**Definition:**

The American Heritage Dictionary defines a [hypothesis](http://www.yourdictionary.com/hypothesis) as, "a tentative explanation for an observation, phenomenon, or scientific problem that can be tested by further investigation." This means a hypothesis is the stepping stone to a soon-to-be proven theory. For a hypothesis to be considered a scientific hypothesis, it must be proven through the scientific method. Like anything else in life, there are many paths to take to get to the same ending. Let's take a look at the different types of hypotheses that can be employed when seeking to prove a new theory.

**Types of Hypothesis**

First, we must take a moment to define **independent** and **dependent** variables. Simply put, an independent variable is the cause and the dependent variable is the effect. The independent variable can be changed whereas the dependent variable is what you're watching for change. For example: How does the amount of makeup one applies affect how clear their skin is? Here, the independent variable is the makeup and the dependent variable is the skin.

The six most common forms of hypotheses are:

* Simple Hypothesis
* Complex Hypothesis
* Empirical Hypothesis
* Null Hypothesis (Denoted by "HO")
* Alternative Hypothesis (Denoted by "H1")
* Logical Hypothesis
* Statistical Hypothesis

A **simple hypothesis** is a prediction of the relationship between two variables: the independent variable and the dependent variable.

* Drinking sugary drinks daily leads to obesity.

A **complex hypothesis** examines the relationship between two or more independent variables and two or more dependent variables.

* Overweight adults who 1) value longevity and 2) seek happiness are more likely than other adults to 1) lose their excess weight and 2) feel a more regular sense of joy.

A **null hypothesis** (H0) exists when a researcher believes there is no relationship between the two variables, or there is a lack of information to state a scientific hypothesis. This is something to attempt to disprove or discredit.

* There is no significant change in my health during the times when I drink green tea only or root beer only.

This is where the **alternative hypothesis** (H1) enters the scene. In an attempt to disprove a null hypothesis, researchers will seek to discover an alternative hypothesis.

* My health improves during the times when I drink green tea only, as opposed to root beer only.

A **logical hypothesis** is a proposed explanation possessing limited evidence. Generally, you want to turn a logical hypothesis into an empirical hypothesis, putting your theories or postulations to the test.

* Cacti experience more successful growth rates than tulips on Mars. (Until we're able to test plant growth in Mars' ground for an extended period of time, the evidence for this claim will be limited and the hypothesis will only remain logical.)

An **empirical hypothesis**, or working hypothesis, comes to life when a theory is being put to the test, using observation and experiment. It's no longer just an idea or notion. It's actually going through some trial and error, and perhaps changing around those independent variables.

* Roses watered with liquid Vitamin B grow faster than roses watered with liquid Vitamin E. (Here, trial and error is leading to a series of findings.)

A **statistical hypothesis** is an examination of a portion of a population.

* If you wanted to conduct a study on the life expectancy of Savannians, you would want to examine every single resident of Savannah. This is not practical. Therefore, you would conduct your research using a statistical hypothesis, or a sample of the Savannian population.

**Parameters of a Good Hypothesis**

In order for a hypothesis to be sound, hold tight to these tips:

**Ask yourself questions.**

* Brainstorm. Define the independent and dependent variables very specifically, and don't take on more than you can handle. Keep yourself laser-focused on one specific cause-and-effect theory.

**Be logical and use precise language.**

* Keep your language clean and simple. State your hypothesis as concisely, and to the point, as possible. A hypothesis is usually written in a form where it proposes that, if something is done, then something else will occur. Usually, you don't want to state a hypothesis as a question. You believe in something, and you're seeking to prove it. For example: If I raise the temperature of a cup of water, then the amount of sugar that can be dissolved in it will be increased.

**Make sure your hypothesis is testable with research and experimentation.**

* Any hypothesis will need proof. Your audience will have to see evidence and reason to believe your statement. For example, I may want to drink root beer all day, not green tea. If you're going to make me change my ways, I need some sound reasoning and experimental proof - perhaps case studies of others who lost weight, cleared up their skin, and had a marked improvement in their immunity by drinking green tea.

**State Your Case**

Scientists can really change the world with their hypotheses and findings. In an effort to improve the world we live in, all it takes is an initial hypothesis that is well-stated, founded in truth, and can withstand extensive research and experimentation. Seek out your independent and dependent variables and go on out here and make this world a better place. Good luck!