



Validity of a Hypothesis

Coming up with an hypothesis can be difficult. You may know that you need two types of variables (independent and dependent) and you may have even been told there are formats that can help you write a proper hypothesis (“If _____ then _____.”)

While this is all true, there’s one other aspect that you need to consider when you are developing your hypothesis: Is the hypothesis valid? So what does that mean?

For a hypothesis to be valid you must answer two questions about the hypothesis:

1. Can the hypothesis be tested?
2. Can the hypothesis be proven false?

First, you want to make sure your hypothesis can be tested. You can figure this out by determine HOW it would be tested.

Take this hypothesis:

“If Jell-O came to life then dinner tables would be made of gold.”

Does this hypothesis have two variables? YES! Is it well formatted? YES! Can it be tested? NO! This is not a valid hypothesis because while it has the necessary elements, it’s not something that can be tested because Jell-O CANNOT come to life.

Sometimes a hypothesis might not be valid for YOU. Take a look at this:

“If elephants fall from the sky then the Earth will fall out of orbit.”

While this might LOOK like a good hypothesis because it contains both an independent and dependent variable AND is formatted in a way you’ve seen hypotheses written before, you would not be able to test this hypothesis. Is that to say that NO ONE could test it? Not at all. I’m sure someone with plenty of money and a hatred of elephants could test this hypothesis, but since you don’t have the resources (or the willingness to harm elephants) YOU would not be able to test it. So for your purposes it would not be a valid hypothesis.

But let’s say you answer the first question about the hypothesis being testable. You still have a second question: “Can the hypothesis be proven false?” Look at this hypothesis:

“If runners drink Gatorade then they will run better.”

This hypothesis might look like something that can be tested, but it’s not specific enough to able to be proven false. What is meant by “better?” You would need to be more specific to make this a valid hypothesis. Maybe something like this:

“If runners drink Gatorade then their time in the 100 meter dash will decrease by 10%.”

This hypothesis can be tested and can be proven false by experimentation!