

Sign reasoning also appears within the debate context. Suppose a debater wishes to argue that violent video games are bad for America's teenagers. The major studies conducted in this area are based on correlation; they ask how often the watching of violent video games is associated with violent teenage behavior.

There are three primary questions that should be asked about sign reasoning:

- How strong is the association between the variables?
- Are there other unexamined variables that might better explain the relationship?
- Is the arguer attempting to base a causal claim on sign reasoning?

Properly conducted studies in the social sciences do much more than simply declare a relationship between two or more variables—they also calculate the degree of correlation. Correlation coefficients are always between plus one and minus one. A correlation coefficient of +1.0 means that a one-to-one relationship exists between the two variables. Suppose we are asking how likely it is that a person growing up in a household with a smoker will choose to smoke in adulthood. A +1.0 correlation would mean that all persons growing up in such a household become smokers in adulthood. A -1.0 correlation would mean that no persons growing up in such a household become smokers in adulthood. A correlation coefficient of 0 would mean that there is no correlation between the variables—or at least that the study could not detect a relationship. In general, a correlation coefficient in the range of .7 or more is considered a high correlation, while a correlation coefficient in the range of .3 or less is considered a low correlation.

A second question to ask about sign reasoning is whether there are unexamined variables that might better explain the relationship. Suppose, for example, a debater is making the claim that lowering the high school dropout rate will strengthen the American economy by hundreds of billions of dollars. The argument is based on a study that shows that high school graduates earn nearly twice as much as high school dropouts. An opposing debater can point out that this study is merely showing a correlation between income and high school graduation. The ignored intervening variable may well be the amount of drive and initiative people possess. People who have a great deal of initiative might be successful at whatever they do, and this success might have little to do with their level of education. Conversely, people who drop out of high school lack initiative. They will be unsuccessful regardless of their level of education. Any solution that forces all the dropouts to remain in school might have very little impact on overall earning power in the American economy.

A final question to ask about sign reasoning is whether it is being inappropriately used to make causal claims. The major reason social scientists have avoided causal claims in favor of correlational analysis is that they are trying to frame studies that are more modest and scientifically careful. Yet debaters often take the results of correlational