

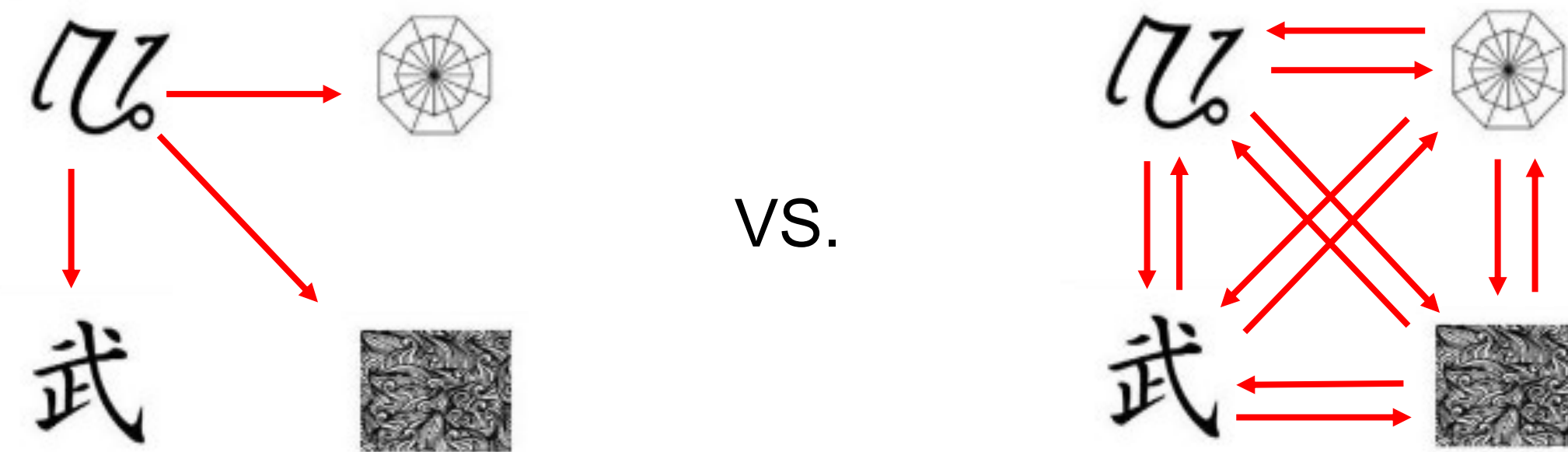


Evaluating Class Reorganization in Equivalence-Based Instruction

Gregory Tomlinson, Juliana S. C. de Oliveira and Anna Ingeborg Petursdottir
Texas Christian University



Introduction



Are there differences between stimulus classes established via equivalence-based instruction (EBI) and complete instruction (CI)? Our previous findings suggest that both EBI and CI produce true equivalence classes, as assessed by

- transfer of function (Oliveira et al., 2021)
- class expansion (Petursdottir & Oliveira, 2020)

In our first reorganization experiment, we found out that classes established via EBI were more likely to show flexible reorganization than classes established via CI. In this experiment, we want to know if we will find the same results if we employ different training structures throughout the experiment.

Method

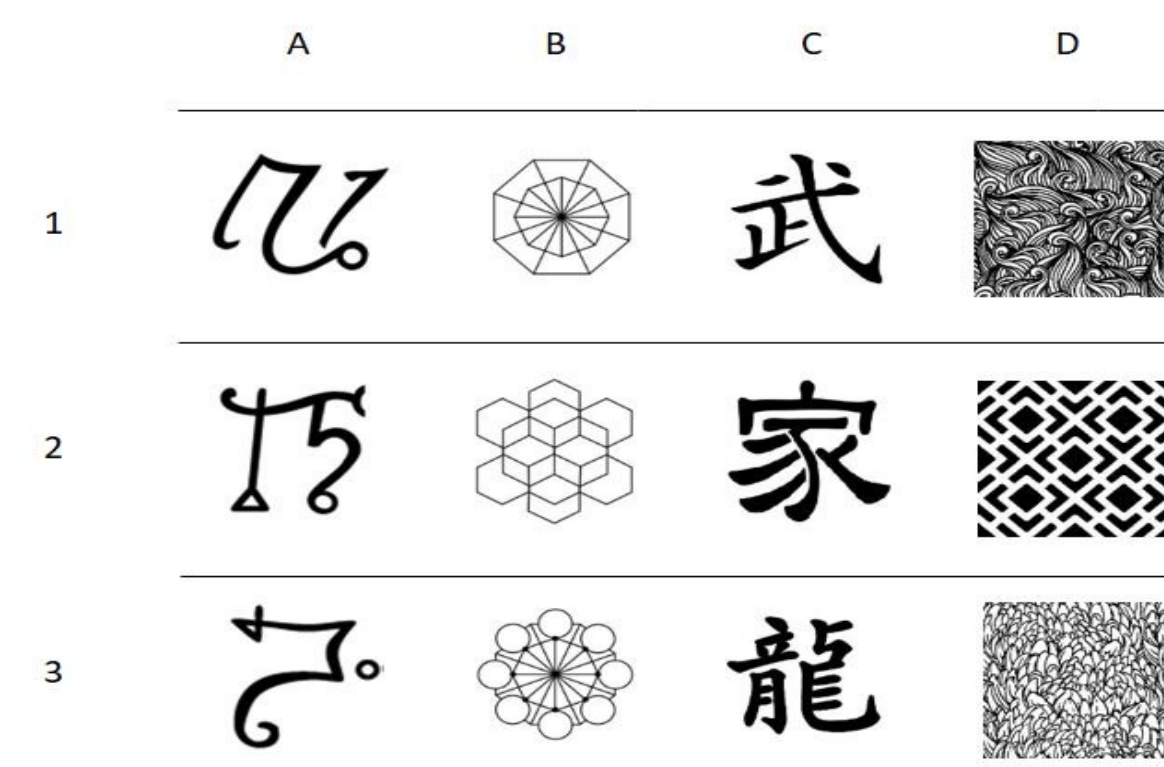
Participants

Forty undergraduate students (18–49 years of age) were recruited from a psychology department's subjects pool. Participants were assigned to either EBI or CI groups.

Apparatus and Stimuli

HP EliteBook 840 laptop computer, software Zoom, and software package SuperLab® 6.

Figure 2.
Visual Stimuli

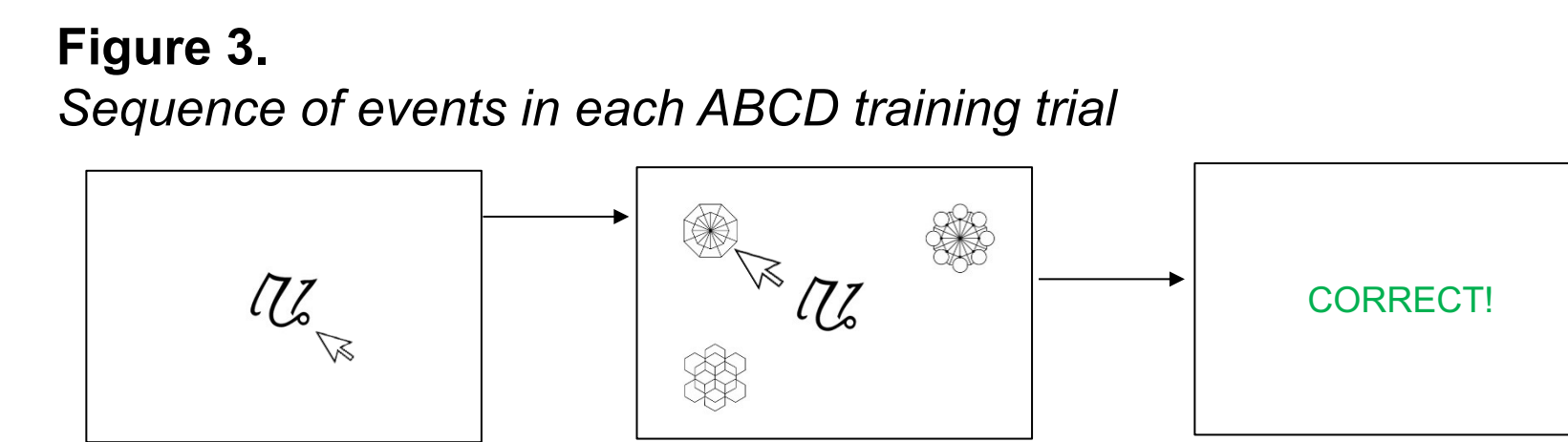


Data Collection and Dependent Variables

The software recorded data on correct and incorrect responses, and number of trials conducted throughout the experiment. Dependent measures included (a) trials to pass ABCD test, (b) percent correct in the second block of ABCD test, (c) trials to criterion in reorganization training, and (d) percent correct in the reorganization test.

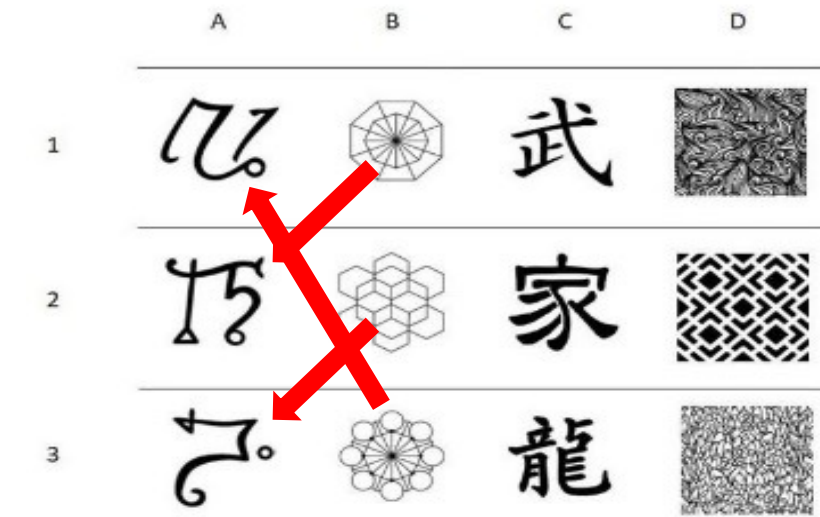
Procedure

- ABCD Training:
 - EBI (OTM) group: AB, AC, AD
 - CI group: AB, BA, AC, CA, AD, DA, BC, CB, CD, DC
- Mastery: One 36-trial block at 89% correct or better.



- ABCD Test: 36-trial blocks (total 72 trials) without feedback, and identical for the two groups.
- Class Reorganization training:
 - Part 1: Training for relations B1A2, B2A3, B3A1.
 - Part 2: Training for relations A1C1, A2C2, A3C3, C1D1, C2D2, C3D3.
 - Part 3: Training for all the relations above.

Figure 4.
Trained Relations between Stimuli in Part 1 of Reorganization Training



- Class Reorganization Test: Identical to ABCD Test, but correct responses were defined as those consistent with the classes A1B2C1D1, A2B3C2D2, and A3B1C3D3.

Results and Discussion

Figure 5.
Trials to pass ABCD training for EBI and CI groups.

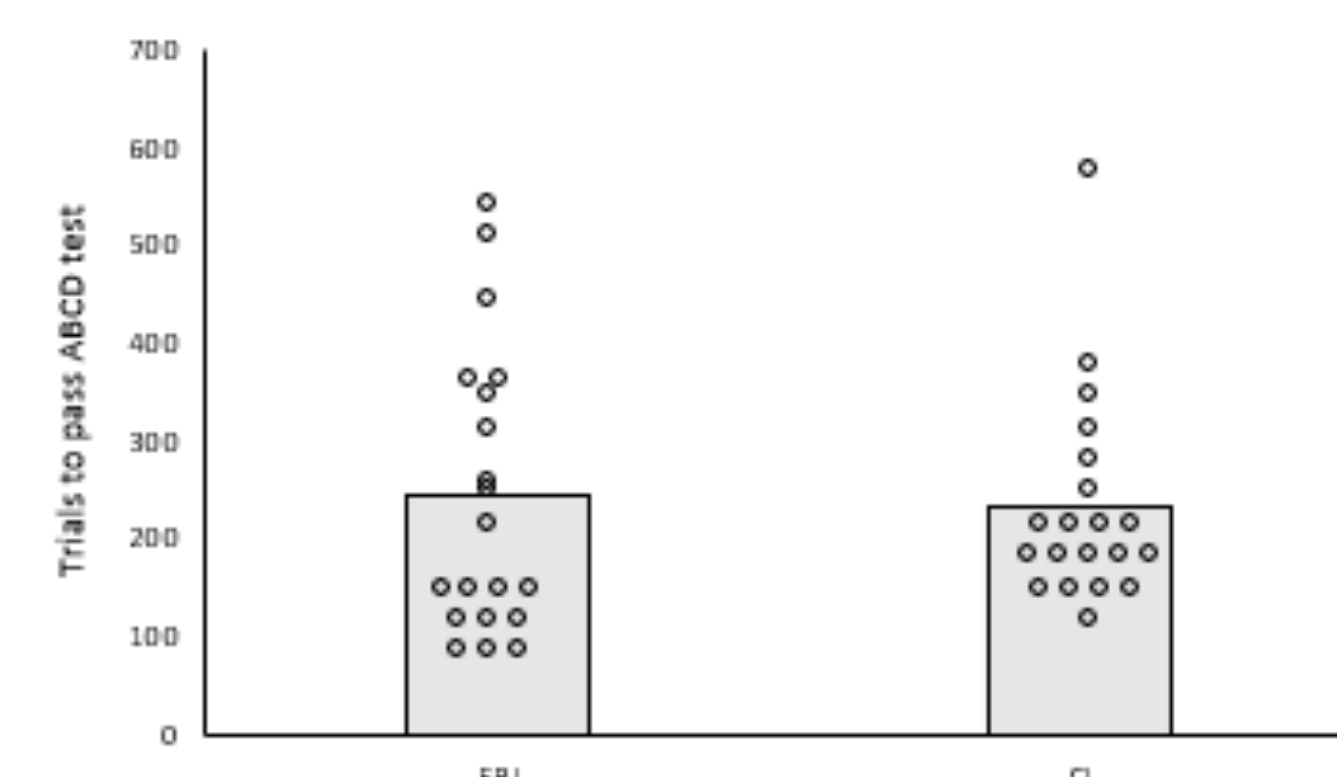


Figure 6.
Accuracy on ABCD test for EBI and CI groups.

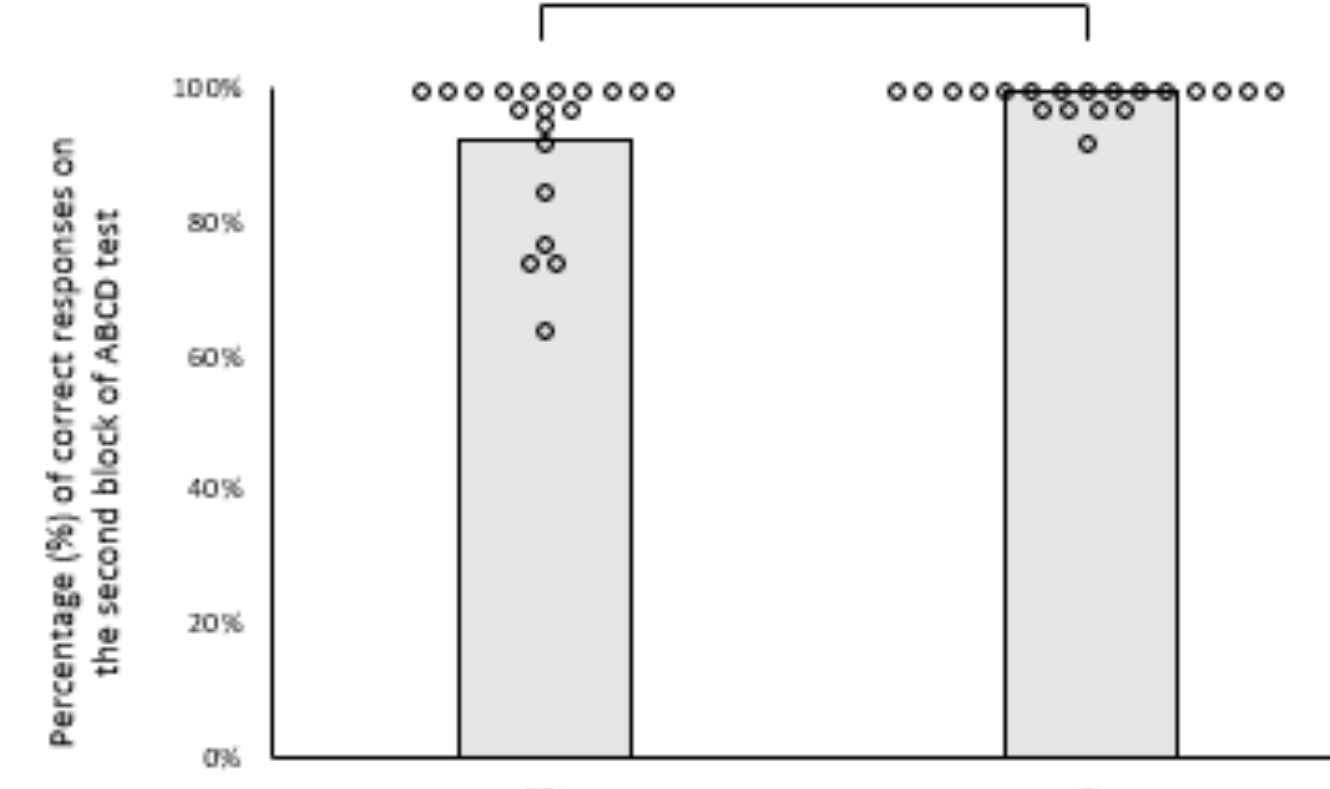


Figure 7.
Trials to pass the Reorganization Training for EBI and CI groups.

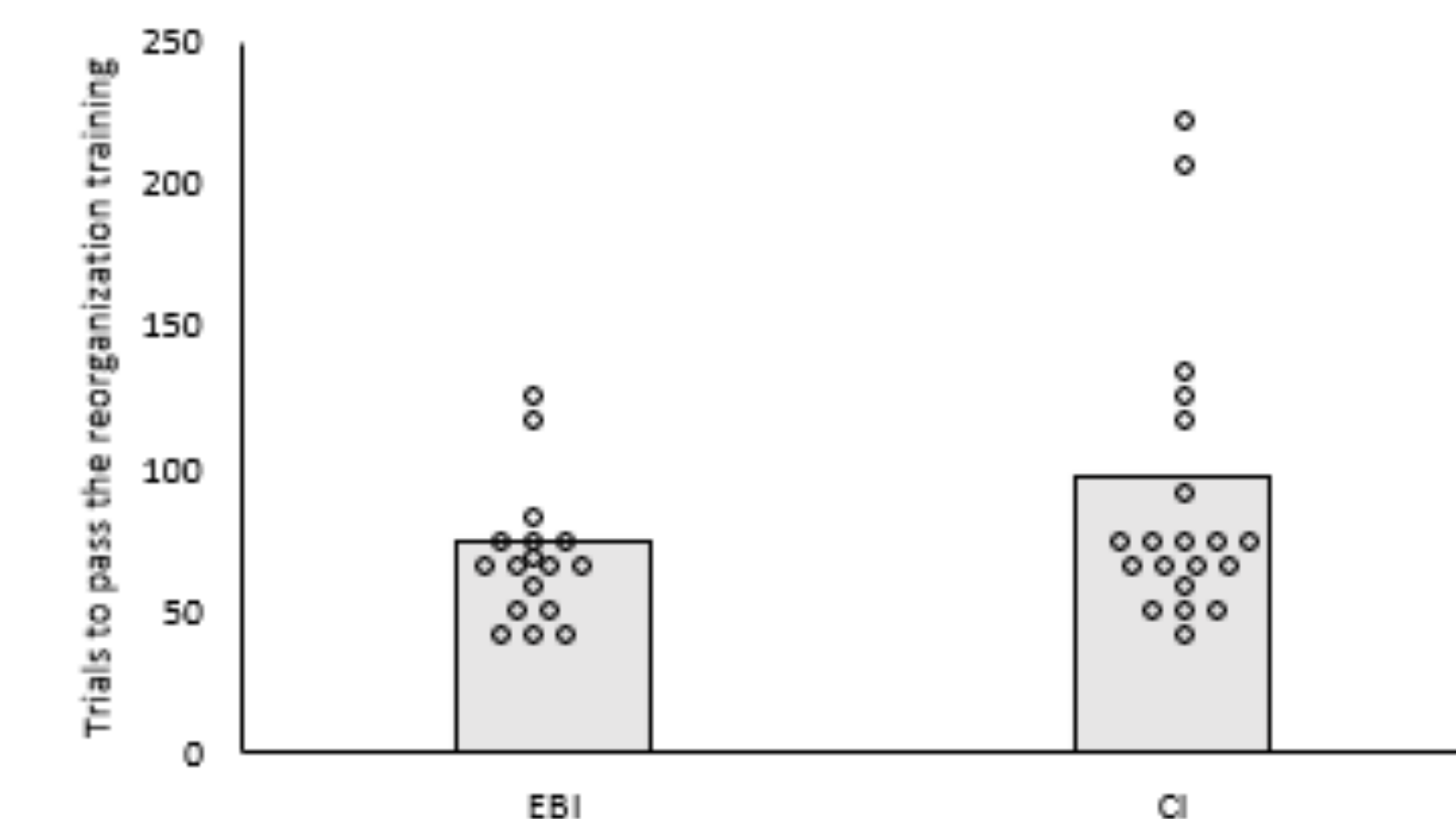
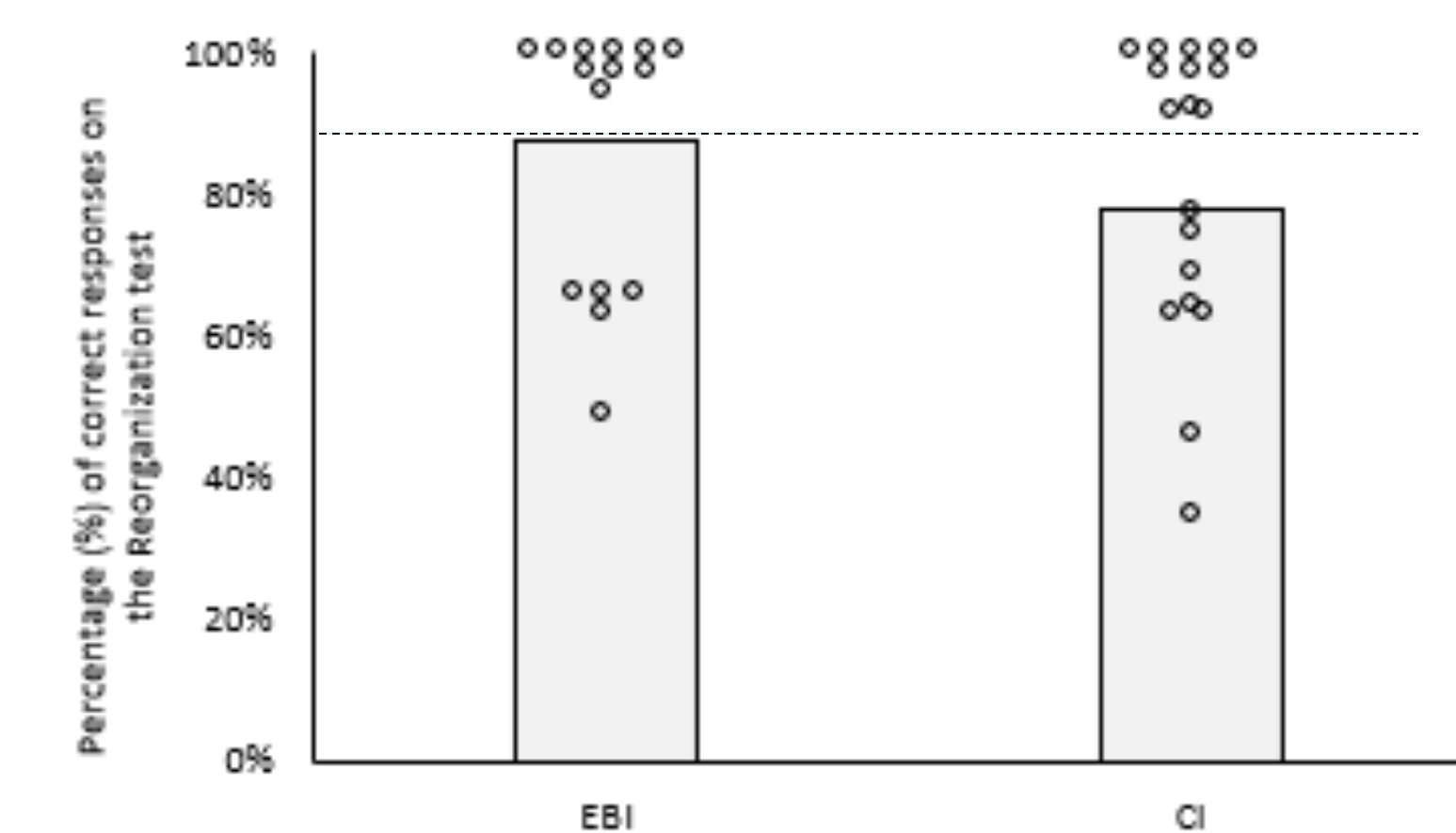


Figure 8.
Accuracy on Reorganization Test for EBI and CI groups.



Class Establishment

- Both groups required a similar number of trials to pass the ABCD test (The EBI group required significantly fewer trials, and CI performed statistically better than the EBI group ($U = .046$)).

Class Reorganization

- Both groups required the same number of trials to pass the reorganization training
- EBI and CI groups performed similarly in the reorganization test. Five participants in the EBI compared to eight participants in the CI group failed the reorganization test. However, this difference was not statistically significant,
- The results of the first experiment suggested that EBI was more likely than CI to produce flexible stimulus classes. However, when we manipulated the training structures in ABCD training and reorganization training, we found that there EBI did not necessarily produced more flexible stimulus classes than CI.

References

- Petursdottir, A. I., & Oliveira, J. S. C. D. (2020). The "equivalence-based" in equivalence-based instruction: A laboratory evaluation. *Journal of the Experimental Analysis of Behavior*, 114(1), 87-105. <https://doi.org/10.1002/jeab.617>
- Oliveira, J. S. C. D., Freitas, L., Tomlinson, G. M., & Petursdottir, A. I. (2021). Translational evaluation of training structures in equivalence-based instruction. *Journal of the Experimental Analysis of Behavior*, 115(1), 393-404. <https://doi.org/10.1002/jeab.657>