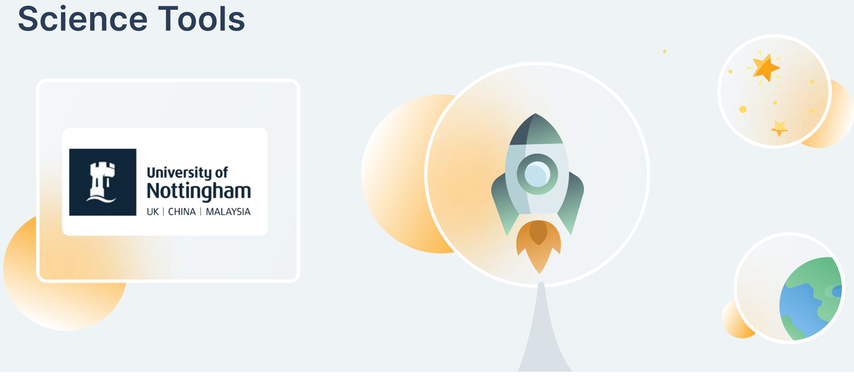
How researchers broke the latent inhibition effect with Prolific and Open Science Tools



Latent inhibition is a concept that's been studied since 1959. Mark Haselgrove, Professor of Experimental Psychology at the University of Nottingham, used Prolific and Open Science Tools to flip it on its head.

The task

First discovered in non-human animals, latent inhibition is an effect where learning about a novel stimulus is faster than learning about a familiar one. Let's say you're trying to get a sheep to learn an association between light and food. The sheep will learn that a novel light signals food more quickly than if the light was familiar to them.

For years, this phenomenon has been important for understanding how mental health disorders work, such as schizophrenia. But what if you could reverse the effect? What if you could make people learn familiar stimuli faster than novel ones?

Haselgrove and his team set out to test this idea with an experiment.
This experiment involved reaction time tasks with pseudo-words - units of text that look like real words, but which don't have any meaning (like heth, sark, or spet). These pseudo-words were presented on-screen. Participants were given a target pseudo-word, and had to hit the spacebar when they saw it.

Importantly, the participants could learn when the target was about to appear, as it was always cued by one of two other pseudo-words. These pseudo-words were either familiar to the participant (they had seen them before), or novel (they hadn't seen them before).

The challenge

The team had the hypothesis and the funding. What they didn't have was time.

They quickly needed to program the study and find 70 to 80 participants. Setting this up and recruiting the right people in traditional lab conditions wasn't going to be fast enough.

To make this work, they needed to take their research online.

The solution

First, they asked Open Science Tools to help program and host the experiments on Pavlovia - which they were able to handle with no problem.

Now they just needed to find participants. A colleague recommended Prolific, an online platform where they could get the participants they needed in less than an hour or two.

Using Prolific, they recruited all the participants they needed for their first experiment quickly and easily.

> "More and more people are starting to recruit participants online. Prolific has been a really useful resource for us. It can get you data really quickly" - Mark Haselgrove, Professor at the University of Nottingham

The first experiment was a success. They found that by subtly changing the novelty of the context in which the experiment was being conducted, then they could indeed reverse the normal latent inhibition effect - but then they had to replicate it, and explore it in more detail. On Prolific, they were able to conduct seven experiments in only a few months. Each time, running the experiment took no longer than an hour or two.

Novelty was critical for the research. When repeating an experiment, they didn't want to re-use anyone who had done it in the past. With the Prolific platform, it was easy to rule these participants out and ensure the task was always tested on a fresh pair of eyes.

The results

Haselgrove initially had his doubts about taking the research online. Could they trust participants doing reaction time tasks remotely to stay engaged?

But his fears were unfounded.

> "We got nice response time data. We really didn't have to drop that many participants, no more so than when we had to do it in a lab. These are paid, motivated people." - Mark Haselgrove, Professor at the University of Nottingham

They also found that Prolific offered a much better sample diversity, compared to the local demographics they could recruit for in-person tasks. The Prolific sample represented a more balanced mix of genders, ages, and backgrounds.

The results of the research are currently being written up for publication. Normally you'd expect participants to learn about the novel pseudo-word faster than the familiar word. But Haselgrove and his team managed to flip the effect around.

If we can learn more about why this effect occurs, it will help researchers better understand conditions like schizophrenia. Off the back of these findings, Haselgrove is now collaborating with researchers at the University of Oxford to investigate patients with schizophrenia who experience hallucinations.