The statistician baboon: papio papio's understanding of noisy linear patterns

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Abstract

Several studies showed that humans are incredibly accurate at extracting simple statistical information from noisy datasets, such as judging the linear trends of scatterplots. Crucially, these intuitions might serve as one of the building blocks of both graphical and mathematical skills. However, we do not know if such abilities are specific to our species or if they can be found in other animals as well. We tested several guinea baboons on a trend judgment task in which they had to judge whether linear trends (both noisy and noiseless) were increasing or decreasing. We show that they can and that they behave strikingly similarly to humans: they seem to base their judgment on the t-value of the graph, which is the index that a statistician would calculate to measure the significance of the linear relationship in the dataset. These findings suggest that the ability to extract statistical information from visual noise is not available only to humans.

In L. K. Samuelson, S. L. Frank, M. Toneva, A. Mackey, & E. Hazeltine (Eds.), *Proceedings of the 46th Annual Conference of the Cognitive Science Society.*