Identifying Inductive and Deductive Reasoning

**Induction** is a process of reasoning that moves from specific information to general conclusions. The specific information is often empirical data. However, the specific information might also be textual evidence used to support or prove an argument. The inductive process may be familiar to those who are fans of TV shows like CSI where the detectives collect evidence to help prove a case:

fingerprint + DNA evidence + eye witness = suspect at the crime scene

**Deduction** is a process that begins with premises or commonly held beliefs and moves to conclusions. This formula is known as a syllogism, and it works like this:

Major premise

Minor premise

Conclusion

One of the most famous syllogisms is:

Major premise: All men are mortal

Minor premise: Socrates is a man

Conclusion: Therefore, Socrates is mortal

(Aristotle, *On Rhetoric*, 1.2.8)

Before the scientific method was refined, deductive reasoning was actually more commonly used and more readily accepted than inductive reasoning. However, deduction has its limitations:

Major premise: Dogs make good pets

Minor premise: Daisy is a dog (a Pekingese, in fact)

Conclusion: Daisy is a good pet

What might be wrong with this statement?
Now it’s not that Daisy isn’t a good pet; in fact, she’s an awesome pet. However, in order to agree with the conclusion, or in order for it to be valid, you must accept both the major and minor premises. Therefore, if you don’t agree that dogs make good pets, then the conclusion that Daisy is a good pet, though seemingly logical, doesn’t hold water. Now you try...

After reading the statements below, decide if the conclusions are based on inductive or deductive reasoning. Then state whether the conclusion is valid or invalid.

1. Groups that want to control wages are communistic. Unions want to control wages. Unions are communistic.

2. There is the dead body of Smith. Smith was shot in his bedroom between the hours of 11:00 p.m. and 2:00 a.m., according to the coroner. Smith was shot with a .32 caliber pistol. The pistol left in the bedroom contains Jones’s fingerprints. Jones was seen, by a neighbor, entering the Smith home at around 11:00 p.m. the night of Smith’s death. A coworker heard Smith and Jones arguing in Smith’s office the morning of the day Smith died. Jones killed Smith. (Adapted from Understanding Argument by Dorothy M. Seyler)

3. American society has become increasingly violent. According to figures quoted in a 2003 article by Adam Smith, each year in America, about 10,000 people die from gun deaths, in contrast to 3 in Great Britain and 17 in Germany.

More to think about:

- How might knowing understanding ethos, pathos, logos, induction, and deduction help you analyze communication and writing?
- How might these strategies help you conduct research for your classes?
- How might these strategies help you write for your classes?

Next we’ll try to find these rhetorical elements in a famous document you may have heard of, the Declaration of Independence.