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Supplemental information

Aversive Bimodal Associations Differently

Impact Visual and Olfactory Memory

Performance in *Drosophila*

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FIGURE S1

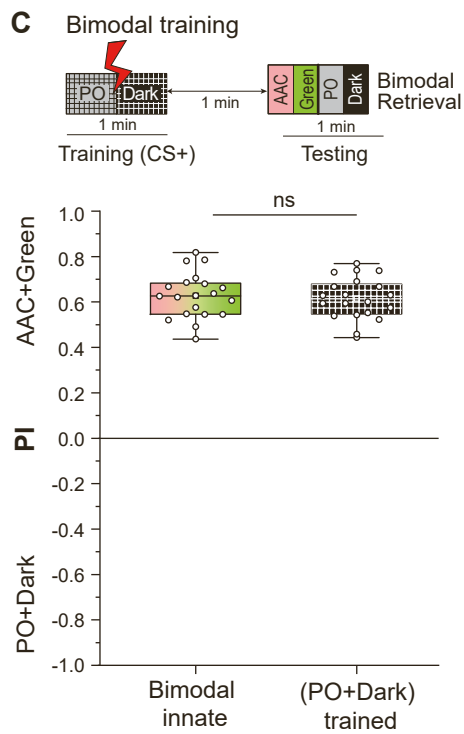
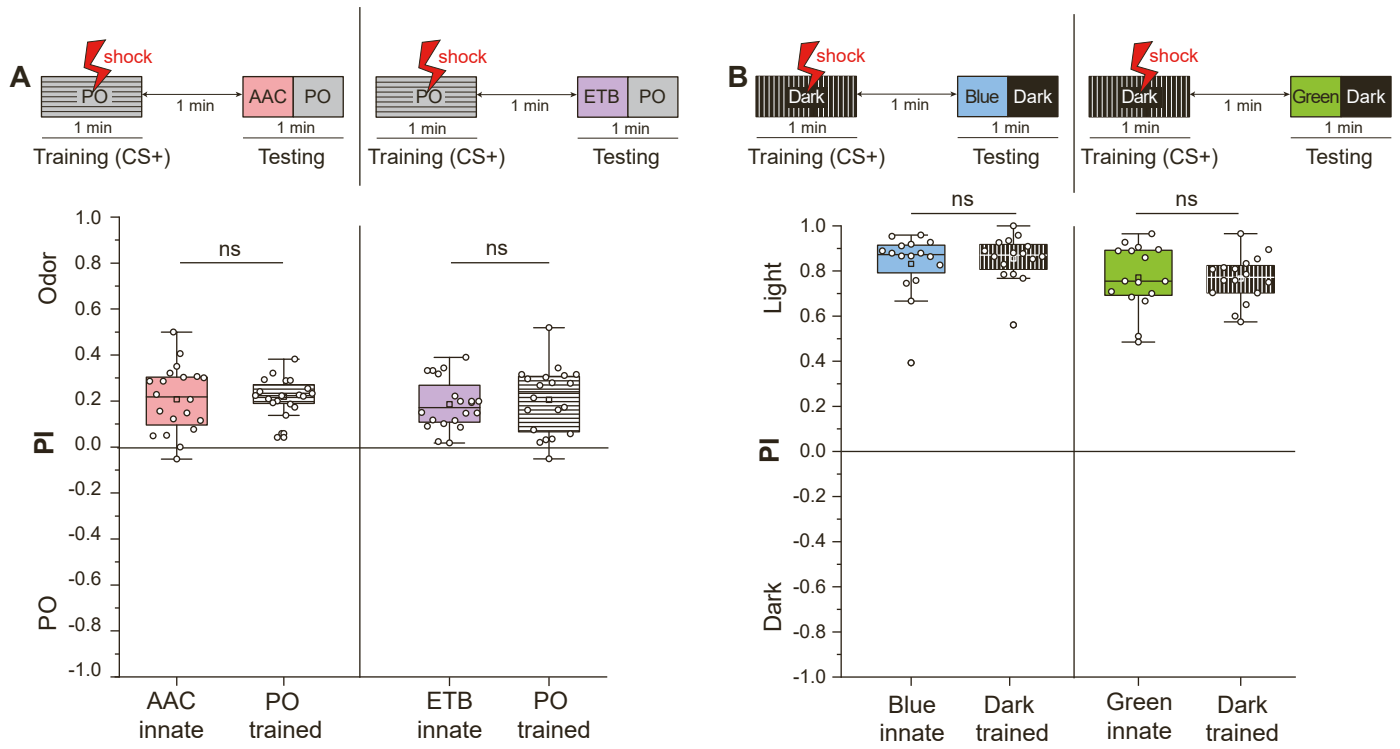
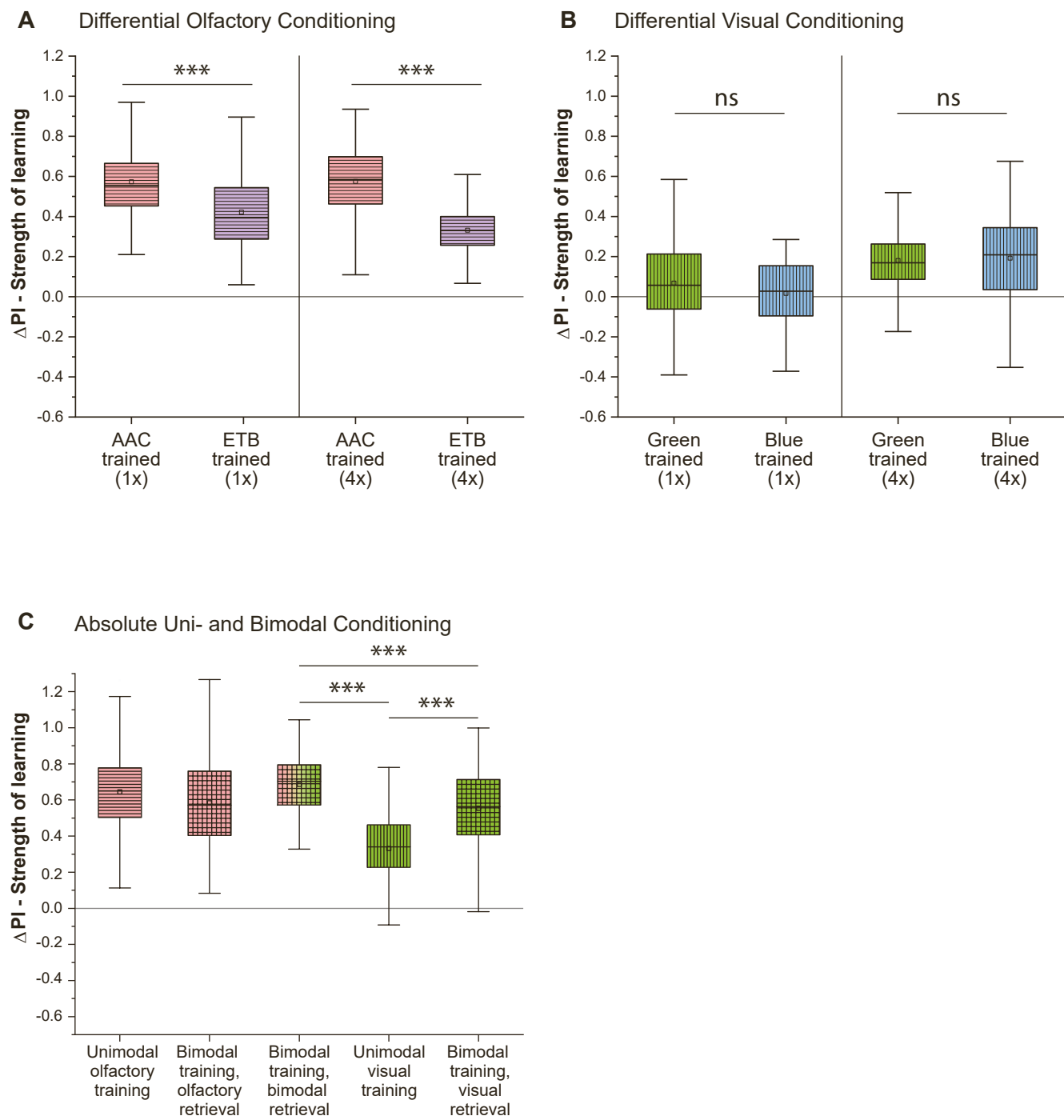


FIGURE S2



Supplemental Figure Legends

Figure S1. Non-associative controls for the absolute conditioning experiments (related to Figures 2A, B and 3D). **A.** Protocol depicting the training of flies to associate paraffin oil (PO) with an electric shock followed by testing their absolute choices to acetoin acetate (AAC) or ethyl butyrate (ETB) against PO. Preference indices plotted for flies that were aversively trained to PO did not differ significantly from those of naïve flies. **B.** Protocol depicting the training of flies to associate darkness with an electric shock followed by testing their absolute choices to blue or green wavelengths against darkness. Preference indices plotted for flies that were aversively trained to darkness did not differ significantly from those of naïve flies. **C.** Similar protocol and preference index plotted for absolute bimodal training with PO+dark. These results control for any non-associative effects. Comparison between two normally distributed data sets was made using unpaired Student T-test with a Welch's correction (ns - $p > 0.05$).

Figure S2. Δ PI values depicting strength of learning across unimodal and bimodal training paradigms (related to Figures 2C-F and 3D). Pairwise differences for all possible combinations were calculated between the innate and learned preference indices of different odors and colors, depicting the strength of learning. **A.** Δ PI values for AAC and ETB indicate significant differences in the ability of flies to learn the two odors. **B.** Δ PI values for blue and green training, which are not significantly different. **C.** Δ PI values for absolute bimodal conditioning experiments (as shown in Fig. 3D), with significant difference evident between unimodally and bimodally acquired visual memory. Comparison between two normally distributed data sets was made using unpaired Student T-test with a Welch's correction ($***p < 0.001$). For comparisons between normally distributed datasets, one-way ANOVA followed by Bonferroni correction and Tukey's post-hoc test was done ($*p < 0.05$, $***p < 0.001$).