

### Chapter 3 Summary

<BL>• Critical thinking is one of the most vital and indispensable components of learning. The thought principles or metathoughts (literally, “thoughts about thought”) presented in this chapter are cognitive tools that provide the user with specific strategies for inquiry and problem solving. In this way, they serve as potent antidotes to thinking that is often prone to be biased, simplistic, rigid, lazy, or just plain sloppy.

- In describing phenomena, particularly social phenomena, the language that people use invariably reflects their own personal values, biases, likes, and dislikes. In this way, their words can reveal at least as much about themselves as the events, individuals, and groups they are attempting to describe.
- Dichotomous variables are a matter of classification (*quality*), whereas continuous variables are a matter of degree (*quantity*). The problem is that people have a tendency to dichotomize variables that, more accurately, should be conceptualized as continuous.
- All phenomena are both similar to and different from each other, depending on the dimensions or sorting variables that have been selected for purposes of evaluation, comparison, and contrast. No phenomenon is totally identical or totally unique in relation to other phenomena.
- Barnum statements are “one-size-fits-all” descriptions that are true of practically all human beings, but that do not provide distinctive information about a particular group or person. Thus, the problem with Barnum statements is not that they are wrong; rather, because they are so generic, universal, and elastic, they are of little value.
- The *assimilation bias* represents a significant obstacle to clear thinking and effective problem solving. In viewing the world through “schema-colored glasses,” we subject virtually all the incoming information to varying degrees of distortion, misinterpretation, and invalidation.

- To identify any given phenomenon, we automatically and intuitively compare it with our mental representation, prototype, or schema of the relevant category. Errors due to the *representativeness bias* can occur as a result of faulty prototypes, failure to consider relevant statistical data, or motivational biases.
- We utilize the availability heuristic whenever we attempt to assess the frequency or likelihood of an event on the basis of how quickly or easily instances come to mind. Thus, vivid examples, dramatic events, graphic case studies, and personal testimonies, in contrast to statistical information, are likely to exert a disproportionate impact on our judgments. In this way, anecdotes may be more persuasive than factual data.
- In arriving at causal attributions to explain people's behavior, we have a tendency to overestimate the impact of their internal personality traits (dispositions) and to underestimate the impact of their environmental circumstances (situations). This *fundamental attribution error* appears to be due to cognitive biases and motivational biases.
- The assumptions, attitudes, and beliefs that we hold toward other people can, with or without our intent, actually produce the very behaviors that we expect to find. Similarly, our own behavior may inadvertently be shaped by other people's expectancies of us. In sum, with the *self-fulfilling prophecy*, expectations can generate their own reality.
- Correlations may provide us with accurate and useful information regarding "what" relationships exist, but they cannot be counted on to answer the question, "why?" Even in those circumstances in which a correlation strongly implies causation, it does not prove causation.
- In contrast to unidirectional causation, when Event *A* causes Event *B*, in bidirectional causation Event *A* and Event *B* are linked in a circular or causal loop, in which each is both a cause and

an effect of the other. In such instances, the pathway of causation is a “two-way street.”

Further, any given event can be, and typically is, the result of numerous causes.

- The frequency of an event does not inherently determine its moral value or worth. What is common, typical, or normal is not necessarily good; what is uncommon, atypical, or abnormal is not necessarily bad. Conversely, what is common is not necessarily bad, and what is uncommon is not necessarily good.
- We have a tendency to stubbornly cling to our beliefs, sometimes even in the face of disconfirming evidence. Thus, when these beliefs are challenged, we feel impelled to protect them, almost as if we were protecting ourselves. One consequence of this belief perseverance effect is that it generally requires much more compelling evidence to change our beliefs than it did to create them in the first place.

### **Key Terms**

**Antidote** A remedy to prevent or counteract an adverse effect.

**Assimilation Bias** The propensity to resolve discrepancies between preexisting schemas and new information in the direction of assimilation rather than accommodation, even at the expense of distorting the information itself.

**Availability Bias** Any condition in which the availability heuristic produces systematic errors in thinking or information processing, typically due to highly vivid although rare events.

**Availability Heuristic** A cognitive strategy for quickly estimating the frequency, incidence, or probability of a given event based on the ease with which such instances are retrievable from memory.

**Barnum Effect** A phenomenon that refers to people’s willingness to accept uncritically the validity of Barnum statements.

**Barnum Statement** Any generic “one-size-fits-all” description or interpretation about a particular individual that is true of practically all human beings.

**Belief Perseverance Effect** The tendency to cling stubbornly to one’s beliefs, even in the face of contradictory or disconfirming evidence.

**Bias** A prejudicial inclination or predisposition that inhibits, deters, or prevents impartial judgment.

**Bidirectional Causation** A mutual, reciprocal relationship between two variables wherein each is both a cause and an effect of the other.

**Cognitive Bias** Any systematic error in attribution that derives from limits that are inherent in people’s cognitive abilities to process information.

**Continuous Variable** Any variable that lies along a dimension, range, or spectrum, rather than in a discrete category, that can theoretically take on an infinite number of values and is expressed in terms of quantity, magnitude, or degree.

**Critical Thinking** An active and systematic cognitive strategy to examine, evaluate, and understand events, solve problems, and make decisions on the basis of sound reasoning and valid evidence. More specifically, critical thinking involves maintaining an attitude that is both open minded and skeptical; recognizing the distinction between facts and theories; striving for factual accuracy and logical consistency; objectively gathering, weighing, and synthesizing information; forming reasonable inferences, judgments, and conclusions; identifying and questioning underlying assumptions and beliefs; discerning hidden or implicit values; perceiving similarities and differences between phenomena; understanding causal relationships; reducing logical flaws and personal biases, such as avoiding oversimplifications

and overgeneralizations; developing a tolerance for uncertainty and ambiguity; exploring alternative perspectives and explanations; and searching for creative solutions.

**Dichotomous Variable** Any variable that can be placed into either of two discrete and mutually exclusive categories.

**Fundamental Attribution Error** A bias in attempting to determine the causes of people's behavior that involves overestimating the influence of their personality traits, while underestimating the influence of their particular situations; that is, overutilizing internal attributions and underutilizing external attributions.

**Heuristic** A mental shortcut or rule-of-thumb strategy for problem solving that reduces complex information and time-consuming tasks to more simple, rapid, and efficient judgmental operations, particularly in reaching decisions under conditions of uncertainty.

**Metathinking** The act of thinking about thinking; engaging in a critical analysis and evaluation of the thinking process.

**Metathoughts** Literally, thoughts about thought, which involve principles of critical thinking.

**Motivational Bias** Any systematic error in attribution that derives from people's efforts to satisfy their own personal needs, such as the desire for self-esteem, power, or prestige.

**Naturalistic Fallacy** An error in thinking whereby the individual confuses or equates objective descriptions with subjective value judgments, in particular, by defining what is morally good or bad solely in terms of what is statistically frequent or infrequent.

**Parataxic Reasoning** A kind of "magical thinking," frequently responsible for superstitious behaviors, in which events that occur close together in time are erroneously construed to be causally linked.

**Post Hoc Error** A shortened form of *post hoc, ergo propter hoc* (“after this, therefore because of this”), referring to the logical error that because Event *B* follows Event *A*, then *B* must have been caused by *A*.

**Representativeness Bias** Any condition in which the representativeness heuristic produces systematic errors in thinking or information processing.

**Representativeness Heuristic** A cognitive strategy for quickly estimating the probability that a given instance is a member of a particular category.

**Schema** A cognitive structure or representation that organizes one’s knowledge, beliefs, and past experiences, thereby providing a framework for understanding new events and future experiences; a general expectation or preconception about a wide range of phenomena.

**Self-Fulfilling Prophecy** A phenomenon wherein people’s attitudes, beliefs, or assumptions about another person (or persons) can, with or without their intent, actually produce the very behaviors that they had initially expected to find.

**Unidirectional Causation** A relationship between two variables wherein one is the cause and the other is the effect.

**Measure of Central Tendency** The measure that indicates the location of a score distribution on a variable, that is, describes where most of the distribution is located.

**Median** The score in a distribution located at the 50th percentile.

**Meta-Analysis** The quantitative analysis of a large collection of scientific results in an attempt to make sense of a diverse selection of data.

**Mode** The most frequently occurring score in a distribution.

**Naturalistic Observation** Recording people’s behavior in their natural environments with little or no personal intervention.

**Psychobiographical Research** A longitudinal analysis of particular individuals, usually outstanding persons, celebrities, and leaders, representing different countries or cultures.

**Relativist Approach** A view in cross-cultural psychology that psychological phenomena should be studied only from “within” a culture where these phenomena occur.

**Representative Sample** A sample having characteristics that accurately reflect the characteristics of the population.

**Survey** The investigative method in which groups of people answer questions about their opinions or their behavior.