

Study shows the temperature of a cow's nose can reveal their inner emotions

January 22 2015



Global campaigning organisation, World Animal Protection, have published the first study exploring whether nasal temperatures can be used as a measure of positive emotions in cows. Published in this month's *Physiology and Behaviour* journal, the science team working at the charity highlight how the findings from their study could provide a way of assessing positive emotions in cows.

Previous literature has shown a strong connection between peripheral

temperatures (e.g. skin, nose, ears etc.) and high arousal negative experiences. Stress, fear and frustration have all been found to cause a drop in peripheral temperatures in mammals. Little is known however, about whether the experience of positive emotions affects peripheral temperatures. In the study of 13 [cows](#), the World Animal Protection team sought to identify whether the nasal temperature of cows could be reliably used as a measure of positive emotional state in cows.

The study involved putting the cows into a calm and relaxed state by stroking them in preferred regions, in a similar manner to allogrooming (the grooming of another individual). The scientists did this over 350 times, remotely recording the cow's nasal temperatures before, during and after they were being stroked.

Analysis revealed that a drop in nasal temperature occurred when the cows were stroked, and experiencing the positive, relaxed emotional experience.

Sentience Manager at World Animal Protection, Helen Proctor, said: "Understanding how animals express positive emotions is an important area of focus for animal welfare science, yet it is widely neglected.

The necessity is not to prove that animals have a range of emotions, but to measure it. In doing this it is key to show not just that pain and suffering is removed but to draw attention to the importance of good welfare and how to understand the [positive emotions](#) that an animal will display."

The stroking stimulus worked really well in inducing a state of positive relaxation in the cows, and it has previously been shown to be both positive and to reduce stress levels and heart rates in cows. World Animal Protection concluded that the drop in nasal temperature was indicative of the change in the cow's emotions from neutral to positive,

and that these results offer insight into the use of peripheral temperatures as a measure of animal emotions.

The study was carried out at Bolton's Park Farm, which is part of the Royal Veterinary College, Potters Bar.

This work is part of ongoing scientific research carried out by World Animal Protection as animal sentience is of growing international concern and interest across many disciplines and sectors. The scientific community's understanding of sentience is crucial in affecting how animals are treated, both in work and everyday lives. Last month the team published a study revealing how the positioning of cows' ears can teach us a lot about their varying emotional states. To learn more about animal sentience please visit the Sentience Mosaic.

The nasal temperature study is also hoped to be of use when working with the dairy industry in their programmes and understanding of their cows. World Animal Protection UK has a long running campaign to address the problem of a trend towards intensive dairy farming and is raising awareness of the benefits and needs for pasture based farming, both for the animals and for the failing industry, which is currently in crisis.

More information: "Can ear postures reliably measure the positive emotional state of cows?" DOI:

[dx.doi.org/10.1016/j.applanim.2014.09.015](https://doi.org/10.1016/j.applanim.2014.09.015)

Provided by World Animal Protection

Citation: Study shows the temperature of a cow's nose can reveal their inner emotions (2015, January 22) retrieved 24 April 2024 from <https://phys.org/news/2015-01-temperature-cow-nose->

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