

16.1: Null Hypothesis Statistical Testing (NHST)

The specific type of hypothesis testing that we will discuss is known (for reasons that will become clear) as *null hypothesis statistical testing* (NHST). If you pick up almost any scientific or biomedical research publication, you will see NHST being used to test hypotheses, and in their introductory psychology textbook, Gerrig & Zimbardo (2002) referred to NHST as the “backbone of psychological research”. Thus, learning how to use and interpret the results from hypothesis testing is essential to understand the results from many fields of research.

It is also important for you to know, however, that NHST is deeply flawed, and that many statisticians and researchers (including myself) think that it has been the cause of serious problems in science, which we will discuss in Chapter 32. For more than 50 years, there have been calls to abandon NHST in favor of other approaches (like those that we will discuss in the following chapters):

- “The test of statistical significance in psychological research may be taken as an instance of a kind of essential mindlessness in the conduct of research” (Bakan, 1966)
- Hypothesis testing is “a wrongheaded view about what constitutes scientific progress” (Luce, 1988)

NHST is also widely misunderstood, largely because it violates our intuitions about how statistical hypothesis testing should work. Let’s look at an example to see.

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