

EMBARGOED until Mar 11th 2014: 7 am EST; 12 midday UK time

Researchers show that bold baboons learn to solve tasks from other baboons *Personality predicts social learning in wild monkeys*

Baboons learn from other baboons about new food sources – but only if they are bold or anxious – according to a new study published in the journal PeerJ (<http://peerj.com>). The results suggest that personality plays a key role in social learning in animals, something previously ignored in animal cognition studies.

Studying animals at the Zoological Society of London's Institute of Zoology Tsaobis Baboon Project in Namibia, the researchers examined how personality influenced whether baboons solved foraging tasks and whether they then demonstrated to others how to solve the tasks. They found bolder baboons did both.

Over three years, the researchers performed two types of experiment in which the baboons could learn about a novel food source by watching another baboon with it.

According to lead author Dr Alecia Carter of the University of Cambridge: "Though bolder baboons learnt, the shy ones watched the baboon with the novel tasks just as long as the bold ones did, but did not learn the task. In effect, despite being made aware of what to do with the tasks they were still too shy to do anything with it afterwards."

This means there was a mismatch between collecting social information and using social information.

The authors found a similar mismatch for anxiety: calm baboons watched a demonstrator for longer than anxious individuals, but it was the anxious individuals which learnt the task.

"These results are significant, because they suggest that in cognitive tasks animals may perform poorly not because they aren't clever enough to solve the task, they may just be too shy or nervous to interact with it. Individual differences in social learning that are related to personality may thus have to be taken into account systematically when studying animal cognition," she said.

The results also suggest that the baboons' social networks may prevent them from learning from others. "I couldn't test some individuals no matter how hard I tried," explained Dr Carter, "because although they were given the opportunity to watch a knowledgeable individual who knew how to solve the task some baboons simply never went near a knowledgeable individual and thus never had the opportunity to learn from others."

The findings may impact how we understand the formation of culture in societies through social learning. If some individuals are unable to get information from others because they don't associate with the knowledgeable individuals, or they are too shy to use the information once they have it,

information may not travel between all group members, stopping the formation of a culture based on social learning.

###

Author Event: On the day of publication (March 11th) two of the authors (Dr Carter and Dr Marshall) will be online and answering any questions about their work. This is a freely available 'ask me anything' event and will be running at <https://www.peerj.com/ask/BaboonPersonality/> all day

###

Images / Movie Files

Note: in addition to the images below, there are 3 others images and a 45 second movie available for use – please request a copy from press@peerj.com



Caption: The Tsaobis Baboon Project follows habituated baboons in the Pro-Namib desert of Namibia.

Credit: Alecia Carter/Tsaobis Baboon Project, CC-BY



Caption: An infant baboon attempts to gather social information from her mother by smelling what she has just eaten.

Credit: Alecia Carter/Tsaobis Baboon Project, CC-BY



Caption: A juvenile male baboon gathers social information from another juvenile male baboon by smelling his mouth while he is processing food.

Credit: Alecia Carter/Tsaobis Baboon Project, CC-BY



Caption: An infant baboon acquires social information indirectly by manipulating a food item previously processed by an adult baboon.

Credit: Alecia Carter/Tsaobis Baboon Project, CC-BY

###

EMBARGOED until March 11th 2014: 7 am EST; 12 midday UK time

Link to the PDF of this Press Release: <http://bit.ly/CarterPeerJRelease>

Link to the Press Preview of the Original Article (this link should only be used **BEFORE** the embargo ends): <http://static.peerj.com/press/previews/2014/03/283.pdf> (note: this is an author proof and so may change slightly before publication)

Link to the Published Version of the article (quote this link in your story – the link will **ONLY** work **after** the embargo lifts): <https://peerj.com/articles/283> - your readers will be able to **freely** access this article at this URL.

Citation to the article: Carter et al. (2014), Personality predicts the propensity for social learning in a wild primate. *PeerJ* 2:e283; DOI 10.7717/peerj.283

Funding Statement (from the article): “Financial support was provided by grants from the Leakey Foundation, the Animal Behavior Society (USA), the International Primatological Society, and the Explorers Club Exploration Fund to AJC. AJC was supported by a Fenner School of Environment and Society studentship. HHM was supported by a NERC Open CASE studentship. The funders had no role in study design, data collection and analysis, decision to publish, or preparation of the manuscript.”

###

About PeerJ

PeerJ is an Open Access publisher of peer reviewed articles, which offers researchers a lifetime publication plan, for a single low price, providing them with the ability to openly publish all future articles for free. PeerJ is based in San Francisco, CA and London, UK and can be accessed at <https://peerj.com/>.

All works published in PeerJ are Open Access and published using a Creative Commons license (CC-BY 4.0). Everything is immediately available—to read, download, redistribute, include in databases and otherwise use—without cost to anyone, anywhere, subject only to the condition that the original authors and source are properly attributed.

PeerJ Media Resources (including logos) can be found at: <https://peerj.com/about/press/>

###

Media Contacts

Note: If you would like to join the PeerJ Press Release list, visit: <http://bit.ly/PressList>

For the Authors: Alecia Carter. Email: ac854@cam.ac.uk

For PeerJ: email: press@peerj.com ; <https://peerj.com/about/press/>

###

Abstract (from the article):

Social learning can play a critical role in the reproduction and survival of social animals. Individual differences in the propensity for social learning are therefore likely to have important fitness consequences. We asked whether personality might underpin such individual variation in a wild population of chacma baboons (*Papio ursinus*). We used two field experiments in which individuals had the opportunity to learn how to solve a task from an experienced conspecific demonstrator: exploitation of a novel food and a hidden item of known food. We investigated whether the (1) time spent watching a demonstrator and (2) changes in task-solving behaviour after watching a demonstrator were related to personality. We found that both boldness and anxiety influenced individual performance in social learning. Specifically, bolder and more anxious animals were more likely to show a greater improvement in task solving after watching a demonstrator. In addition, there was also evidence that the acquisition of social information was not always correlated with its use. These findings present new insights into the costs and benefits of different personality types, and have important implications for the evolution of social learning.