

A Note about "p" and "α"

An important step in each of the analyses requires that we compare an "obtained value" (computed from the data) with a "critical value" (looked up from one of the tables at the end of this manual). In order to look up the critical value in the table we must select a "p-value," which is related to our confidence in our statistical decision. The most commonly used "p-value" in behavioral statistics is the 5% criterion, which will be applied throughout this manual. The "5%" rule means that whenever we decide, based on our statistical analysis, that there is a relationship between the two variables (Reject the Null Hypothesis) there is a five percent chance that we are wrong (and there really is no relationship between the variables in the population of interest -- our results were just a "fluke").

While the "5%" rule is well established, there are different ways of expressing the rule. Statisticians (who have an affinity for using Greek letters in their notation -- borrowed from mathematicians) tend to refer to the "alpha-value" or " α -value," and so express the rule as " $\alpha = .05$ ". Lots of the rest of us tend to refer to this as the "probability-value" or "p-value," and so express the rule as " $p = .05$ ".

You will see **both versions** in various places in this manual, because it is important that you be able to recognize and "translate" either expression.