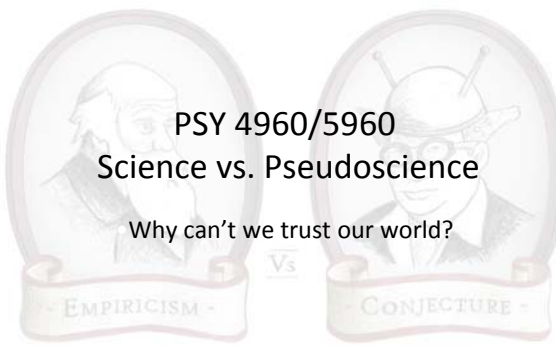believe nothing,

no matter where you read it
or who has said it,
not even if i have said it,
unless it agrees with
your own reason and
your own common sense.

guatama buddha

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PSY 4960/5960
Science vs. Pseudoscience

Why can't we trust our world?

EMPIRICISM - Vs CONJECTURE -

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Exercise #4

Fooled you!

Write down an occasion when you believed something without a doubt…and then found out it was not true.

Analyze your belief as we talk about why we can't trust our world, thinking about why and how you were fooled. We'll discuss this at the end of this lecture.

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Trust No One
(least of all yourself…or them)

Many factors influence why we should be careful of trusting either our own or other's assessments of a situation

What motivates us to belief things

Wanting good stories

Overestimating your social support

Not using a baloney detection kit

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Motivational Determinants of Belief

Our wishes about ourselves can also lead to errors in thinking

For example, the average American thinks that he or she is

More intelligent

More fair-minded

Less prejudiced

A better driver

than the "average" person

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Lake Wobegon Effect

"…all the women are strong, all the men are good-looking, and all the children are above average."

Did you know that 50% Americans are of below average intelligence?

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2

Underlying Mechanisms

Self-serving patterns of bias and attributions
  If I succeed, it's because I worked hard.
  If you succeed, it's because you are lucky.

These can be seen as motivational or cognitive
  Either way, SSB only works if we think of ourselves as objectively evaluating information
  We then fit available evidence and make attributions to best serve our biases

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Underlying Mechanisms

The SSB also impacts *who* we seek information from and how much of it we seek

"What do you think about the health impact of smoking?"

"Do I look fat in this?"

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Underlying Mechanisms

How "good" you are in an area depends on what you and your society value

If something is valued, you want to be better
or
If you are good at something, you value it more

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Believing What We Are Told

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We all need to tell and want to hear a good story, so the teller and listener have complementary goals

The communication should be "justified"
   My message should be worthy of your attention *or* your message must be worthwhile of my attention
   Message must be understandable, but not laden with needless details

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Believing What We Are Told

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When we hear something we…
Sharpen it – emphasize what we consider important
Level it – deemphasize what we consider unimportant

This serves to make second-hand stories simpler and more "clean", more distorted
E.g., the Little Albert experiments

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Second-hand Stories

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Sharpening and leveling especially occurs when we have no first-hand information about the subject

We place more emphasis on the person and the actions…not on the situation
Actions and actors go together
People and actions are described in the same terms

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Distortions of Communication

- If communication informs or entertains, then the interaction can be considered worthy

- How to do this?
- Increase the immediacy
- It happened to someone to you, instead of a

"This guy I know said that...."

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Distortions of Communication

How to do this?
Information is overextended *or* qualifications are left out
You may exaggerate the risks or benefits of some behavior

"If you take this pill, you will lose at least 10 pounds."

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Distortions of Communication

How to do this?
Entertaining, rather than informing, is what you are aiming for
"They wouldn't say it if it weren't true."

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Distortions of Communication

Distorting for the "greater truth"

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Distortions of Self-Interest

Telling a "good story" also promotes the teller's self-interest by

Enhancing his or her public image
Advancing his or her ideology / theories

Vs

- EMPIRICISM -   CONJECTURE -

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Distortions of Self-Interest

"One in five heterosexuals could be dead of the AIDS virus in three years."

Oprah Winfrey, 1987

"By 1991, 1 in 10 babies may be AIDS victims."

USA Today, 1988

CONJECTURE -

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Distortions Due to Plausibility

Stories are retold because they *seem* like they could or should be true

For example:

Reusing plastic water bottles releases a deadly carcinogen

Bill Gates / MS / AOL will give you money if you just forward this to X number of other people

A student whose roommate committed suicide got a 4.0 GPA from the school automatically

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How do We Detect Distortions?

Consider the source

Trust facts, distrust predictions

Be on the lookout for sharpening and leveling

Be wary of testimonials

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Imagined Agreement of Others

We tend to be heavily influenced by what those around us believe

This is perfectly justified…within certain limits

It is compromised, however, by systematically exaggerating the extent to which others believe what we do

This helps maintain our erroneous beliefs

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Social Projection

Humans tend to think others have similar characteristics to themselves

False consensus effect – your own beliefs, values, habits bias your estimates how widely shared those are by others

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Social Projection

The FCE is *relative*
You don't think everyone agrees with you, but how much you think people agree depends on the strength of your own belief

Why does it happen?
Motivation for our assessment to be correct
Selective nature of our exposure to information
Belief that what governs our behavior governs the behavior of others

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Inadequate Feedback from Others

Corrective feedback is not as common as one would think

How often do *you* tell someone what you **really** think?

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Inadequate Feedback from Others

In general, only our closest friends and family point out when our beliefs are out of line

It's not "proper" to disagree with others

"One cannot go around correcting others."

"The tactful person keeps his prejudices to himself."

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Inadequate Feedback from Others

Our relative inexperience with open disagreement and conflict is reflected in gossip
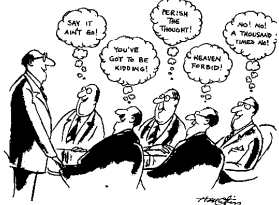
Gossip can be seen as the non-open release of dissent

May help us get closer to "the truth"

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Inadequate Feedback from Others

Fear of how your opinion will be received may also contribute to lack of feedback

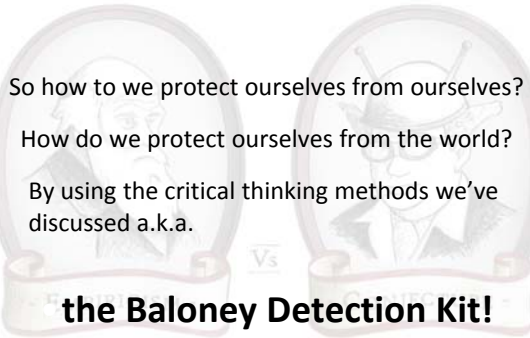science versus pseudoscience

So how to we protect ourselves from ourselves?

How do we protect ourselves from the world?

By using the critical thinking methods we've discussed a.k.a.

the Baloney Detection Kit!

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Baloney Detection Kit

Must be independent confirmation of "facts"

Debate on the evidence must be encouraged

More than one hypothesis must be given

Do not get attached to your hypothesis

Measure and quantify

All the links in the argument must be sound

Sagan (1995)

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Baloney Detection Kit

Authority carries no weight

Occam's Razor

Falsifibility

Be on the lookout for logical fallacies in arguments

Sagan (1995)
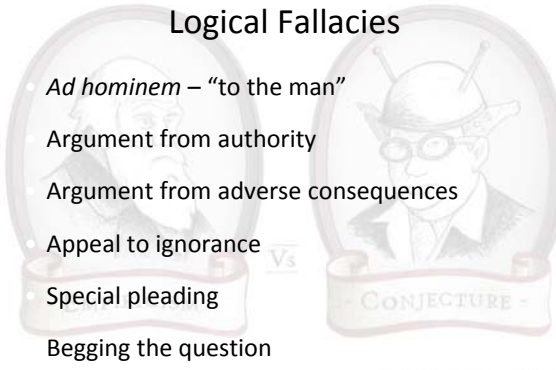
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Logical Fallacies

Ad hominem – "to the man"

Argument from authority

Argument from adverse consequences

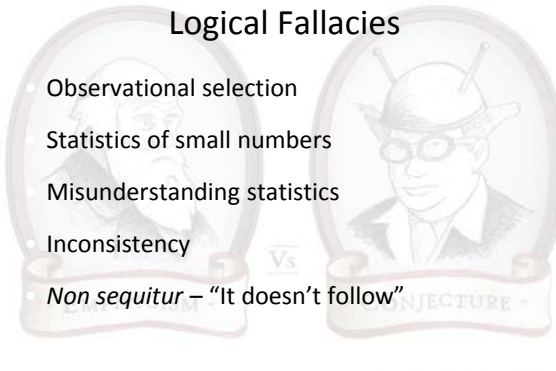Appeal to ignorance

Special pleading

Begging the question

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Logical Fallacies

Observational selection

Statistics of small numbers

Misunderstanding statistics
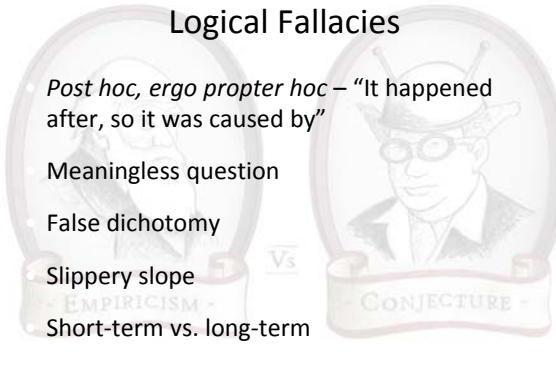
Inconsistency

Non sequitur – "It doesn't follow"

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Logical Fallacies

Post hoc, ergo propter hoc – "It happened after, so it was caused by"

Meaningless question

False dichotomy

Slippery slope

Short-term vs. long-term

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Logical Fallacies

- Confusing correlation and causation

- Straw man

- Suppressed evidence / half-truths

- Weasel words

EMPIRICISM - Vs - CONJECTURE -

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Exercise #4

So, how and why were you fooled?

EMPIRICISM - Vs - CONJECTURE -

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Skeptical scrutiny is the means, in both science and religion, by which deep thoughts can be winnowed from deep nonsense.

Carl Sagan

Media Critique #2