The Experiment

There are many different ways researchers can test their ideas. The experiment is one method, which we will be utilizing in this interactive learning assignment. (Note that you will be exploring other methods in your responses.). The advantage of this method is that researchers are able to determine causality.

A true experiment\* must contain the following elements:

1. The researcher *manipulates* the **independent variable** (the purported cause), while holding everything else constant (i.e., controlling confounds, which are any other factors that might explain the outcome of the research).
   1. The experimental group(s) receives the treatment; the control/comparison group does not.
2. Participants are *randomly assigned to condition*. This minimizes preexisting differences and allows the researcher to make causal attributions.

\*When random assignment is impossible (e.g., if testing men versus women), the design is called quasi-experimental (i.e., *like* an experiment).

1. The researcher *measures* the **dependent variable** (the effect).

* Consider the following example:
  + **THEORY** (collection of knowledge): Social/Observational Learning ~ We learn by watching others.
  + **HYPOTHESIS** (testable prediction): Exposure to violent media will result in aggressive behavior.
  + The **population** (the entire group to whom we wish to generalize) includes preschool age children in the US; our **sample** (the children selected to participate) is Ms. Crystal’s first grade class.
  + The **independent variable** is *violent media*; the **dependent variable** is *aggressive behavior.*
    - Aggressive behavior can be **operationalized** (defined) in many ways. In this case, the researcher decides to “count” as aggression the following behaviors: hitting, kicking, biting, tripping, pulling hair, and shouting.
  + The children in Ms. Crystal’s class are **randomly assigned** to the experimental condition and the control condition by way of pulling their names out of a hat. Because they were randomly assigned, we can be sure that preexisting differences, such as the amount of exposure they receive at home, gender, and so on, are roughly equally distributed between the two groups, and so these extraneous factors should not affect our outcome.
    - In the **experimental condition**, the children watch an episode of Bugs Bunny in which the Road Runner gets smashed by a giant anvil (hence, violence).
    - In the **control condition**, the children watch the same episode, but the smashing incident is deleted (no violence).
    - All of the children watch the cartoon at the same time, in adjacent rooms, while eating popcorn. None of the children are allowed to talk during the show. This provides some **control** of the situation, because other than the presence or absence of violent content, not much else varies in terms of their experience.
  + After watching the cartoon, the children come together for recess. Observers covertly tally the number of times they see each child enact aggressive behaviors. Researchers then analyze the data to see if the children from the violent condition behaved more aggressively than did children from the control condition.