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Researching with chocolate

People often feel that a small sugary snack before some test of their performance improves their ability to concentrate or to remember information. Today's experiment will examine this premise. Specifically, we'll look at whether eating chocolate candy is associated with a gain in memory performance.

Step 1: Observe (gather information, research literature)

What is your research question?

Step 2: Design the study (develop hypotheses, operationalize terms, details of procedure, determine population, etc.)

What is your null hypothesis?

What is your research hypothesis?

For this research, what terms do you need to operationally define?

Create operational definitions for those terms.

Restate your research hypothesis in terms of your operational definitions.

How will you decide which participants will be in which condition? Be specific.

What is your **independent variable**?

What is your **dependent variable**?

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Step 3: Run the study (test hypothesis)

Describe the **procedure** your study will follow.

Step 4: Analyze results (organize, code, tally data, run statistical analysis)

Step 5: Draw conclusions (interpret findings, identify flaws in study, suggest further work)

What conclusion do you draw from this study?

What are some problems with this study? How would you improve it?

Based on the results of this study, describe a follow-up study you might conduct to learn more about the effects of chocolate on memory.

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Review of IV and DV – What went wrong?

Each of the following scenarios describes a hypothetical study. Each study has one or more design flaws. Read the descriptions carefully and identify whether it is an experiment or a correlational study. Identify IVs and DVs (if an experiment), and identify at least one major flaw.

Motivating monkeys

A psychologist wants to determine whether love and affection will make an adult monkey more active. She starts off with a group of 12 monkeys and randomly assigns them to either the experimental group or the control group. Every day the psychologist plays with the animals in the experimental group for 30 minutes but not with the ones in the control group. At the same time, she is careful that the animals in both groups get enough food and water. After one month, she carefully measures the activity level of all of the animals and discovers that indeed, the experimental animals are more active. Based on this result, she concludes that love and affection cause animals to be more active.

Correlation or experiment?

IV =

DV =

Major flaw(s):

Birth order and IQ scenario

Researchers surveyed hundreds of children to gather information about their intelligence and birth order. They found that children who were the first born in their family had the highest IQs. Because intelligence can't influence birth order, the researchers conclude that being the first born in a family enhances intellectual growth.

Correlation or experiment?

IV =

DV =

Major flaw(s):

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Gender and politics

A psychologist is trying to figure out whether males or females know more about political issues. The psychologist interviews people on the street, asking them the name of their home state Senators. He discovers that men are 23% more likely to know the name of their home state Senator, and he concludes that men know more about politics than women do.

Correlation or experiment?

IV =

DV =

Major flaw(s):

Scream therapy

A group of psychologists wants to determine whether scream therapy actually helps people feel better. To test this, they recruit a number of subjects who have recently complained of extreme nervousness, carefully measuring anxiety by using a series of psychological tests. They then invite each subject to enter a special sound chamber, and they encourage the person to scream as loudly as possible. After the subjects do so, the subjects report feeling much less anxious. The researchers administer the same tests again, which also show that the subjects are less anxious than they used to be.

Correlation or experiment?

IV =

DV =

Major flaw(s):