

GENERALIZED IDENTITY MATCHING-TO-SAMPLE IN RATS USING OLFACTORY
STIMULI

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Abstract

The present study evaluated rats' performances on an olfactory match-to-sample task. Four rats were trained on an identity match-to-sample (MTS) procedure, with common household spices mixed with sterilized play sand used as stimuli. Digging in a sample cup filled with sand that was mixed with a predetermined spice initiated the presentation of two comparison cups. Digging in the comparison cup that contained the same scent as the sample cup was reinforced by a sucrose pellet. After such training, novel olfactory stimuli were added to test for generalized matching. All four rats developed high levels of matching accuracy and were able to maintain performances that were well above chance with up to 37 stimuli. Three of the four rats showed above chance accuracy on novel probe stimuli. Finally, two of the subjects were tested on trials with three comparison stimuli, and both performed at above chance levels of accuracy under these conditions. The use of olfactory stimuli as well as a multiple-exemplar approach may have played a role in the demonstration of generalized identity matching-to-sample in the present study.

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