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## Inference with Imperfect Randomization: The Case of the Perry Preschool Program

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### Abstract:

This paper considers the problem of making inferences about the effects of a program on multiple outcomes when the assignment of treatment status is imperfectly randomized. By imperfect randomization we mean that treatment status is reassigned after an initial randomization on the basis of characteristics that may be observed or unobserved by the analyst. We develop a partial identification approach to this problem that makes use of information limiting the extent to which randomization is imperfect to show that it is still possible to make nontrivial inferences about the effects of the program in such settings. We consider a family of null hypotheses in which each null hypothesis specifies that the program has no effect on one of several outcomes of interest. Under weak assumptions, we construct a procedure for testing this family of null hypotheses in a way that controls the familywise error rate – the probability of even one false rejection – infinite samples. We develop our methodology in the context of a reanalysis of the HighScope Perry Preschool program. We find statistically significant effects of the program on a number of different outcomes of interest, including outcomes related to criminal activity for males and females, even after accounting for the imperfectness of the randomization and the multiplicity of null hypotheses.

**Text:** See [Discussion Paper No. 5625](#)

[Back](#)