4. Confidence Interval Concept Checks Continued
Confidence Interval Concepts Review Continued

Start of transcript. Skip to the end.

(Caption will be displayed when you start playing the video.)

So here's a new experiment in which
there are 150 participants.
So basically, think of your 124.
Now, it's 150.
It turns out that exactly half of them
turn their head to the left and half of them
turn their head to the right.
And now, I'm giving you a bunch of
candidates

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Confidence Interval Concept Check 4

0/1 point (graded)
If $[0.34, 0.57]$ is a **realization** of a (non-asymptotic, for some fixed n) 95% confidence interval for an unknown parameter p, then which of the following is true?

The probability that the unknown parameter p is in this interval is

- ≥ 0.025
- ≥ 0.05
- ≥ 0.95 ✖
- None of the above, because p and $[0.34, 0.57]$ are both deterministic. ✔

Solution:

给了模型和data

Given some unknown but fixed parameter $\theta \in \mathbb{R}$ for a parametric model and random variables $X_1, \ldots, X_n$ distributed i.i.d. P_θ, recall that the non-asymptotic 95% Confidence Interval of p is an interval $\mathcal{I} = \mathcal{I}(X_1, \ldots, X_n)$ such that $\mathbf{Pr}(\mathcal{I} \ni \theta) \geq 0.95$. It is important to note that there is randomness here, given by the randomness of $\mathcal{I}$.

fix model, I是r.v. which depends on data

A realization of a random variable is *deterministic*. The interval $[0.34, 0.57]$ either contains the parameter p, or it doesn't. In other words, the expression $\mathbf{Pr}([0.34, 0.57] \ni p)$ is equal to 1 or 0. Hence, the correct choice is "None of the above, because p and $[0.34, 0.57]$ are both deterministic.".