Inductive Arguments: Testing Their Strength and Validity

Generally, to reason inductively is to recognize a pattern in or among members of a data set or population, and then to form assumptions (claims) about the past and/or present and/or to make predictions (claims) about the future.

For example, if I've observed that the sun has come up every single day in the past, and the sun came up today as well, I can (inductively) assert the following claims with a very high level of confidence:

- The sun rose every day.
- The sun rises every day.
- The sun will rise tomorrow.
- The sun will rise the day after tomorrow, and the day after that, and the day . . .

The above example, while it does demonstrate an inductive argument, is not typical of actual, real-life inductive arguments. (Outside of a philosophy class, how often, for instance, might one actually discuss or consider whether or not the sun will rise tomorrow?) The vast majority of inductive arguments are not as fail-safe. They cannot be asserted with such high levels of confidence.

So, what do we do? Do we abandon inductive arguments all together, dismissing them as hasty generalizations, stereotypes, or wild leaps in logic? The answer, of course, is complicated, but essentially it can be understood this way:

When we produce our own inductive arguments, and when we examine the inductive arguments others produce, we proceed with caution. Our primary concern is this: How well do the data support the claim? To answer that, we have a series of tests at our disposal, STAR.

Testing an Inductive Argument with STAR:

S **S**ufficient sample size?

Is there enough evidence/data to warrant or support the claim?
(Has enough data been checked or considered?)

T **T**ypical of sample and population?

To what degree are the data representative of the larger group?
(Is the checked data a representative sample?)

A **A**ccurate Data and Test?

Is the information used as data true?
(How accurate is the data? to what degree?)

R **R**elevant to Claim?

Is claim relevant to data from/about sample?
(How relevant? How strong is connection?)