

Basic lines of reasoning an author, speaker or presenter can take:

- Cause and effect
- Classification/Division
- Application of a rule
- Definition
- Analysis of a process
- Analysis of evidence/exemplification
- Compare/Contrast
- Chronological Sequencing
- Deductive argument forms
 - modus ponens
 - modus tollens
 - syllogisms: categorical, hypothetical, disjunctive, et cetera
- Inductive argument forms
 - argument by statistic
 - argument by analogy
 - argument by enumeration (exemplification)

Note: the best way to trace an author's line of reasoning is to look for the words that function as logical operators, aka [discourse markers](#), aka transitions (so, thus, because, however, and, or, et cetera). These will explain **how** claims fit together, which is what any question of line of reasoning is really asking.

Most common logical operations:

Affirmation--showing that something is the case

Negation--showing that something is not the case

Conjunction-- basically, "and". Showing that two things are the case at the same time.

Disjunction--basically "or." There are two type of disjunction:

-*exclusive*, aka "either or" meaning only one of two things is the case (*either* this *or* that)

Ex: "Either I take Friday off from work or I'm going to have a mental breakdown!"

-*inclusive* or, meaning *at least* one of two things is the case

Ex: "I need a Friday or a Monday off from work" (Most people would agree that having Friday *and* Monday off is perfectly acceptable)

Conditional-- "If...then" usually used to show cause and effect

Biconditional-- a stronger form of conditional. "If and **only** if." Shows cause and effect, with a focus on **necessary cause**.

Equivalence: showing that two things are identical

Non-equivalence: showing that two things are not identical

Conclusion: to show that something follows from the preceding premises

BASIC TYPES OF EVIDENCE:

Two main types

Quantitative: Numbers. Anything countable or measurable.

Qualitative: Stories and arguments. Anything that attempts to explain.

More specific categories:

Numerical or statistical:

-Usually regarded as the strongest type of evidence. However, it is not absolute, nor should we always accept it.

"There are three types of lies: lies, damn lies, and statistics"

- British Prime Minister Benjamin Disraeli, as quoted by Mark Twain.

"Aw, people can come up with statistics to prove anything, Kent. Forty percent of all people know that." - Homer Simpson

["42.7% of all statistics are made up on the spot. Everyone knows that."](#)

-Homer Simpson, again.

The point is, statistics are subject to potential bias, interpretation and misrepresentation. A statistic is only as trustworthy as the methods that went into generating it.

Anecdotal:

-Usually regarded as the weakest form of evidence. Essentially, it is a statistic presented as a narrative. However, in this case, the only basis for the statistic is a thing that happened one time to one person. At best, it can illustrate something, but is never really the basis for proof.

What it can do, however, is to disprove a generalization that someone else makes. If someone presents a sweeping generalization, all you need to do is present one anecdote that says otherwise, and that person would at least have to modify their claim.

Testimony:

Expert:

Firsthand/ Eyewitness:

Both of these rely upon the credibility of the person presenting the testimony. For expert testimony, this will come from his or her credentials or professional reputation. For firsthand/eyewitness, this mainly will come from how well his or her testimony is corroborated by other sources.

Empirical Data:

Results gathered from observation and experiment. Strength of this type of evidence depends on how well and how often it's been corroborated. Can be scientific, or personal, direct observation.

-historical fact, or other accepted fact. A subset of empirical data.

-forensic or other physical data

Documentation:

Case studies, letters, speeches, interviews, et cetera. Any written record of something.

Analogical:

Presenting a similar case in order to point out important, meaningful similarities or principles