

Brains Make Decisions the Way Alan Turing Cracked Codes

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Smithsonian Magazine:

Despite the events depicted in *The Imitation Game*, Alan Turing did not invent the machine that cracked Germany's codes during World War II—Poland did. But the brilliant mathematician did invent something never mentioned in the film: a mathematical tool for judging the reliability of information. His tool sped up the work of deciphering encoded messages using improved versions of the Polish machines.

Now researchers studying rhesus monkeys have found that the brain also uses this mathematical tool, not for decoding messages, but for piecing together unreliable evidence to make simple decisions. For Columbia University neuroscientist Michael Shadlen and his team, the finding supports a larger idea that all the decisions we make—even seemingly irrational ones—can be broken down into rational statistical operations. “We think the brain is fundamentally rational,” says Shadlen.

Read the whole story: [*Smithsonian Magazine*](#)