

Discussion of “Testing by betting: A strategy for statistical and scientific communication” by Glenn Shafer

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What the paper is:

Introduction of interesting concepts that helps us to learn about tests. (Treatment of multiple testing is elegant.)

What the paper is not:

A convincing persuasion that we should use betting for communicating test results.

Issue 1:

p-values are often misinterpreted,
but this is not because they are “too difficult”.

Many reasons for misinterpretation (e.g. Mayo 2018),
e.g. journals incentivising misuse by demanding significance.

Statistical inference is inherently difficult.

Meaning of probability?

People want certainty and we don't deliver it.

Truth statements about models that aren't true anyway?

Probabilities are always also about
what could have happened but hasn't.

Actually I find the considerations involving
"Sceptic", "Reality", "Forecaster", "Scientist"
rather convoluted -

which wouldn't be a problem if simplicity weren't the aim.

Issue 2:

“Implied alternatives” - I like that concept for analysing characteristics of tests -
I actually believe that all tests have a direction and do not “neutrally” test H_0 only , but. . .

My “alternative implied alternative”:

If $T > c$ rejects P , all Q with $Q\{T > c\} > P\{T > c\}$.

Can't infer any specific alternative from test -

Shafer probably agrees,
but his concept may encourage it anyway.

All examples in Sec 2.4 rely on unrealistically precisely specified alternatives.

Issue 3:

Shafer implies that scientists should be prepared to bet, meaning they should favour outcomes that makes them win.

Is this a good attitude for science or should we rather be neutral?

Shafer implies that scientists “hope” to achieve payoff for rejection of the H_0 .

Seems to take problematic incentives of journals for finding significance for granted.

It's about communication, remember!

Issue 4:

Betting is problematic and *not* easily understood!
People's betting behaviour is often not rational.
(This includes scientists and even statisticians!)

Many are unfamiliar or uncomfortable with betting.
There's much problem gambling.

Different betting behaviour and attitudes, and stereotypes
regarding different parts of society
(see Kelly quote on gambler and his wife).

Giving the betting metaphor a major role
in statistics communication seriously worries me!