The welfare implications of CO2 euthanasia of research animals has been questioned. Euthanasia by CO2 involves allowing the gas to first render the animal unconscious, then letting the animal die from the extended exposure while unconscious. Studies have shown that rats experience high levels of stress far before being rendered unconscious by CO2, and that rats wish to quickly escape from the toxic gas. However, some argue that the fleeing behaviour exhibited by rats is not a result of felt emotions, but a reflex or physiological response of the body. Researchers argue that the rats do not feel negative emotions during exposure to CO2. To assess whether rats feel experience emotions, this study examined microbehaviours of rats when placed in an unfamiliar cage filled with CO2 or air. A bowl of cheerios was placed in the test cage which prompted rats to leave their home cage to reach the cheerios. As the rats ate the cheerios, we observed behaviours such as attempts to exit the test cage while fitting many cheerios in their mouths and arms, eating with their bodies facing the exit and standing by the exit while eating as opposed to beside the bowl. These observable microbehaviours provide evidence that rats do feel negative felt emotions when exposed to only a few seconds of CO2, and that without cheerios, the rats would have no desire to remain in the CO2 environment. This study presents the need for an improved method of rat euthanasia that is more humane.

Themes:
Check (highlight) the most applicable theme according to the abstract.

I Innovation and Technology
Health and Wellness
Culture and Society
Sustainability and Conservation

Comments: While this is an interesting study, I caution the author about making broad conclusions about the emotional state of the rats when this was not directly tested. Microbehaviours need to be defined, but I would argue does not apply in this study. You can state the behaviours you assessed and how the animal reacted here, but to get at emotional states you would need to be running aversion testing or cognitive bias tests. I like the focus on welfare and working to improve the lives of animals used in research. Make sure the abstract contains a bit more information for the reader on the methods used and analyses employed. Overall, good work.