

Study: Focusing immediately on the benefits of waiting might help people improve their self-control

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People tend to make more impulsive decisions if they think about time delays first, UCLA researchers have found. Changing how information is presented could lead to better choices. Credit: Susan Q. Yin/Unsplash

If you had to decide whether to receive \$40 in seven days or \$60 in 30 days, which would you choose? Your answer could have less to do with whether you are a patient or impatient person than with how the choice is presented, according to a new paper [published](#) in *Nature Communications*.

The research found that first revealing the time delay—seven to 30 days—made people tend to prefer the shorter-term, "impatient" option, while first revealing the greater reward of the 30-day option encouraged people to choose the "patient" option of waiting to receive more money. The amount of time allotted to decide also influences their choices, but not always in the way you might expect. In some cases, people were more patient when they had less time to decide.

"The takeaway message is that people can be impatient or exhibit a lack of self-control for many reasons," said corresponding author Ian Krajbich, an associate professor of psychology at UCLA. "It may in part reflect their true patience but it may also be due to attentional biases, like how prominently delay information is presented. Immediately focusing on the benefits of waiting might help people improve their self-control."

Krajbich, who studies the [cognitive process](#) by which people make choices, and colleagues at Zhejiang University and Hangzhou Normal University, led by Fadong Chen, asked a total of 353 college student volunteers to choose between patient and impatient alternatives, for example to receive \$40 in seven days or \$60 in 30 days, by clicking their choice on a computer screen while software tracked and recorded the movements of their mouse.

In some cases, participants had to make their decisions in two seconds, in others they had unlimited time or had to wait 10 seconds before choosing. At the end of the study, participants earned money based on one decision.

Whether the mouse shot straight to one of the options or wandered a little as the participant considered their options revealed the order in which they were considering dimensions of the task, and at what point in time their mouse movements were first influenced by either the delays or rewards.

More than half the participants patiently chose the "larger later" option regardless of time constraint:

- Surprisingly, when given the least time to think about it, they made the most patient decisions. With just two seconds to choose, 65% opted for the "larger later" option.
- With unlimited time, 59% chose the "larger later" option, as did only 54% of those who had to wait 10 seconds before choosing.
- But participants who generally favored the "smaller sooner" options showed the opposite pattern, tending to prefer the "larger later" option when they had more time to think about it.

"If you're somebody who focuses on the rewards first, [time pressure](#) accentuates that and makes you more patient," Krajbich said. "And if you're a little impatient by nature and focus on delays first, time pressure magnifies that impatience. Time pressure has different effects for different people. It enhances inherent bias."

But the researchers found that they could manipulate that bias by changing how they presented information about the choices.

The researchers then repeated the experiments, but altered how the

information was presented, sometimes revealing the delay first and sometimes revealing the rewards first. In these experiments, participants were allowed to make choices at various times, such as after seeing just one piece of information or after seeing them all.

These experiments revealed that when shown the rewards first, participants made more "larger later" choices. When the [time delay](#) was presented first, they made more "smaller sooner" choices. People were more patient when they saw rewards before delays.

Research on decision-making has shown that when people are making decisions, they have to evaluate their options over time because they often don't immediately know what to do. Because people have limited attention, they tend to focus on one dimension of the [choice](#) at a time.

In the experiments, these two dimensions were delay or reward, and participants tended to consider the amounts first and then the delays, but this varied across people. Those who were less patient in their choices were more likely to consider the delays first.

"If people consider amounts first, they're more likely to choose the patient option, and if they consider the delays first, they're more likely to choose the impatient option. If you're trying to get people to be more patient by getting them to slow down or speed up their decisions, you need to know which dimension they're going to focus on first. That will determine the appropriate intervention," Krajbich said.

The findings could be applied where people are being encouraged to make life choices that will benefit them in the long run, such as eating healthier, exercising or saving for retirement.

"You want to emphasize those future large rewards and try to deemphasize how long it's going to take," Krajbich said. "Try to have the

reward information come first."

More information: Fadong Chen et al, Attribute latencies causally shape intertemporal decisions, *Nature Communications* (2024). [DOI: 10.1038/s41467-024-46657-2](https://doi.org/10.1038/s41467-024-46657-2)

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