

For complex decisions, narrow them down to two

February 3 2020



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When choosing between multiple alternatives, people usually focus their attention on the two most promising options. The quicker we do that, the faster we make the decision. Psychologists from the University of Basel have reported these findings in the scientific journal *Nature Human Behaviour*.

How can we make quick yet efficient decisions in a world with ever more options and choices? This is the question that a team from the University of Basel's Center for Decision Neuroscience asked themselves. One key element for the researchers when tackling this challenge was identifying the attention of their participants, which was measured by recording eye movements with an eye tracker.

Choice of foods

In two experiments, 139 participants were asked to choose between three different foods that changed over multiple rounds. Based on these experiments, the psychologists determined that people did not distribute their attention equally, but increasingly focused on the two options that they found most promising. This led to faster decisions—the easier it was to discount the worst option, the more quickly the participant was able to decide between the two remaining options.

In earlier studies on this topic, participants were usually only given two options to choose between. In recent years, however, research has increasingly turned to decisions with three or more alternatives. This is because people can behave in many contradictory and inconsistent ways when multiple related options are available. For example, someone who initially selects chicken over pasta may change their preference when another vegetarian option such as salad is added—and may then suddenly find the pasta more appealing.

Ever more choices

Such inconsistencies when making decisions have important implications for decision theories in economics, psychology and neuroscience. On the basis of their new results, the Basel researchers have proposed a [mathematical model](#) that describes the dynamic interactions of

preference formation and eye movements when making decisions between multiple alternatives.

"One goal of our research," says study leader Professor Sebastian Gluth, "is to understand how people act in a world with ever more options, as you have with online stores or large shopping malls." The results of the study should help to advance our understanding of [decision](#)-making in today's real-life environments: "Usually, we don't have to choose between an apple and an orange—but between tens or hundreds of different apples and oranges."

More information: Gluth, S., et al. Value-based attention but not divisive normalization influences decisions with multiple alternatives. *Nat Hum Behav* (2020). doi.org/10.1038/s41562-020-0822-0

Provided by University of Basel

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