Robust Estimators - Quiz

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Question 1

1.0/1.0 point (graded)

Which of the following criteria might one take into account when choosing an estimator? (Select all that apply.)

- [x] a. Ease of computing the estimator
- [x] b. Robustness
- [x] c. Bias
- [x] d. Efficiency

✔

Explanation

All of these criteria are perfectly valid to take into consideration when choosing an estimator. Some estimators are far easier to compute than others, which will matter more or less depending on the application. We learnt about robustness, whether the estimator will still do a good job even if our assumptions about the underlying distribution are wrong, in this lecture segment. We learnt about bias and efficiency in the previous lecture segments.

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Question 2

1.0/1.0 point (graded)

Which of the following are examples of a given estimator $\hat{\theta}_1$ being more robust than some other estimator $\hat{\theta}_2$? (Select all that apply.)

- [ ] a. $\hat{\theta}_1$ is more biased than $\hat{\theta}_2$ if we've misspecified the tail probabilities of the underlying distribution.
- [x] b. $\hat{\theta}_1$ is less biased than $\hat{\theta}_2$ if we've misspecified the tail probabilities of the underlying distribution.
- [ ] c. $\hat{\theta}_1$ is more biased than $\hat{\theta}_2$ if our assumed underlying distribution is shifted from the true distribution.
- [x] d. $\hat{\theta}_1$ is less biased than $\hat{\theta}_2$ if our assumed underlying distribution is shifted from the true distribution.

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Explanation

An estimator is robust if it does a good job of estimator the parameter even if we've made a mistake in our assumptions about the underlying distribution. It is possible that an estimator is robust to one type of mistaken assumption but not another.

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Discussion

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