Abstract

We define new criteria for prior choice in two-sample hypothesis tests and find classes of prior distributions that satisfy them (and classes that don't). The criteria have a common starting point: a hypothetical situation where perfect knowledge about one of the groups is attained, while the data for the other group are assumed to be fixed. In such a scenario, the Bayes decision of the two-sample problem should "converge" to the Bayes decision of a one-sample test where we know the distribution of the group for which we gain perfect information. The first criterion is based on a limiting argument where the sample size of one of the groups grows to infinity, whereas the second criterion is based upon conditioning on the "true" value of the parameters. We find priors where the limiting argument and conditioning give rise to equivalent Bayes decisions under perfect knowledge, and cases where they give rise to different Bayes decisions. We show that, with some prior specifications, the limiting Bayes decisions are not compatible with any prior specification for the one-sample problem.

DATE: Wednesday, March 13, 2019
TIME: 4:00 pm
PLACE: Philip E. Austin Bldg., Rm. 108

Coffee will be served at 3:30 pm in the Noether Lounge (AUST 326)