Preliminary Analysis of Second Language (L2) Learners' Discrimination of Phonological Contrasts in ASL

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Background

As an important area for future research, this unpublished research study's purpose is to describe variation in signed languages and explore its impact on L2 acquisition from the perspectives of both production and perception; specifically focusing on the ability to effectively distinguish contrastive from non-contrastive differences among L2 learners.

In our study, L2 learners with different levels of ASL proficiency were asked to produce sets of items illustrating contrasts in each of these parameters by engaging in a sentence repetition task (SRT).

Three hypotheses are provided below:

1) Beginners would make more mistakes than intermediate learners, with advanced learners making the fewest mistakes.

2) Movement and handshape contrasts would be the most difficult for L2 learners to acquire, therefore, they would persist to some degree even in advanced learners.

3) Orientation and location contrasts would be the easiest to learn, therefore, they will rarely occur in intermediate-advanced learners.

Error patterns should reflect hypotheses both in terms of number of errors by category and type of error.

Our hypotheses predicted movement and handshape contrasts were more difficult for L2 learners than orientation and location.

Participants

Between the academic years of 2013-2015, fifty (50) L2 learners consisting of Liberal Arts students, ASL-English interpreting students, and college employees participated in the main study. All subjects had completed or were currently enrolled in an ASL class. The stimuli consisted of forty-eight sentences performed by a native ASL user on a video-recording. Their ages ranged from 18 to 58. A few deaf subjects were oral and learned ASL as a second language.

Preliminary Results

With the primary data analysis completed, preliminary findings demonstrated that the beginner level students made more production errors than the intermediate level students in the areas of marked and unmarked locations and movement than in the area of palm orientation. Furthermore, the findings reveal that rate of errors across all L2 learners is highest with movement (24%), followed closely by location (20%) and palm orientation (19%). The lowest rate of error by far was handshape (13%), going against our working hypothesis.

Currently in progress, our secondary analysis cross-references error rates against subjects' demographic information in order to better understand the impact that factors such as subject's language history and age can have on production and perception of each phonological contrast.

Figure 1. Native ASL Model and Sentence Repetition Task (SRT)
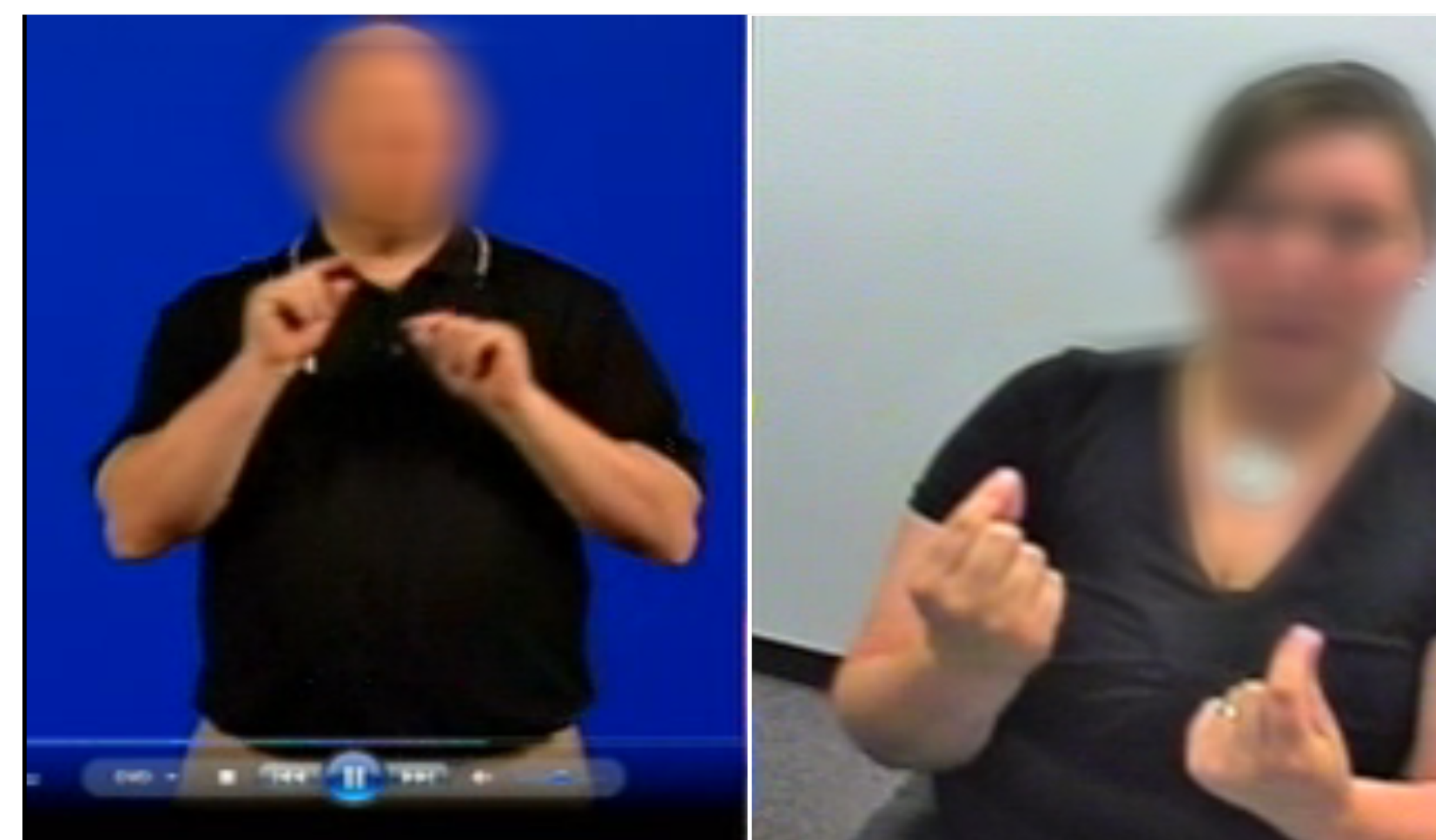
Correct ASL Sign Production: GOSSIP
Incorrect ASL Sign Production: DO ++

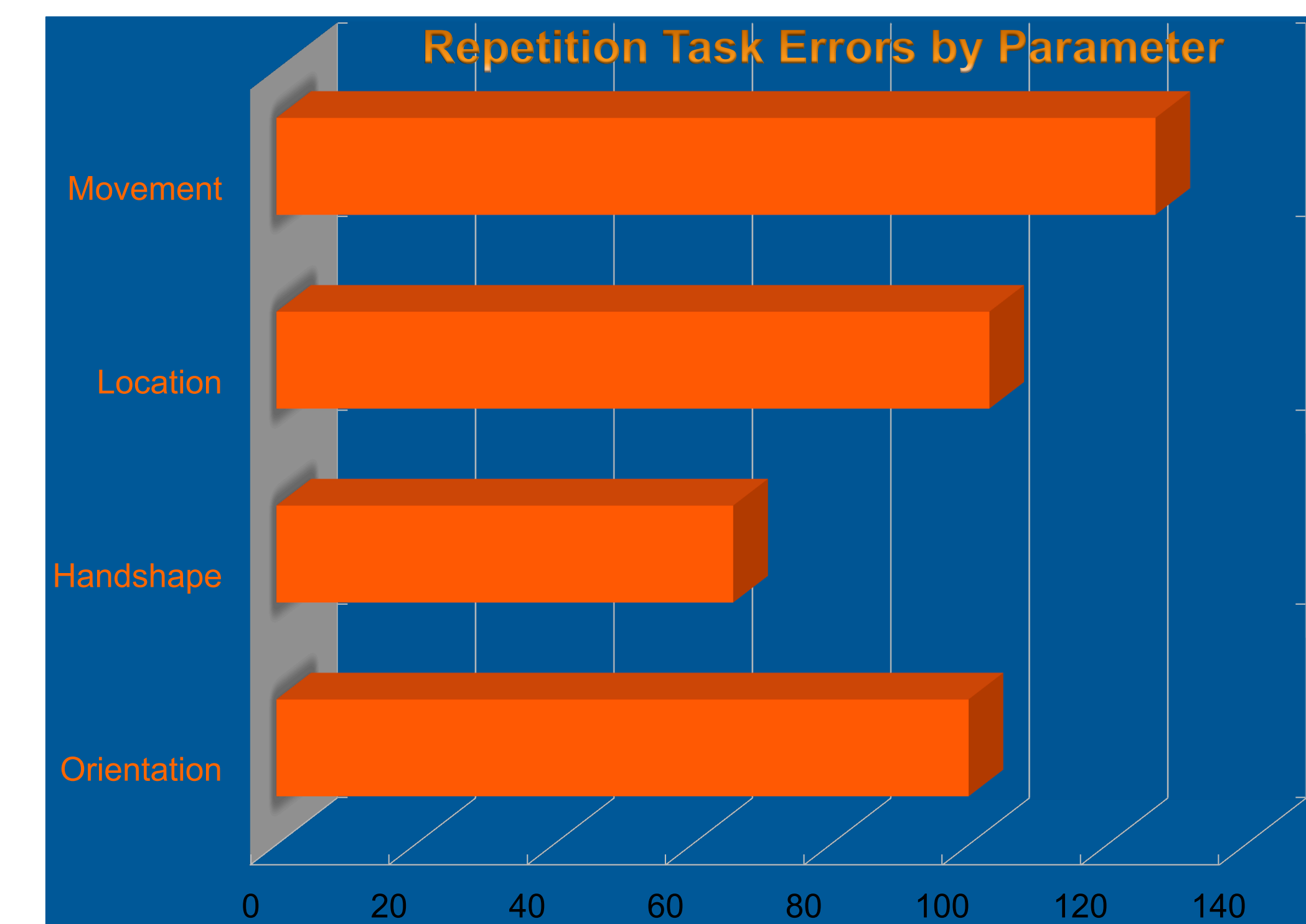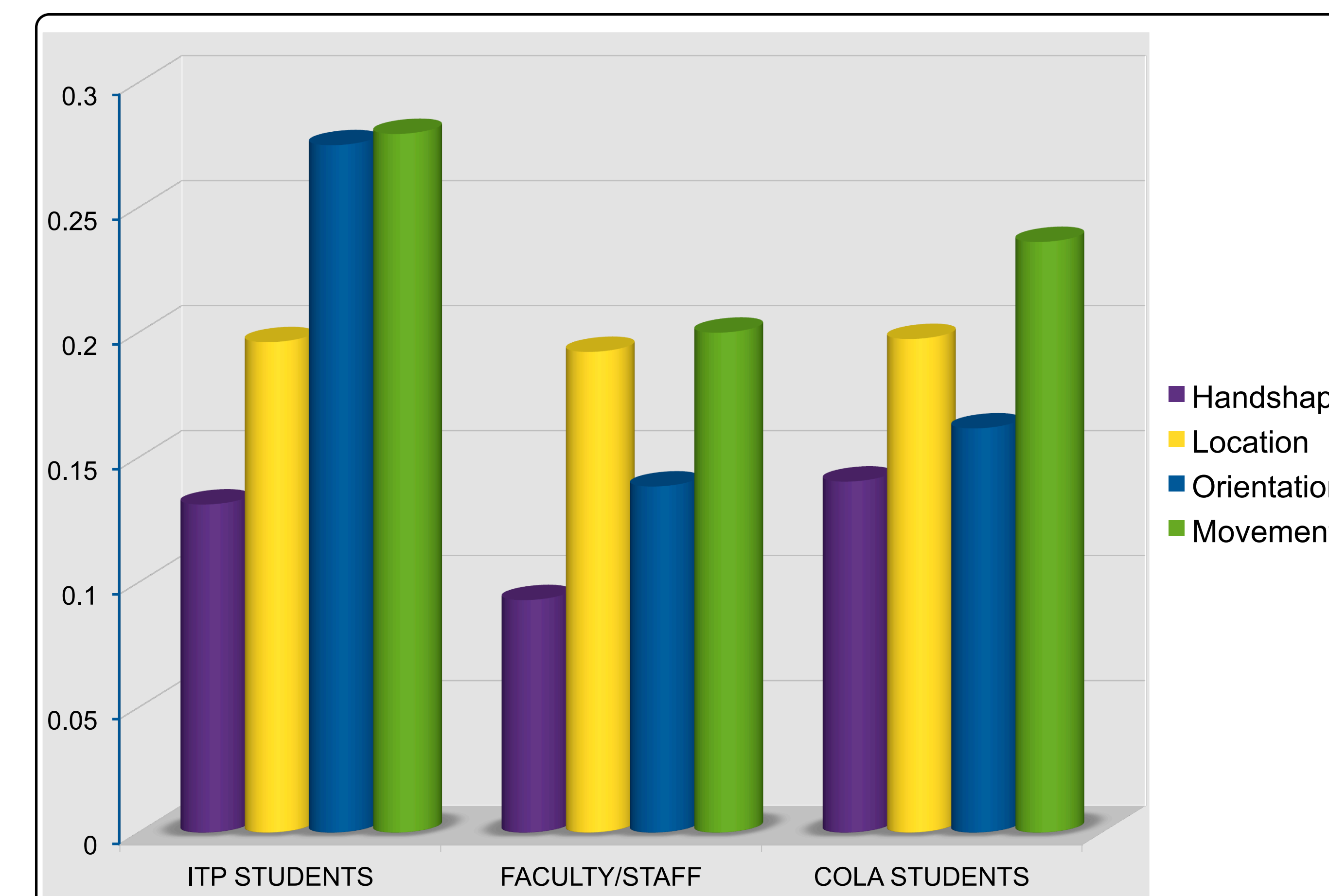**Figure 2a.** Phonological Error Occurrences

Figure 2b shows that in contrast to our hypothesis, the handshape parameter proved to be the least difficult to produce accurately. Movement was clearly a challenge as the hypothesis asserted, however.

Figure 2b. Error Percent by Group

Note:
ITP refers to students in the NTID Interpreting Program.
COLA refers to the College of Liberal Arts at Rochester Institute of Technology (RIT).

Conclusions

The results show that consistent use of signing improves articulation accuracy, as well as some sign components are produced more correctly than others. Movement was the most difficult, followed by location, then orientation, and finally handshape. This study reveals that there is a great need for future research in this field: (1) there are universal properties of phonological organization common to natural language in different physical modalities, but (2) there are substantial areas in which the physical production and perception systems influence the phonology of both modalities.

This study will bring new insights into L2 teaching and theoretical linguistics in the field of phonology, as well as how to improve ASL curriculum to match students of different skill levels and backgrounds.

Literature Cited

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