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Effects of Category Learning: An Event-Related Potential Study

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Abstract: Not a great deal is known about the electrophysiology of category learning. In our study, one group of participants learned novel categories of tropical fish, an exposure group viewed the same stimuli without learning any categories, and a control group did not see the stimuli. All three groups then viewed a sequence of quadruples of fish while their EEG was recorded. In half the quadruples ("different"), the first three fish were from one category and the fourth was from the other, while in the other half ("same"), all four fish were from the same category. All three groups also rated the similarity of many pairs of stimuli. Learners rated same-category fish as more similar than the other groups (a "compression" effect) and initial analyses of the EEG data suggest that the effect of same vs. different quadruples on the ERP pattern in the P300 time window varied according to group.