

# Stimulus comparison: Effects of the pre-exposure schedule and instructions for perceptual learning and attention

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This study aimed to test the effects of the preexposure schedule and certain kinds of verbal instructions for pre-exposure in perceptual learning and attention to the distinctive features of the stimuli. For this, in two experiments adult human participants received concurrent or blocked pre-exposure to two stimuli, and were then required to judge them as same or different in a target identification task. During pre-exposure, participants could receive unspecific instructions to look only at the stimuli (Experiments 1 and 2), asking for 'same/different?' judgments (Experiments 1 and 2), or only for 'different?' or 'same?' judgments (Experiment 2), whilst the dwell time on the distinctive and common features of the stimuli was also recorded. Regardless of the instructions, Experiment 1 found a clear benefit of the concurrent schedule relative to the blocked schedule in the ability to differentiate the stimuli, accompanied by a preference to look at the distinctive features of the stimuli. In the concurrent preexposure condition, the instructions asking for same/different judgments boosted stimulus differentiation in general, along with an attentional shift, while a clear effect of instructions was not found for the blocked preexposure conditions. Experiment 2 further found that whilst such effects of the instructions for the concurrent schedule might appear when the participants were asked uniquely whether the stimuli were the same, these were stronger when the instructions asked explicitly whether the stimuli were different. According to these novel findings, the benefit of the concurrent preexposure schedule for human perceptual learning might arise from an attentional shift toward the distinctive elements; the instructions encouraging the search for stimulus differences are not needed for either stimulus differentiation or an attentional shift during concurrent preexposure, even though such instructions might enhance both effects. Several valuable

implications of these findings for human and non-human perceptual learning are discussed. © 2018

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Attention

Discrimination

Human perceptual learning

Pre-exposure

Visual stimuli