6 types of inductive reasoning

“GASCAP”

• Generalization
• Analogy
• Sign
• Causation
• Authority
• Parallel Case
Inductive Vs. Deductive reasoning

- **Inductive**
  - Moves from specific observations to general claims
  - Seeks to reduce uncertainty of claims
  - “Informal”/probability

- **Deductive**
  - Moves from general premises to specific conclusions
  - Seeks absolute certainty of conclusions
  - “Formal”/truth
Example of Inductive Reasoning

- *Specific observations*
  - Red light cameras decrease speeds
  - Red light cameras increase expectations of being caught
  - Red light cameras identify repeat offenders
- *General claim*
  - Red light cameras increase safety
Example of Deductive Reasoning

• **General premises**
• **Major premise:** all red-light cameras reduce accidents at intersections.
• **Minor Premise:** Costa Mesa has installed red light cameras at intersections.
• **Conclusion:** Costa Mesa has fewer accidents at these intersections.
Reasoning by generalization

- Searching for predictable patterns in details, examples.
- True in these cases equals usually true of the class.
- Specific observations:
  - In 2010 we averaged 15 albacore caught
  - In 2011 we averaged 13 albacore caught
  - In 2012 we averaged 16 albacore caught

- General claim
  - We will probably average more than 10 albacore this year.
Reasoning by analogy

- Observing fundamental similarity between the characteristics of dissimilar cases.
- Specific observations:
  - Americans are like energy junkies.
  - Oil Producing nation’s are like pushers.
- General claim:
  - The U.S. should decrease energy dependence.
Reasoning by sign

• *Observation of symptoms, conditions, or marks used to prove a certain condition exits.*
• *Specific observations:*
  • The current water temperature is optimal.
  • Sea life is currently abundant.
  • There are boats around us fishing.
• *General claim:*
  • The current likelihood of catching fish is high.
Reasoning by causation

• Observation of a temporal connection between events in which one produces the other.
• Specific observations:
  • Steroid users develop emotional problems.
  • Steroids decrease sexual drive.
  • Steroids create secondary sexual characteristics.
• General claim:
  • Steroid use leads to negative consequences.
Reasoning by authority

• Reliance on the credibility of the source of information to warrant acceptance of claim.

• Specific observations:
  • Professional athletes and team owners rely on the expertise of arbitrators.
  • Doctors and patients utilize arbitration.

• General Claim:
  • Because I am a professional arbitrator, you should abide by my decision
Reasoning by parallel case

• Observing similarities in two or more similar cases
• Specific observations
  • The US spent 1000’s of American lives in WWII.
  • The US spent 1000’s of American lives in Viet Nam.
  • The US spent 100’s of American lives in Iraq and Afghanistan.
• General Claim:
  • The US will not support a foreign engagement plan for Syria.
Locating reasoning in units of argument

- **Finding specific observations:**
  - Examine the evidence in the grounds
  - Look for specific language that states or implies reasoning
  - Decide what types of reasoning is NOT being utilized.
  - Select from remaining types to make a “best guess.”

- **Making general claims:**
  - Claim should reflect a reasonable position based on the evidence in the grounds.

- **Making warrants:**
  - The warrant should make a statement about why the evidence in the grounds supports that claim.