

PART



Lay of the Land

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CHAPTER

1



The Need for Critical Thinking in Clinical Practice

Decision making is at the heart of clinical practice. You may have to decide how to assess a client's depression. What sources of information will you draw on and what criteria will you use to evaluate their accuracy? Will you rely on your intuition? Will you ask your client to complete the Beck Depression Inventory? Will you talk to family members and take a careful history? Will it help you to understand your client's depression if you provide a psychiatric diagnosis? Or you may have to decide how to help parents increase positive behaviors of their four-year-old child. What sources of information will you use? How can you locate valuable guidelines regarding the most effective methods? What criteria will you use to review the evidentiary status of a claim such as: "Attention-deficit/hyperactivity disorder is due to a biochemical imbalance"? Think back to a client with whom you have worked. Which of the following 10 criteria did you use to make decisions (Gambrill & Gibbs, 2009)?

1. Your intuition (gut feeling) about what will be effective.
2. What you have heard from other professionals in informal exchanges.
3. Your experience with a few cases.
4. Your demonstrated track record of success based on data you have gathered systematically and regularly.
5. What fits your personal style.
6. What is usually offered at your agency.
7. Self-reports of other clients about what is helpful.
8. Results of controlled experimental studies (data that show that a method is helpful).
9. What you are most familiar with.
10. What you know by critically reading the professional literature.

In addition to complex decisions that involve collecting and integrating diverse sources of data, scores of smaller decisions are made in the course of each interview, including moment-to-moment decisions about how to respond. Options include questions, advice, reflections, interpretations, self-disclosures, and silence. Decisions are made about what outcomes to focus on, what information to gather, what intervention methods to use, and how to evaluate progress. The risks of different options must be evaluated, and probabilities must be estimated. Judgmental tasks include deciding on causes and making predictions. You may have to decide whether a child's injuries are a result of parental abuse or were caused by a fall (as reported by the mother). You will have to decide what criteria to use to make this decision and when you have enough material at hand. If a decision is made that the injuries were caused by the parent, a prediction must be made as to whether the parent is likely to abuse the child again. Errors that may occur include:

- Errors in description. (Example: Mrs. V. was abused as a child when she was not.)
- Errors in detecting the extent of covariation. (Example: All people who are abused as children abuse their own children.)
- Errors in assuming causal relationships. (Example: Being abused as a child always leads to abuse of one's own children.)
- Errors in prediction. (Example: Insight therapy will prevent this woman from abusing her child again when this is not true.)

The events of the past few years continue to illustrate the need for critical thinking in clinical practice. During these years there has been a continuing parade of revelations, including hiding of negative trials, hiding adverse effects of medications, creating bogus categories of illness, overmedicating young children and the elderly with antipsychotics, and related conflicts of interest. (See Gambrill, 2012a.) Academic researchers, including some heads of psychiatry departments at prestigious universities, have been shown to be in the pay of pharmaceutical companies while underreporting this income to their universities, sometimes by millions of dollars. Ioannidis (2005) argues that most research findings reported in the biomedical literature are false. Hiding alternative views is common, such as failure to describe a view of anxiety in social situations as a learned reaction created by a unique learning history and/or arousal threshold (Gambrill & Reiman, 2011). Anxiety in social situations is typically proclaimed to be a psychiatric disorder. Did you know that this "disorder" was created by Cohn and Wolfe, a public relations firm hired by a pharmaceutical company (Moynihan & Cassels, 2005)?

THE IMPORTANCE OF THINKING CRITICALLY ABOUT DECISIONS

Clinical practice allows a wide range of individual discretion: how to frame problems, what outcomes to pursue, when to stop collecting information, what risks to take, what criteria to use to select practice methods, and how to evaluate progress. The privacy of clinical practice (rarely is it observed by other clinicians) allows unique styles, which may or may not enhance the accuracy of decisions. Use of vague evaluation procedures may maintain styles that are not optimal. Clients may be harmed rather than helped if we do not think critically about the decisions we make. Are they well-reasoned? Are they informed by related research? Have we avoided being bamboozled into accepting bogus claims about the effectiveness of a method? As Karl Popper (1994) points out, "There are always many different opinions and conventions concerning any one problem or subject-matter. . . . This shows that they are not all true. For if they conflict, then at best only one of them can be true" (p. 39). The following 13 findings suggest that clinical decisions can be improved:

1. There are wide variations in practices (e.g., see Goodman, Brownlee, Chang, & Fisher, 2010).
2. Most services provided are of unknown effectiveness. There has been little rigorous critical appraisal of most variations in practices and policies in relation to their outcomes (e.g., do they do more good than harm?).
3. Clients are harmed as well as helped. Consider, for example, the death of a child in "rebirthing therapy" (Janofsky, 2001; see also Diaz & de Leon, 2002; Goulding, 2004; Moncrieff & Leo, 2010; Ofshe & Watters, 1994; Sharpe & Faden, 1998; Whitaker, 2010).
4. Intervention methods found to be harmful continue to be used (e.g., Petrosino, Turpin-Petrosino, & Buehler, 2003).
5. Assessment methods shown to be invalid continue to be used (e.g., Hunsley, Lee, & Wood, 2003; Thyer & Pignotti, in press).
6. Methods that have been found to be effective are often not offered to clients (e.g., Jacobson, Foxx, & Mulick, 2005).
7. There are large gaps between claims of effectiveness and evidence for such claims (Greenberg, 2009; Ioannidis, 2005).
8. Good intentions are relied on as indicators of good outcomes.
9. Journalists' exposés of avoidable harms are common.
10. Avoidable errors are common (e.g., DePanfilis, 2003; Kaufman, 2006).
11. Licensing and accreditation bodies such as the National Association of Social Workers (NASW) and the Council on Social Work Education rely on surrogates

- of competence and quality of professional education, such as the diversity of faculty and size of faculty, their degrees, and their experience (Gambrill, 2002; Stoetz, Karger, & Carrilio, 2010).
12. Clients are typically not informed regarding the evidentiary status of recommended services (e.g., that there is no evidence that these are effective or do more good than harm; Braddock, Edwards, Hasenberg, Laidley, & Levinson, 1999; Cohen & Jacobs, 1998; Gottlieb, 2003).
 13. There seems to be an inverse correlation between growth of the helping professions and problems solved.

The history of the helping professions shows that decisions made may do more harm than good. Consider the blinding of 10,000 babies by the standard practice of giving them oxygen at birth (Silverman, 1980). Scared Straight programs designed to decrease delinquency have been found to increase it (Petrosino, Turpin-Petrosino, & Buehler, 2003). Many clinicians carry out their practice with little or no effort to take advantage of practice-related research describing the evidentiary status of different interventions. Gaps between knowledge available and what was used were a key reason for the development of evidence-based practice and care (Gray, 2001a). The histories of the mental health industry, psychiatry, psychology, and social work are replete with the identification of false causes for personal troubles and social problems. Complex classification systems with no empirical status such as those based on physiognomy (facial type) and phrenology (skull formation) were popular, including the creation of metal phrenological hats to aid in diagnosis (Gamwell & Tomes, 1995; McCoy, 2000). (See Exhibit 1.1.)

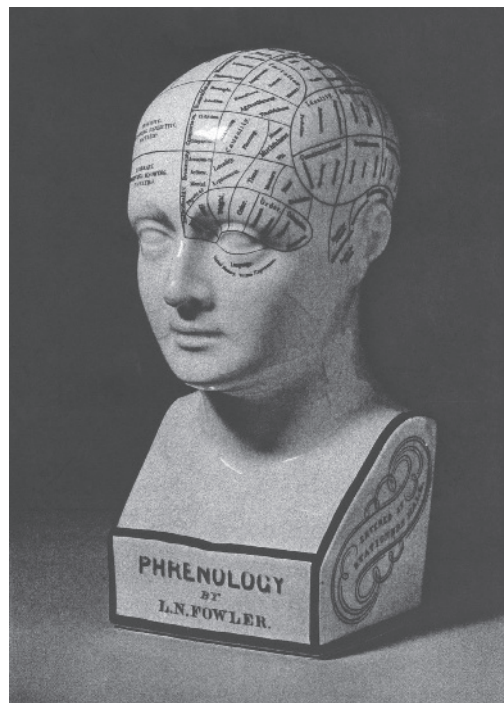
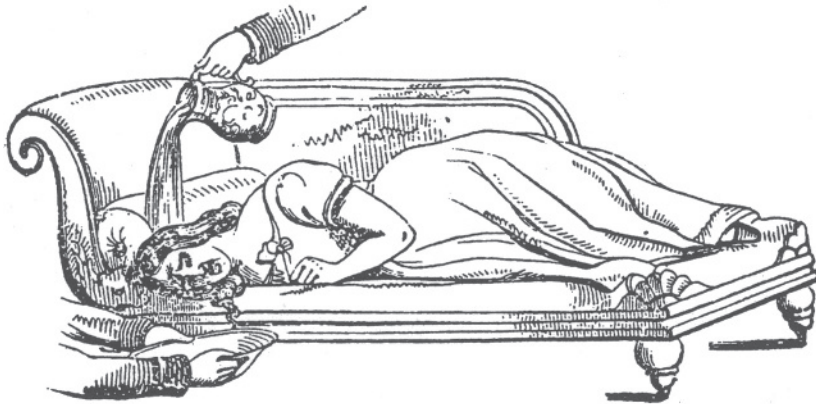


Exhibit 1.1 Phrenological head, by L. N. Fowler, mid-19th century, porcelain, 11 in. high. Courtesy Mrs. Erick T. Carlson. Reprinted from *Madness in America* (p. 86), by L. Gamwell and N. Tomes, 1995, Ithaca, NY: Cornell University Press.

Reviews of the history of psychiatry reveal a long list of intrusive interventions that can best be described as torture (e.g., Scull, 2005; Valenstein, 1986). Consider Darwin's chair, in which a patient was spun until bleeding from his or her nose. Water-based interventions were a popular strategy (see Exhibit 1.2). A former patient, Ebenezer



TREATMENT OF HYSTERIA

Exhibit 1.2 “Treatment of Hysteria.” In Russell T. Trall, *Hydropathic Encyclopedia* (New York, NY: 1868). New York Academy of Medicine Library. Reprinted from *Madness in America* (p. 157), by L. Gamwell and N. Tomes, 1995, Ithaca, NY: Cornell University Press.

Haskell, said he witnessed the spread-eagle method while in Pennsylvania Hospital for the Insane. “A disorderly patient is stripped naked and thrown on his back, four men take hold of the limbs and stretch them out at right angles, then the doctor or some one of the attendants stands up on a chair or table and pours a number of buckets full of cold water on his face until life is nearly extinct, then the patient is removed to his dungeon cured of all diseases” (cited in Gamwell & Tomes, 1995, p. 63). The remedy of

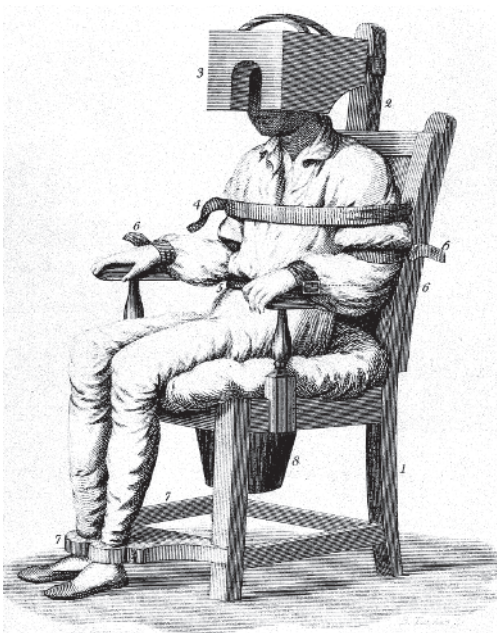


Exhibit 1.3 “The Tranquilizing Chair,” in Benjamin Rush, “Observations on the Tranquilizer,” The Philadelphia Medical Museum (1811). Archives of Pennsylvania Hospital, Philadelphia. Reprinted from *Madness in America* (p. 33), by L. Gamwell and N. Tomes, 1995, Ithaca, NY: Cornell University Press.

the tranquilizing chair is shown in Exhibit 1.3. Epidemiologists bring to our attention different rates of use of certain kinds of interventions, such as the higher number of hysterectomies in the United States as compared with Great Britain. Such differences may reflect actual need, or they may result from influences that conflict with client interests (such as an overabundance of surgeons or a tendency to think for clients rather than inform them fully and let them make their own decisions). Variations in services provided for the same concern were another reason for the development of evidence-based medicine and health care (Gray, 2001b; Wennberg, 2002).

The exposure of avoidable errors and harming in the name of helping is a topic of concern to journalists as well as investigators in a variety of fields, as illustrated by reports of children maltreated by their foster parents (e.g., DePanfilis, 2003; Pear, 2004); abuse of patients in facilities that purport to help them, such as group homes for the so-called mentally ill (e.g., Levy, 2003); and neglectful practices in hospitals and nursing homes (e.g., Delamothe, 2011; Mooney, 2011). Preventable medical error is responsible for 98,000 deaths per year and 99,000 deaths result from hospital-acquired infections per year. Exhibit 1.4 illustrates types of errors. What would be considered an error today might have been considered common (and good practice) years ago. For example, many people who entered a mental hospital in the 1950s and spent the rest of their lives there should not have been hospitalized in the first place. Many errors reflect a confirmatory bias (seeking only data that support favored views; Nickerson, 1998). Imagine that you are a community organizer in a low-income neighborhood and believe that new immigrants moving into the neighborhood are the least likely to

Exhibit 1.4 Examples of Errors in Medicine

Diagnostic

- Error or delay in diagnosis
- Failure to use indicated tests (e.g., use of outmoded tests)
- Failure to act on results of monitoring or testing

Treatment

- Error in the performance of a procedure or test
- Error in the dose or administration of a drug
- Avoidable delay in treatment or in taking action in relation to an abnormal test
- Inappropriate (not indicated) care

Preventive

- Failure to provide preventative treatment
- Inadequate monitoring or follow-up

Other

- Failure of communication (e.g. with team members)
 - Equipment failure (e.g., not calibrated adequately)
 - Other system failure (e.g., in training)
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Source: From "Preventing Medical Injury," by L. Leape, A. G. Lawthers, T. A. Brennan, et al., 1993, *Qualitative Review Bulletin*, 19(5), pp. 144–149. Reprinted with permission.

become active in community advocacy efforts. Because of this belief, you may concentrate your attention on long-term residents. As a result, new resident immigrants are ignored, with the consequence that they are unlikely to become involved. This will strengthen your original belief.

The very nature of clinical practice leaves room for many sources of error. Decisions must be made in a context of uncertainty; the criteria on which decisions should be made are in dispute, and empirical data about the effectiveness of different intervention options are often lacking. Clients seek relief from suffering, and professionals hope to offer it; there is a pressure from both sides to view proposed options in a rosy light. Some errors result from a lack of information about how to help clients. Empirical knowledge related to clinical practice is fragmentary, and theory must be used to fill in the gaps. Other errors result from ignorance on the part of individual clinicians—that is, knowledge (defined here as information and procedural know-how that reduce or reveal uncertainty) is available but is not used. This lack of knowledge and skill may be due to inexperience or inadequate training. Errors also result from lack of familiarity with political, economic, and social influences on professions such as psychiatry, psychology, and social work (e.g., Cohen & Timimi, 2008). The interpersonal context within which counseling occurs offers many potential opportunities for mutual influence that may have beneficial or dysfunctional effects, as described in Chapter 2. Errors may occur because of personal characteristics of the clinician, such as excessive need for approval.

Avoidable errors may result in (1) failing to offer help that could be provided and is desired by clients, (2) forcing clients to accept practices they do not want, (3) offering help that is not needed, or (4) using procedures that aggravate rather than alleviate client concerns (that is, procedures that result in iatrogenic effects; e.g., Sharpe & Faden, 1998). Such errors may occur in all phases of clinical practice: assessment, intervention, and evaluation. Errors may occur during assessment by overlooking important data, using invalid measures, or attending to irrelevant data; during intervention by using ineffective methods; and during evaluation by using inaccurate indicators of progress. Reliance on irrelevant or inaccurate sources of data during assessment may result in incorrect and irrelevant accounts of client concerns and recommendation of ineffective or harmful methods. Important factors may not be noticed. For example, a clinician may overlook the role of physiological factors in depression. Depression is a common side effect of birth control pills and is also related to hormonal changes among middle-aged women. Failure to consider physical causes may result in inappropriate decisions. Failure to seek information about the evidentiary status of methods may result in use of an ineffective method. We may fail to recognize important cues or attend to irrelevant content. Errors may result from reliance on questionable criteria such as anecdotal experience to evaluate the accuracy of claims, as discussed in Chapter 4.

Given the role of decision making in clinical practice and the variety of factors that influence the quality of decisions, it is surprising that more attention is not devoted to this content in professional training. Meehl's book *Clinical Versus Statistical Prediction* appeared in 1954. The classic "Why I Do Not Attend Case Conferences" (Meehl, 1973) identifies errors and tendencies in groups that dilute the quality of decisions. The influence of illusory correlations on clinical observation was explored in the late 1960s (e.g., see Chapman, 1967; Chapman & Chapman, 1967, 1969). The tendency of clinicians to attribute problems to the person and overlook the role of environmental factors has been a topic of interest for some time (Rosenhan, 1973). Although students in professional education programs learn to attend to some sources of error (such as factors that influence reliability and validity) and are cautioned to avoid mistaking correlation for causation, they are not exposed to the range of formal and informal fallacies described in this book. Nor are they given information about conditions that encourage these fallacies and that increase the likelihood that their influence will slip by unnoticed. Students may not be exposed to the influential role of the biomedical industrial complex, including biological psychiatry, in framing problems and remedies (e.g., see Boyle, 2002; Brody, 2007; Carlat, 2010; Clarke, Mamo, Fosket, Fishman, & Shim, 2010; Szasz, 1994) or to critiques of psychological models (Illouz, 2008). Related literature shows that labeling attributes or actions as symptoms of psychopathology (deviations from the normal) is intimately associated with political and economic concerns and social conventions; therapists function as "moral managers" (Sedgwick, 1982, pp. 141, 147). They may not be exposed to critiques of prevalence rates such as the assertion that 46% of adults met criteria of the American Psychiatric Association (APA) for having had at least one mental illness in their lives.

Although the strategies we use to make decisions may often result in sound judgments, the task here is to identify ways in which they are not correctly used, so that errors can be minimized. Judgmental strategies are not necessarily used consciously, which is another reason it is helpful to be familiar with them. Indeed, two of the three routes to information lie outside of our awareness: perception and automatic associations. However, familiarity with sources of error is not enough. If this were true, certain kinds of errors would not recur in clinical practice. For example, many writers, both past and present, have argued that mental health professionals are too focused on pathology, that stereotypes interfere with making balanced decisions that reflect what a client can do as well as what the client cannot do (e.g., see Hobbs, 1975). However, some clinicians continue to focus on individual pathology, neglect client assets, and overlook environmental causes of personal troubles. Decreasing such errors requires a systemic approach, including attention to agency culture and climate as discussed in Chapter 9.

HALLMARKS OF CRITICAL THINKING

The term *reflection* is popular. But as Steven Brookfield notes, “Reflection is not by definition critical” (1995, p. 8). Critical thinking is a unique kind of purposeful thinking in which we use standards such as clarity and fairness. It involves the careful examination and evaluation of beliefs and actions in order to arrive at well-reasoned decisions. It is:

- Clear versus unclear.
- Precise versus imprecise.
- Specific versus vague.
- Accurate versus inaccurate.
- Relevant versus irrelevant.
- Consistent versus inconsistent.
- Logical versus illogical.
- Deep versus shallow.
- Complete versus incomplete.
- Significant versus trivial.
- Adequate (for purpose) versus inadequate.
- Fair versus biased or one-sided. (Paul, 1993, p. 63)

Both critical thinking and evidence-based practice encourage asking questions designed to make the invisible visible. Problems may remain unsolved because we rely on questionable criteria to evaluate claims about what is accurate, such as tradition, popularity, or authority. Consider a claim that recovered memory therapy works. Too often, the questions that should be asked to reveal the evidentiary status of a claim are not asked, such as: “What is the source?” “The method works for what?” “What kind of research was conducted to test this claim?” “Could such research rigorously test the claim?” “Has anyone been harmed by this method?” This illustrates the difference between propaganda and critical thinking. In the former, strategies such as censoring (not mentioning) alternative well-argued views and contradictory evidence are used.

Critical thinking involves clearly describing and carefully evaluating claims and arguments, no matter how cherished, and considering alternative views. This means paying attention to the process of reasoning (how we think), not just the product. Critical thinking encourages us to examine the context in which personal and social problems occur (to connect private troubles with public issues; Mills, 1959; Prilleltensky, Prilleltensky, & Voorhees, 2008); to view questions from different points of view; to identify and question our assumptions; and to consider the possible consequences of different beliefs or actions. It requires clarity rather than vagueness. “One cannot tell truth from falsity, one cannot tell an adequate answer to a problem from an irrelevant one,

one cannot tell good ideas from trite ones—unless they are presented with sufficient clarity” (Popper, 1994, p. 71).

Critical Thinking Is Integral to Evidence-Based Practice

Critical thinking knowledge, skills, and values are integral to evidence-based practice (EBP). Critical thinking, evidence-based practice, and scientific reasoning are closely related. All use reasoning for a purpose (i.e., to solve problems), relying on standards such as clarity, relevance, and accuracy. All regard criticism (self-correction) as essential to forward understanding; all encourage us to challenge our assumptions, consider well-argued opposing views, and check our reasoning for errors. All are antiauthoritarian. Critical appraisal skills are needed to accurately describe the extent to which a given research method can rigorously test a given practice or policy question, and many tools have been developed to facilitate this task, as described in Chapter 12. Critical thinking can protect us from being bamboozled and misled by deceptive descriptions of research and advertisements, for example for drugs. Consider the examples that follow. Each makes a claim concerning the effectiveness of a practice method. Are they true? What questions would you ask to evaluate the accuracy of these claims? How would you search for related research findings? Is there a high-quality review of research related to each claim?

- Eye movement desensitization is effective in decreasing anxiety. (Is it?)
- “Four hours a month can keep a kid off drugs forever. Be a mentor” (*New York Times*, December 31, 2002, p. A15; Partnership for a Drug-Free America, www.drugfreedomamerica.org). (Can it?)
- Anatomically detailed dolls can be used to accurately identify children who have been sexually abused. (Can they?)

Both critical thinking and EBP value clarity over obscurity, accuracy over inaccuracy, deep over superficial analysis, and fair-minded over deceptive practices. Both value transparency (honesty) concerning what is done to what effect, including candid description of lack of knowledge (uncertainty and ignorance). Consider the statement by the editor of *BMJ* (formerly the *British Medical Journal*):

The history of medicine is mostly a history of ineffective and often dangerous treatments. . . . Unfortunately there is still no evidence to support most diagnostic methods and treatments. Either the research hasn’t been done or it is of too poor a quality to be useful. (Smith, 2003, p. 1307)

Material referred to as “evidence-based” reflects critical thinking values, knowledge, and skills to different degrees, ranging from a close relationship to little overlap, as illustrated by use of the term *evidence-based* without the substance (e.g., misrepresenting the philosophy and evolving technology of EBP, inflated claims of effectiveness, and not involving clients as informed participants; Gambrill, 2011).

Related Values, Attitudes, and Styles

Critical thinking is independent thinking—thinking for yourself. Critical thinkers question what others view as self-evident. They ask:

- Is this claim accurate? Have critical tests been performed? If so, were they relatively free of bias? Have the results been replicated? How representative were the samples used?
- Who presented it as true? How reliable are these sources?
- Are vested interests involved?
- Are the facts presented correct?
- Have any facts been omitted?
- Are there alternative well-argued points of view?

Critical thinkers are skeptics rather than believers. That is, they are neither gullible (believing anything people say, especially if it agrees with their own views) or cynical (believing nothing and having a negative outlook on life). This was illustrated by Susan Blackmore in a keynote address at the 1991 annual meeting of the Committee for the Scientific Investigation of Claims of the Paranormal (CSICOP) when she presented what she described as her favorite slide (a question mark) between slides of a sheep (illustrating gullibility) and a goat (illustrating cynicism). Cynics look only for faults. They have a contemptuous distrust of all knowledge. Skeptics (critical thinkers) value truth and seek approximations to it through critical discussion and the testing of theories. Criticism is viewed as essential to forward understanding.

Intellectual traits integral to critical thinking, suggested by Richard Paul, are shown in Exhibit 1.5. Critical thinking involves using related knowledge and skills in everyday life and acting on the results (Paul, 1993). It requires flexibility and a keen interest in discovering mistakes in our thinking. Truth (accuracy) is valued over winning or social approval. Values and attitudes related to critical thinking include open-mindedness, an interest in and respect for the opinion of others, a desire to be well informed, a tendency to think before acting, and curiosity. It means being fair-minded, that is, accurately describing opposing views and critiquing both preferred and disliked

Exhibit 1.5 Examples of Valuable Intellectual Traits

Intellectual autonomy: Analyzing and evaluating beliefs on the basis of reason and evidence.

Intellectual civility: Taking others seriously as thinkers, treating them as intellectual equals, attending to their views.

Intellectual confidence in reason: Confidence that in the long run our own higher interests and those of humankind will best be served by giving the freest play to reason—by encouraging people to come to their conclusions through a process of developing their own reasoning skills; to form rational viewpoints, draw reasonable conclusions, persuade each other by reason, and become reasonable people despite the many obstacles to doing so. Confidence in reason is developed through solving problems through reason, using reason to persuade, and being persuaded by reason. It is undermined when we are expected to perform tasks without understanding why, or to accept beliefs on the sole basis of authority or social pressure.

Intellectual courage: Critically assessing viewpoints regardless of negative reactions. It takes courage to tolerate ambiguity and to face ignorance and prejudice in our own thinking. The penalties for nonconformity are often severe.

Intellectual curiosity: An interest in deeply understanding, figuring things out, and learning.

Intellectual discipline: Thinking guided by intellectual standards (e.g., clarity and relevance).

Undisciplined thinkers neither know or care when they come to unwarranted conclusions, confuse distinct ideas, or ignore pertinent evidence. It takes discipline to keep focused on the intellectual task at hand; to locate and carefully assess evidence; to systematically analyze and address questions and problems; and to honor standards of clarity, precision, completeness, and consistency.

Intellectual empathy: Putting ourselves in the place of others to genuinely understand them and recognize our egocentric tendency to identify truth with our views. Indicators include accurately presenting the viewpoints and reasoning from assumptions other than our own.

Intellectual humility: Awareness of the limits of our knowledge; sensitivity to bias, prejudice, and limitations of one's viewpoint. No one should claim more than he or she actually knows. Lack of pretentiousness and conceit, combined with insight into the strengths and weaknesses of the logical foundations of one's views.

Intellectual integrity: Honoring the same standards of evidence to which we hold others, practicing what we advocate, and admitting discrepancies and inconsistencies in our own thought and action.

Intellectual perseverance: The pursuit of accuracy despite difficulties, obstacles, and frustration; adherence to rational principles despite irrational opposition of others: recognizing the need to struggle with confusion and unsettled questions to pursue understanding. This trait is undermined when others provide the answers or do our thinking for us.

Source: Adapted from *Critical Thinking: What Every Person Needs to Survive in a Rapidly Changing World* (Rev. 3rd ed., pp. 470–472), by R. Paul, 1993; Foundation for Critical Thinking. www.criticalthinking.org. Reprinted with permission.

views using the same rigorous standards. Critical thinking discourages arrogance, the assumption that we know better than others or that our beliefs should not be subject to critical evaluation. As Popper emphasized, “. . . in our infinite ignorance we are all equal” (Popper, 1992, p. 50). These attitudes reflect a belief in and respect for the intrinsic worth of all human beings, for valuing learning and truth without self-interest, and a respect for opinions that differ from one's own (Nickerson, 1988–1989, p. 507). They also highlight the role of affective components, such as empathy for others and a tolerance for ambiguity and differences of opinion. Critical reflection stresses the value of self-criticism. It prompts questions such as: “Could I be wrong?”

“Have I considered alternative views?” “Do I have sound reasons to believe that this plan will help this client?” (See also Paul & Elder, 2004.)

Related Skills and Knowledge

Similar kinds of knowledge and skills are of value in problem solving and decision making, including accurately weighing the quality of evidence and arguments, identifying assumptions, and recognizing contradictions. Examples of critical thinking skills are (e.g., see Ennis, 1987; Paul, 1993):

- Clarify problems.
- Identify significant similarities and differences.
- Recognize contradictions and inconsistencies.
- Refine generalizations and avoid oversimplifications.
- Analyze or evaluate arguments, interpretations, beliefs, or theories.
- Identify unstated assumptions.
- Clarify and analyze the meaning of words or phrases.
- Use sound criteria for evaluation.
- Clarify values and standards.
- Detect bias.
- Distinguish relevant from irrelevant questions, data, claims, or reasons.
- Evaluate the accuracy of different sources of information.
- Compare analogous situations; transfer insights to new contexts.
- Make well-reasoned inferences and predictions.
- Compare and contrast ideals with actual practice.
- Discover and accurately evaluate the implications and consequences of a proposed action.
- Evaluate one’s own reasoning process (metacognitive skills).
- Raise and pursue significant questions.
- Make interdisciplinary connections.
- Analyze and evaluate actions or policies.

We often fail to solve problems not because we lack intelligence, but because we fall into intelligence traps such as jumping to conclusions. This highlights the value of acquiring strategies that avoid these pitfalls in thinking. In addition to content knowledge, we need performance skills. For example, being aware of common errors in observing interaction between clients and significant others (e.g., students and teachers) will not be useful without the skills to avoid them (see Chapter 13). Critical thinking skills are not a substitute for problem-related knowledge. For example, you may need

specialized knowledge to evaluate the plausibility of premises related to an argument. Consider the following example:

- Depression always has a psychological cause.
- Mr. Draper is depressed.
- Therefore the cause of Mr. Draper's depression is psychological in origin.

Even though the logic of this argument is sound, the conclusion may be false; the cause of Mr. Draper's depression could be physiological. The more information that is available about a subject that can decrease or reveal uncertainty about what decision is best, the more important it is to be familiar with this knowledge. Taking advantage of practice-related research findings is a hallmark of evidence-based practice.

Nickerson (1986b) suggests that self-knowledge is one of the three forms of knowledge central to critical thinking, in addition to knowledge of content related to a topic and critical thinking skills. Self-knowledge includes awareness of our style of thinking (e.g., the strategies we use) and its flaws, such as stereotypes that bias what we see and inaccurate (inflated) assessment of our competencies (Dunning, Heath, & Suls, 2004). Without self-knowledge, content and performance knowledge may remain unused. Three of the nine basic building blocks of reasoning suggested by Paul (1993) concern background beliefs that influence how we approach problems (ideas and concepts drawn on, whatever is taken for granted, and the point of view in which one's thinking is embedded).

BARRIERS TO MAKING SOUND JUDGMENTS

Judgments and decisions must be made in the face of uncertainty; even if all could be known, typically not enough time would be available to know all, nor may knowing all be needed to solve problems. The judgments that must be made are difficult ones, requiring distinctions between causes and secondary effects, problems and the results of attempted solutions, personal and environmental contributions to presenting complaints, and findings and evidence (links between clinical assumptions and findings). Problems that confront clients (e.g., lack of housing or day care) are often difficult ones that challenge the most skilled of helpers. Rarely is all relevant information available, and it is difficult to integrate different kinds of data. Knowledge may be available but not used. Physicians usually work in a state of uncertainty about the true state of the patient. They can only estimate the probability that a client has a certain illness. Uncertainty may concern: (1) the nature of the problem, (2) the outcomes desired, (3) what is needed to attain valued outcomes, (4) the likelihood of

attaining outcomes, and (5) measures that will best reflect degree of success. Information about options may be missing or unreliable, and accurate estimates of the probability that different alternatives will result in desired outcomes may be unknown. It may be assumed that because there is uncertainty, there is no difference between the different degrees to which a claim has been critically appraised.

Even when empirical information is available, this knowledge is usually in the form of general principles that do not allow specific predictions about individuals (Dawes, 1994a). For example, many convicted rapists rape again when released from prison; however, this does not allow you to accurately predict whether a particular person will rape again if released. You can only appeal to the general information (see discussion of expert testimony in Chapter 13). Problems may have a variety of causes and potential solutions. The criteria on which decisions should be based are in dispute, and empirical data about the effectiveness of different options are often lacking. A desire to avoid uncertainty is a source of error. Yet another barrier is the effort required to make sound judgments. There are many pressures on clinicians to act more certain than they are, including the rhetoric of professional organizations that oversells the feats of clinicians, clients who seek more certainty than is possible, colleagues who make exaggerated claims of certainty, and journal articles that misrepresent findings (Doust & Del Mar, 2004). Such pressures encourage our tendency to be overconfident in the accuracy of our views (Baron, 2000). A reluctance to consider errors as inevitable may result in overlooking uncertainty. We work under environmental constraints such as time pressures. Preferences may change in the very process of being asked about them.

Some barriers, such as selective perception, are common to all judgmental tasks. Others, such as the lack of agreed-on criteria for evaluating the accuracy of decisions, are more problematic in clinical contexts than in the hard sciences or in activities such as car repair. Our perception is selective; we do not necessarily see what is there to be seen (see Chapter 9). Errors may occur during perception and when thinking about what we see. The former type of errors may be more difficult to alter because of their automatic nature. We may process data in a sequential manner, although a network or web approach to associations between variables will result in more accurate judgments. Although “fast and frugal” heuristics used to simplify judgmental tasks and decrease effort may often work well in making accurate judgments, at other times they may not. (See Chapter 9.) Our memories may not be accurate. Data that may decrease uncertainty may not be available. Because our beliefs are often implicit rather than explicit, it is often difficult to discover whether beliefs are compatible with one another. Lack of knowledge and interfering attitudes such as fear of failure and inflated self-assessments (for example, an unjustified belief in one’s background knowledge) may limit success (see Chapter 17). We are often “unskilled and unaware of it” (Dunning, Heath, & Suls, 2004; Kruger & Dunning, 1999).

Unlike in medical practice in which there are signs (e.g., temperature reading) as well as symptoms (feeling hot), there are often no agreed-on criteria against which to check the accuracy of assumptions in clinical practice in psychology, social work, and psychiatry. The reports of a pathologist may verify clinical assumptions, although here, too, there is more disagreement than we recognize (Welch, 2004). Clients may not and probably do not know when an avoidable error occurs, since they usually are not informed about the potential risks and benefits of different assessment, intervention, and evaluation options (Braddock, et al., 1999). They may not be aware that methods suggested are not those that have been found to be most effective and offer little potential for attaining outcomes they value.

Economic and political interests influence decisions in the helping professions. Clinicians may not be aware of the influence of the biomedical-industrial complex in creating bogus problems and selling methods that do more harm than good (Angell, 2004; Clarke et al., 2010). The context in which decisions are made influences their soundness. (See Chapter 2.) These differ in how conducive they are to learning and critical thinking. Hogarth (2001) uses the term *wicked* to refer to environments that impede learning from experience. Critical questions regarding a view may result in ad hominem attacks rather than reasoned discussion (e.g., Gresham & MacMillan, 1997). Because many clinical tasks involve the same kinds of judgments made in everyday life, replacement of research-informed views by unsupported hunches is especially easy. For most clinicians, “practice theory” is probably a mix of common knowledge, hunches, and scientific knowledge (Bromley, 1986, p. 219). There are many application challenges, such as gaining timely access to research findings related to important questions. Indeed, a key aim of evidence-based practice is addressing these application challenges.

Lack of understanding of and misrepresentation of science may result in rejection of critical appraisal of claims of knowledge. Some confuse this with scientism, “the belief that science knows or will soon know all the answers, and it has the corrupting smugness of any system of opinions which contains its own antidote to disbelief” (Medawar, 1984, p. 60). Clinicians are not immune from this educational deficit, which is common in our culture and which accounts in large part for the ready acceptance of proposed causal factors without any evidence that they are relevant (Science and Engineering Indicators, 2010). Consider, for example, the uncritical acceptance of phenomena such as past lives, spirit guides, auras, and the occult (Shermer, 1997). Even quite elementary knowledge of scientific ways of weighing the value of evidence would call such claims into question. Hallmarks of a scientific approach toward clinical practice include looking for disconfirming evidence for favored views and considering the evidentiary status of practices and policies. It is assumed that nothing is ever proven, but rather that some claims have passed critical tests of their accuracy. Thus, a scientific approach is quite

the opposite of the characteristics often attributed to it, such as “rigid,” “dogmatic,” “closed,” or “trivial” (see Chapter 4).

Clinicians tend to form impressions of clients quickly; these first impressions influence their expectations about outcomes, which in turn may affect how they respond to clients and so confirm their original impressions. Different therapists may form quite different impressions of the same client. Initial beliefs may be resistant to new evidence as well as to challenges of the evidence that led to those beliefs. The generation of data, as well as the retrieval of material, is influenced by our assumptions. Premature commitment to a position and insufficient revision of beliefs as well as a tendency to believe (often falsely) in the consistency of behavior contribute to unsound decisions. Clinicians have a tendency not to search for evidence against their views; this tendency may result in errors. Different standards are used to criticize opposing evidence than to evaluate supporting evidence. Moreover, data that provide some support for and some evidence against preferred views increase the confidence of holders of both views (Lord, Ross, & Lepper, 1979).

Expectations tend to be self-fulfilling. A clinician may have read a report describing a client as schizophrenic. This may result in a selective search for evidence in support of this assumption and a selective ignoring of counterevidence. This justification focus (searching for data that confirm initial views rather than seeking to disconfirm preferred views) is at the heart of many sources of error. The unrepresentativeness of samples may be ignored (see Chapter 15). The tendency to attribute problems to dispositional (personal) characteristics of clients and to ignore environmental factors is common—the fundamental attribution error (see Chapter 14). The tendencies described may influence decision making in all phases of helping (for example, describing clients and their concerns, making inferences about causal factors, and making predictions about the effectiveness of different kinds of services). The more familiar we are with sources of error, the more likely we may be to avoid them. Some of these biases result in too little thinking, in contrast to too much thinking—a “premature cessation of search” (Baron, 1985b, p. 208).

CLINICAL REASONING AS A TEACHABLE SKILL

A rich literature is available describing efforts to enhance problem solving and decision making, including the tools and process of evidence-based practice designed to decrease gaps between a clinician’s current knowledge and possibilities for resolution. Critical thinking skills can be enhanced and helpful strategies for improving accuracy can be acquired, such as using natural frequencies to estimate risk (see Chapter 15). Evidence-based practice offers an evolving process for integrating evidentiary, ethical,

and application issues. Checklists are available to help us pay attention to important characteristics when critically appraising practice-related research (e.g., Greenhalgh, 2010). Debiasing strategies can be acquired, as described in later chapters. We can learn how to allocate scarce resources, such as time, wisely and become more aware of our reasoning process, as described in Chapter 3. We can become familiar with barriers to problem solving, including inflated self-assessments, and develop skills for avoiding them. We can acquire critical thinking values, knowledge, and skills that contribute to problem solving and decision making that are described throughout this book (e.g., see Croskerry & Nimmo, 2011; Janicek & Hitchcock, 2005). The term *metacognitive* refers to awareness of and influence on our reasoning processes (e.g., monitoring our thinking by asking questions such as: “How am I doing?” “Is this correct?” “How do I know this is true?” “What are my biases?” “Is there another way to approach this problem?” “Do I understand this point?”). These questions highlight the importance of self-correction in problem solving. Related behaviors can be thought of as self-governing processes (strategies we use to guide our thinking).

As skill is acquired in an area, knowledge tends to be stored in larger chunks, and these chunks are run off in a more automatic fashion. Components of practical intelligence tend to be learned on the job. The goal of practical intelligence is to accomplish tasks in real-life settings. Different kinds include managing emotions, developing and using interpersonal skills, responding to setbacks and failures, and dealing with procrastination. Successful managers seek concrete information when faced with ambiguity, obtain information from a range of sources, and identify useful analogies to explain a situation (Klemp & McClelland, 1986).

COSTS AND BENEFITS OF CRITICAL THINKING

Like anything else, critical thinking has advantages and disadvantages; there may be long-term benefits for short-term investments. A tendency to overemphasize immediate costs in relation to future gains may be an obstacle to critical thinking. The benefits depend on our goals and values. An interest in enhancing clinical competence, curiosity, and a desire to make ethical decisions encourage critical thinking (for example, searching for and critically appraising practice-related research).

Benefits of Critical Thinking

There are many benefits of thinking critically about clinical decisions, all of which contribute to helping clients and avoiding harming them:

- Discover problem-related resources and constraints.
- See the connection between private troubles and public issues; think contextually.
- Avoid cognitive biases.
- Avoid being bamboozled by others (avoid influence by human service propaganda).
- Recognize errors and mistakes as learning opportunities.
- Recognize pseudoscience, quackery, and fraud.
- Minimize avoidable harm to clients.
- Accurately assess the likelihood of attaining hoped-for outcomes.
- Make valuable contributions at case conferences (e.g., identify flawed arguments, suggest well-argued alternative views).
- Select effective programs and policies.
- Make accurate predictions.
- Accurately assess the effects of policies, programs, and plans.
- Make timely changes in plans, programs, and policies.
- Use resources (e.g., time) wisely and justly.
- Continue to enhance knowledge and skills.
- Increase self-awareness; for example, note contradictions between what you say (“I care about clients”) and what you do (fail to keep up-to-date with research findings about clients’ concerns).

Thinking critically about practice beliefs and judgments will increase the accuracy of decisions. Informal fallacies and weak rhetorical appeals used in human service propaganda will be less likely to be influential, and you may be more aware of cognitive biases that influence your judgments. Enhancing the quality of reasoning should provide useful problem-solving skills, such as deciding what questions to ask, what data to gather, and what factors to relate to problems. Selection of weak or ineffective practice methods may be avoided by a search for alternative views of problems and by consulting high-quality research reviews related to specific practice methods, such as those in the Cochrane and Campbell databases. Critical thinking skills and practice in their use can be used to avoid errors, such as the fundamental attribution error, in which environmental influences are overlooked, such as the role of significant others (those who interact with clients and influence their behavior). Clarifying vague terms such as *addiction*, *abuse*, *dementia*, and *self-determination* may prevent misunderstandings between clinicians and their clients, as well as among clinicians, and help to avoid the “patient uniformity myth,” in which clients and their problems are incorrectly assumed to be identical (Kiesler, 1966). Only when desired outcomes are clearly

described may it be obvious that, given available resources, some are unattainable or conflict with other valued outcomes. Clarifying values and preferences is another benefit of critical thinking.

Thinking carefully about decisions will minimize regret. Enhancing decision-making skills may help us to recapture a sense of discovery and curiosity in confronting the challenges of clinical work and in encouraging an attitude of “constructive discontent” (Koberg & Bagnall, 1976). Some clinicians may lose the sense of positive challenge over their careers as they labor in environments in which there is a poor match between resources available and tasks required. A sense of curiosity and discovery may be replaced by a mindless approach to work that is dull and dulling (Maslach, Schaufeli, & Leiter, 2001).

Familiarity with persuasion strategies and informal fallacies should upgrade the quality of decisions in all contexts: interviews with clients, case conferences, and discussions with colleagues. I was quite mystified when low-level appeals such as straw person arguments were often successful in swaying colleagues. After becoming familiar with persuasive tactics and the variety of fallacies that may occur, as well as reasons for their effectiveness, I understood their popularity and was better prepared to handle them. Argument-analysis skills are valuable in focusing on key assumptions and identifying problems with a position (see Chapter 3). An emphasis on helping clients and avoiding harming them will encourage a collaborative, critical approach to decision making and decrease the frequency of weak appeals and adversarial tactics. You and your clients will be in a better position to assess whether an outcome can be pursued successfully. It is disturbing to hear clinicians say “nothing can be done” when, in fact, if they were familiar with available knowledge, they could do something. Saying “nothing can be done” when this is not true leaves you helpless, and leaves clients without the benefit of the best chance of obtaining hoped-for outcomes.

Some clinicians view helping people as an art rather than a science—they believe that there is little if any empirical knowledge of value that will increase the accuracy of decisions and, therefore, taking the time to become familiar with and to draw on this not only is a waste of time, but will diminish the quality of service because it interferes with the creative, spontaneous flow that is the heart of effective helping. This is not an either-or question. Both art and science are involved (see Chapter 2). There is evidence in many areas that certain decisions are better than others in helping clients. Perhaps you should ask yourself, “In what areas would I want my dentist and doctor to base their recommendations on what feels best, without finding out whether what feels best is compatible with related research findings?” Do you base decisions you make about your clients on the same criteria you would like your doctor to use when making recommendations about a serious health problem of your own? (See criteria listed earlier in this chapter.) If not, why not? Comparison of criteria used when making decisions that affect

one's own health with those relied on with clients shows that what's good for the goose (ourselves) may not be good for the gander (our clients). For example, 92% of respondents wanted physicians to base recommendations about treatment of a health problem on results of randomized controlled trials, but relied on criteria such as intuition with their clients. Exhibit 1.6 shows results from 86 master's degree students in social work (Gambrill & Gibbs, 2002). Personal preferences do have a role in selecting a method from among several different ones when all methods may be equally effective—especially if the client makes the choice. And such preferences may be acted on if many methods are equally effective or all are of unknown effectiveness.

Knowledge about different kinds of decision-making strategies and the situations in which they can be used to good effect will contribute to timely, well-reasoned decisions. It is often not necessary to optimize (choose the best of all possible alternatives) to achieve desired outcomes. Rather, we “satisfice” (seek a satisfactory option). For example, if any one of several methods can be used with equal effectiveness to enhance client participation, trying to select the optimal one is a waste of time. A more systematic approach to problem solving will be required at other times.

Exhibit 1.6 Percentage Endorsement of Criteria Over Three Situations (n = 86)

	Ideally With Client (%)	Physician (%)	Client (%)
1. Your intuition (gut feeling) about what will be effective.	77 (66)	22 (19)	38 (33)
2. What you have heard from other professionals in informal exchanges.	64 (55)	20 (17)	27 (23)
3. Your experience with a few cases.	73 (67)	26 (22)	26 (22)
4. Your demonstrated track record of success based on data you have gathered systematically and regularly.	39 (34)	92 (79)	91 (78)
5. What fits your personal style.	62 (53)	3.6 (3)	27 (22)
6. What was usually offered at your agency.	59 (51)	3.6 (3)	8 (7)
7. Self-reports of other clients about what was helpful.	65 (56)	52 (45)	64 (55)
8. Results of controlled experimental studies.	37 (32)	92 (79)	86 (74)
9. What you are most familiar with.	53 (45)	19 (16)	14 (12)
10. What you know by critically reading professional literature.	67 (58)	88 (76)	86 (74)

Source: From “Making Practice Decisions: Is What's Good for the Goose Good for the Gander?” by E. Gambrill and L. Gibbs, 2002, *Ethical Human Sciences and Services*, 4(1), p. 39. Reprinted with permission.

Costs of Thinking Critically About Decisions

A review of the costs of thinking suggests why so many people do not think carefully about their beliefs and the tasks they confront. There are social, psychological, and practical costs. You even may be sued (Sweet, 2011). You may falsely believe that only experts can understand what is going on in a field, and that it will take too much time to understand views related to a decision you must make. The media as well as professional publications encourage this belief by lack of clear description of facts and figures related to claims (e.g., see Schwartz, Woloshin, & Welch, 2007, for an exception). Scientists do too little to make their views accessible to those outside their field (Burnham, 1987). In fact, many of the basic principles vital to examining the evidentiary status of a claim or theory are quite straightforward and easy to understand, even though these are not generally taught. Consider our tendency to search our memories for one or two supporting examples when asked about the accuracy of an assumption, and to believe that these examples provide satisfactory evidence for our beliefs. It takes little training to realize that the case is far from settled. An overestimate of the costs of thinking may be combined with an underestimate of the value of further thinking and an overconfidence in the thinking already done. These tendencies result in impulsive decision making (Baron, 1985b). Reliance on a “makes-sense epistemology” (Perkins, Allen, & Hafner, 1983) encourages impulsive decisions (see discussion of empathic explanations in Chapter 3).

Making well-reasoned decisions may require additional time and effort in questioning initial hypotheses; consulting practice-related research; gathering data in real-life contexts to explore assumptions (for example, concerning the nature of parent-child exchanges); and encouraging colleagues to consider alternatives in case conferences. It often takes longer to refute an argument than it does to state a position. The benefits of thinking may be in the future, whereas the costs in time, effort, and lost opportunities may be immediate (Baron, 1985b). Learning to question inferences requires the cultivation of compatible values and goals—a commitment to helping clients and avoiding harming them. Effort will be required to learn how to critically appraise different kinds of research relevant to different kinds of questions. However, the time and effort devoted to critical thinking should be saved many times over in increased accuracy of decisions; errors are more likely to be avoided.

An interest in protecting self-worth is a key factor in avoiding information that is not self-serving. Questioning our views requires recognizing the uncertainty inherent in helping clients. It requires us to abandon attitudes of smug paternalism and related justifications used to impose services on clients. It requires a tolerance of ambiguity and doubt. Critically appraising views entails the possibility of discovering that “we were wrong.” Suggesting positions and questioning the views of others carries the risk of

negative reactions from colleagues. Critical thinkers may be viewed as acting unsociably by questioning assumptions others take for granted. Even though critical thinking skills are used with consummate diplomacy, negative reactions may result. Creating an environment that encourages critical thinking will decrease the probability of negative reactions. Cultural differences should also be considered regarding when and how questions are raised (see Tweed & Lehman, 2002).

Careful consideration of options and assumptions may reveal ignorance and uncertainty. The complexity of some tasks clinicians confront may challenge the clearest thinker. Dilemmas include (1) the tension between the need to act despite uncertainty and the desire for certainty, and (2) the attempt to not impose personal biases while increasing client options (Lenrow, 1978). Estimating the probability that a practice method will be effective may reveal that it is relatively low. Being aware of the slim probability of effectiveness should be helpful in preventing clinicians from blaming themselves for lack of success, given that they have offered the best services possible. Inadequate resources should be viewed as an occasion to work together with others to increase access to needed services.

Most decisions involve costs as well as benefits. Thinking about a decision may reveal trade-offs that have been ignored. As the need for defense against disturbing information gets stronger, curiosity gets weaker. Yet another cost is the time needed to critically review claims of what is true and what is not. Not asking questions saves time and effort. Also, if we do not have goals, tools, and beliefs that encourage such questions, we are less likely to raise questions and seek answers. Use of critical thinking skills increases responsibility for providing the help that can be offered to clients and decreases tendencies to blame clients for resistance. Responsibility in the absence of skills and other resources to act effectively is unpleasant. The flip side of responsibility is freedom; giving up responsibility entails giving up freedom (Fromm, 1963). Thinking critically increases freedom from the unwanted influence of other people, including researchers who misrepresent the evidentiary status of practices and policies. You will move beyond acceptance of arguments simply because they make sense, realizing that what makes sense is not necessarily true; uncritical acceptance of claims leaves you at the mercy of what others think, as well as at the mercy of flaws in self-assessment of your own competence. One of the basic choices in life is whether to look or not look. Critical thinking values and skills increase a willingness to look. (Dare to know.)

HOW SKEPTICAL SHOULD CLINICIANS BE?

A thoughtful approach to decision making requires a skeptical attitude. How skeptical should clinicians be? They should be as skeptical as they have to be to maximize

opportunities to help clients and avoid harm. Decisions must be made in spite of uncertainties. “Practitioners are asked to solve problems every day that philosophers have argued about for the last two thousand years and will probably debate for the next two thousand. Inevitably, arbitrary lines have to be drawn and hard cases decided” (Dingwall, Eekelaar, & Murray, 1983, p. 244). As Thouless (1974, p. 166) points out, “What we do is more important than what we think. . . . So important is action that we can reasonably condemn as crooked thinking any device in thought which has as its purpose the evasion of useful or necessary action” (p. 166). We could not get through a day if we questioned every judgment. We cannot offer evidence for every belief we hold. We must trust the experts for many beliefs—that is, we cannot offer sound evidence for many of the everyday decisions we make. The case is different for clinicians in relation to their work: they should be able to offer cogent reasons for decisions they make regarding choice of assessment, intervention, and evaluation methods. We should be as skeptical as we need to be to avoid influence by propaganda in the helping professions, which is rife.

SUMMARY

Decision making is at the heart of clinical practice. Decisions include classifying clients into categories, making causal assumptions, and making predictions about the effectiveness of different kinds of interventions and future behavior of clients. Unless we critically reflect on our decisions, clients may be harmed rather than helped; we may be bamboozled by slick advertising and deceptive research reports. We may uncritically accept bogus claims in professional publications. Tendencies that decrease accuracy include discounting conflicting evidence, failing to search for disconfirming evidence, relying on experts, and a bias for dispositional explanations. Clinicians who are psychoanalytically oriented tend to search for and attend to different factors than those who are behaviorally oriented; these selective searches influence decisions. Clinical practice requires the integration of information from diverse sources, which places a strain on memory and on capacities to combine different kinds of data. Challenges include disagreements about criteria to use to assess the accuracy of decisions, cultural difference in views of personal troubles and social problems, and gaps in knowledge about how to achieve given outcomes.

Enhancing critical thinking skills and knowledge should yield long-term benefits for short-term investments. Benefits include doing more good than harm, recapturing a sense of discovery, and learning from mistakes how to enhance success in the future. Costs include the discovery of faulty beliefs, ignorance, and uncertainty. Using critical thinking skills may result in negative reactions from colleagues and increases personal

responsibility because more accurate distinctions are possible between artificial and real constraints on helping clients. Critically evaluating the accuracy of practice- and policy-related claims requires time, effort, and skill. The process of evidence-based practice is designed to facilitate the integration of practice- and policy-related research in a user-friendly manner attentive to daily time pressures of clinicians and managers. The costs of forgoing critical thinking in clinical practice are substantial. "In exchange for the time saved, clinicians must preserve and encourage unwarranted complacency, unverified dogma, and self-perpetuating error" (Feinstein, 1967, p. 310). Increasing critical thinking knowledge, values, and skills may result in a change of preferred practice theory. Most importantly, it should enhance the quality of services offered to clients.

