Abstract
Background: An experiment with pigeons was conducted for 46 months in order to test the multiple-exemplar training (MET) hypothesis of symmetry derivation. According to this hypothesis, symmetry is progressively derived after an extensive training of multiple examples of direct and inverse relations among arbitrary stimuli. Method: Four pigeons were given extensive training in direct (e.g., A1-B1; A2-B2) and inverse (e.g., B1-A1; B2-A2) arbitrary conditional discriminations. Once pigeons learned a complete reversal (e.g., AB and BA), a new reversal with different stimuli was trained (e.g., CD and DC, etc.). Subjects were assigned to two different stimulus sets, and sample-comparison order was counterbalanced. Results: Pigeons learned between 4 and 24 conditional discriminations, but none showed evidence of symmetry. Discriminability of samples and comparisons was identified as an important factor because it affected direct and inverse discriminations differently. Conclusions: Despite the negative results reported, this study provides some insights that might help to improve current research on MET and symmetry: We describe some lessons learned about the design of long-term experiments involving a high number of stimuli and finally, we discuss some control strategies for stimulus discriminability that might also contribute to facilitate symmetry derivation in pigeons.

Keywords
conditional discrimination, multiple-exemplar training, symmetry, stimulus discriminability, pigeons.