

Primitive reward-driven behaviors may bias the information people choose to sample

November 11 2016

The way people make decisions often seems irrational. One explanation for this behavior is that they seek evidence that confirms what they already believe, a phenomenon called 'confirmation bias'. But new research in open-access journal *PLOS Biology* suggests that confirmation bias may not be the only factor that influences how people sample information. The tendency to choose items associated with rewards—known as 'Pavlovian approach'—can also bias the information people choose to sample, according to Laurence Hunt from University College London, United Kingdom, and his colleagues.

It's known that Pavlovian approach affects how animals and people learn as well as what they pay attention to, so the researchers thought this behavior might also bias the information people choose to sample. To test this idea, they collected data from more than 30,000 people who played a gambling card game via a [smartphone app](#), which included more than 3 million decisions. The game involved tasks such as selecting the row of cards containing those that were biggest or smallest. Players were trying to score points, and could use some of their previously earned points to look at cards—that is, sample locations—to help them decide which one to select. To see if the way the participants made decisions was biased, the researchers compared their choices with those predicted by a model of the best possible actions.

The researchers identified three biases in the way participants sample information: the first influenced where people sought that information, the second influenced when they stopped seeking it, and the third

influenced how they used information to select cards. Each bias was related to Pavlovian approach: that is, choices were biased towards a location more likely to yield a reward. Interestingly, subjects' tendency to sample information increased with education level and age, while game performance rose with [education level](#) but dropped with age.

Comparison with the model of optimal information gathering showed that the three biases were irrational in the context of the game. However, the researchers suggest that information sampling biases that are driven by Pavlovian approach are likely to be adaptive in the natural world. When making foraging decisions such as staying in or leaving an area, for example, it may be adaptive to select the most valuable alternative first, and then accept or reject it based on further information about its value. The researchers posit that such behaviors could explain decisions that seem irrational: while advantageous to our evolutionary ancestors, these primitive behaviors may bias [information](#) sampling even when they are irrelevant, thus leading to suboptimal choices amongst [people](#) today.

More information: Laurence T. Hunt et al, Approach-Induced Biases in Human Information Sampling, *PLOS Biology* (2016). [DOI: 10.1371/journal.pbio.2000638](#)

Provided by Public Library of Science

Citation: Primitive reward-driven behaviors may bias the information people choose to sample (2016, November 11) retrieved 25 April 2024 from <https://phys.org/news/2016-11-primitive-reward-driven-behaviors-bias-people.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.
