Practice Doesn't Make Perfect When it Comes to Understanding Risk

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People aren't very good at making decisions that involve risk. Many people are afraid of airplanes, although accidents are extremely rare; some people even drive to avoid flying, putting themselves at more risk. A new study, which will be published in an upcoming issue of *Psychological Science*, a journal of the Association for Psychological Science, examines how people learn about risk and finds that practice does not make perfect.

Willingness to take risk is usually studied with questions, says Laurence Maloney, like this: "Would you rather have a 50-50 chance of winning $100 or would you rather just take $40 instead and not have to gamble?" Maloney, of New York University, cowrote the paper with Craig Glaser and Julia Trommershäuser of NYU and Pascal Mamassian of CNRS and Université Paris Descartes in France. But those questions from the world of economic theory don't have a lot to do with the real-world situation of, say, deciding whether it's safe to jaywalk.

The researchers came up with an experiment in which participants were given a chance to learn about probability. They played a kind of video game in which they fired off bullets that might or might not hit a rectangle on the screen. "It was a magic bullet," Maloney says. "Not a very good magic bullet"—it took a zig-zagging trail and often missed. The bigger the rectangle, the more likely the bullet was to hit it. Participants did hundreds of trials with different-sized rectangles. Then they were asked to decide which rectangle they would like to aim for: a bigger one worth less money or a smaller one worth more money. Other people were told what the probabilities of hitting each rectangle were and asked to choose one.

Participants made the same choices when they learned about probability visually as when they were told the probabilities. And they made the same mistake people make when they avoid air travel: they think very unlikely events are more likely to happen.

This shows that practice isn't enough to get people to make good decisions based on risk, Maloney says. "You could imagine taking someone and saying, well, let's practice them over and over and over again until they're experts and maybe their decision-making will be perfect." But that's not what happens, he says. "Basically, the key idea is that people have a distorted appreciation of probability and it doesn't go away even when you become one of the world's experts at shooting rectangles."