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How do we predict rewards? : What animal models can reveal about basic behaviours

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Making associations between environmental cues that predict positive outcomes and adjusting our behaviours accordingly is critical for our survival. Over time, these associations can become inflexible due to repeated exposure to the same cues. For instance, driving to work might take less effort due to repeated exposure to the same street signs. This is known as stimulus-response learning and is known to be implicated in a brain region called the striatum. However, not much is known about the underlying mechanisms of this form of learning. My work seeks to use animal models to determine whether a specific population of neurons found in the striatum are important for stimulus-response learning. Using cognitive assessments, while simultaneously silencing these neurons in mice, will help to further elucidate the underlying mechanisms. By understanding the basic mechanisms of this form of learning we can understand diseases where this learning is impaired, including Parkinson's disease.