Anticipatory behaviour in animals: A critical review

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Abstract

A number of studies have investigated anticipatory behaviour in animals as a measure of sensitivity to reward or as an expression of emotional state. A common feature of many studies is that they base inferences on seemingly arbitrary measures, for example, the frequency of behavioural transitions (ie number of times an animal switches between different behaviours). This paper critically reviews the literature and discusses various hypotheses for why specific behavioural responses occur in the anticipatory period between the signal and reward in conditioned animals. We argue that the specific behaviours shown may be the result of superstitious learning and thus highly variable, leaving behavioural transitions as the only response that can be scored consistently, and that sometimes these responses may relate more to frustration than to a positive emotional state. Finally, we propose new research approaches to avoid potential confounds and improve future studies on this topic.