

Experimental Designs

- **Independent Groups Design:**
Each subject is randomly assigned to one of the conditions in the experiment. A different (independent) group of subjects is assigned to each condition.

With *simple random assignment*, each subject is randomly assigned without regard to any characteristics of the subjects.

With *matched random assignment*, subjects are first measured on a matching variable: a subject characteristic related to the dependent variable. Subjects are then rank-ordered on the matching variable to form pairs of subjects. The members of each pair are then randomly assigned to the conditions in the experiment. There are statistical advantages when matching is used.

- **Repeated Measures Design:**

Each subject is assigned to all of the conditions in the experiment. Fewer subjects are needed, and there are statistical advantages.

Must control for *order effects* by counterbalancing the order of presentation of conditions. With a few groups, complete counterbalancing (all possible orders) is possible; with many groups, Latin Square procedures are necessary.