

How can we measure the emotional states of animals?

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Rats housed in standard conditions show a stronger response to the loss of an expected food reward than those housed in enriched conditions, perhaps indicating a more negative emotional state, according to new research by scientists at Bristol University Veterinary School, published in this week's issue of Royal Society Biology Letters.

The researchers have developed a new approach to the measurement of animal emotional states based on findings from human psychology that emotions affect information processing. In general, people are more sensitive to reward losses than gains, but depressed people are particularly sensitive to losses. The researchers wanted to know whether animals' sensitivity to reward loss might also be related to their emotional state.

Many studies have demonstrated beneficial welfare effects of enriched compared to barren housing, and the researchers found that rats housed in standard conditions, previously shown to experience poorer welfare than those housed in enriched conditions, were indeed more sensitive to the unanticipated loss of a food reward. Oliver Burman, Richard Parker, Liz Paul and Mike Mendl from the Centre for Behavioural Biology at Bristol University consider the research indicates that sensitivity to reward reduction may be a valuable new indicator of animal emotion and welfare.

"The study of animal emotion is an important emerging field in subjects ranging from neuroscience to animal welfare research. Whilst we cannot

know for sure what other animals feel, our approach may provide improved methods for indirectly measuring animal emotion and welfare," said Professor Mendl.

Dr Burman further explained, "Parallel studies using this approach in humans and animals may also reveal cross-species commonalities in the influence of affect on reward evaluation. Our next step is to see whether other reward evaluation processes involving contrasts between expected and actual rewards also reflect background emotional state."

Source: University of Bristol

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