

OPINION

AUGUST 16, 2024 | 6 MIN READ

Why People Procrastinate, and How to Overcome It

To stop putting off tasks, think about the positive

BY JAVIER GRANADOS SAMAYOA & RUSSELL FAZIO



Pete Ryan

Psychology ▾

Opinion ▾

By April 12, 2024—three days before the deadline for filing tax returns in the U.S.—more than a quarter of American taxpayers had yet to do so.

Procrastination—delaying something despite an awareness of associated negative consequences, leading to discomfort—is a common experience for many. Unfortunately, procrastination tends to carry significant costs. For instance, completing a task when rushing to finish can affect the quality of one’s work. Moreover, procrastination is by its very definition stressful, and naturally such stress can take its toll. Chronic procrastinators tend to report more symptoms of illness, more visits to the doctor, lower overall well-being and even greater financial struggles.

So if procrastination is so costly, why do so many people regularly do it? Years of research have provided a reasonably comprehensive list of psychological factors that relate to procrastination. But it’s been unclear what mental processes underlie the decision to start or postpone a task. When faced with an upcoming deadline, how do people decide to initiate a chore or project?

To explore this question, we conducted a series of studies examining task delay, the behavioral component of procrastination in which people put off completing something despite lacking any objectively strategic reason to do so. We found that people with a negativity bias tend to delay tasks more, especially if they tend to be poor at self-control.

The central idea guiding our work was that as people pursue their goals, the environment nudges them to make specific assessments that can shape their behavior. For example, once a taxpayer has received all the necessary documentation—typically well before the filing deadline—they may ask themselves, “Do I want to do this *now*?” This question should bring to mind some positive outcomes (for instance, the satisfaction of completing a chore and, potentially, receiving a tax refund sooner) and some that are negative (such as the tediousness of the task).

People who are inclined to see the negatives rather than the positives are more likely to delay tasks, especially if they tend to be poor at self-control.

Ultimately the positives must be weighed against the negatives. Notably there are individual differences in how people generally weigh positive and negative signals—a characteristic that psychologists call valence weighting bias.

Whereas some people tend to give greater weight to the pros, others give greater weight to the cons. We reasoned that those with a more negative weighting bias should be more likely to procrastinate.

Our first study used surveys to identify people who generally expected to receive a tax refund but tended to submit their taxes either early (during the last two weeks of January or early February) or late in tax season (the first two weeks of April). Some 232 people who met our eligibility criteria participated in a follow-up session, in which we measured their valence weighting bias, using a game affectionately called “BeanFest.”

In this game, people viewed images of beans that varied in shape and number of speckles. Some beans, when selected, yielded points, whereas others led to a loss. We later assessed how participants generalized from these newly learned associations (such as that oblong beans with many speckles were “bad” and that circular beans with few speckles were “good”) to new bean images that had both positive and negative aspects (such as circular beans with many speckles). The people who leaned more heavily on the negative features when

assessing the novel beans had a negative valence weighting bias, whereas those who leaned more on the positive features had a more positive bias.

The decisions that people make in this game reveal something very fundamental: it turns out that people's tendencies to generalize either positive or negative associations on this test can serve as a proxy for their general likelihood of weighing pros or cons when making decisions of any kind. Through this process we found that those people who had reported filing taxes late in the season exhibited a more negative valence weighting bias. They apparently felt more preoccupied by the unpleasant aspects of preparing their tax return.

Having found evidence that this bias predicted task delay, we followed up with a different approach. We asked 147 students enrolled in an introductory psychology course for their record of participation in a research experience program in which completing a predetermined number of hours of experiment earned extra credit. Using these data, we focused on the average date of research participation; broadly speaking, later dates indicated greater task delay. And much like doing taxes, putting off these hours of research participation ultimately led to greater stress because it exacerbated an "end-of-semester crunch."

Then we added one more element to this study. Other research has found that valence weighting bias shapes decision-making even more strongly when people are relatively unmotivated to deliberate beyond their initial impulsive reactions or do not have the cognitive resources and time to do so. So we asked students to rate—on a scale of 1 ("not at all like me") to 5 ("very much like me")—how strongly they agreed with statements such as "I am good at resisting temptation." Not surprisingly, those who reported better self-control tended to

participate earlier in the semester. More to the point, those with a more negative weighting bias tended to delay, as indicated by the average day of earning research hours, and this pattern was *most* evident among those reporting poorer self-control.

Can we disrupt this link between weighting bias and task delay? In our last study, we explored that possibility. We again examined student participation in the research experience program. But instead of recruiting from the general pool of students, we specifically sought out those who had reported struggling with procrastination more generally. These participants, we reasoned, probably had a negative weighting bias.

We then randomly assigned the students who agreed to participate to either a control or an experimental condition. Both groups of participants from the psychology course played BeanFest, but the latter involved a training procedure. Specifically, on each of numerous trials, participants indicated whether a novel bean was helpful or harmful, and then we told them whether their decision was *objectively* correct. That feedback effectively trained participants to better weigh pros versus cons, bringing more balance to their perspective. In the control condition—where we did not attempt to shape students' tendency toward the positive or negative—we provided no additional information.

After this targeted BeanFest intervention, students went back to the semester as usual. Impressively, when we followed up with them two weeks later, those in the experimental group showed fewer signs of procrastination—that is, greater research participation—than those in the control group. More important, this recalibration procedure, as we call it, does something the real world rarely does: it provides objectively correct feedback about the appropriate weighting of positive and negative signals, and through repetition

it shifts valence weighting tendencies toward a more balanced equilibrium. Even though BeanFest may seem utterly unrelated to something like research participation, this training exercise works because the act of weighing the pros and cons of a situation is the same, whether it involves beans or a real-world decision. So when people's bias is changed in BeanFest, that naturally generalizes to situations beyond the lab.

Putting it all together, our research uncovers the processes that lead to procrastination. When faced with a deadline, people seem to ask themselves, "Do I want to do this *now*?" That leads them to weigh the pros and cons involved—and their biases then come into play. Although additional rigorous testing is required, the training procedure used in our last study shows promise as an avenue to assist people who struggle with procrastination. Cognitive training based on this approach—for example, through a smartphone app—could help individuals who struggle with delaying tasks.

But there are more immediate implications of our work as well. Our research indicates that valence weighting has the biggest influence on people who lack the motivation and cognitive resources to pause and deliberate beyond their initial quick appraisals on whether to tackle a task. In other words, just pushing yourself to think a little bit more before acting may help you generate more positive reasons to get started and to ensure you don't put off until tomorrow what you might best do today.

This is an opinion and analysis article, and the views expressed by the author or authors are not necessarily those of Scientific American.

**Editor's Note (8/16/24): This sentence was edited after posting to correct the description of the time frame in April.*

JAVIER GRANADOS SAMAYOA is a research associate at the University of Pennsylvania. He studies why people succeed or fail as they pursue their goals and how behavior can be changed to help people reach their potential.

[More by Javier Granados Samayoa](#)

RUSSELL FAZIO is Harold E. Burt Chair in Psychology at the Ohio State University. His research concerns attitudes, including their formation, their accessibility from memory, and the effect they have on attention, judgment and behavior.

[More by Russell Fazio](#)

Popular Stories



WEATHER | MARCH 16, 2021

Eight States Are Seeding Clouds to Overcome Megadrought

But there is little evidence to show that the process is increasing precipitation

CHELSEA HARVEY, E&E NEWS



EPIDEMIOLOGY | OCTOBER 7, 2024

Human Longevity May Have Reached its Upper Limit

New research dispels the notion that human beings can continue to radically extend their lifespan

RACHEL NUWER

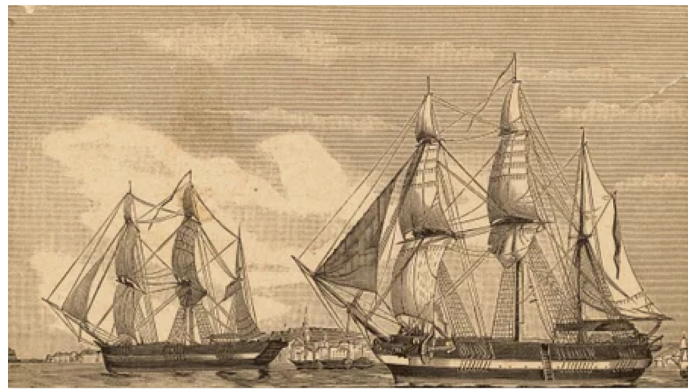


EPIDEMIOLOGY | OCTOBER 8, 2024

How Rwanda Is Containing a Deadly Marburg Virus Outbreak

Rwanda’s health minister says authorities are tracing every potential contact of the index case in the country’s outbreak of Marburg virus disease to reduce the risk of wider spread

PAUL ADEPOJU



ARCHAEOLOGY | OCTOBER 7, 2024

Cannibalized Captain of Doomed Arctic Expedition Identified by DNA Analysis

Scientists reveal the identity of a cannibalized captain from the doomed Northwest Passage expedition of 1845 to 1848

SOURMYA SAGAR, LIVESCIENCE

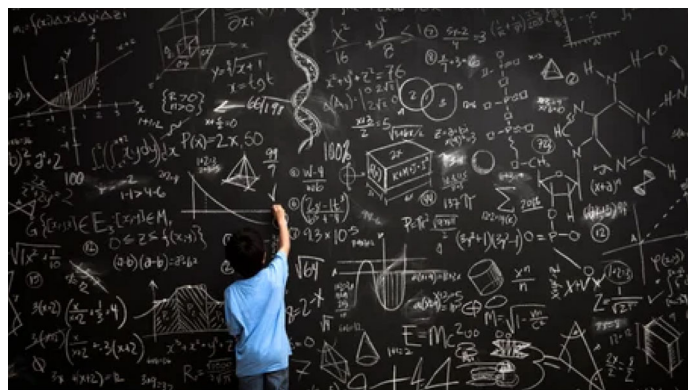


QUANTUM PHYSICS | SEPTEMBER 30, 2024

Evidence of ‘Negative Time’ Found in Quantum Physics Experiment

Physicists showed that photons can seem to exit a material before entering it, revealing observational evidence of negative time

MANON BISCHOFF, JEANNA BRYNER



MATHEMATICS | OCTOBER 9, 2024

A Century-Old Question Is Still Revealing Answers in Fundamental Math

Mathematicians have made lots of recent progress on a question called the Mordell conjecture, which was posed a century ago

RACHEL CROWELL