

A Study on Empathy in Rats: Prosocial Behavior in Active Avoidance Task

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Empathy is defined as a kind of cognitive and affective reactions appropriate for someone else's situation rather than one's own. This empathic concern of others drives human pro-social behavior, which is defined as voluntary behavior intended to benefit the in-group members. We trained rats to learn an active avoidance task (AA). After that, two rats were tested in pairs within two transparent adjacent Skinner boxes. Only one lever in one of two boxes was active to prevent or stop delivery of shock and was accessible only to the better trained rat of the pair. In conventional yoked condition, avoiding or escaping of shock for both rats by a lever pressing. At the mean time an intermittent leakage condition was introduced that rescue of the neighbored rat required a second press of the lever after the self-serving first press. Rats did show a higher rate of second press in the leakage condition than in the yoked condition in which the first press saved both and the second press was a random and meaningless act. This empathic rescuing response dropped to a chance level after the partner's removal.

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