

What testing can learn from social sciences

Huib Schoots – TestBash 2.0 Brighton 2013



Conference audiences

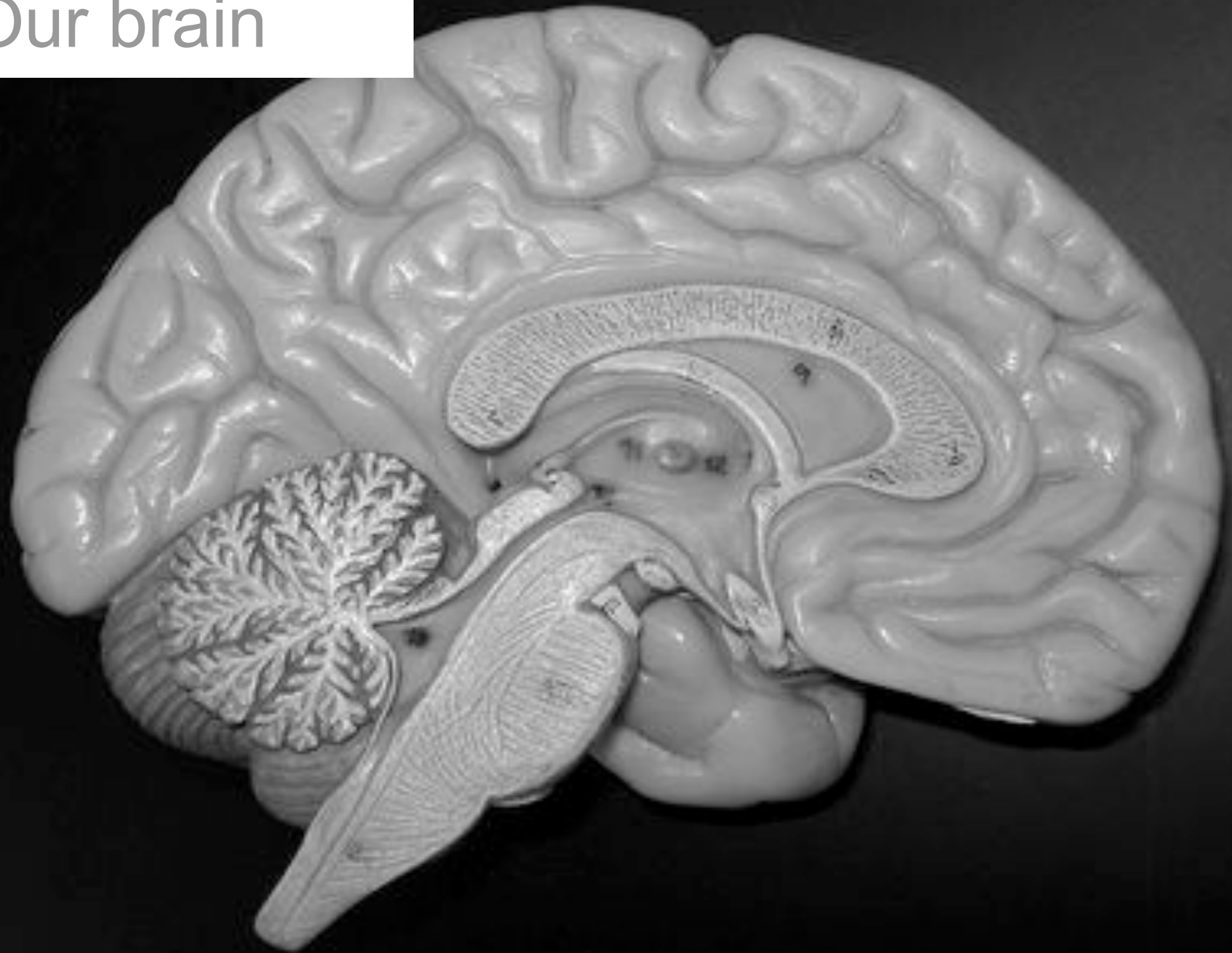


PHOTO: RIK MARSELIS (WWW.TESTNET.ORG)

Conference audiences

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

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?



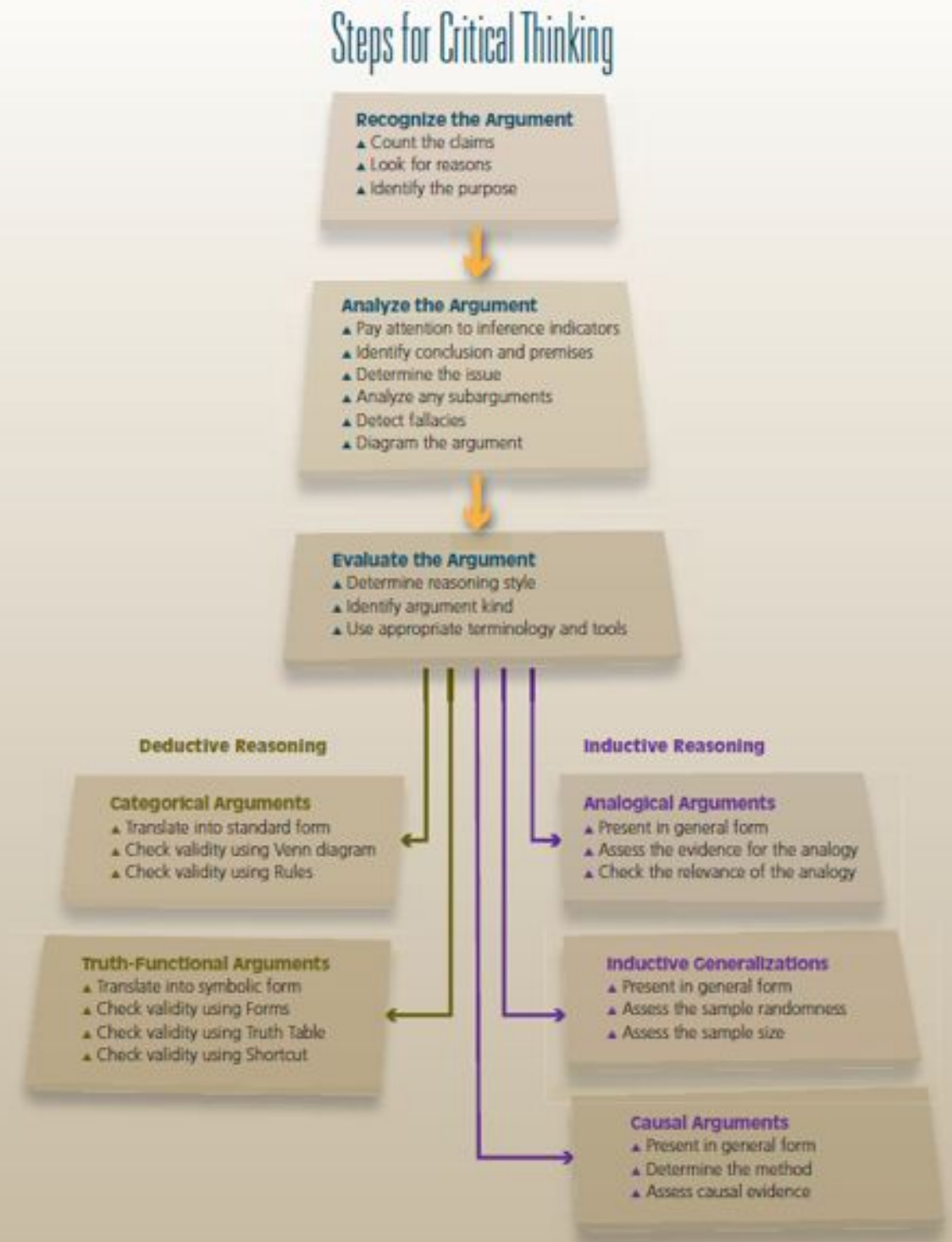
Source: James Bach (see video: <http://youtu.be/8TX6rzz60xQ>)

Critical Thinking

- Recognise argument
- Analyse argument
- Evaluate argument

- Deductive & Inductive reasoning

- Critical vs creative thinking?



System Thinking



What is testing?

morning ;
something
verb. The
bird, hu-

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

from dead to live
the Mass the
and 1792.
The early
the Mass
as a morning
the case of an

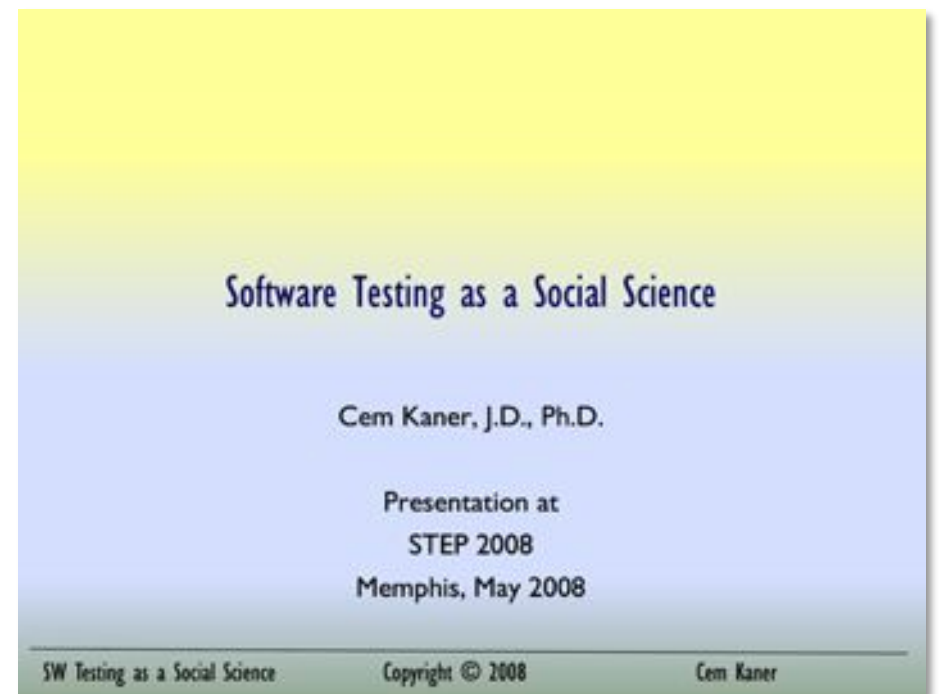
ally descri
also the style
called *Early*

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

any division of
also, anterior
timely, done
before it is
former, later
copy Green
page one early
1851. 1851
copy

Effective testing

“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?

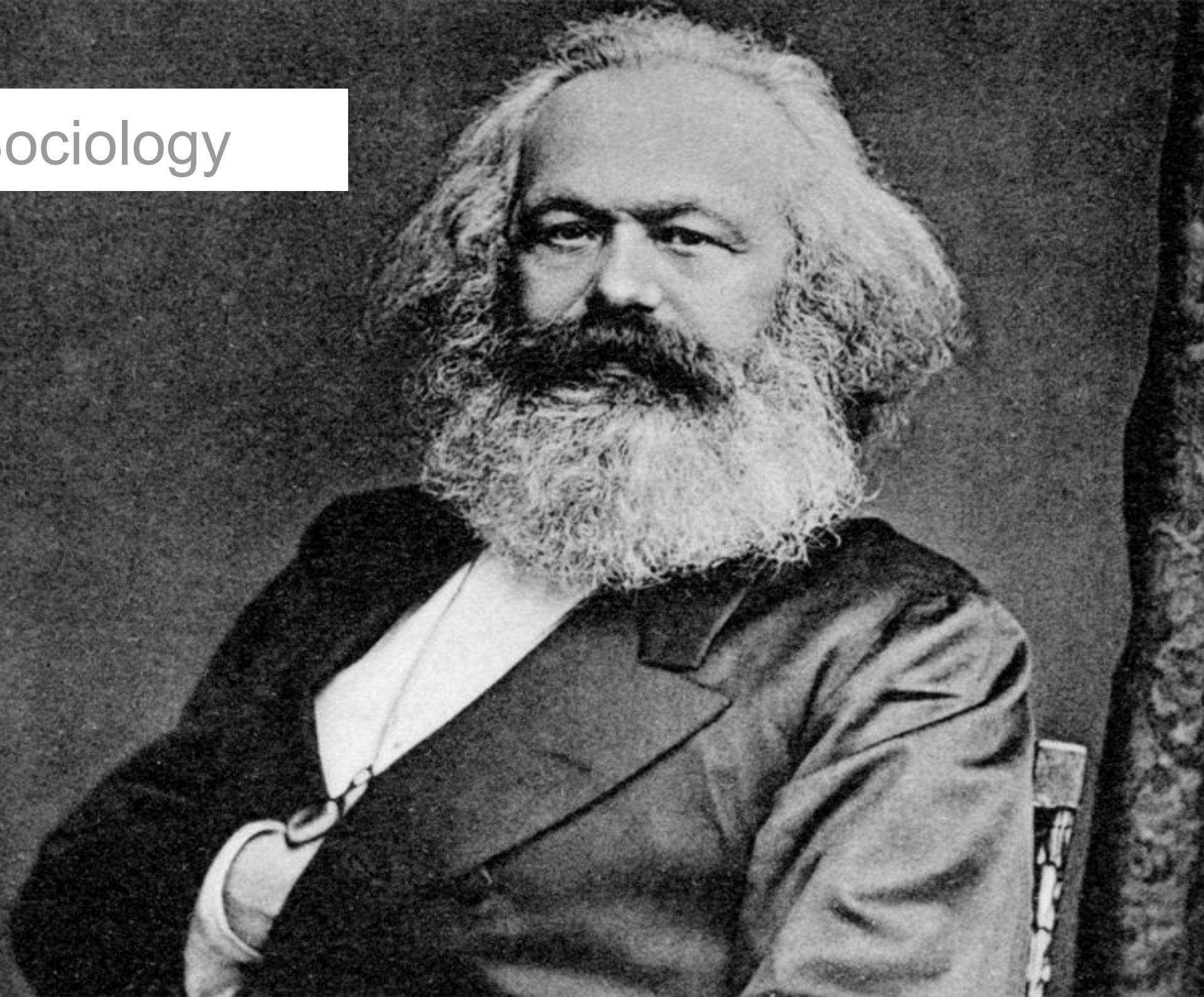


PHOTO: [HTTP://WWW.FLICKR.COM/PHOTOS/ROBBY_VAN_MOOR/478725670/](http://www.flickr.com/photos/robby_van_moore/478725670/)

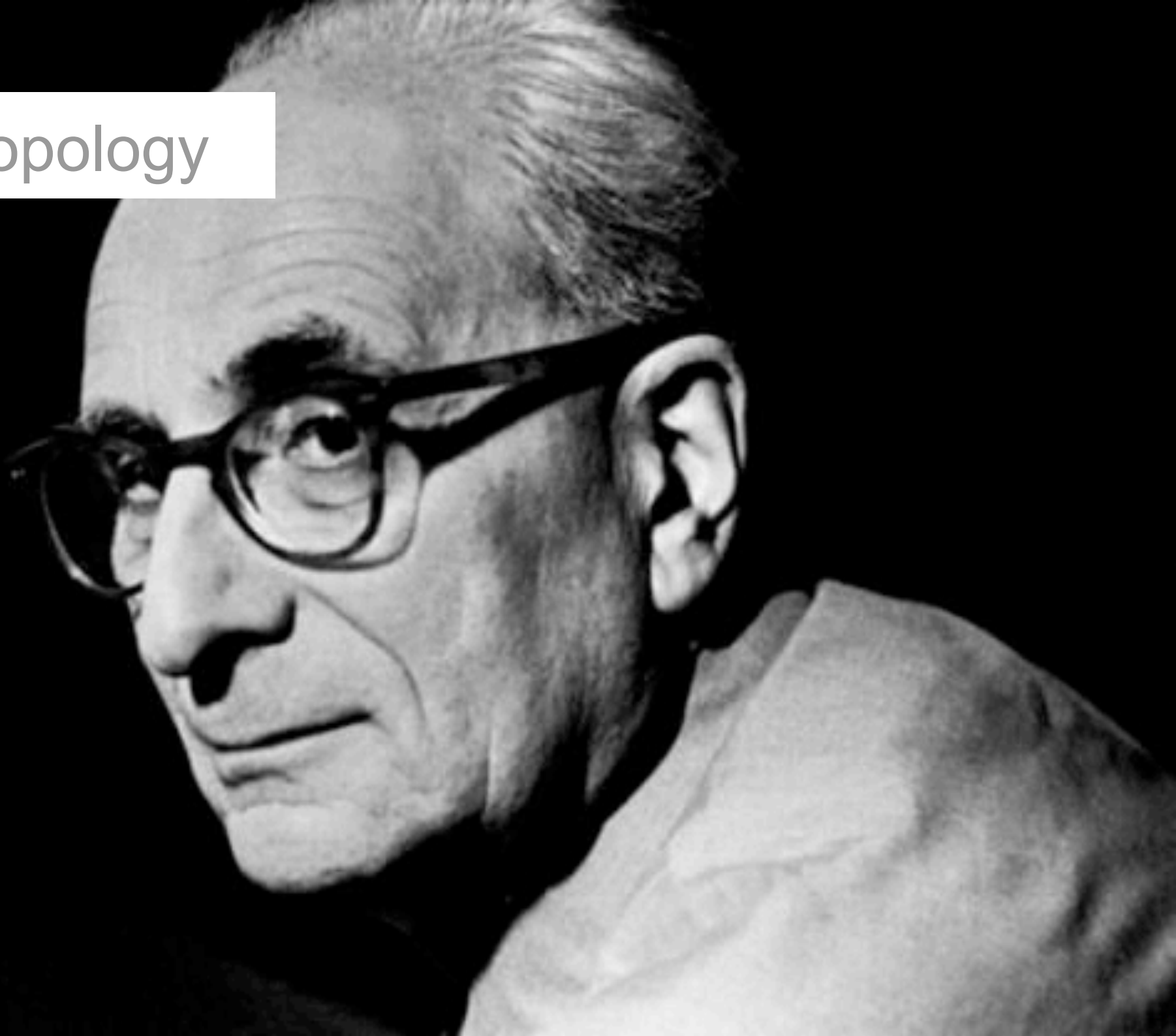
Psychology



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

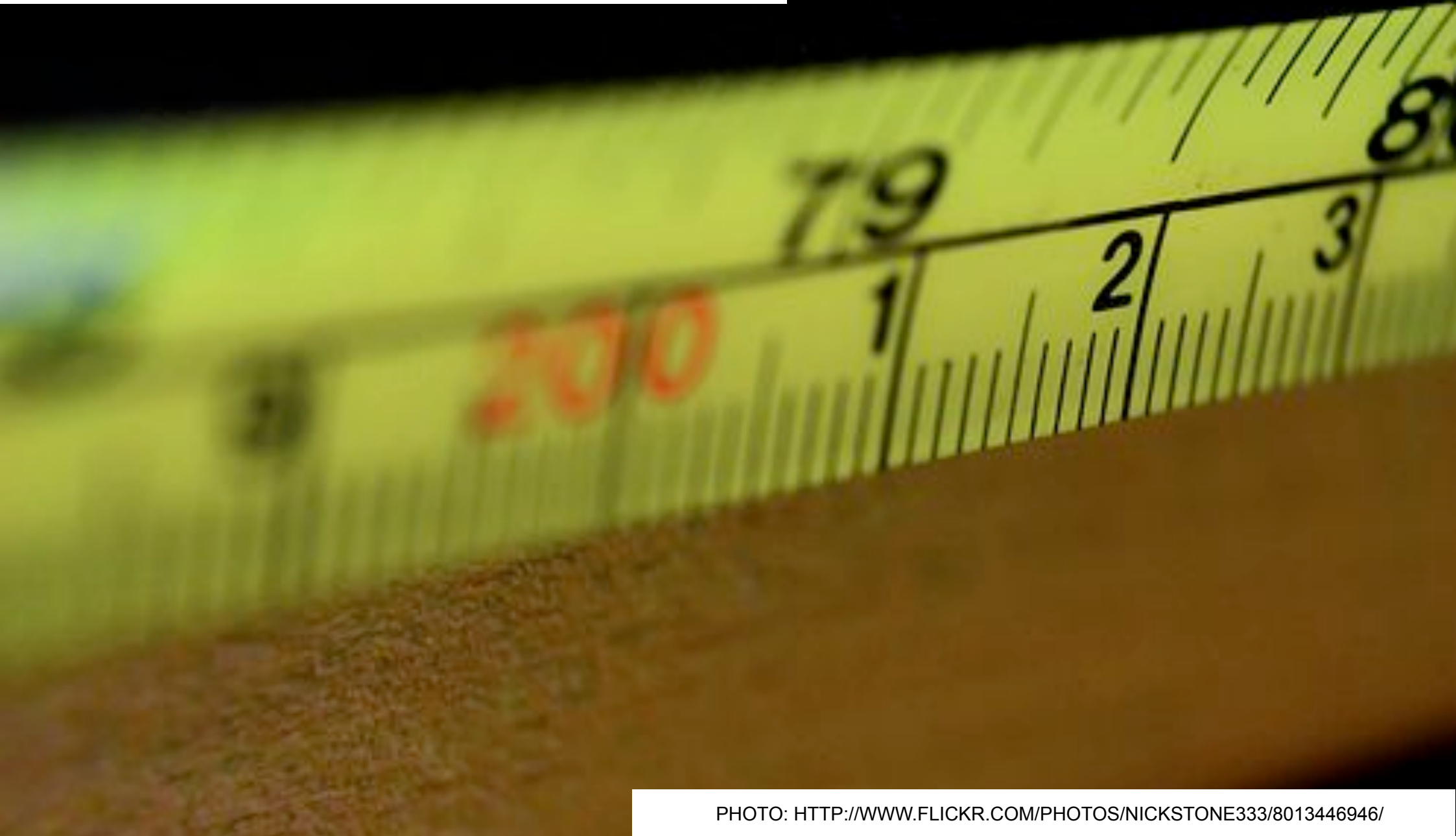
WILEY



Research



Quantitative Research



Qualitative Research



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

About your opinion...

- 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/ILUVCOACOLA/53495590/](http://www.flickr.com/photos/iluvcocacola/53495590/)

Biases & Fallacies



You are not so smart

- 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

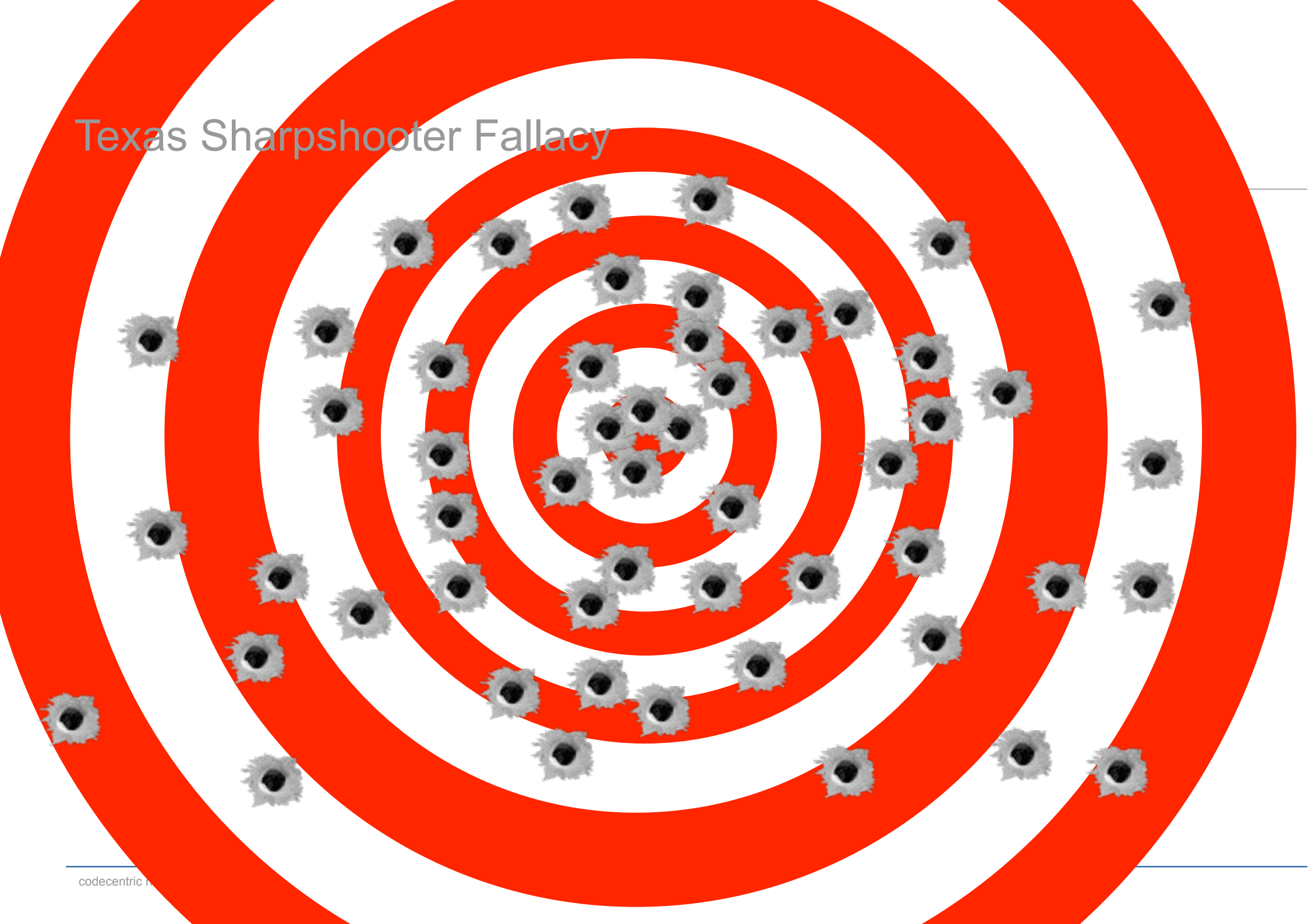
Confirmation Bias

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



The colour
changing
card trick

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

Dancing Gorillas



the invisible gorilla



And Other Ways Our Intentions Deceive Us

Christopher Chabris and Daniel Simons

Dancing Gorillas



PSYCHOLOGICAL SCIENCES

Software

A close-up, black and white photograph of a computer keyboard. The keys are dark with white characters. The focus is sharp on the keys in the foreground, while the keys in the background are blurred. The keys visible include 'W', 'E', 'R', 'T', 'Y', 'U', 'I', 'O', 'P', 'A', 'S', 'D', 'F', 'G', 'H', 'J', 'K', 'L', 'Z', 'X', 'C', and 'V'. The lighting creates highlights on the keys, giving them a three-dimensional appearance.

Quality



Numbers & counting

1427220915042157305232052021
517324721000
42348615315209769384610425
03279685301868631572488401
19982554211730846774529708
7450517028560698067889521
2628075696832610749532339
420290390181429373115293
319445727118614900017650

Testing is about

Behaviour



Skills



Communication



Attitude



Learning



Thinking



Collaboration



Now you!

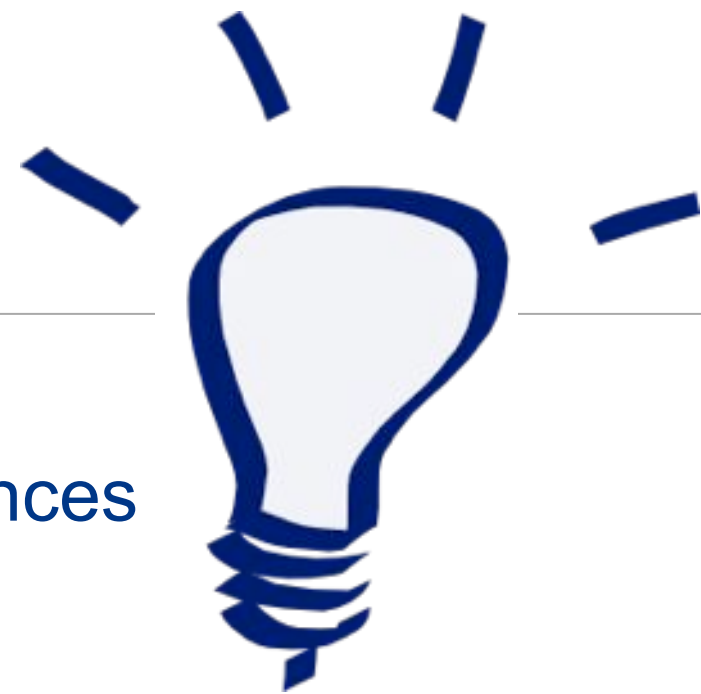


Read the links & think critical about it:

- 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)
- Qualitative Evaluation checklist - Michael Quinn Patton (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

Summary

- 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



Acknowledgements

Special thanks to:

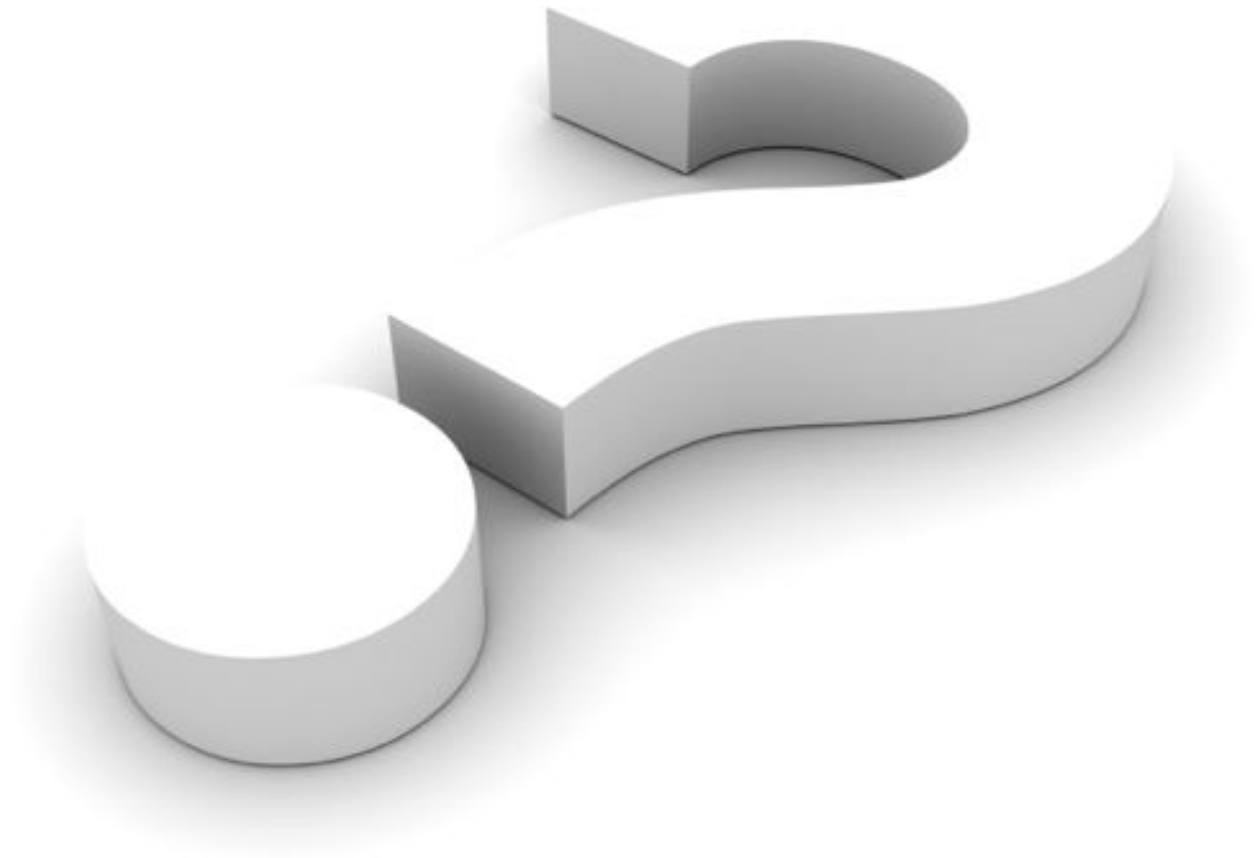
John Stevenson

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



Many of the ideas in this presentation were inspired by colleagues including Cem Kaner, Michael Bolton, James Bach, Rikard Edgren and Jerry Weinberg.

Questions?



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