Hypothesis Generation Worksheet (Loosely based on McGuire, 1989)

The heart of a research paper is its hypothesis (or hypotheses). The purpose of this exercise is to practice the introductory steps necessary to create a hypothesis.

In its simplest form, a hypothesis expresses the relationship between two (or more) variables. Thus, it is important to define the variables in question. The term "variable" comes from the same root as "vary." A variable is a characteristic (usually of a person or situation) that can have at least two different values (sometimes called "scores" or "levels"). The phrase, "violent television," does not refer to a variable, as there is no indication of how it can vary. The phrases: "Amount of exposure to violent television," or "Exposure to violent television versus exposure to nonviolent television," both describe variables as they indicate the possibility of different values. The different values of a variable can be measured either qualitatively (for example, male or female if the variable is gender) or quantitatively (for example, a certain number of pounds if the variable is weight).

There are two general classes of variables. Independent/predictor variables (IVs)are those things that are presumed to be the cause of some phenomenon. Dependent variables (DVs) are the effects and outcomes we are interested in measuring. Suppose we hypothesize that greater exposure to violent imagery leads to more aggressive behavior. In this case "exposure to violent television" is the independent variable and "aggressive behavior" is the DV.

1. Select a psychological variable that interests you.

   A. Give it a label. _____

   B. Briefly describe this variable. _____

   _____

   C. Describe how this variable can be operationalized (that is, describe exactly how you determine which category or which value of the variable applies to a particular person or situation).

   _____

   _____

   _____

2. Select another psychological variable that you believe is related to your first variable.

   A. Give it a label. _____

   B. Briefly describe this variable. _____

   _____

   C. Describe how this variable can be operationalized. _____

   _____

   _____

   _____

Once the variables are defined, the next step is to predict the relationship between these two variables by writing a hypothesis. A hypothesis is a prediction about the relationship between two or more variables. For now, assume that there is a causal relationship between the two variables even if it would be impossible or unethical to test a causal hypothesis. This means that changing a person's score on one of the variables (the independent variable) would cause the person's score on the other variable (the dependent variable) to change. For example, you might say, "Increasing the amount of violent television that a person watches will cause that person to exhibit more aggressive behaviors."

3. State a hypothesis. _____

_____

_____

Hypotheses are not mere guesses. Although there is never 100% certainty that a hypothesis is true, there are usually good reasons why the researcher believes that the hypothesis is true. It is very important to note why a particular relationship is expected.

4. Why does this relationship exist? Give a short theoretical explanation for this hypothesis.

_____

_____

_____

_____

Often other variables are mentioned when explaining why a relationship exists. With many causal relationships, the relationship exists because changing the independent variable causes a change in a middle variable that causes the change in the dependent variable. This middle variable is called a "mediator variable." For example, you may believe that watching violent television causes people to believe that violence is an effective way to achieve one's goals and that this belief causes people to become violent. If this is the case, the extent to which a person believes that violence is an effective way to achieve goals is a mediator variable.

5. Think about a possible mediatior variable.

   A. Give it a label. _____

   B. Give a short explanation of why you believe that this variable is a mediator variable.

_____

_____

_____

It is not interesting to predict something so obvious that there is a certain or near certain chance that the predicted result will occur. More interesting hypotheses have a possibility that the opposite would be true. For example, it is possible that increasing the amount of violent television that a person watches would decrease the number of aggressive behaviors that that person exhibits.

6. State a hypothesis that predicts the opposite relationship of what you predicted in part 3.

_____

_____

_____

7. Why do might this relationship exist? Give a short theoretical explanation of this new hypothesis.

_____

_____

_____

Frequently, researchers find the result they expected in one situation or for one group of people and find no relationship or the opposite of what they expected in a different situation (situational moderators) or for a different group of people (personal moderators). The variable that describes the difference between the two situations or the two groups of people is called a "moderator variable." For example, the amount of violent television that people watch may affect their level of aggression if they are younger than 14 years old, but not if they are older than 14 years old. In this situation, age would be a moderator variable.

8. Think about a possible moderator variable.

   A. Give it a label. _____

   B. Briefly explain how you believe the relationship that you stated in part 3 would change depending on the value of the moderator variable. _____

   _____

   _____

   C. Give a short theoretical explanation of why you believe that this variable is a moderator variable.

   _____

   _____

   _____