Strategic Sample Selection

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An evaluator tests an empirical hypothesis based on evidence provided by a researcher who is biased toward acceptance. The researcher constructs the sample by first collecting a pre-sample and then strategically selecting data for the sample. Selected data are not Blackwell comparable to random data. Building on and generalizing Lehmann's classical result on the comparison of location experiments, the paper develops tools to characterize the impact of strategic sample selection on the payoff of evaluator and researcher.

The evaluator's payoff is increasing/decreasing in the amount of manipulation when the quantile density (a.k.a. Tukey's sparsity) function is less/more elastic than Gumbel's extreme value distribution. More generally, the evaluator is hurt when either the data distribution has sufficiently thick tails and the hypothesis would strongly be rejected at the prior, or the data distribution has sufficiently thin tails and the hypothesis would strongly be accepted at the prior.

When the data follows the Gumbel distribution, the evaluator is always unaffected by strategic sample selection; in that case data manipulation is a pure rat race and results in a loss for the researcher equal to the cost of all the extra data collected.

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