LAB#6

Designing an Experiment

An observational study requires the casual observation of events, whereas an experiment implies active intervention on the part of the researcher. In this lab we consider what makes a good designed experiment.

CRITIQUING THE MEDIA

Consider the following news article.

Does TV make kids want to buy toys?

Watching television has been linked to many problems in children, including obesity. Could it also be linked to asking for toys? How do we make children stop asking for toys? Could it be just turning off the television? A recent study taught 88 third- and fourth-graders a series of 18 mini-lessons in school over a six-month period, aimed at helping them learn to watch television within a budgeted amount of time. The researchers, lead by Dr. Thomas Robinson, then asked them to limit their TV watching to just seven hours per week. Not all of the children were able to stay within this budget, but most reduced the amount of TV watched by about one-third.

To allow them to make a comparison, the researchers selected a control group of 87 students from a different elementary school. This control group did not get the training sessions and were not asked to budget their TV time. The group that watched a reduced amount of television were much less likely to ask for toys they had seen advertised on television.

1. What is the explanatory variable in this study? What is the response variable?

2. Does this study provide convincing evidence that reducing amount of television watched will influence children's requests for toys? What do you believe is the key weakness of this study?

DESIGNING YOUR OWN

We would like to determine if a reduction in the amount of television watched by children will influence the children's requests for toys. We have found 175 children from a local elementary school whose parents will allow them to participate in the study. Explain carefully how you would redesign the experiment that was described in the previous news article by answering the following questions.

3. Into how many groups would you divide the children? What are these groups and what differences would you create between them?

4. What procedure would you use to divide these children into the groups? Explain.

5. What other precautions would you use to ensure that lurking variables do not confound your experiment? Explain.