

There are certain common errors we make in our casual inquiries. One is that we make mistakes in our observations. For example, what was your English teacher wearing when you saw him or her last? If you have to guess, it's because most of our daily observations are casual and semiconscious. That's why we often disagree about what happened.

In contrast to casual human inquiry, scientific observation is a conscious activity. Simply making observation more deliberate helps reduce error. If you had to guess what your teacher was wearing, you'd probably make a mistake. If you had gone to the class with a conscious plan to observe and record what your teacher was wearing, you'd be likely to be far more accurate. In many cases, both simple and complex measurement devices help guard against inaccurate observations. Moreover, they add a degree of precision well beyond the capacity of the unassisted senses. Suppose, for example, that you had taken color photographs of your teacher that day.

Let's look at a different type of error we make. When we look for patterns among the specific things we observe around us, we often assume that a few similar events are evidence of a general pattern. That is, we overgeneralize on the basis of limited observations. Probably the tendency to overgeneralize is greatest when the pressure to arrive at a general understanding of some phenomenon is high. Yet it also occurs without such pressure. Whenever overgeneralization does occur, it can misdirect or interfere with inquiry.

Imagine you are a reporter covering an animal rights demonstration. You have orders to turn in your story in just two hours, and you need to know why people are demonstrating. Rushing to the scene, you start interviewing them, asking for their reasons. If the first three demonstrators you interview give you essentially the same reason, you may simply assume that the other 3,000 are also there for that reason. Unfortunately, when your story appears, your editor gets scores of letters from protesters who were there for an entirely different reason.

Scientists guard against overgeneralization by committing themselves in advance to a sufficiently large and representative sample of observations. Another safeguard against overgeneralization is provided by the replication of inquiry. Basically, replication means repeating a study and checking to see whether the same results are produced each time. Then, as a further test, the study may be repeated again under slightly varied conditions.

One danger of overgeneralization is that it may lead to selective observation. Once we have concluded that a particular pattern exists and have developed a general understanding of why it exists, we tend to focus on future events and situations that fit the pattern, and we tend to ignore those that don't.

Racial and ethnic prejudices depend heavily on selective observation for their persistence.

[2005 年、早稲田(教)] (一括ファイル)