

Cocky kids: The four-year-olds with the same overconfidence as risk-taking bankers

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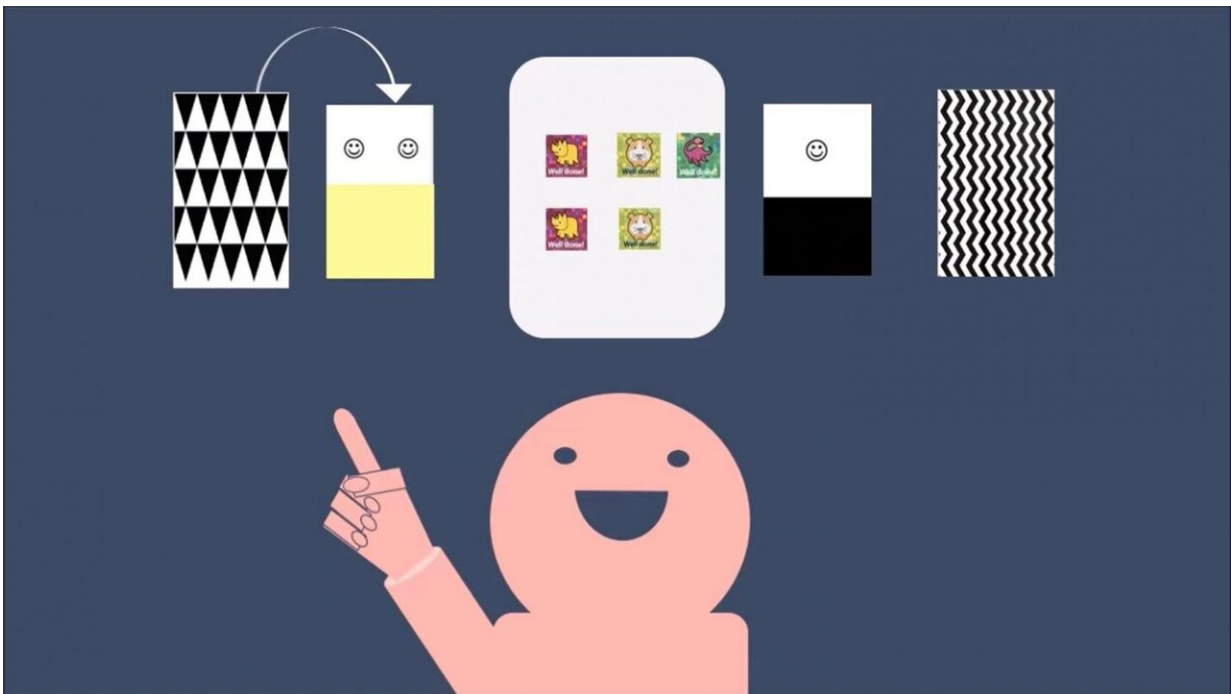


Illustration of the Children's Gambling Task. Credit: University of Sussex

Overconfidence in one's own abilities despite clear evidence to the contrary is present and persistent in children as young as four, a new study by the University of Sussex Business School has revealed.

The [cognitive bias](#) has been consistently observed among a number of professions including business executives, bankers and physicians across

different countries and cultures but a new study led by Dr. Dominik Piehlmaier indicates that [overconfidence](#) is persistent and widespread during early childhood.

The research also found that girls were more successful than boys at a [card game](#) in the study thanks to a more low-risk strategy but also experienced greater swings between overconfidence and lack of confidence in their abilities.

Dr. Dominik Piehlmaier, Lecturer in Marketing at the University of Sussex Business School and the study's author, said: "Much of our knowledge on judgment and decision-making is based on adult participants but there is no reason to believe that humans only develop such an omnipresent cognitive illusion once we reach adulthood.

"My findings indicate that effective interventions that increase an individual's knowledge about their own knowledge and its boundaries might be needed to target much younger individuals if one wants to efficiently calibrate a person's irrational confidence."

In the study, children were asked to play a card game known as the Children's Gambling Task where they choose cards from one of two packs.

The card is then turned over to reveal how many stickers the participant has won and lost. One pack had cards with significantly higher wins and losses than the other.

At intervals, children had to decide whether they thought they would win more, about the same, or fewer stickers than previously in the game.

Each participant started off with four stickers after the initial six practice trials. On average, every participant gained 0.3 stickers per turn

and left the game with an average of 6.67 stickers, ranging from zero to 33.

The study showed that more than 70% of four-year-olds and half of all five and six-year-olds were overconfident in their expectations after playing ten turns and six practice trials.

Dr. Piehlmaier said: "A vast number of repetitions, learning, and feedback in the study did not diminish the misplaced confidence in the success of the majority of participants.

"The children played more than 60 turns and saw their payoff balance rose and fell, yet every third child still thought that they could do better than they had done in the previous 50 turns.

"The Children's Gambling Task closely resembles a very simplified version of the financial markets with relatively safe options providing low but steady average return rates and highly risky assets that promise much higher short-term gains with a catastrophic long-term yield.

"The finding that overconfidence is persistent even in the face of own shortcomings mirrors results from previous studies that looked at the performance of investors."

Overconfidence is widely seen as a male trait but the study also had interesting findings when it came to the general performance of boys and girls.

In general, girls outperformed boys by an average of 2.87 stickers thanks to a less high-risk strategy of choosing relatively more safe cards which offered smaller but more sustainable gains.

Dr. Piehlmaier added: "Boys seem to follow a negative trend line that

indicates slow but steady learning on what might be considered 'reasonable expectations'.

"Girls' behaviour is much more unpredictable. When the girls' overconfidence plot is compared to their payoffs, it can be noticed that they closely align.

"This indicates that girls overestimate their abilities if they have a winning streak and underestimate themselves whenever they lose a few times in a row.

"By the end of the experiment, there were relatively more overconfident girls than boys; a finding that contradicts previous reports regarding more calibrated [girls](#) in metamemory tasks."

More information: Dominik M. Piehlmaier, Overconfidence Among Young Decision-Makers: Assessing the Effectiveness of a Video Intervention and the Role of Gender, Age, Feedback, and Repetition, *Scientific Reports* (2020). [DOI: 10.1038/s41598-020-61078-z](https://doi.org/10.1038/s41598-020-61078-z)

Provided by University of Sussex

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