

Copying others can lead to greater comfort with riskier behavior

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The best things in life are unlikely to occur. In many situations, taking at least moderate risks yields higher expected rewards. Yet many people struggle with taking such risks: they are overly cautious and forego high

payoffs. "However, we are not alone in this struggle, but we can observe and learn from others," says Wataru Toyokawa. "We therefore wanted to find out whether social learning can also rescue us from adverse risk aversion." The answer is yes, as the authors from the Cluster of Excellence Centre for the Advanced Study of Collective Behaviour showed in a recently published study in the journal *eLife*.

Collective rescue occurs even among a biased collective

It is a long-established finding that collectives achieve better decisions by aggregating information or judgments, known as the [wisdom of crowds](#). Individual errors cancel each other out, so that collectives do the right thing even if many individuals err. However, the wisdom of crowds does not work directly here, because the crowd is not wise; rather, the collective is biased towards undue risk aversion. "I wondered how [social learning](#) could still be beneficial in such a situation," states Toyokawa. "Simply copying the majority would not help us at all, it would even yield more extreme risk aversion. So, if social learning helps at all, it must be by a different mechanism."

To uncover these mechanisms, Toyokawa developed a dynamical mathematical model, which predicted that social learning can indeed promote favorable risk taking. He then proceeded to review the predictions from his model in large-scale online experiments with [human subjects](#). Each participant played a browser-based game where they could choose between a variety of options—which might turn out good or bad, and with different probabilities. Toyokawa observed that "when the subjects played individually without any information from other participants, they predominantly preferred safe options with lower rewards. However, when social learning was possible, that is, when participants could see what others chose—but not know how successful

others' choices were—it became more and more likely that they choose riskier options with higher expected rewards." In other words, social learners made riskier choices that were more rewarding in the long run.

Occasionally copying others increases exploration and persistence

"By observing others' choices, we could make smarter decisions, even though every single individual's own decisions might be unduly risk averse," Toyokawa summarizes. "Herewith, we identified a key mechanism underlying this counter-intuitive result: risk-aversion was mitigated not because the majority chose the risky option, nor were individuals simply attracted towards the majority. Rather, participants' choices became riskier even though the majority chose the safer alternative at the outset, by striking a right balance between what they experienced themselves and what they observed from others."

Wolfgang Gaissmaier stresses that this is a striking demonstration of the power of social learning: "Under social influence, individuals became more explorative and more persistent in trying out the risky, more profitable option, even if that option might sometimes disappoint them in the short run. And once individual risk aversion was reduced, this process perpetuated itself, as there were more and more risk takers around to be copied."

"The finding that adverse risk aversion is mitigated under [social influence](#) will help us better understand the evolution of learning under [social interaction](#)," concludes Wataru Toyokawa. "The study suggests that social learning is advantageous in wider environmental conditions than previously assumed."

More information: Wataru Toyokawa et al, Conformist social

learning leads to self-organised prevention against adverse bias in risky decision making, *eLife* (2022). [DOI: 10.7554/eLife.75308](https://doi.org/10.7554/eLife.75308)

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