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## THIS WEEK'S FORUM

### Week 2

Discuss this week's module: Statistical Inference.

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Objectivity

Herbie Lee · Staff · 18 days ago

1) In what ways could the frequentist paradigm be considered objective? In what ways could the Bayesian paradigm be considered objective?



## DESCRIPTION

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2) Identify ways in which each paradigm might be considered subjective.

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EH

Eric Hunt · 14 days ago



1.) The frequenting paradigm merely identifies the fraction of the events so no room for subjective interpretation. The Bayesian paradigm could be considered objective if the information that you derive your opinion from is objective.

2.). The frequentist paradigm could be considered subjective by how you derive your hypothetical infinite sequence which could differ from how someone else derives their hypothetical infinite sequence. The Bayesian paradigm could be subjective because people could put different weights of probability based on the information they have.

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Zhixue (Maggie) Wang · 8 days ago



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CC

Claude Chaunier · 7 days ago · Edited



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The frequentist paradigm is subjective and doesn't admit it when it deals with confidence intervals -- the parameter whose value is unknown has to follow some distribution for the confidence to be computed.

The bayesian paradigm is objective when it explicitly states every bit of subjectivity and puts them in formal terms.

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Vimos Tan · 7 days ago



1) Frequentist draw conclusion from a large number of observations, while Bayesian assume a prior for the distribution of hyper parameters and draw inference from the posterior using Bayes theorem

2) For frequentists, smoothing problems may be neglected for small probability events; for Bayesian, distribution of parameter may not be conjugate with the true variables.

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JJ

Jonathan Joe · 7 days ago



N/A

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PP

Padmanabhan Pillai · 7 days ago



1. Frequentist paradigm can be considered objective as it derives the probability based on

observing a large number of events, where possible. Bayesian paradigm can be considered objective as it uses additional information, domain knowledge and arrive at a probability

2. Frequentist paradigm probably requires infinite observations to come at a good estimate, which may not be practical. Bayesian paradigm infers using a person's experience which is subjective

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DD

Danny Dunlavy · 7 days ago



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PH

Pam Howard · 7 days ago



From the internet : This frequentist paradigm calibrates the plausibility of propositions by considering (notional) repeated sampling of a population distribution to produce datasets similar to the one at hand. By considering the dataset's characteristics under repeated sampling, the frequentist properties of a statistical proposition can be quantified. This is an objective measure of the probability

Not sure that the Bayesian paradigm be considered objective - except where the prior is set to missing or unknown or defaulted to some objective measure ? Surely one of the advantages of Bayesian would be that prior subjective considerations are taken into account?

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Yu Gan · 7 days ago



1) at most cases frequentism is considered as objective. For bayesian, if the flat prior is used, it may be considered as objective.

2) For frequenstism, if we assume certain distribution to calculate the std, this is somewhat subjective. In most case the way of choosing prior of bayesian is subjective.

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MC

Matthew Cave · 7 days ago



If we trust the fundamental laws of probability, then both paradigms can, under some conditions, yield the objective truth. In the case of the frequentist paradigm, the condition is that every member of the population is included in the statistical sample. In the case of the Bayesian paradigm, it's that every last shred of evidence (that can inform the prediction) is taken into account and understood perfectly.

Without these conditions being met, the predictions provided by either paradigm will be subjective. If only a small number of specimen in a large population is included in the statistical experiment, then the results will be very unreliable.

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Meg Spriggs · 7 days ago



MS 1) Frequentist is objective because it is a relative frequency in a hypothetical sequence, and this is not determined by any prior knowledge.

Bayesian can be considered objective if the priors used do not reflect subjective judgement. e.g., if flat priors are used.

2) Frequentist could be considered subjective because you are defining a predetermined finite sequence. Thus, the significance of the outcome depends on how you have defined that sequence, e.g., where you plan to stop testing.

Bayesian could be considered subjective because you take into account your own prior knowledge about the probability of an event occurring.

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ND

Nathan Desdouits · 7 days ago



For ease of explanation I will mix the order of the "4" questions, in a "Frequentist vs Bayesian" way. Also, please pardon my English, it is not my first language.

1) Frequentist paradigm only rely on the given data to compute probabilities. No assumption on the data is asked beforehand. Frequentist paradigm does not leave the place to personal choice (compared to the Bayesian approach which requires the definition of a prior, even if a non

informative prior is taken). Bayesian paradigm on the other hand gives the user the choice of the prior, which is subjective by essence.

2) Although it creates the illusion of "determinism" and to only depend on the data, the frequentist paradigm do actually make a choice, the one to "stay in the bubble" of the data. Data in the real world has a source, and that source may itself be biased. In this case, the frequentist paradigm blindly ignores that bias, while the Bayesian paradigm alleviates the bias by defining a prior distribution. In this sense, the Bayesian paradigm is often actually more objective than the frequentist paradigm.

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HH

Hamel Husain · 7 days ago



the frequentist view might not be objective when the "infinite sequence" of hypothetical events are not representative of the true behavior of the underlying system.

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JP

Jaeyoung Park · 7 days ago



1) relative frequency, personal perspective

👍 0 Upvote · Reply

LK

Lara Kattan · 7 days ago



Frequentist approach could be considered objective because it requires using the data observed in the world; this is objective because either something happened or did not happen. However, a frequentist approach could also be subjective because there's a degree of measurement error or researcher "degrees of freedom" when choosing what to measure.

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SD

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