Pre-exposure schedule effects on generalization of taste aversion and palatability for thirsty and not thirsty rats

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The study reported four experiments aiming to test the effects of the pre-exposure schedule and water deprivation on the generalization of a conditioned taste aversion in rats, with a particular focus on testing whether or not the concurrent schedule might enhance generalization. In two experiments, non-water-deprived rats received concurrent, intermixed, or blocked exposure to a sweet-acid solution and a salty-acid solution before conditioning of one of these compounds and testing of both flavors. During pre-exposure, the rats consumed a greater amount of the sweet-acid solution than the salty-acid solution (Experiments 1 and 2), consumption of the former increasing during pre-exposure while consumption of the latter decreased (Experiment 1). Furthermore, consumption of the salty-acid solution was lower during concurrent than intermixed or blocked pre-exposure (Experiment 1 and 2) while consumption of the sweet-acid solution was greater during intermixed than concurrent or blocked pre-exposure (Experiment 1). It is discussed whether the pre-exposure schedule might modify stimulus perception beyond the mere enhancement of stimulus differentiation, by, for instance, affecting the palatability of gustatory stimuli. Evidence for enhanced generalization after concurrent pre-exposure was not found for either deprived (Experiments 1, 2, and 3) or non-deprived rats (Experiments 3 and 4), with deprivation leading to a general increase in consumption of both the conditioned and test flavors. This then raised the question of whether or not concurrent pre-exposure to flavors always increases generalization between them. The present study highlights the importance of this issue for various accounts of perceptual learning.

Deprivation

Discrimination

Generalization

Palatability

Pavlovian conditioning

Perceptual learning

Rats

Taste aversion