

Comparison of Procedures for Teaching Abstract Nouns in a Foreign Language

Harrison Perry, Juliana Oliveira, and Anna Ingeborg Petursdottir
Texas Christian University

Introduction

- Many computerized self-instruction programs for are commercially available for learning foreign languages (e.g., Duolingo®, Rosetta Stone®, Babbel®).
- Research on the effects of response contingencies in computer-assisted instruction (e.g., Kritch & Bostow, 1998) suggests that the more active responding is required from students, the better their learning outcomes.
- However, Smith et al. (in preparation) found that when teaching concrete foreign-language nouns, dense active response requirements did not improve performance over lean active response requirements.
- Goal: Replicate Smith et al. (in preparation) with abstract instead of concrete nouns. Abstract nouns are not easily represented by pictures and therefore, instruction relies more on text stimuli.
- Compared a pair-test (PT) condition with low density of active response requirements to a high-density response contingency (HDRC) condition.

Participants

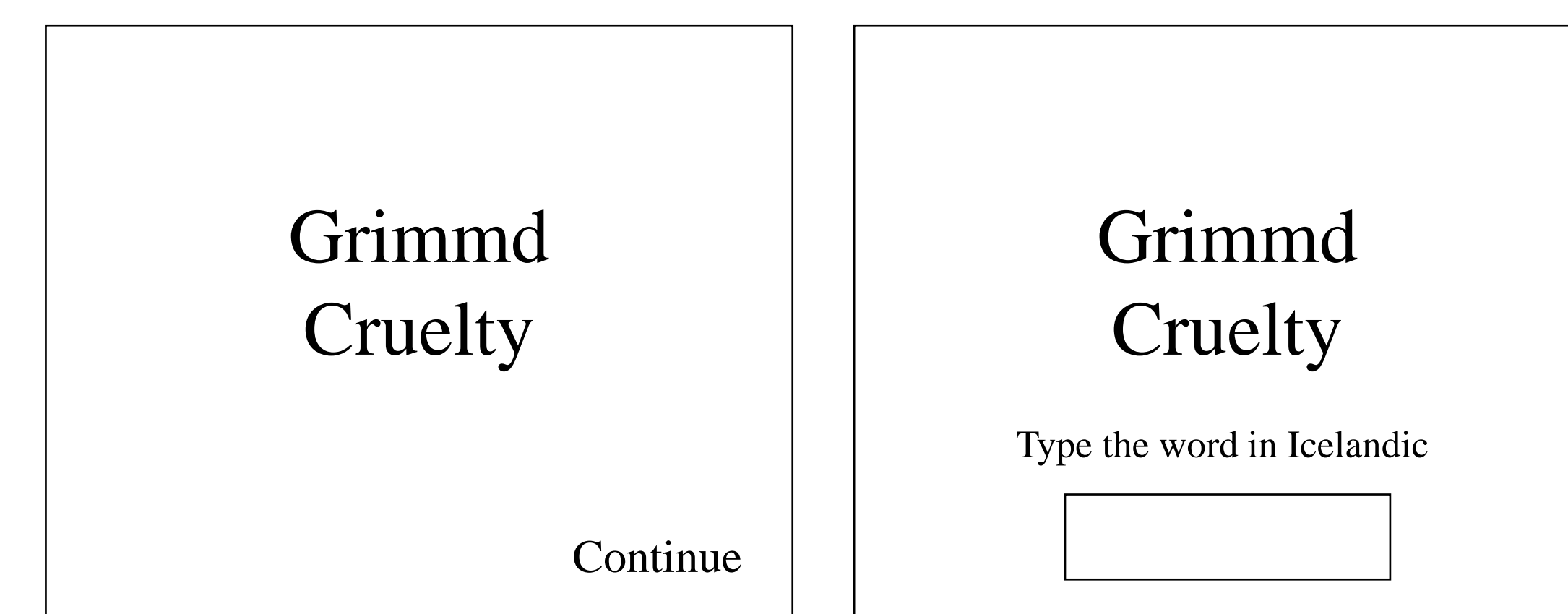
- Ten undergraduate students were recruited from a psychology department's subjects pool. No previous knowledge of Icelandic.
- Suitable computer and a quiet place to run the experiment
- SuperLab 6 software ran through Zoom "remote control" feature

PT	HDRC	HDRC	PT
Grimmd	Snilld	Grimmd	Snilld
Vitund	Svengd	Vitund	Svengd
Geta	Vissa	Geta	Vissa
Tap	Efi	Tap	Efi
Frelsi	Fyndi	Frelsi	Fyndi

Procedure

Pre-and post-test: 30 trials in random order. Three trials for each target:
 1. Foreign-Native (FN) Intraverbal: "What is [foreign word] in English?"
 2. Native-Foreign (NF) Intraverbal: "What is [English word] in Icelandic?"

Acquisition phase



Four 40-trial training subphases (20 pair-test and 20 HDRC trials), each followed by a 10-trial tact probe with feedback (correct/incorrect)

Condition preference: Assessed on a 7-point scale in a post-experimental questionnaire

Retention Test: Presented via Qualtrics a week after the initial experiment. Same questions as the comprehensive pre-and post-test but 60 trials presented in the order of (a) FN intraverbal, and (b) NF Intraverbal

Results and discussion

Figure 1. Individual performance in probes during the acquisition phase

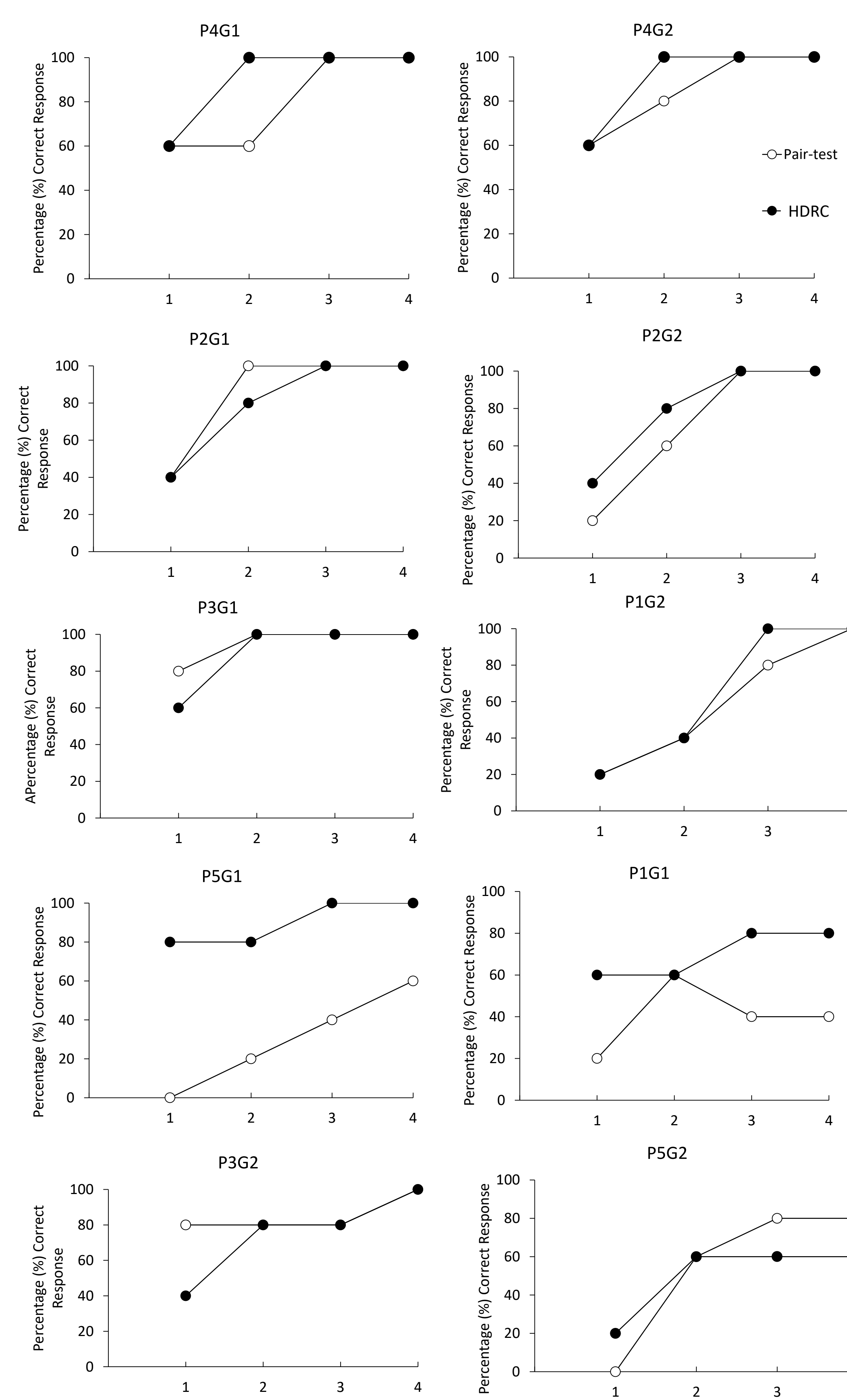


Figure 2. Percent Correct on Post-test

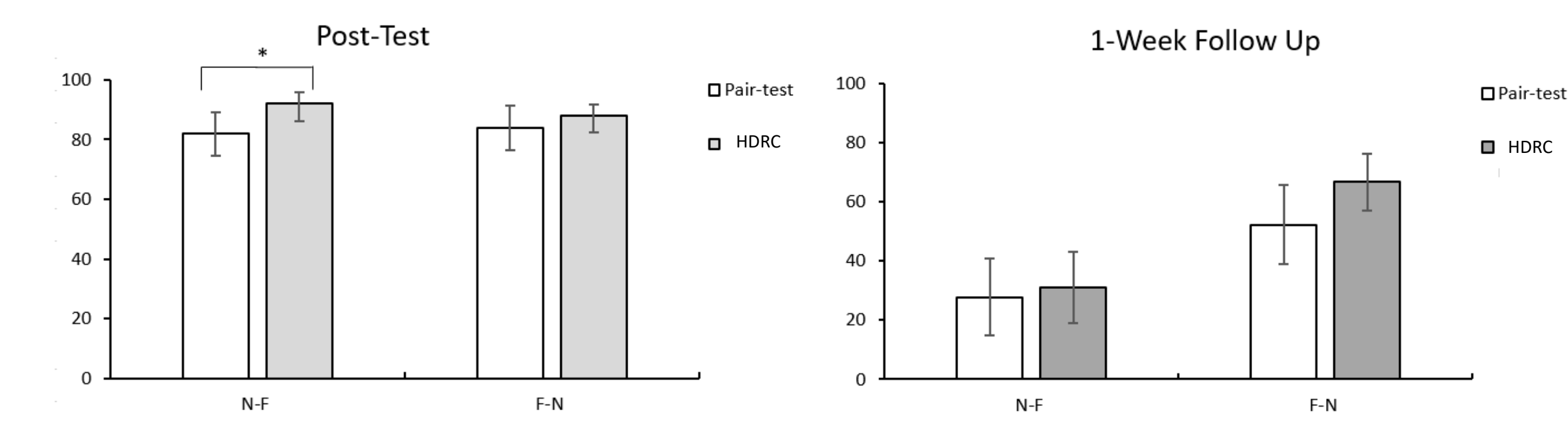
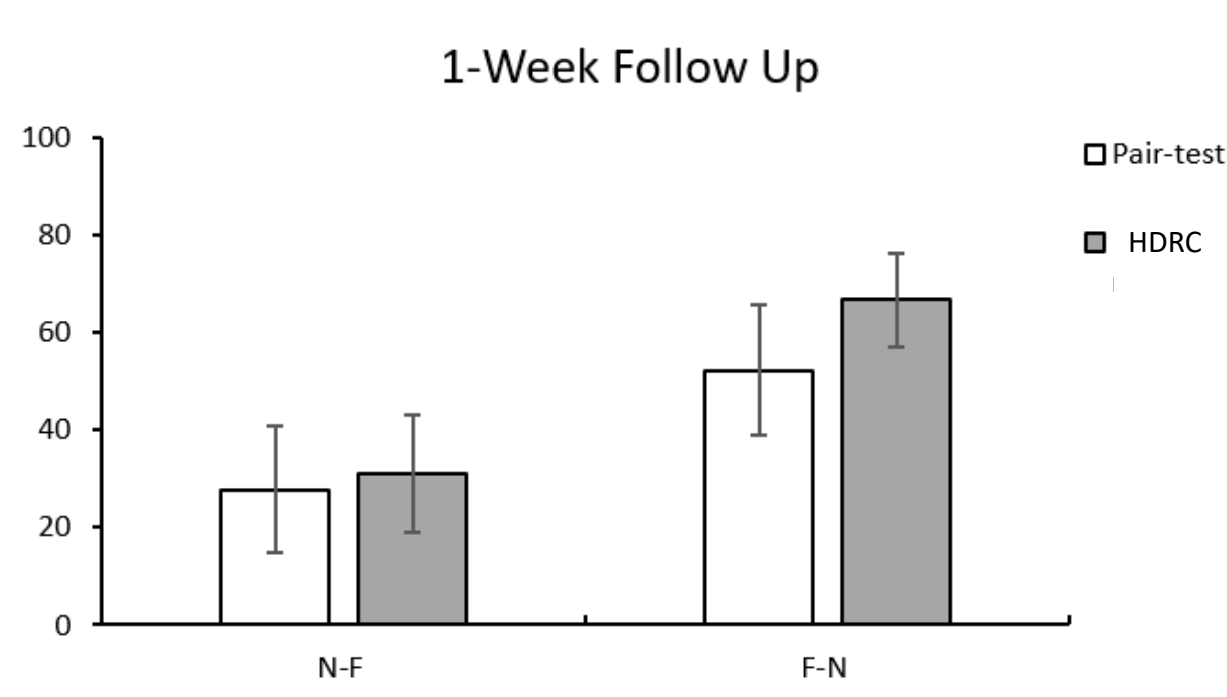


Figure 3. Percent Correct on Retention test



- Five participants reached mastery in both conditions, with no systematic advantage of one condition over another.
- Two participants reached mastery only in the HDRC condition, and three participants did not reach mastery in either condition.
- In the immediate native-foreign post-test trials, there were significantly more correct responses for words in the HDRC than in the pair-test condition ($p = .042$). There was no difference between the HDRC and pair-test conditions in foreign-native trial.
- At one-week follow-up, correct responding had deteriorated more in native-foreign than in foreign-native trials. There were no differences between conditions.
- Prior research (Smith et al., in preparation) found no advantage of denser over leaner response requirements when teaching concrete foreign-language nouns.
- The present results suggest a slight advantage of dense response requirements when teaching abstract nouns.

References

Kritch, K. M., & Bostow, D. E. (1998). Degree of constructed-response interaction in computer-based programmed instruction. *Journal of Applied Behavior Analysis, 31*, 387-398
 Smith, C. J., Oliveira, J. S. C. D., Birgisdottir, E. D., Cox, R. E., & Petursdottir, A. I. (in preparation). Evaluation of a pair-test procedure in computer-assisted language learning.