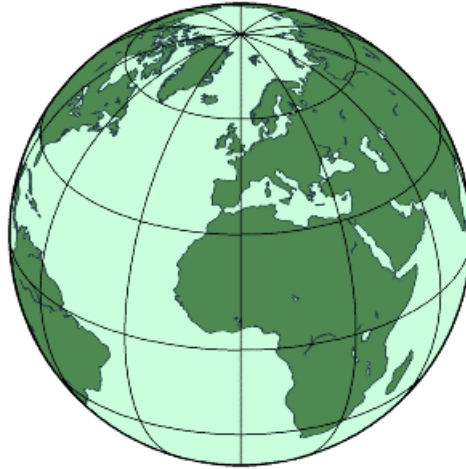


Confirmation Bias



License

Copyright © 2009 Ciaran McHale.

Permission is hereby granted, free of charge, to any person obtaining a copy of this training course and associated documentation files (the "Training Course"), to deal in the Training Course without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Training Course, and to permit persons to whom the Training Course is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Training Course.

THE TRAINING COURSE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE TRAINING COURSE OR THE USE OR OTHER DEALINGS IN THE TRAINING COURSE.

The globe logo is from www.mapAbility.com. Used with permission.

Introduction

- In 1960, Peter Wason performed the following experiment...
- A person was:
 - Shown three numbers (a triplet), for example: 2, 4, 6
 - Told the numbers conformed to a particular rule
 - Asked to generate their own triplets, and they would be told whether each triplet conformed to the rule
- When the person was sure what the rule was, they should announce it
- Most people did *not* deduce the correct rule:
 - The correct rule was “any sequence of increasing numbers”
 - They thought the rule was different, for example, “successive even numbers” or “numbers increasing by 2”
 - They tested their hypothesis only with triplets that agreed with it

Introduction (cont')

- Wason's experiment provides an example of *confirmation bias*
 - You form an opinion based on evidence available initially
 - Afterwards, you are likely to:
 - Seek out more evidence that supports your already-formed opinion
 - Ignore (or neglect to seek out) evidence that contradicts your already-formed opinion

- For more details, see:
 - *Confirmation Bias: A Ubiquitous Phenomenon in Many Guises* by Raymond S. Nickerson, in *Review of General Psychology* 1998, volume 2, number 2, pages 175–220

- This chapter:
 - Provides some more examples of confirmation bias (most are taken from the above paper)
 - Explains how it is relevant to people who want to change the world

1. Examples of confirmation bias

Making predictions

- Some activities are based on an ability to make predictions:
 - Examples: astrology, fortune telling, gambling
- Some of the predictions will be correct; some will be incorrect
- Confirmation bias can help preserve your *belief* in such an activity:
 - You use correct predictions as evidence to support your belief
 - You ignore (or explain away) incorrect predictions
- Likewise, confirmation bias can help preserve your *disbelief* in such an activity:
 - You use incorrect predictions as evidence to support your disbelief
 - You ignore (or explain away) correct predictions

Judging people's character

■ In one experiment:

- Students were asked to comment on the sociability and friendliness of a guest lecturer
- The students' comments were heavily influenced by how the guest lecturer had been described before the lecture took place

■ Analysis:

- The students formed an initial opinion based on the description of the guest lecturer
- The students used this initial opinion as a filter when observing the lecturer's behaviour
 - They noted behaviour that confirmed their initial opinion
 - They ignored behaviour that disagreed with their initial opinion

Science

- The history of science shows a recurring pattern:
 - Most scientists believe theory X
 - A new theory, Y, is developed that contradicts theory X
 - Most scientists continue to believe X due to the limited evidence in support of theory Y
 - Over time, more and more evidence in support of theory Y is found
 - As this happens, more and more scientists start to believe theory Y
- That pattern of behaviour is good. However:
 - A few individual scientists will suffer from confirmation bias
 - They will ignore or disbelieve the new evidence and continue to believe theory X for a long time

Pre-scientific medicine

- Some medical practices continued for decades or centuries before doctors realized they were ineffective or harmful:
 - Example: the practice of bleeding a patient was widespread for about 2000 years
- This can be explained by confirmation bias:
 - Some patients who received a particular treatment recovered
→ this was viewed as evidence of the treatment's effectiveness
 - Some patients who received the same treatment did not recover
→ this information was ignored
 - Some people who did not receive the treatment recovered
→ this information was also ignored

Government policy

- Sometimes, confirmation bias can be seen in the actions of a government or the senior managers of a company
- Example sequence of events:
 - A government examines available information and makes a policy decision
 - After the policy is implemented, new information is found that suggests the policy might be a bad one
 - The government's response might display confirmation bias:
 - Ignore any information that discredits the policy
 - Find (or invent) other facts that support the policy

Other examples of confirmation bias

- Hypochondriacs may ignore the “healthy” signals from their bodies and instead focus only on the “unhealthy” signals
 - Likewise, confirmation bias may worsen paranoia or depression
- Some sayings allude to confirmation bias:
 - “You only get one chance to make a good first impression”
 - “It is important to keep an open mind”
 - “Love is blind”
 - “She is an angel”
 - “He is a good for nothing”
 - “He is a ne’er do well” (“ne’er” means “never”)

Confirmation bias leads to self-fulfilling prophecies

- A self-fulfilling prophecy can be rooted in belief of a stereotype
 - One common stereotype is that physically attractive people are more sociable, confident and humorous than physically unattractive people
- In one experiment:
 - Men were asked to have telephone conversations with women
 - Some women were described to the men as being attractive
 - Some women were described to the men as being unattractive
- Results:
 - A man's behaviour during the telephone calls was influenced by what he had been told about a woman
 - In turn, this influenced how the woman responded to the man
 - In effect, a man's expectations of a woman became a self-fulfilling prophecy

2. Confirmation bias and prejudice

It is difficult to recognise our own prejudices

- It is easy to recognize and condemn prejudice *in others*:
 - Example: when you read about prejudice in another country
- It is difficult to recognize *your own* prejudices:
 - You may not consciously realize you dislike a group
 - You may consciously realize you dislike a group but think the dislike is based on a good reason
- Even if you accept you have a prejudice, it may not be safe to publicly admit it
- This presents a problem:
 - You think the world would be a better place if *other people* stopped being prejudiced. But...
 - If *you* can't recognize and admit *your own* prejudices then how can you help *other people* to recognize and eliminate *their* prejudices

An ineffective way to tackle prejudice

- Let's assume you say to Fred: "You are racist"
- Likely reaction from Fred:
 - He realizes that you have accused him of something
 - Since Fred does not like being accused, he will try to defend himself by:
 - Denying he did anything racist
 - Trying to justify his beliefs or behaviour
 - Counter-attacking you
- Your chances of changing Fred's prejudiced beliefs and behaviour are slim
- Is there a better way?

A more effective way to tackle prejudice

- A better way to tackle prejudice might be as follows...
- Explain the concept of confirmation bias to Fred:
 - Start with examples that have nothing to do with prejudice
 - Use a wide variety of examples to show that confirmation bias is ubiquitous
- Then explain how confirmation bias plays a role in prejudice:
 - A child is repeatedly told stereotypes about “X” people
 - The child assumes this information is true
 - Later, when the child grows up and encounters X people, she:
 - Notices behaviour that agrees with the stereotypes
 - Does not notice behaviour that disagrees with the stereotypes

Continued on the next slide...

A more effective way to tackle prejudice (cont')

- Then ask if some of Fred's beliefs might be a result of confirmation bias
- This tactic is likely to be more successful, for several reasons
- Fred is less likely to get defensive because:
 - The term *confirmation bias* sounds less like an accusation than *racist*
 - You have explained that *everybody* suffers from confirmation bias
 - Fred will be able to think of non-racist examples of confirmation bias in his own life
- You have made Fred aware of a general principle:
 - Later, he might use knowledge of confirmation bias to re-examine some of his other possibly-prejudiced beliefs towards other groups

3. Summary

Summary

■ *Confirmation bias:*

- You form an opinion based on evidence available initially
- Afterwards, you are likely to:
 - Seek out more evidence that supports your already-formed opinion
 - Ignore (or neglect to seek out) evidence that contradicts your already-formed opinion

■ Confirmation bias is ubiquitous:

- Belief in astrology, fortune telling, gambling, scientific theories, medical treatments; our perceptions of other people, ...

■ Confirmation bias plays a big part in prejudice:

- Spreading knowledge of confirmation bias might help to make people aware of their own prejudices in a non-accusatory manner