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## Confirmation Bias

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### ...and the Wason Rule Discovery Test

Confirmation bias is also known as selective collection of evidence. It is considered as an effect of information processing where people behaves to as to make their expectations come true. People tend to favor information that confirms their preconceptions or hypotheses independently of the information's truthfulness or falsity.

Can You Solve This?

Confirmation bias is a person's tendency to favor information that confirms their assumptions, preconceptions or hypotheses whether these are actually and independently true or not. The phenomenon is also called confirmatory bias or myside bias.

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So how does confirmation bias work? People already have preconceived assumptions at the start and to confirm these, what people tend to do is gather evidence and recall information from memory selectively and interpret these altogether in a biased way. These biases appear in particular for emotionally significant issues and for established beliefs.

The term confirmation bias was coined by the English psychologist Peter Wason. He also conducted a study that in the end demonstrated the phenomenon of confirmation bias.

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## Background of the Study

Peter Wason conducted series of experiments in the 1960s to demonstrate that people are indeed biased towards confirming their existing beliefs. Another view of the phenomenon suggests that people show confirmation bias because they are pragmatically assessing the costs of being wrong, rather than investigating in a neutral and scientific way.

## The Research Problem

Wason in his study aims to demonstrate that most people do not proceed optimally in testing hypothesis. Instead of trying to falsify <sup>[1]</sup> a hypothesis, people tend to try to confirm the hypothesis <sup>[2]</sup>. So in his experiment, Wason challenged subjects to identify a rule applying to triples of numbers.

## Methodology

The subjects were asked to identify a rule that applies to series of triples of numbers. Wason made up a rule for the construction of the given sequences of numbers. For instance, the three numbers “2-4-6” satisfy this rule. To find out what the rule is, Wason said the subjects may construct other sets of three numbers to test their assumptions about the rule the experimenter has in mind.

For every three numbers the subjects will be coming up with, the experimenter will tell them whether it satisfies the rule or not, until the subject comes up with the right rule.

## Results

Most participants in Wason’s experiment typically proceeded in the following manner:

Given the sequence of “2-4-6”, they first formed a hypothesis about the rule: A sequence of even numbers.

Then they tried to test this rule by proposing more sequences of numbers that follow this rule. They tried “4-8-10”, “6-8-12”, “20-22-24”. The feedbacks to all these sequences were positive. The subjects give a few more tries until they felt sure about their hypothesis and stopped since they thought they have already discovered the rule. The only thing is, this wasn't the rule. The rule was simply increasing numbers.

## Conclusion

Almost all subjects formed this hypothesis and tried number sequences that only prove their hypothesis and very few actually tried to make up a number sequence that might disprove their hypothesis. The subjects did not ask questions to falsify their hypothesis because as much as possible, they do not want to break their own rules.

Generally, people indeed find this difficult to do, for they do not want to face the possibility that their beliefs could be wrong.

Wason's Rule Discovery Test proves that most people do not try at all to test their hypotheses critically but rather to confirm them. Other studies were also conducted to reconfirm this opinion. One of these is Klayman and Ha's in 1987, which disputed the view of humans as hypotheses con-firmers. They argued that the behavior of the participants in Wason's study might be interpreted as a positive test strategy.

## Application

People's tendency to succumb to the phenomenon of making confirmation biases may lead to disastrous decisions. Since confirmation biases contribute to overconfidence in personal beliefs, these may dramatically strengthen beliefs that when faced with contrary evidence, the result might be disastrous, especially in organizational, military and political contexts.

## Sources

Confirmation Bias by Margit E. Oswald and Stefan Grosjean

Wikipedia: Confirmation Bias [3]

Confirmation Bias, The Investor's Curse [4]

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