CHAPTER 12: Judgment: Drawing Conclusions From Evidence

Judgment Heuristics

- **Induction**—a reasoning process in which one goes beyond the information given to draw inferences about patterns or make projections
- **Attribute substitution**—substituting information one needs (but does not know) with other information one has
- **Heuristics**—strategies for induction that are efficient, but can also lead to errors

Availability Heuristic—availability of information about an event is used as an estimate of frequency or likelihood of the event

- **Problem**—if estimates of frequency are wrong, decisions made based on these frequencies will be wrong
- **Example**—overestimating the frequency of rare events (e.g., homicide, plane crashes) that are given lots of media coverage

Representativeness Heuristic—information about resemblance is used in place of information about category membership

- **Problem**—most groups are not homogeneous, thus traits for one example may not apply to all other examples in the group
- **Sample size**—an important factor to consider in inductive reasoning but is often overlooked
  - **Population to sample**: an incorrect assumption that trends in population should be apparent in small samples or individual instances
  - **Sample to population**: all category members share the properties of the sample

  - ► **Gamblers' fallacy**—if no "tails" have appeared recently, a tail should appear next
  - ► **Logic**—the overall chance of a coin landing on "heads" is 50:50; therefore, a small sample of coin flips should also have 50% "heads"

  - ► **Stereotyping**—drawing conclusions about a group from a single experience
  - ► **"Man who" arguments**—using a personal story (sample size of one) to influence a decision

Anchoring

- **Anchor**—tendency to use the first available estimate as a reference for a judgment
- **Adjustment**—fine-tuning the first estimate (anchor) to fit the current situation
- **Problem**—an anchor can be easily manipulated; we often do not adjust enough

(*continued*)

Detecting Covariation

Covariation—tendency for two items to appear (or not appear) together

Illusions—people often think two factors covary, when in fact they do not

Detection—covariation changes are based on the presence of previous beliefs

Data-driven	people are good at detecting and estimating covariation when participants have no prior beliefs about the factors
Theory-driven	people make errors about the presence as well as the magnitude of covariation when personal beliefs about the factors are present

Confirmation bias—tendency to be more attentive toward (and have better memory for) evidence that confirms a person's previous beliefs

Base rates—overall probability of an event occurring

Diagnostic information	descriptive information about an event
Base-rate neglect	when given base rates and diagnostic information, people tend to ignore the base rates and rely on only the diagnostic information

Inability to use base-rate information can lead to problems estimating covariation and determining cause-and-effect relationships

Assessing the Damage

It's not all bad—there are instances when people use sample-size data appropriately and avoid using heuristics

Chance	if something happens once, it is most likely due to chance, but accidents do not happen again and again

Previous knowledge about the homogeneity of a category (people vs. chemicals) can be used to make estimates of likelihood

Dual-process model of thinking—suggests that two processes have different goals; processing speeds are used in decision-making

System 1	fast and efficient but can lead to errors; linked to use of heuristics
System 2	slower, more effortful, more accurate; this system is engaged by cues that trigger its involvement

Data format—can affect the way people reason about information and lead to more accurate conclusions

Frequencies	call attention to the fact that the example is one sample in a population and encourage use of base rates

Highlighting the fact that statistics apply to a situation leads to better judgments

Emphasizing the role chance plays in a situation leads to better judgments

Background knowledge can be used to infer a cause-and-effect relationship, facilitating correct judgments

Training—in statistics, makes people more likely to avoid judgment errors and form correct conclusions