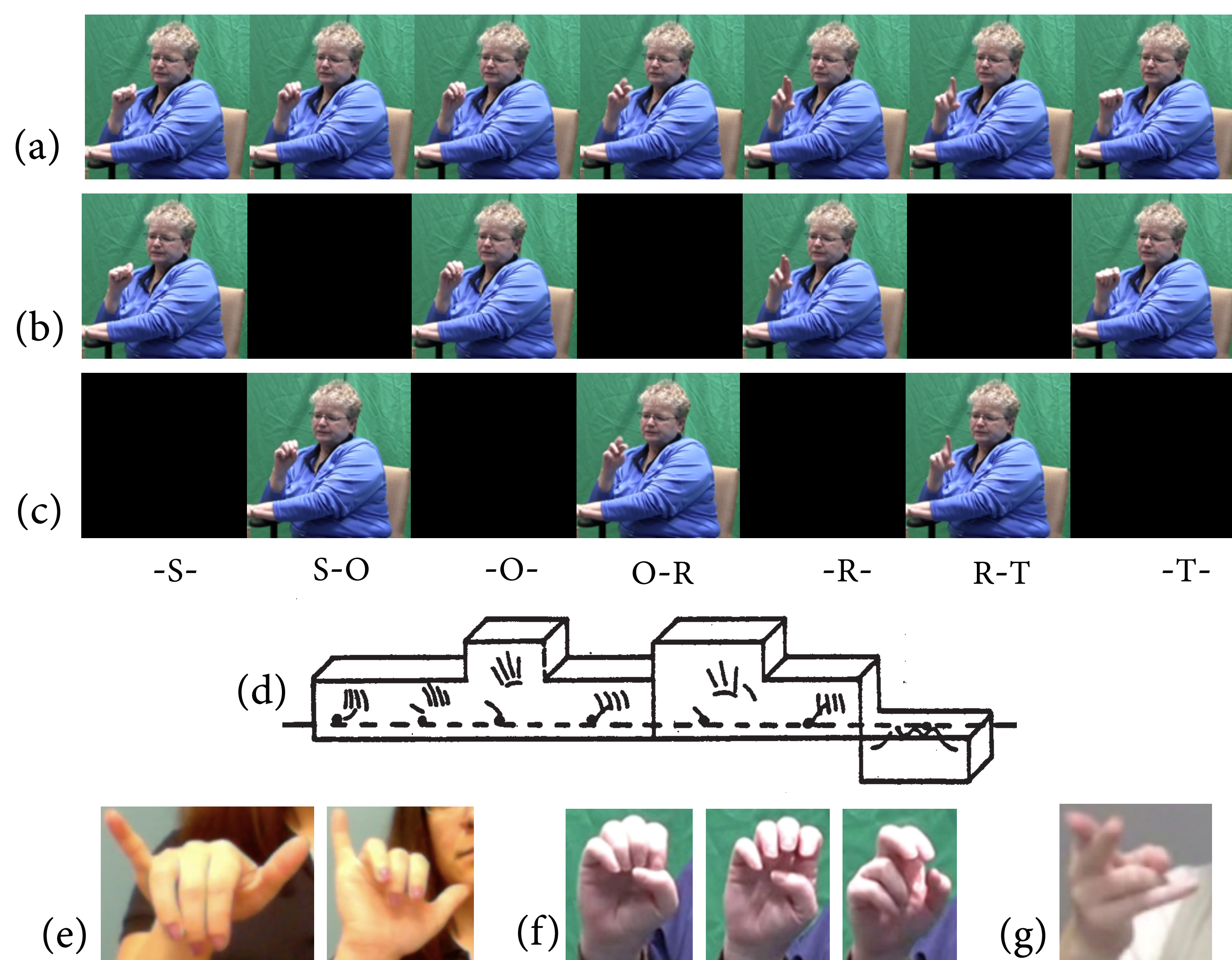
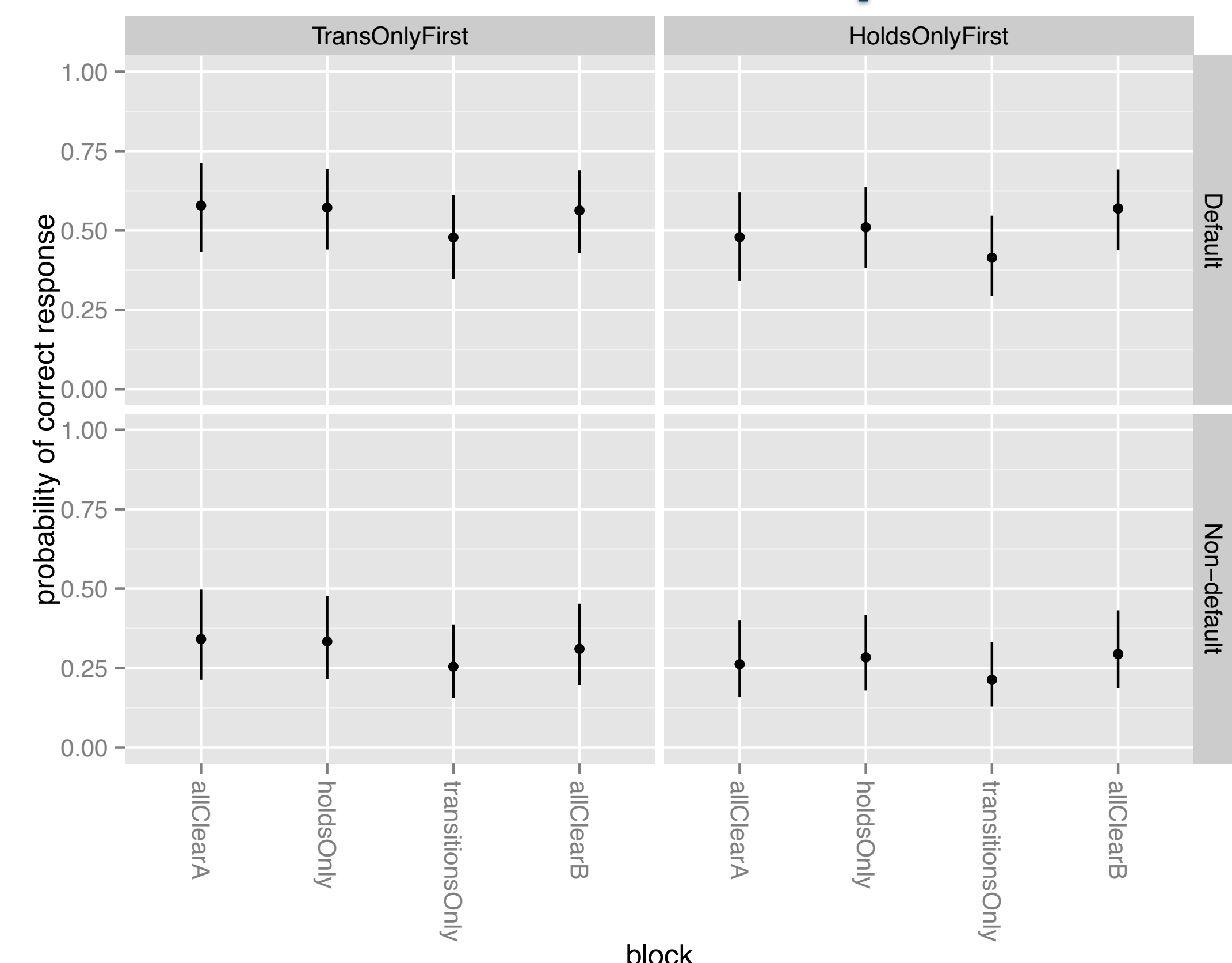


Fig: Still images extracted from video stimuli used in the pre- and post-tests. (a) unmasked stimuli, (b) transitions masked, (c) holds masked. (d) Movement envelope^[4] schematic of the word S-A-F-E-W-A-Y. (e) Variation in productions of -Y- depending on position in the word, (f) Variation in productions of -E- based on phonetic context, (g) Coarticulation of U-R bigram.

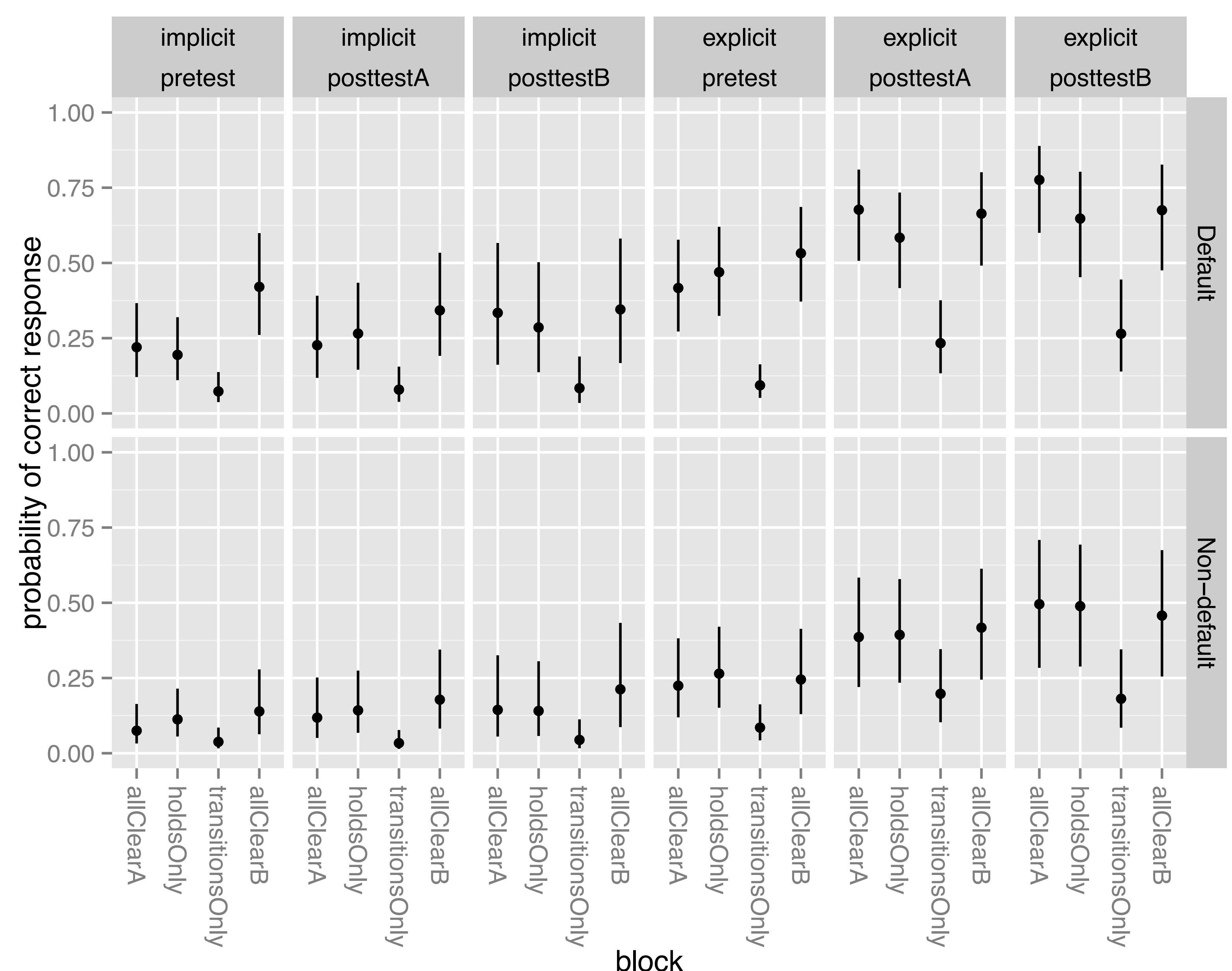
Implicit training (re)teaches fingerspelling as it is taught in students' textbooks including production of double letters

Results: Exp 1



- * Students perform better in holds-only condition^[3]
- * Additional findings reveal poorer student performance on items with letters with non-default palm orientation e.g., misinterpreting -P- as -K-
- * Can students be trained to improve fingerspelling comprehension with an explicit intervention training as has been the case for spoken language-learning^[5,6,7]?

Results: Exp 2



Summary

- * The patterns of perception are clear: holds-only is significantly better than transitions-only.
- * Words with letters with non-default orientations are perceived less accurately.
- * There is a striking trend of improvement over the course of the semester in the explicit training group that is not seen in the implicit training group.
- * Just as phonetic instruction has been effective in improving English perception^[5,6,7], so too should ASL curricula incorporate this type of formal phonetic instruction.