

<http://allpsych.com/psychology101/index.html>

What is Psychology?

Psychology is the study of cognitions, emotions, and behavior. Psychologists are involved in a variety of tasks. Many spend their careers designing and performing research to better understand how people behave in specific situations, how and why we think the way we do, and how emotions develop and what impact they have on our interactions with others. These are the research psychologists who often work in research organizations or universities. Industrial-organizational psychologists work with businesses and organizations to help them become more productive, effective, and efficient, and to assist them in working with their employees and their customers. Practitioners, typically counseling and clinical psychologists, work with individuals, couples, families, and small groups to help them feel less depressed, less anxious, become more productive or motivated, and overcome issues which prevent them from living up to their potential.

The study of psychology has five basic goals:

- 1. Describe** – The first goal is to observe behavior and describe, often in minute detail, what was observed as objectively as possible
- 2. Explain** – While descriptions come from observable data, psychologists must go beyond what is obvious and explain their observations. In other words, why did the subject do what he or she did?
- 3. Predict** – Once we know what happens, and why it happens, we can begin to speculate what will happen in the future. There's an old saying, which very often holds true: "the best predictor of future behavior is past behavior."
- 4. Control** – Once we know what happens, why it happens and what is likely to happen in the future, we can exert control over it. In other words, if we know you choose abusive partners because your father was abusive, we can assume you will choose another abusive partner, and can therefore intervene to change this negative behavior.
- 5. Improve** – Not only do psychologists attempt to control behavior, they want to do so in a positive manner, they want to improve a person's life, not make it worse. This is not always the case, but it should always be the intention.

Experimental Methods

Starting from the general and moving to the more specific, the first concept we need to discuss is [Theory](#). A theory can be defined as a "general principle proposed to explain how a number of separate facts are related." In other words, a theory is an "idea about a relationship." In order to test whether a theory is correct or not, we need to do research. Theories are stated in general terms, so we need to define more accurately what we will be doing in our experiment.

To do this, we need to define the [variables](#) in our theory so that they are testable, and every experiment has two types of variables:

- [Independent Variable \(IV\)](#) – the variable that is manipulated by the experimenter (input variable)
- [Dependent Variable \(DV\)](#) – the outcome variable (results of the experiment)

By defining our variables that we will use to test our theory we derive at our [Hypothesis](#), which is a testable form of a theory.

As an example of this, let's say that we have a theory that people who drive sports cars are more aggressive in their interactions with others. Our independent variable would be the type of car you drive (sports, sedan, SUV, etc.). Our dependent variables, the outcome of our research, would be aggression. We would need to further define aggression so that it is something we can test such as speeding or cutting other people off in traffic. We now have the basics of our very simple experiment and can write our Hypothesis: People who drive sports cars drive over the speed limit more frequently than people who drive other types of cars.

Research Biases

Now we've got a hypothesis which is the first step in doing an experiment. Before we can continue, however, we need to be aware of some aspects of research that can contaminate our results. In other words, what could get in the way of our results in this study being accurate. These aspects are called research biases, and there are basically three main biases we need to be concerned with.

- [Selection Bias](#) – occurs when differences between groups are present at the beginning of the experiment.
- [Placebo Effect](#) – involves the influencing of performance due to the subject's belief about the results. In other words, if I believe the new medication will help me feel better, I may feel better even if the new medication is only a sugar pill. This demonstrates the power of the mind to change a person's perceptions of reality.
- [Experimenter Bias](#) – The same way a person's beliefs can influence his or her perception, so can the belief of the experimenter. If I'm doing an experiment, and really believe my treatment works, or I really want the treatment to work because it will mean big bucks for me, I might behave in a manner that will influence the subject.

Controlling for Biases

After carefully reviewing our study and determining what might effect our results that are not part of the experiment, we need to control for these biases. To control for selection bias, most experiments use what's called [Random Assignment](#), which means assigning the subjects to

each group based on chance rather than human decision. To control for the placebo effect, subjects are often not informed of the purpose of the experiment. This is called a [Blind](#) study, because the subjects are blind to the expected results. To control for experimenter biases, we can utilize a [Double-Blind](#) study, which means that both the experimenter and the subjects are blind to the purpose and anticipated results of the study.

Standardization

We have our hypothesis, and we know what our subject pool is, the next thing we have to do is [standardize](#) the experiment. Standardization refers to a specific set of instructions. The reason we want the experiment to be standardized is twofold.

First, we want to make sure all subjects are given the same instructions, presented with the experiment in the same manner, and that all of the data is collected exactly the same or all subjects. Second, single experiments cannot typically stand on their own. To really show that results are valid, experiments need to be replicated by other experimenters with different subjects. To do this, the experimenters need to know exactly what we did so they can replicate it.