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## BIOLOGY

# Lies breed lies: Brain may get desensitized to dis



By Stephanie Bucklin, Live Science Contributor

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A child touches the nose of a Pinocchio puppet, a fictional character of a popular children's novel, at a woodwork souvenir shop in Vienna, Austria, (REUTERS/Heinz-Peter Bader)

Dishonesty is a slippery slope: If you behave dishonestly once, you may become more likely to do so again, a new study from England shows.

The reason may be that the brain grows less sensitive to self-serving dishonest behavior over time, a new study from England shows.

In the study, researchers asked 80 adults ages 18 to 65 to advise a second person about the amount of pennies in a jar. In several of the trials, conditions made it so that dishonesty benefited the participant. Researchers might promise the participants a higher reward if their partners overestimated the number of pennies in the jar.

People's dishonesty escalated over the course of these trials, found the study, published online in the journal *Nature Neuroscience*.

"This study is the first empirical evidence that dishonest behavior escalates," Neil Garrett, the lead author and an experimental psychology researcher at University College London, said at a news conference.

With 25 of the participants, the researchers conducted the penny-jar experiments while a functional magnetic resonance imaging (fMRI) machine scanned the person's brain. The results showed that the amygdala, a part of the brain involved in processing emotions, showed a marked reduction in activity in response to self-serving dishonesty over time.

In fact, researchers found that the amount of the reduction in the amygdala's activity for each trial was smaller than that of the previous trial, indicating that the participant's dishonesty would increase in the next trial: The bigger the fall in amygdala activity, the bigger the lie would be the next time.

"It is likely [that] the brain's blunted response to repeated acts of dishonesty reflects a reduced emotional response to these acts," Garrett said.

The study also offers support for the idea that the activity in the amygdala "signals aversion to actions that are socially or morally wrong," Garrett said. In other words, whenever a person lies for personal gain, the amygdala's activity helps curb that act — but the more often a person lies, the more the response fades, creating a downward slope that may encourage an escalation of dishonest behavior.

People in the study actually lied the most when their lies benefited both them and their partners. It was easier to rationalize these lies, said Tali Sharot, the senior author of the study and an associate professor of behavioral neuroscience, also at University College London. In this condition, the amygdala did not show the same activity as when people lied solely to benefit themselves, she said at the news conference.

Interestingly, though, the researchers found that study participants never lied as much as they could. Their estimates of the value of the coins in the jar were always significantly lower than the ceiling, meaning they "always had an opportunity to lie more than they actually did," the paper said. Sharot explained that this was likely just a little bit, perhaps so they can still hold a relatively positive perception of themselves.

The researchers noted that one limitation of their study was that there was no feedback given to the participants when they lied. In the real world, the researchers noted, people who are caught being dishonest may be punished, and people who are honest may be praised, which may also affect their future behaviors. It's also unclear whether the findings would hold true in other populations, the researchers said.

Still, the results may have important implications for other types of decision-making, such as risk-taking or violent behavior, the researchers said. "The results show the possible dangers of regular engagement in small acts of dishonesty, perils that are frequently observed in domains ranging from business to politics and law."

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enforcement," the scientists wrote in their findings. The study suggests that repeated small lies may pave the way for larger lies over time, the researchers said.

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