

Modeling Generalization in the Acquired Equivalence Paradigm with the Successor Representation

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Abstract : The successor representation balances flexible and efficient reinforcement learning by learning to predict the future, given the present. As such, the successor representation models stimuli as what future states they lead to. Therefore, two stimuli that are perceptually dissimilar but lead to the same future state will come to be represented more similarly. This is very similar to an older behavioral paradigm -the acquired equivalence paradigm, which measures the generalization of learned associations. Here, we test via computational modeling the plausibility that the successor representation is the mechanism by which people generalize knowledge learned in the acquired equivalence paradigm. Computational evidence suggests that this is a plausible mechanism for acquired equivalence and thus can guide future empirical work on individual differences in associative-based generalization.

Keywords : acquired equivalence, successor representation, generalization, decision-making

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