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SHORT REPORT

Figures and figure supplements

Nostril-specific and structure-based olfactory learning of chiral discrimination in human adults

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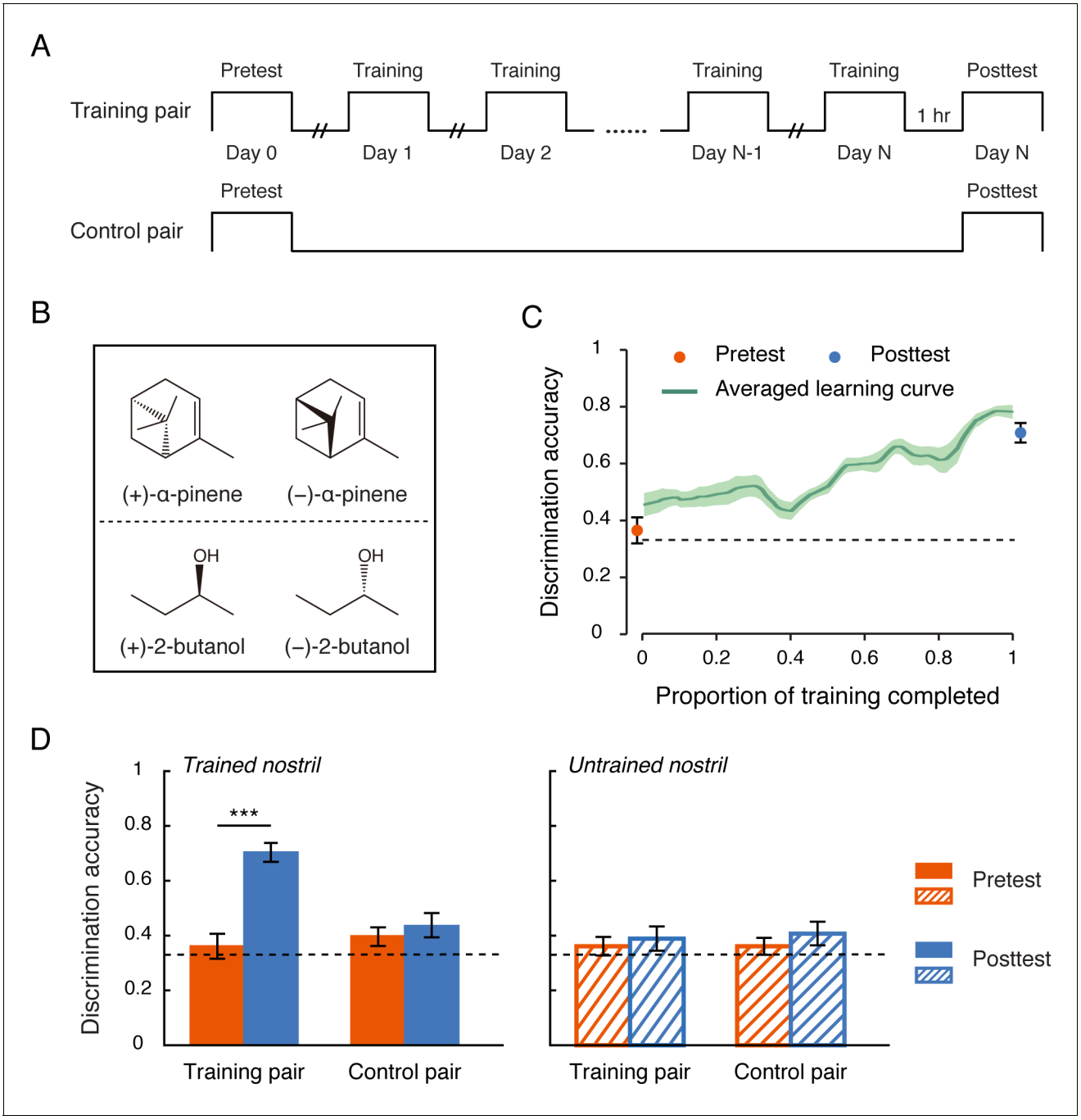

Figure 1. Nostril-specific olfactory learning of chiral discrimination. (**a**) Schematic illustration of the experimental procedure, which comprised of three phases: pretest, training and posttest. During the training phase, participants were trained unirhinally for chiral discrimination with a pair of odor enantiomers. (**b**) Chemical structures of the enantiomers of α-pinene and 2-butanol. Each enantiomer pair served as the training pair for half of the participants in Experiment 1 and the control pair for the other half. (**c**) Improvements in chiral discrimination over the course of training (green curve). Data points were linearly interpolated and averaged across participants. Shaded area represents SEMs. Dots mark the mean discrimination accuracies at pretest and posttest for the training pair of enantiomers presented to the trained nostril. (**d**) Chiral discrimination accuracies at pretest and posttest for the training pair and the control pair of enantiomers presented to the trained vs. untrained nostril. Dashed lines: chance level (0.33); error bars: SEMs; ***$p < 0.001$.

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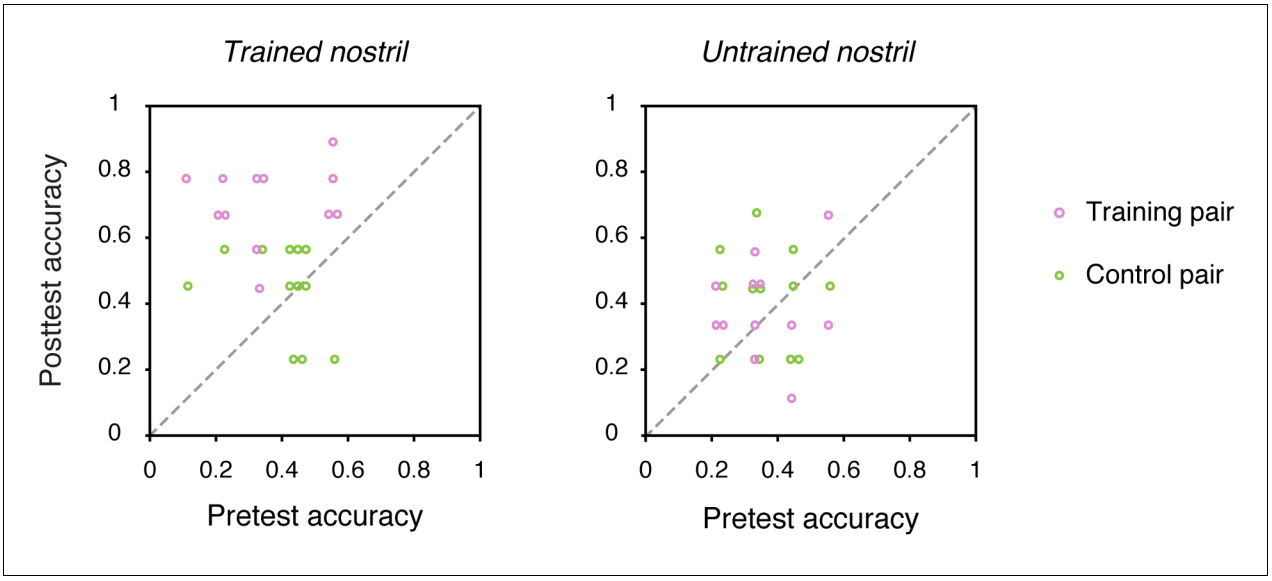

Figure 1—figure supplement 1. Chiral discrimination accuracies at pretest and posttest for each pair of odor enantiomers presented to the trained vs. untrained nostril for individual participants in Experiment 1.

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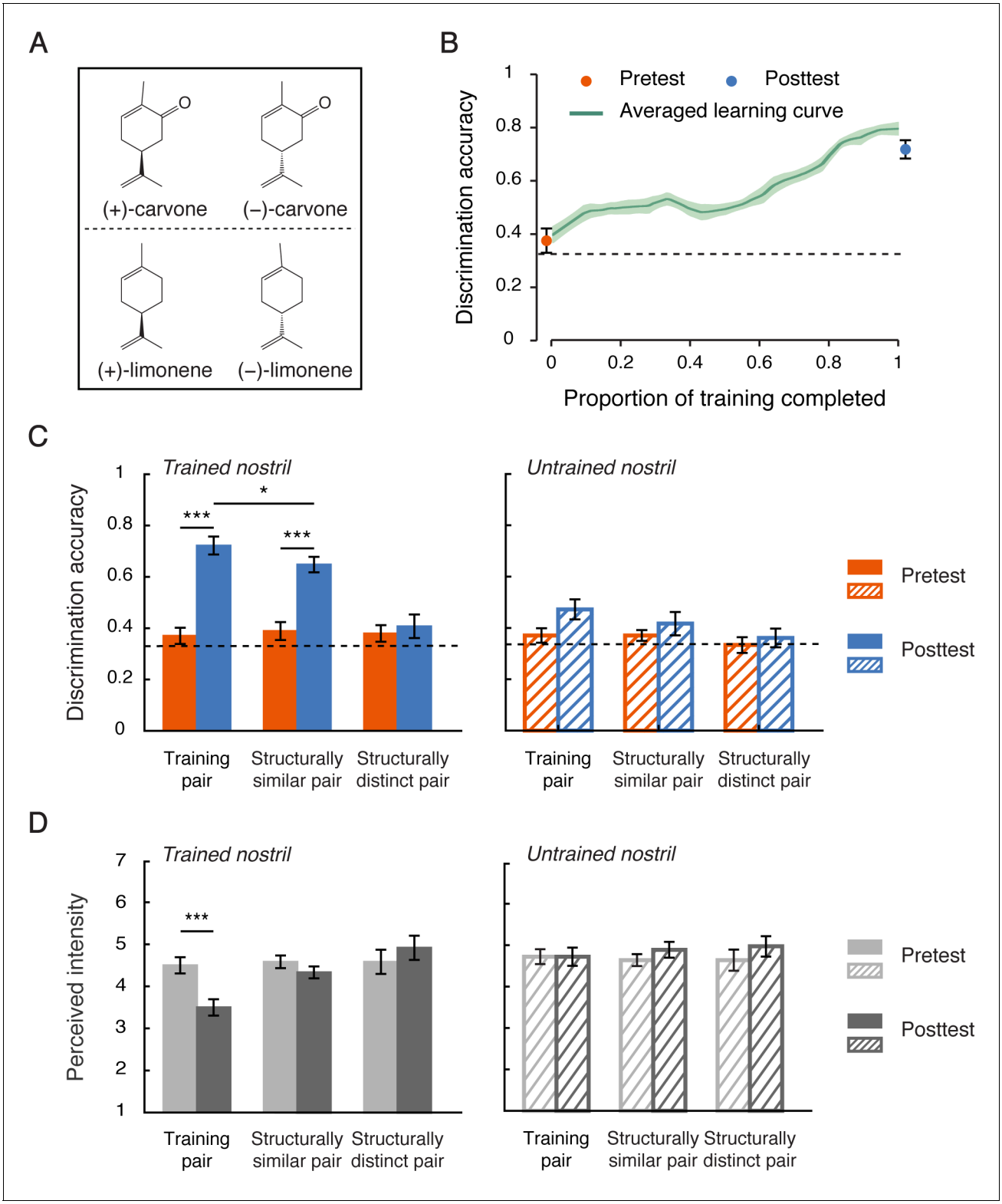

Figure 2. Structure-based generalization of chiral discrimination learning. (**a**) Chemical structures of the enantiomers of carvone and limonene, differing only by a carbonyl group. Each enantiomer pair was used for training for half of the participants in Experiment 2. (**b**) Improvements in chiral discrimination over the course of training (green curve). Data points were linearly interpolated and averaged across participants. Shaded area represents SEMs. Dots mark the mean discrimination accuracies at pretest and posttest for the training pair of enantiomers presented to the trained nostril. (**c**) Chiral discrimination accuracies at pretest and posttest for the training pair (carvone or limonene) and the non-training pairs of enantiomers,

Figure 2 continued on next page

Figure 2 continued

one structurally similar to the training pair (limonene or carvone) and one structurally distinct (α-pinene), presented to the trained vs. untrained nostril. (**d**) Intensity ratings at pretest and posttest for the three pairs of enantiomers (ratings averaged between the two enantiomers in each pair) presented to the trained vs. untrained nostril. Dashed lines: chance level (0.33); error bars: SEMs; *p < 0.05; ***p < 0.001.

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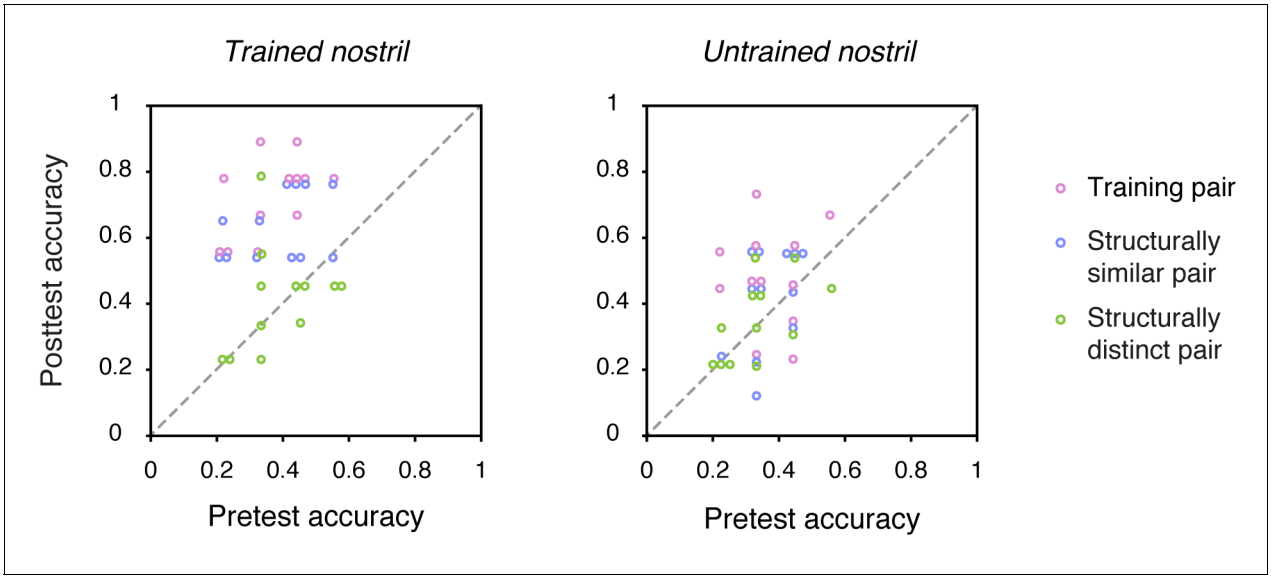

Figure 2—figure supplement 1. Chiral discrimination accuracies at pretest and posttest for each pair of odor enantiomers presented to the trained vs. untrained nostril for individual participants in Experiment 2.

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