


Forensic psychology science vs. pseudoscience



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Examples of pseudoscience

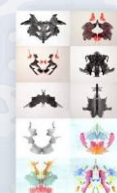

- Polygraph
- Scientific Content Analysis (SCAN)
- Nonverbal lie detection
- Thermal cameras,
- Voice analyses,
- fMRI brainfingerprinting

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Examples of pseudoscience

Psychological tests:

- Rorschach test
- Draw a Man, Tree, Family, House ...
- Anatomical dolls

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Examples of pseudoscience

Psychological therapies:

- Eye Movement Desensitisation and Reprocessing Therapy – EMDR
- Neuro-linguistic programming – NLP
- Recovered-Memory Techniques
- Critical Incident Stress Debriefing – CISD

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Science is cumulative and progressive in that it continues to improve and refine knowledge of our reality based on new observations and interpretations.

Pseudo-science hardly changes, but if it does it changes primarily for personal, political or ideological reasons (Shermer, 2002).

In contrast to sciences, which eventually assimilate negative evidence into their corpus of belief, pseudosciences remain largely insulated from contradictory data.


Scientific research is sometimes subject to bias and open to serious question, so place the highest value on your own experience (Yeschke, 2003).

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Critical Thinking Errors

Theory shapes what we perceive

The theory in part constructs reality in the eyes of the observer.



When Columbus discovered the New World, he had the theory that he was in Asia. He had found cinnamon, a tree like mastic tree in Mediterranean and Chinese Rhubarb.

Criminal investigators are confident that they are very successful in detection of deceit. Therefore they „know“ who is lying.

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Critical Thinking Errors

The observer changes the observed

Participants in a psychological experiment may alter their behaviour if they know about the purpose of a research.

We can avoid it with blind and double-blind research procedures.

If a person is invited to participate in the investigative interview at the police station, then the person may become nervous. Police station is not a place that induces relaxation. Tense response from the suspect may be interpreted as a confirmation that the suspect is guilty.

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Critical Thinking Errors

Anecdotes don't make a science

Anecdotes are stories recounted in support of a claim. Without a research proof a hundred anecdotes are no better than one.

If you want the suspect to confess, use rationalization. It makes the suspect a victim of circumstances instead. In one case the suspect was told:
„You falsely accused your step-dad of molesting you, not because you are a nasty kid, but because you love your mom and want to put him away where he can't hurt her any more.“
She confessed (Zulawski & Wicklander, 2002).

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Critical Thinking Errors

Scientific words don't make a science

Those who don't have evidence try to substitute the missing evidence by looking and sounding scientific.

Research in linguistics has shown that people of a higher social status or who are better educated tend to be more verbal and use fewer gestures. The suspect who has a lower mental capacity or who is less well educated tends to rely more on gestures (Zulawski & Wicklander, 2002).

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Critical Thinking Errors

Scientific words don't make a science

Eye movement desensitization and reprocessing (EMDR), is used by a number of police departments in the US in an effort to ward off stress reactions.

... the repetitive redirecting of attention in EMDR induces a neurobiological state, similar to that of REM [rapid eye movement] sleep, which is optimally configured to support the cortical integration of traumatic memories into general semantic networks. We suggest that this integration can then lead to a reduction in the strength of hippocampally mediated episodic memories of the traumatic event as well as the memories' associated, amygdala-dependent, negative affect (Stickgold, 2002).

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Critical Thinking Errors

Bold statements

Without supportive scientific evidence daring and powerful claims are the way to manipulate people.

"I have been using the Reid Technique since the training. I have been very successful using this technique. I got a confession two days after the training. I also got a confession from a "long-time" sexual offender. He had been investigated many times over a 20 year period - with no one obtaining a confession until I used the Reid Technique on him." (www.reid.com).

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Critical Thinking Errors

Whose burden of proof?

If someone is making unusual claim he has the burden of proving to the community and experts that his / her belief has more validity than the one which is broadly accepted. Sometimes it takes decades.

Most interrogation critics have never questioned a suspect, much less tried to obtain the truth. Instead, to prove impropriety they blindly accept what the suspect says happened during the interrogation. They then point to experiments with college students to confirm their belief in coerced confessions (Zulawski & Wicklander, 2002).

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Critical Thinking Errors

Coincidence of events

If two events follow each other in sequence it does not mean they are connected causally. Correlation does not mean causation.

You are thinking about Mary. The phone rings, it's Mary. Wow, this could not have been a mere coincidence! Maybe we are communicating telepathically?!

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Critical Thinking Errors

Overreliance on authority

We tend to rely heavily on authorities, especially if authority is seen as intelligent and successful. Who is making a claim makes a difference.

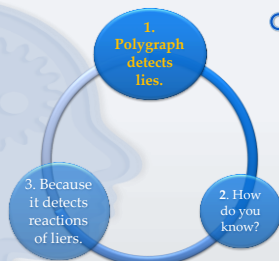


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Critical Thinking Errors

Circular reasoning

The claim is only a restatement of one of the premises (assumptions).



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Critical Thinking Errors

Some other problem solving inabilities

Interrogators often form conclusions about the suspect prior to obtaining sound evidence, and the process may become more about confirming those conclusions than obtaining impartial information (Vrij, 2008).

Confirmation bias: We tend to immediately form a hypothesis and seek only for examples to confirm it.

Selective perception: we do not seek evidence to disprove the claim or assumption. We tend to perceive and remember only hits.

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Why we make mistakes?

1. Reduction of anxiety
2. Immediate gratification
3. Simplicity
4. Cognitive dissonance

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Why we make mistakes?

Anxiety reduction

We form false beliefs because it feels good - it's comforting and consoling, it reduces uncertainty.

We need certainty, control and we tend to make simple and effortless explanations.

Gallup poll in USA:
79% of adults believe in miracles,
72% in angels.

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Why we make mistakes?

Immediate gratification

False beliefs offer immediate gratification.

"I have worked for child protective services for 9 years and this training was the best I had ever received in regards to interviewing alleged perpetrators (www.reid.com).

"I have been using the Reid Technique since the training, I have been very successful using this technique. (www.reid.com).

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Why we make mistakes?

Simplicity

We do not like answers who contain words like:

- probably,
- it depends,
- not enough data,
- maybe ...?

We need simple explanations for an often complex and contingent world. Science often gives complicated answers and we have to wait for them.

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Why we make mistakes?

Cognitive dissonance

We simply need explanations.

Science seems to offer a cold and cruel world in an infinite and purposeless universe.

Magic, myth, religion, superstition, pseudoscience offer simple, immediate and consoling answers about everything.

Who am I?
Why am I?
What to do?
How to do it?
What is that?
Why it happened?
How can I be safe?
When will it happen?

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Why we are not critical thinkers?

Evolution: for 99% of human existence people lived as hunter-gatherers in small nomadic groups.

Our brains are adapted to life demands of the stone age and not to demands of the hi-tech civilisation (Pinker, 2009).



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Thank you for your attention.

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