

# IG® & BEYOND: DOGS ON FACES, MICE ON ART

Some further research adventures of Ig Nobel Prize winners

compiled by Nan Swift, Improbable Research staff

## Huber: Dogs' Take on Human Happy Faces

[The 2011 Ig Nobel Prize for physiology was awarded to Anna Wilkinson, Natalie Sebanz, Isabella Mandl, and Ludwig Huber, for their study "No Evidence of Contagious Yawning in the Red-Footed Tortoise." REFERENCE: "No Evidence Of Contagious Yawning in the Red-Footed Tortoise Geochelone carbonaria," Anna Wilkinson, Natalie Sebanz, Isabella Mandl, and Ludwig Huber, Current Zoology, vol. 57, no. 4, 2011. pp. 477-484.]

"Dogs Can Discriminate Emotional Expressions of Human Faces," Corsin A. Müller, Kira Schmitt, Anjuli L.A. Barber, and Ludwig Huber, Current Biology, epub February 12, 2015. NOTE: Ig Nobel winner Ludwig Huber joins with other colleagues who report:

After learning to discriminate between happy and angry human faces in 15 picture pairs, whereby for one group only the upper halves of the faces were shown and for the other group only the lower halves of the faces were shown, dogs were tested with four types of probe trials: (1) the same half of the faces as in the training but of novel faces, (2) the other half of the faces used in training, (3) the other half of novel faces, and (4) the left half of the faces used in training. We found that dogs for which the happy faces were rewarded learned the discrimination more quickly than dogs for which the angry faces were rewarded.

## Watanabe: Mice on Paintings

[The 1995 Ig Nobel Prize for psychology was awarded to Shigeru Watanabe, Junko Sakamoto, and Masumi Wakita, for their success in training pigeons to discriminate between the paintings of Picasso and those of Monet. REFERENCE: "Pigeons' Discrimination of Paintings by Monet and Picasso," Journal of the Experimental Analysis of Behavior, vol. 63, 1995, pp. 165-174.]

"Preference for and Discrimination of Paintings by Mice," Shigeru Watanabe, PLOS ONE, vol. 8, no. 6, 2013, e65335. The author reports:

I measured preference for paintings (Renoir vs. Picasso or Kandinsky vs. Mondrian) in mice. In general mice did not display a painting preference except for two mice: one preferred Renoir to Picasso, and the other preferred Kandinsky to Mondrian. Thereafter, I examined discrimination of paintings with new mice. When exposure to paintings of one artist was associated with an injection of morphine (3.0 mg/kg), mice displayed conditioned preference for those paintings, showing discrimination of paintings by Renoir from those by Picasso, and paintings by Kandinsky from those by Mondrian after the conditioning.

### Report

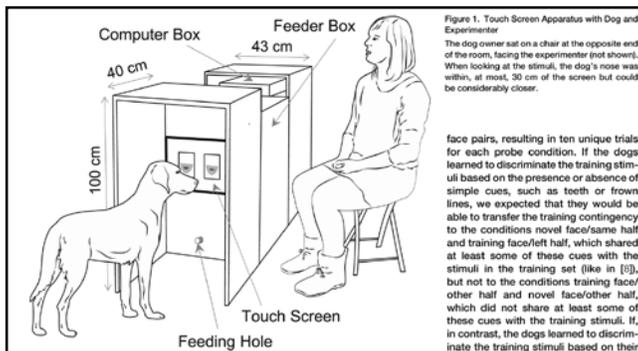
#### Dogs Can Discriminate Emotional Expressions of Human Faces

Corsin A. Müller,<sup>1,\*</sup> Kira Schmitt,<sup>1</sup> Anjuli L.A. Barber,<sup>1</sup> and Ludwig Huber<sup>1,2</sup>  
<sup>1</sup>Messeri Research Institute, University of Veterinary Medicine Vienna, Medical University of Vienna and University of Vienna, 1210 Vienna, Austria

#### Summary

The question of whether animals have emotions and respond to the emotional expressions of others has become a focus of research in the last decade [1–6]. However, to date, no study has convincingly shown that animals discriminate between emotional expressions of heterospecifics, excluding the possibility that they respond to simple cues. Here, we show that dogs use the emotion of a heterospecific as a discriminative cue. After learning to discriminate be-

individuals of different species, for example in mutualistic mixed-species associations or in predator-prey interactions (e.g., a predator discriminating fear and anger in a potential prey animal). Compared to emotion recognition in conspecifics (cf. [7, 10–12]), discriminating emotional expressions in heterospecifics is particularly challenging as emotions are not necessarily expressed in similar ways across species (indeed, although emotional expressions are generally very similar across cultures in humans, they are not expressed universally in the same way even within the species [13]). Therefore, the ability to recognize emotional expressions in individuals of a different species is likely dependent on experience. Similar experience effects have previously been shown, for example, for the ability to discriminate individual faces of another species [14–16]. The most promising species pair for investigating emotion recognition between heterospecifics is domestic dogs and



Detail from the study "Dogs Can Discriminate Emotional Expressions of Human Faces."

## Preference for and Discrimination of Paintings by Mice

Shigeru Watanabe\*

Department of Psychology, Keio University, Mita 2-15-45, Minato-Ku, Tokyo, Japan

### Abstract

I measured preference for paintings (Renoir vs. Picasso or Kandinsky vs. Mondrian) in mice. In general mice did not display a painting preference except for two mice: one preferred Renoir to Picasso, and the other preferred Kandinsky to Mondrian. Thereafter, I examined discrimination of paintings with new mice. When exposure to paintings of one artist was associated with an injection of morphine (3.0 mg/kg), mice displayed conditioned preference for those paintings, showing discrimination of paintings by Renoir from those by Picasso, and paintings by Kandinsky from those by Mondrian after the