

People may know the best decision—and not make it: study

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When faced with a decision, people may know which choice gives them the best chance of success, but still take the other option, a new study suggests.

People may choose based on a "gut feeling", a habit, or what worked for them last [time](#), rather than on what they have learned will work most

often, said Ian Krajbich, co-author of the study and associate professor of psychology and economics at The Ohio State University.

The results run counter to the belief that people make the less optimal choice because they just don't know any better.

"In our study, people knew what worked most often. They just didn't use that knowledge," Krajbich said.

The research, published today in the journal *Nature Communications*, was led by Arkady Konovalov, a former graduate student at Ohio State who is now at the University of Zurich in Switzerland.

Krajbich gave an example of how the study's findings may work in real life. Say Main Street is usually the fastest way home from work for you. But yesterday there was an event that was going to slow traffic on Main Street, so you took Spruce Street instead and it got you home a few minutes faster than normal.

Today, do you take Main Street—which you know is usually the better route—or take Spruce Street because it worked so well yesterday?

Krajbich said the results of this study suggest that many times we will take the route that worked yesterday and ignore the evidence of what normally works best.

"There's this tension between doing what you should do, at least from a statistical perspective, versus doing what worked out well recently," Krajbich said.

In the study, participants played a simple computer game in which noticing and exploiting patterns could make them more money. The researchers tracked their mouse movements to detect whether they

picked up on those patterns.

For example, participants would choose one of two symbols on the top half of the screen—one on the top left and one on the top right. They would then move the cursor to the bottom half of the screen and a symbol would appear on the bottom right or bottom left. They would click on that to see their [reward](#).

Participants repeated this game dozens of times. The researchers could determine if the participants learned the pattern between what they chose at the top and what they got at the bottom (for example, choosing the top left symbol usually led to the bottom right symbol with the largest reward) by watching their mouse movements.

"We could tell where they thought the next symbol was going to appear by where they moved the cursor," Krajbich said.

"And we found that nearly everyone—56 of the 57 participants—learned the pattern. That was no problem for our participants."

But the researchers designed part of the study so that the pattern that usually led to the largest reward didn't work 10 to 40 percent of the time.

So the question was: After one of the trials in which the pattern that usually led to the largest reward didn't work, what would participants do? Would they stick to the pattern or choose something else?

Results showed that participants followed the plan that gave them the best chance of success—which was following the pattern that worked at least 6 out of 10 times—only about 20 percent of the time.

In other parts of the study, the pattern that produced the biggest reward always worked the same way. Here, where the pattern was consistent,

participants followed it about twice as often as in the other cases: about 40 percent of the time.

Why don't people follow the best strategy more often? While the answer to that is beyond the scope of this study, Krajbich said it likely takes a lot of mental energy and planning to always make decisions based on your knowledge of the environment.

And the rewards of following the best strategy aren't always obvious—especially if following that strategy increases your success by only a small percentage, he said.

This tension between using a statistical-based strategy versus going with your "gut" comes up a lot in sports, Krajbich said. Coaches and managers must decide whether to go for it on fourth down in football or walk a batter in baseball. The [decision](#) that has the best chance to succeed statistically is often only a bit more successful than the other choice.

"It can be hard to judge whether you made a good or bad decision based just on the outcome. We can make a good decision and just get unlucky and have a bad outcome. Or we can make a bad decision and get lucky and have a good outcome," Krajbich said.

In those situations, it is easy for people to stop being disciplined and just choose whatever decision got them rewards most recently.

The lesson from this study, Krajbich said, is that people often do learn what works best. "They just have to put that knowledge into practice."

Provided by The Ohio State University

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