**Reward prediction error**

The mismatch between what we anticipate will occur in a certain scenario and what actually occurs is known as a reward prediction error. It is a psychological idea that is frequently used to describe how our brains acquire knowledge and make judgments (Schultz, 2017). An instance of a positive reward prediction mistake is when we anticipate receiving a reward but actually get a better result than we had expected. This may result in joy and higher levels of motivation.

A positive reward prediction error would occur if the individual expected to receive a certain reward for taking a certain action, but actually received a higher reward than expected (Schliephake et al., 2021). For example, imagine that an agent is learning to play a game in which it can take one of two actions: left or right. Let's say that the agent expects to receive a reward of 10 points for taking the action "left," but actually receives a reward of 15 points. In this case, the agent would experience a positive reward prediction error of 5 points. This would indicate that the agent's previous expectations about the rewards associated with different actions were incorrect, and that it needs to update its understanding of the environment in order to improve its performance.

An example of a negative prediction error would be when an individual expects to receive a reward for completing a task, but instead experiences a negative outcome or punishment. For example, a student may expect to receive a good grade on a test after studying hard, but instead receives a poor grade. This can lead to feelings of disappointment and decreased motivation to continue studying in the future.

The practice of anticipating our emotional reactions to a future occurrence is known as affective forecasting. When our predictions are accurate, we experience a positive reward prediction error, which can lead to feelings of happiness and increased motivation (Celestine, 2018). On the other hand, when our predictions are inaccurate and we experience a negative reward prediction error, we may feel disappointed and unmotivated. Therefore, making more accurate predictions through careful affective forecasting can help us experience more positive emotions and be more motivated to achieve our goals.

**Reference**

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