

A Review of “Counterfactual thinking and the first instinct fallacy” by Kruger, Wirtz, and Miller (2005)

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What is counterfactual thinking?

- A psychological concept (definitions may differ in other fields or among laypersons)
- Thoughts that are “counter to the facts,” specifically thoughts about **hypothetical alternatives** to past events that often inspire frustration and regret.
- **Past-oriented** (or possibly present-oriented), NOT future-oriented

What are counterfactual thoughts?

- “Counterfactual thoughts are mental representations of alternatives to past events, actions, or states. They are epitomized by the phrase “**what might have been,**” which implicates a juxtaposition of an imagined versus factual state of affairs” (Epstude & Roese, 2008).

What are counterfactual thoughts?

- People who practice counterfactual thinking often think about “something that did not happen that they **wished** had happened or something that did happen that they **wished** had not happened” (Kruger, Wirtz, & Miller, 2005, p. 732).

What is the first instinct fallacy?

- A term that seems to have been coined in 2004 by Justin Kruger
- The **incorrect** idea that “gut feelings” or first instincts are more likely to be right, even though the research, at least with respect to academic settings, says otherwise.
- **Sustained and reinforced** by counterfactual thinking

Study 1: Method

- Examined eraser marks on multiple-choice exams from **1561** introductory undergraduate psychology students
- 51 of 1561 students randomly selected to provide their **feedback** on what they thought the overall outcomes would be

Study 1: Results

- 51 college students predicted, on average that 33% of switches would be wrong–right and **42%** would be right–wrong. However, in actuality, *51% were wrong–right switches* and only 25% were right–wrong.
- This means that switching answers was the **correct** move more than **twice** as often, but students still cling to the belief that it is a bad move!

Study 2: Method and Results

- 23 college students read a scenario about switching answers on a multiple-choice exam
- They are then asked what would make them feel more **foolish** or **regretful**
- In all cases more than **three times** as many students said they would regret right–wrong switches more than sticking with a wrong answer!

Study 3: Method and Results

- 27 college students were given multiple-choice SAT or GRE questions and were asked to indicate **TWO** answers and mark one as their “**first instinct**” if they could not decide between two answers.
- On a **follow-up questionnaire** given 4–6 weeks later ($n = 19$), students remembered sticking with their first instinct and being right *significantly more often than what really happened*.



Study 4: Method

- 68 college students watched a mock video of a modified version of the TV show, *Who Wants to Be a Millionaire?*, imagining they were **teammates** with the contestant.
- In **both** conditions, the contestant in the video got 10 of 20 questions right.
- In one condition, the contestant always **stuck** with their answer, and in the other, always **switched**.

Study 4: Results

- Overall, participants who watched the contestant constantly switch answers reported being much more **angry** and **frustrated**.
- They were more **critical** of the contestant's strategies and abilities.
- This occurred even though the contestant got the **same proportion** of questions right in both videos.



The authors assert:

- Switching from a right answer to a wrong one is more **memorable** and **regrettable** than sticking with or fixing a wrong answer, even though right–wrong switches are statistically *uncommon*.
- Sticking with your **first instinct** is considered good, “common sense” advice, even among educated people, but in reality it is *very bad* advice.

The authors assert:

- Given the veracity of the data, the authors assert a **causal relationship** where preferential memory for right–wrong switches, along with feelings of regret, **cause** people to overestimate the effectiveness of going with their first instincts (p. 729).



Deal or No Deal is a popular TV show that exemplifies counterfactual thought and the first instinct fallacy:

Participants are asked to choose a suitcase which may be worth from 1¢ to \$1,000,000.

They are then asked to choose suitcases from the field to eliminate, with the hope that they eliminate suitcases with small amounts, improving their overall odds.

[At various times in the game, they may “cash in” with the “banker” for somewhat less than the average value of all remaining (unopened) suitcases.]

Participants who continue to the end have the option of **switching** suitcases (when there are only two left to choose from).



Technically, the “first instinct fallacy” is present in this example only insofar as there is **no statistical benefit** from keeping the original suitcase (though our minds may think otherwise). However, **unlike** in the findings of Kruger et al. and the Monty Hall problem, sticking with our first instinct *is not a worse choice* in the *Deal or No Deal* example (the choices are equivalent).

Screenshot is from the Microsoft Windows “Deal or No Deal” game by “Endorsay.”

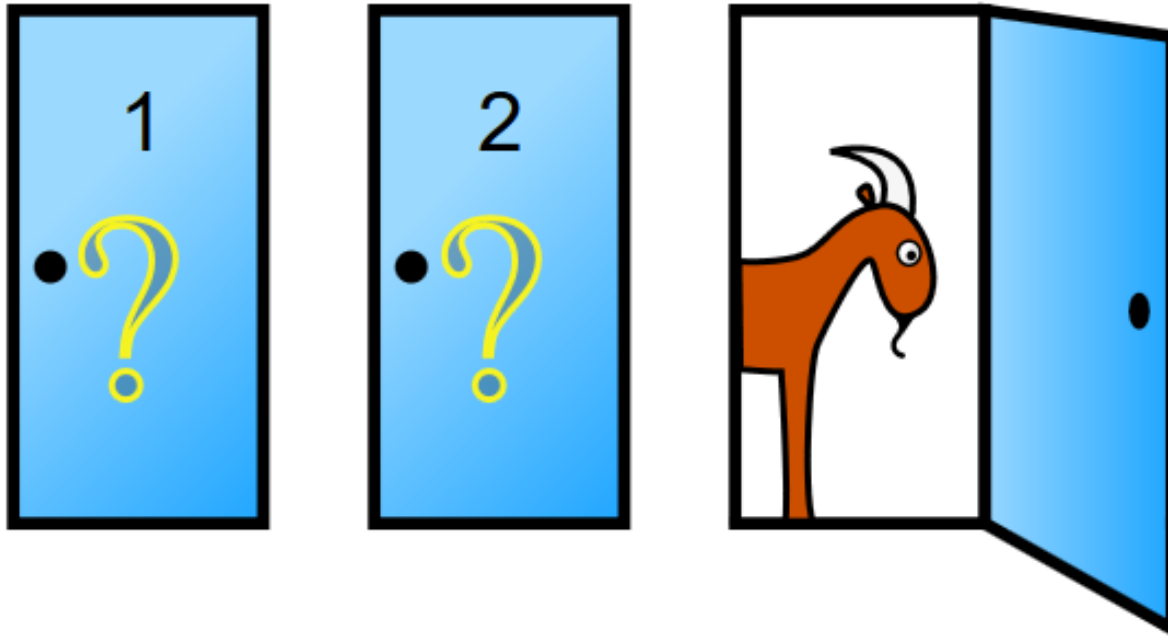


From the *Deal or No Deal* example, we can see that even with completely **random**, 50/50 odds, the first instinct fallacy is still present!

Watching the show is **torturous**—participants display numerous superstitions, logical fallacies (including the gambler’s fallacy), character foibles, and rampant counterfactual thought patterns in a game devoid of skill or content. Fortunately, there is no “phone a friend” option.

Note: The 26 suitcases have a total value of \$3,418,416.01 and an average value of \$131,477.54.

Screenshot is from the Adobe Flash “Deal or No Deal” game by NBC.



The Monty Hall problem: Based on a scenario from *Let's Make a Deal* (premiered 1963) and named after the show's host. Related to the first instinct fallacy.

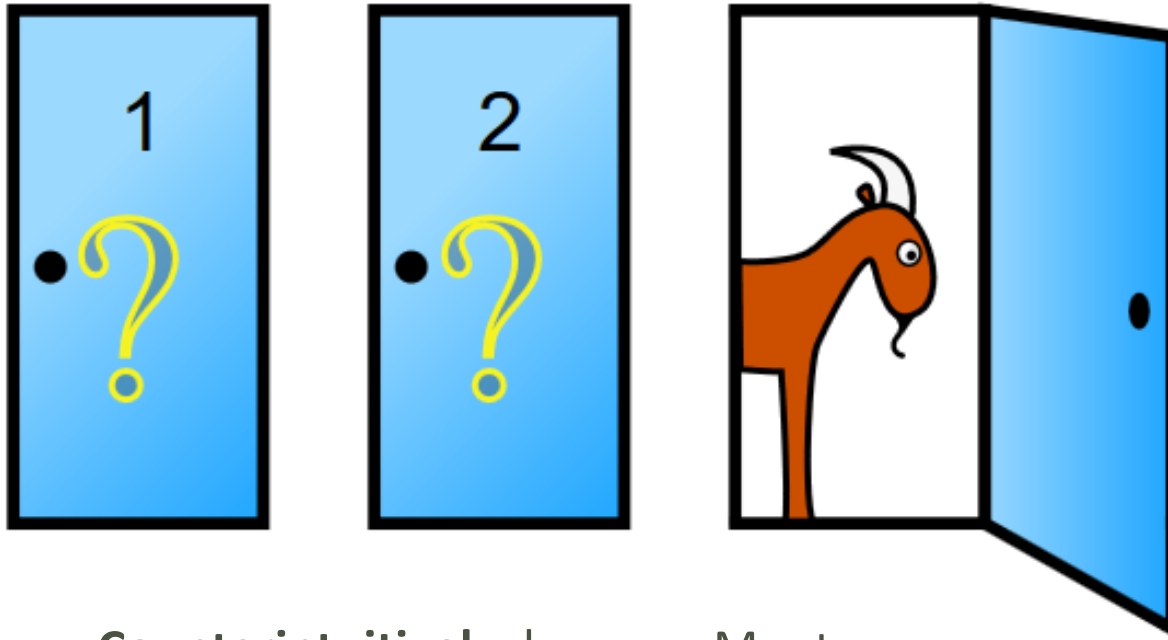
Scenario:

You choose from 1 of 3 doors. 2 doors have goats behind them and 1 has a **new car**.

Monty then opens 1 of the doors you did **NOT** pick, revealing a goat.

You are then asked if you want to **stick** with your door or **switch** doors.

Are both options equal?



Counterintuitively, because Monty could only open a door that you did NOT pick that also did NOT have the new car behind it, the door you initially picked now has a **1/3 chance** of having the new car, while the other remaining door has a **2/3 chance**. Therefore, you should **switch** doors.

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Discussion: Implications for **collaboration**

- In academic and workplace group projects, who would be seen as **more competent**? Someone who sticks with their decision and is right **50%** of the time? Or someone who switches and is right **60%** of the time?
- (Recall the exceedingly high statistical power Kruger et al. had for many of their results, and particularly, perceptions of the teammate in Study 4.)

Discussion: Relation to other **fallacies**

- False attribution and self-serving bias
- Gambler's fallacy, winning streaks, and the human tendency to see illusory patterns
- Fundamental attribution error versus emergent conflicting information about a person
- **Monty Hall problem**
- Anything else you want to talk about

References

- Epstude, K., & Roese, N. J. (2008). The functional theory of counterfactual thinking. *Personality and Social Psychology Review, 12*(2), 168–192.
- Kruger, J., Wirtz, D., & Miller, D. T. (2005). Counterfactual thinking and the first instinct fallacy. *Journal of Personality and Social Psychology, 88*, 725–735.

Source URLs for images used are at the bottom of each applicable slide.

They are not included in the above references.