

[Physiol Behav.](#) 2011 Mar 28;102(5):503-10. Epub 2011 Jan 12.

Measuring judgement bias and emotional reactivity in sheep following long-term exposure to unpredictable and aversive events.

[Doyle RE](#), [Lee C](#), [Deiss V](#), [Fisher AD](#), [Hinch GN](#), [Boissy A](#).

CSIRO Livestock Industries, Locked Bag 1, Armidale, NSW 2350, Australia; School of Environment and Rural Science, University of New England, Armidale, NSW 2351, Australia.

Abstract

Animal welfare research is now starting to measure the cognitive component of affective states in an effort to improve welfare assessments of animals. Twenty-six Romane ewe lambs were trained to a spatial location task previously demonstrated to test for judgement bias in sheep. This required a go/no-go response according to the location of a bucket in a pen, with one location being positively reinforced (with a feed reward) and the other negatively reinforced (with a fan-forced blower). While training in the judgement bias arena continued, half of the sheep (n=13) were subjected to a chronic, intermittent treatment that consisted of stressful events common to production systems. After 3 weeks of treatment, all sheep were tested for biases in judgement by placing the bucket in ambiguous locations between the two learnt reference locations. The emotional reactivity, as characterised by behavioural and physiological responses, of all sheep to events that were unexpected, novel or sudden was then tested. A significant treatment×bucket location interaction was seen on day 3 with Stressed sheep approaching the bucket locations less than Control sheep ($p=0.007$). This may reflect a bias in judgement, however it is also possibly a treatment-induced difference in learning. Cardiac data did not indicate treatment differences, however the RMSSD of Control sheep in novel and unfamiliar situations was always higher than the Stressed animals. No meaningful treatment differences in emotional reactivity behaviours were evident. This paper provides further evidence that affective states exist and can be measured in animals.

Crown Copyright © 2011. Published by Elsevier Inc. All rights reserved.

PMID: 21236279 [PubMed - in process]