

# What testing can learn from social sciences

Huib Schoots – Belgium Testing Days 2013



**BELGIUM TESTING DAYS**  
**2013**

# Conference audiences



PHOTO: RIK MARSELIS (WWW.TESTNET.ORG)

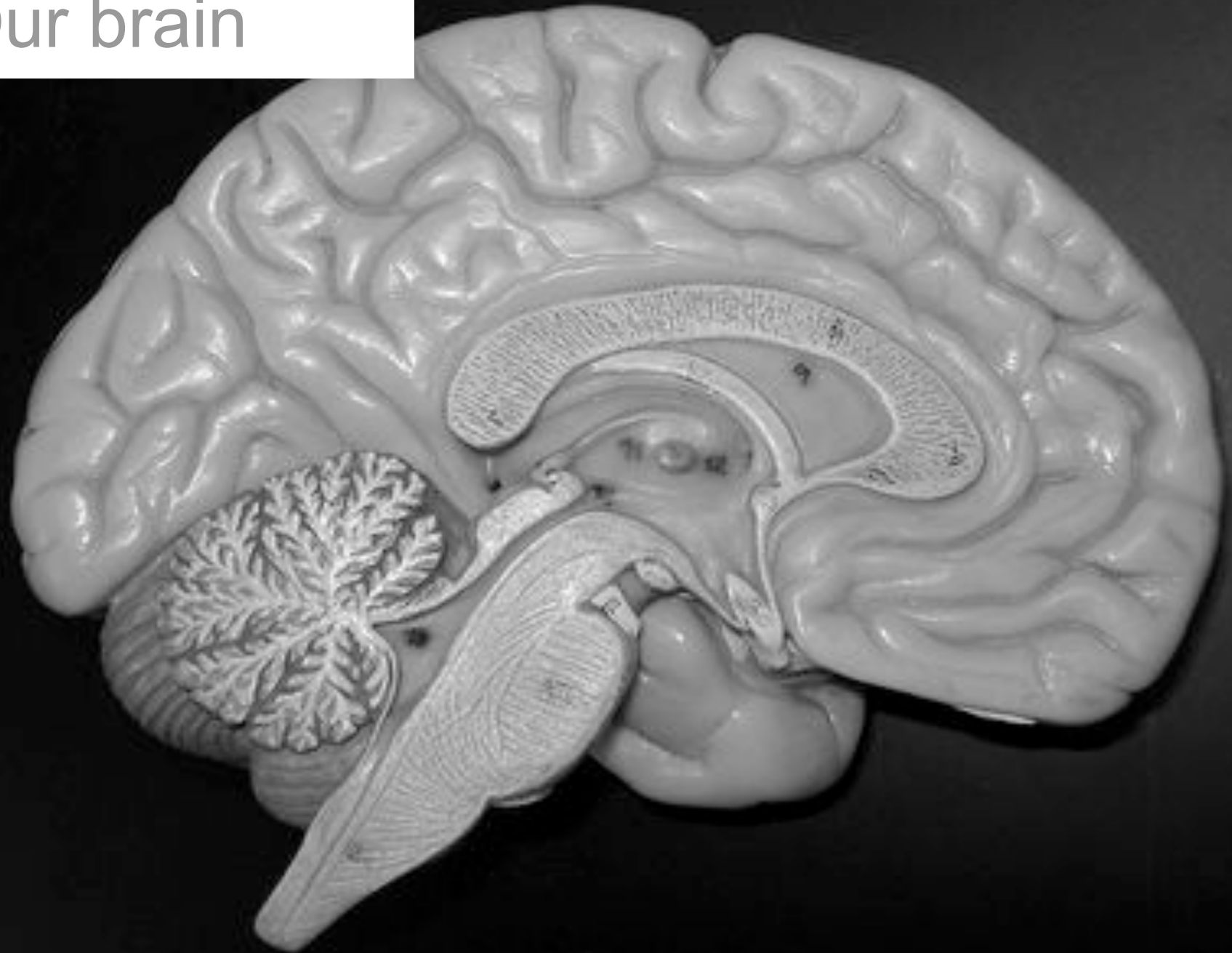
## Conference audiences

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You have a need for other people to like and admire you, and yet you tend to be critical of yourself. While you have some personality weaknesses you are generally able to compensate for them. You have considerable unused capacity that you have not turned to your advantage. Disciplined and self-controlled on the outside, you tend to be worrisome and insecure on the inside. At times you have serious doubts as to whether you have made the right decision or done the right thing. You prefer a certain amount of change and variety and become dissatisfied when hemmed in by restrictions and limitations. You also pride yourself as an independent thinker; and do not accept others' statements without satisfactory proof. But you have found it unwise to be too frank in revealing yourself to others. At times you are extroverted, affable, and sociable, while at other times you are introverted, wary, and reserved. Some of your aspirations tend to be rather unrealistic.



# Our brain





People are irrational

PHOTO: [HTTP://WWW.FLICKR.COM/PHOTOS/CAYUSA/364105908/](http://www.flickr.com/photos/cayusa/364105908/)

# Critical Thinking

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## Huh?

What does this mean? What is the point?

## Really?

Are you absolutely certain? How can I know?

## So?

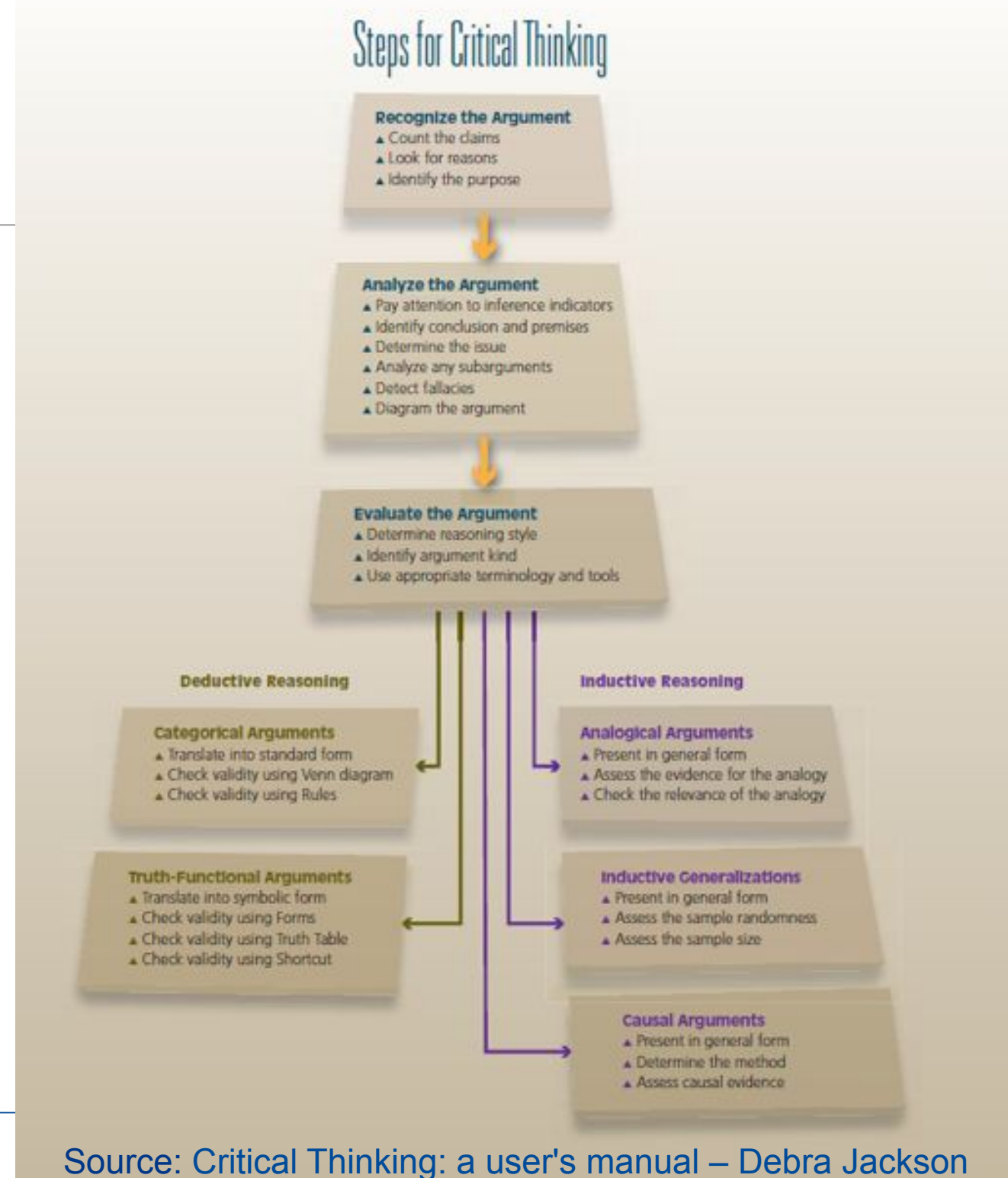
Where does this lead? So what?



Source: James Bach (see video: <http://youtu.be/8TX6rzz60xQ>)

# Critical Thinking

- Recognise argument
- Analyse argument
- Evaluate argument
  
- Deductive reasoning
- Inductive reasoning
  
- Critical vs creative thinking?





# System Thinking

A close-up photograph of several interlocking, rusty metal gears of various sizes, symbolizing a complex system or mechanism. The gears are made of a dark, weathered metal, possibly cast iron, and are mounted on a similar metal frame. The background is slightly blurred, showing more of the machinery and some green foliage, suggesting an outdoor or industrial setting. The overall tone is industrial and mechanical.



# What is testing?

morning ;  
something  
verb. The  
bird, hu-

word may either be  
created as a com-  
adv. cf. well-doe,  
in accordance with  
and is supported by

from dead to live  
the Mass the  
and 1791.  
The early  
the Mass  
as a morning  
the time of an

ture and the  
ally descri  
also the style  
called *Early*

1851 Reske  
capital is, therefore  
Sir G. Scott Lee  
capital is character  
138 The Early Point  
B. generally.

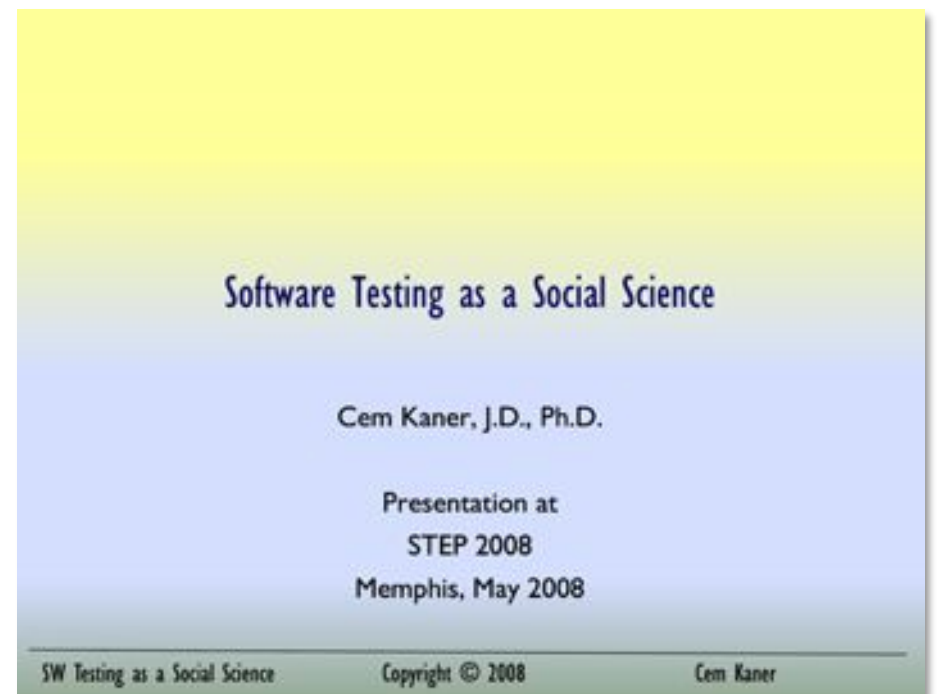
any division of  
also, anterior of  
timely, done  
before it is  
former, later

only Green  
page one early  
1851. 1851  
custom.  
good.  
the

# Effective testing

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“To test effectively, our theories of error have to be theories about the mistakes people make and when / why they make them”





# What is Social Science?



PHOTO: [HTTP://WWW.FLICKR.COM/PHOTOS/ROBBY\\_VAN\\_MOOR/478725670/](http://www.flickr.com/photos/robby_van_moore/478725670/)

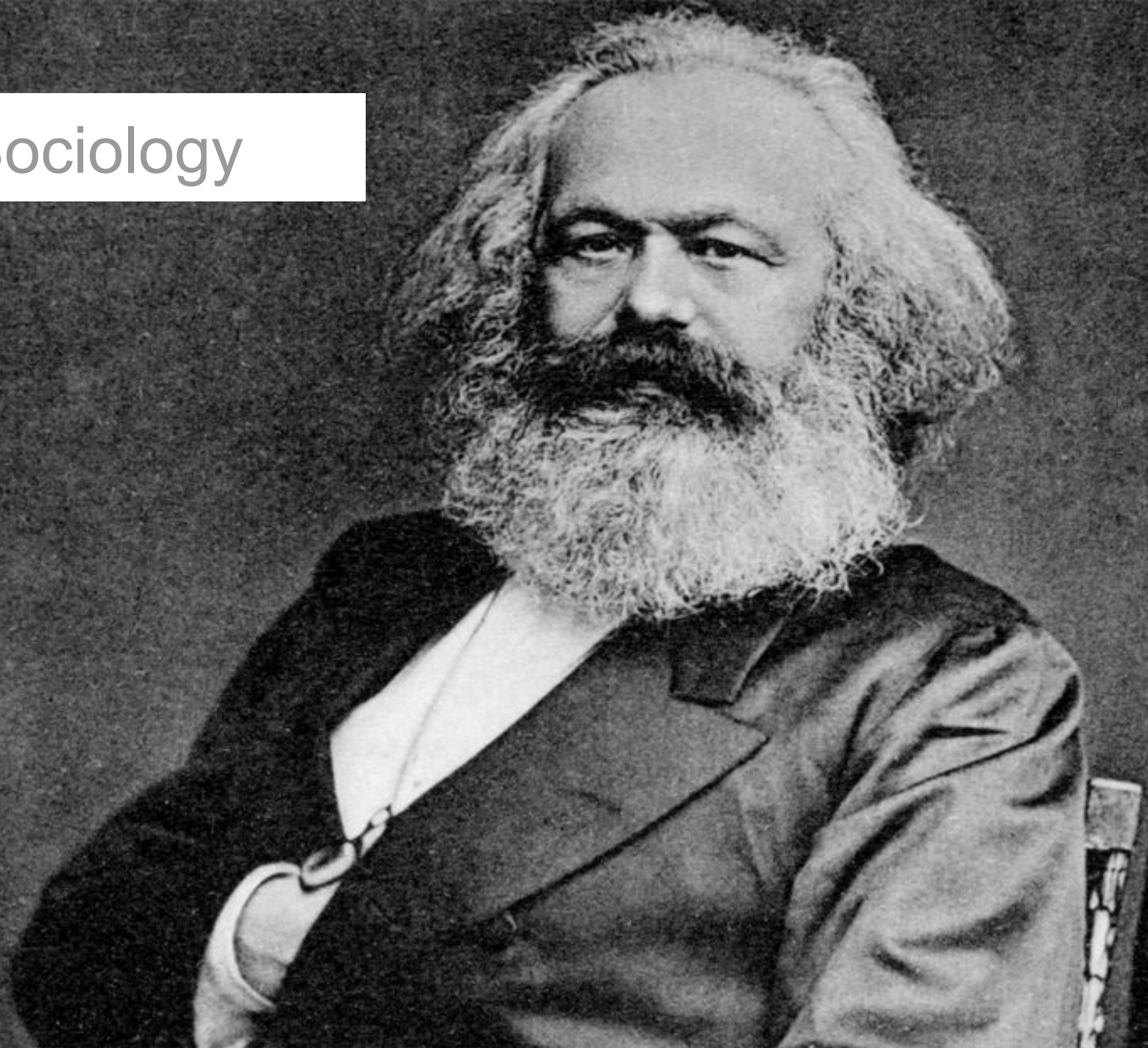




Psychology

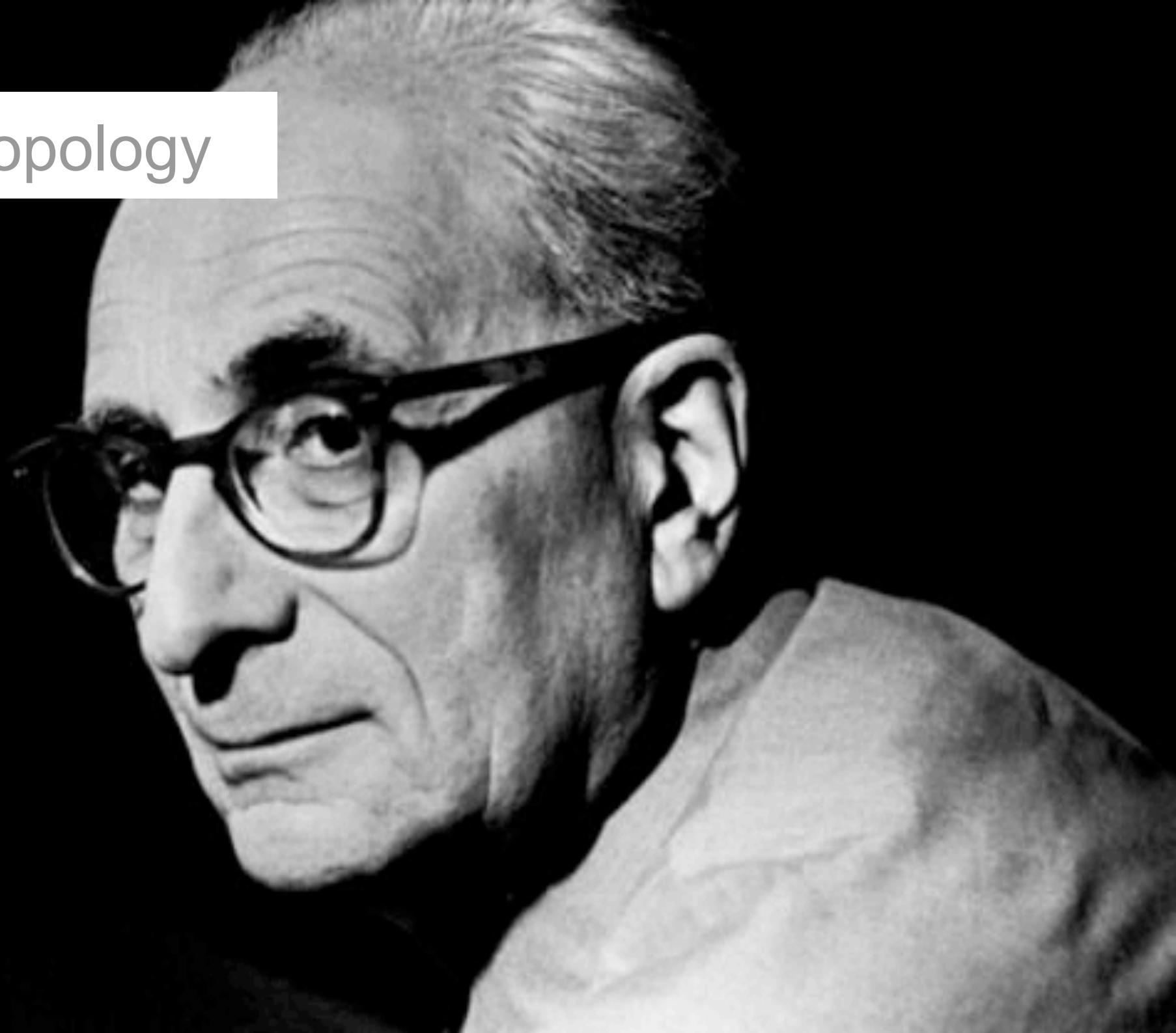


# Sociology





# Anthropology



# Didactic / Pedagogy



# Communication studies





# Communication studies

HOLLIS The philosophy of social science CAMBRIDGE

Zimbardo  
Leippe

THE PSYCHOLOGY OF ATTITUDE CHANGE AND SOCIAL INFLUENCE

Aronson

*The Social Animal*

Seventh  
Edition



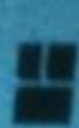
Freeman

Aronson

READINGS ABOUT

*The Social Animal*

Seventh  
Edition



FREEMAN

ITP



LIPPA

INTRODUCTION TO  
SOCIAL PSYCHOLOGY

SECOND  
EDITION

WADSWORTH

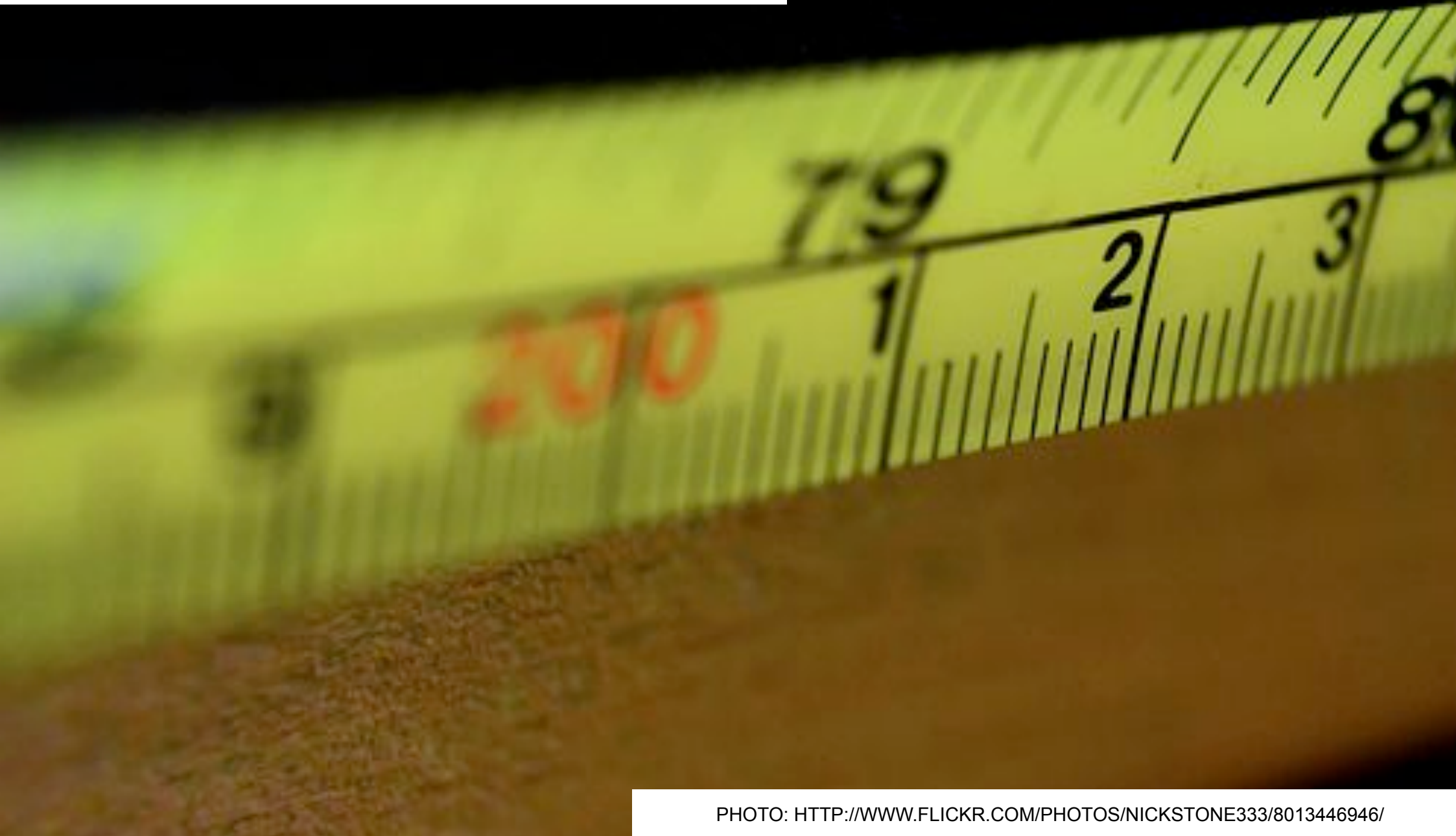




# Research



# Quantitative Research





# Qualitative Research



PHOTO: [HTTP://WWW.FLICKR.COM/PHOTOS/JKIRKHART35/4984385396/](http://www.flickr.com/photos/jkirkhart35/4984385396/)

## About your opinion...

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- What did I find out?
    - Not prove yourself right
    - Prove yourself wrong
  - First collect data, then judge / have an opinion
- Grounded Theory Method

Adapt to military life?



PHOTO: [HTTP://WWW.FLICKR.COM/PHOTOS/ILUVCOCOLA/53495590/](http://www.flickr.com/photos/iluvcocacola/53495590/)



# Biases & Fallacies



# You are not so smart

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- Cognitive biases
- Logical fallacies
- Heuristics

"The archives of David McRaney's blog on self-delusion are well worth picking through." —ANDREW SULLIVAN

# YOU *are* NOT *so* SMART

WHY YOU  
HAVE TOO MANY  
FRIENDS ON  
FACEBOOK

WHY YOUR  
MEMORY  
IS MOSTLY  
FICTION



AND 65 OTHER  
WAYS YOU'RE  
DELUDING  
YOURSELF

# DAVID McRANEY

FOUNDER OF [YouAreNotSoSmart.com](http://YouAreNotSoSmart.com)

# Confirmation Bias

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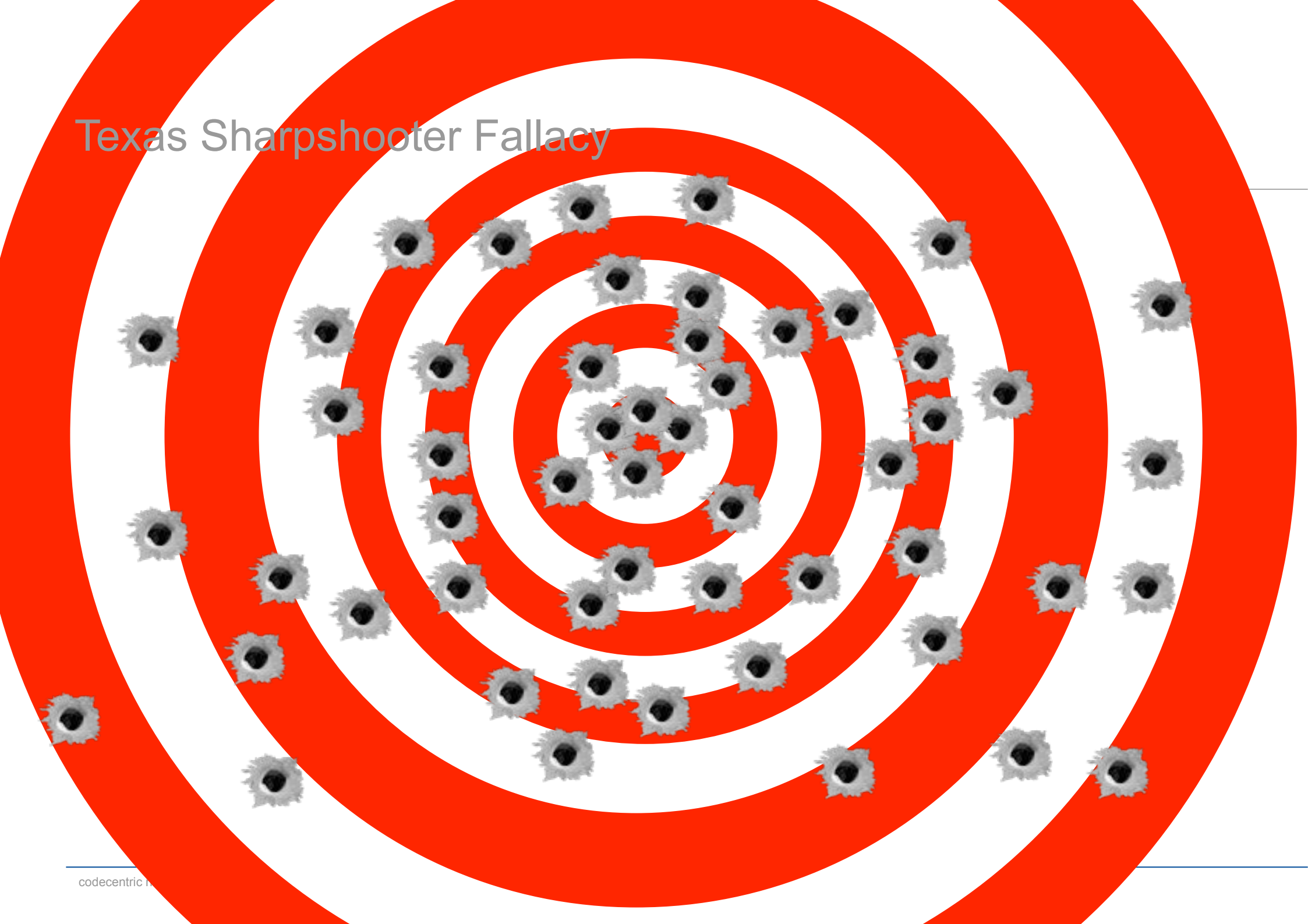
You tend to look for information that confirms your beliefs and ignore the information that challenges them.

- Biased search
- Biased interpretation
- Biased memory





# Texas Sharpshooter Fallacy




# Availability Heuristic



# Magic tricks

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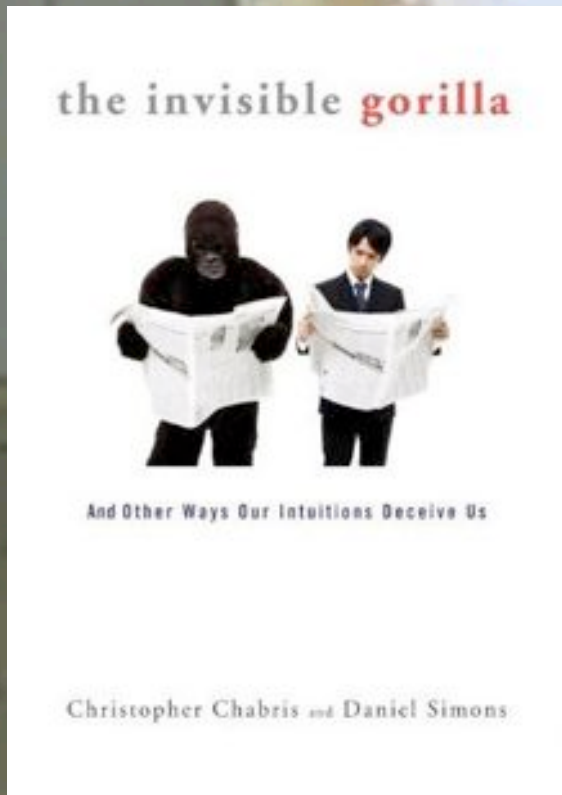


The colour  
changing  
card trick

Source: Richard Wiseman (see video <http://youtu.be/v3iPrBrGSJM>)



# Dancing Gorillas



# Dancing Gorillas



PSYCHOLOGICAL SCIENCES

# Software

A close-up, black and white photograph of a computer keyboard. The keys are arranged in a grid, with some keys in sharp focus in the foreground and others blurred in the background. The keys are dark with white characters. The lighting creates highlights on the keys, giving them a three-dimensional appearance. The overall composition is a shallow depth of field, emphasizing the texture and layout of the keyboard.



Quality



# Numbers & counting



Testing is about

**Behaviour**



**Skills**



**Communication**



**Attitude**



**Learning**



**Thinking**



**Collaboration**





## Take aways

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- Be aware of what you do in testing
- Learn from what people do in social sciences
- Do quantitative AND qualitative research
- Think critically
- Be aware of biases and fallacies
- Accept and deal with ambiguity, situational specific results and partial answers



# Now you!

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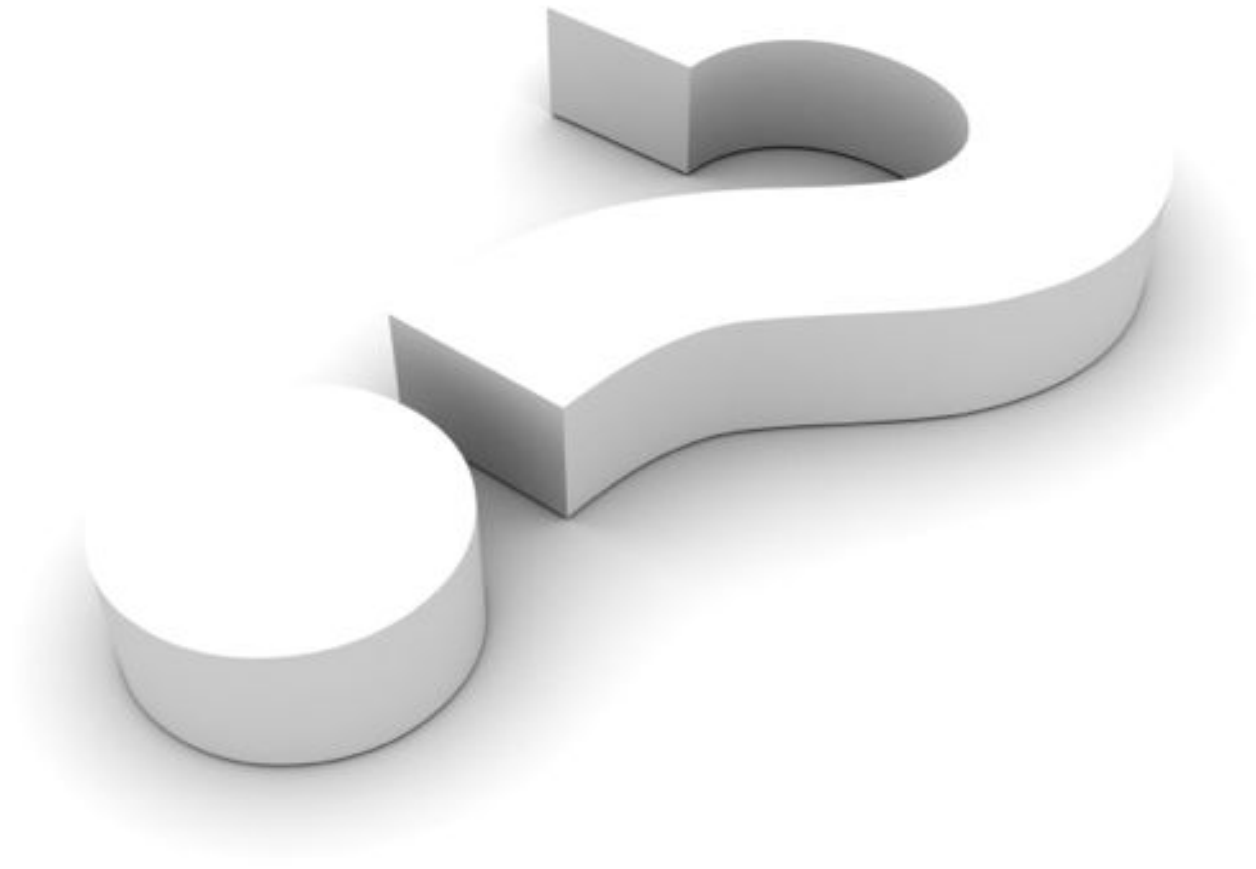


## Read the links & think critical about it:

- Thinking fast & slow – Daniel Kahneman
- You're not so smart – David McRaney
- The invisible Gorilla – Christopher Chabris and Daniel Simons
- Qualitative Data Analysis: a user-friendly guide for social scientists – Ian Dey
- Critical Thinking: a user's manual – Debra Jackson
- <http://steveo1967.blogspot.com/2011/01/are-testers-ethnographic-researchers.html>
- <http://steveo1967.blogspot.com/2011/01/what-you-believe-might-not-be-true-part.htm>
- <http://steveo1967.blogspot.com/2010/07/danger-confirmation-bias.html>
- <http://usersknow.blogspot.ca/2013/02/combining-qualitative-quantitative.html>
- Research Methods: Participant observation ([www.sociology.org.uk](http://www.sociology.org.uk))
- Qualitative Evaluation checklist - Michael Quinn Patton ([www.wmich.edu/evalctr/checklists](http://www.wmich.edu/evalctr/checklists))
- Critical & creative thinking (<http://www.engin.umich.edu/~cre/probsolv/index.htm>)
- Software Testing a Social Science – Cem Kaner
- Testing Through The Qualitative Lens – Michael Bolton
- Curing Our Binary Disease – Rikard Edgren

# Questions?

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# Acknowledgements

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Special thanks to: John Stevenson

<http://www.steveo1967.blogspot.com/>

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# Contacts

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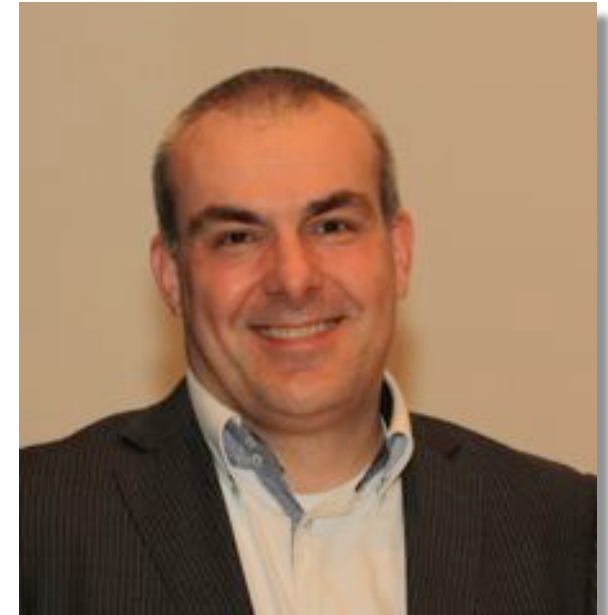


@huibschoots



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