

Scientific Method

Using the "Statement" because "Explanation" technique effectively to separate the truth from "truthiness"

Tools to be used with the Better Motorcycling Paradigm

Is it Truth (Factual)
or Truthy (Wishful)?



Truthiness:

The quality of preferring facts one wishes to be true, rather than facts known to be true.

Truth:

The quality of being factual.



We use **science** in this way:

"Statement" because **"Explanation"**

"Statement" because "Explanation"

Where the "Statement" must be
Measurable and Disprovable

And the "Explanation" must be
Difficult to Manipulate

“Statement because Explanation” Example

Right of way violations occur

because

the violators are experiencing inattentional blindness.

The Statement Rule:

A scientific statement should be measurable, can be tested and should be disprovable.

Scientifically, either we find evidence to support the statement, or we disprove a statement.

Therefore, saying “Scientifically Proven” is an oxymoron. We should use, "Scientifically Supported" and “Scientifically Disproven.”

Reference: Francis Bacon and Karl Popper

A caution about statements:

There are reasonable and non-scientific statements.

Example: “A person can’t live forever.”

This statement is reasonable;
but not testable, not scientific.

Science cannot answer all questions.
It can answer some questions, well.

Explanation



Use Scientific Method to
guide us to better Explanations

The Explanation Rule:

A scientific theory must be difficult to manipulate and hard to vary.

It must be difficult to make up new explanations as evidence is accumulated. Supporting evidence from measurement and experiment leads to refinement.

This rule is what we mean when we say the scientific theory or explanation is good.

Myths are easy to vary, so testing them is not useful.

Ref: Physicist David Deutsch



“Statement because Explanation” Example

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Caution about statements and explanations:

Just because a statement is measurable and disprovable does not make it scientific. It needs to also have a good explanation.

Example: “The sun will not rise on Tuesday.”

This statement is measurable, and disprovable, yet one can make up many variations of explanation.

Again, science cannot answer all questions. It can answer some questions, well.

Good Science is Hard to Accomplish

This comes from our human genius of making decisions from partial information.

We “jump” to conclusions. This is why we can enjoy seeing images in the clouds.

We humans are often optimistic and may prefer truthiness to truth when only partial information is available.

And, we often prefer the answer that makes us feel good over accurate answers.



Sisyphus by Titian,
Prado Museum, Madrid

We can use Scientific Method to guard against being misled by Truthy statements.

This technique helps reduce confirmation bias.

