PART I

LAY OF THE LAND

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 give her a psychiatric diagnosis? Or, you may have to decide how to help parents increase positive behaviors of their four-year-old boy. 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 disorder?" Think back to a client with whom you have worked. Which of the following criteria did you use to make decisions (Gibbs & Gambrill, 1999):

___ 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 professional literature.

In addition to complex decisions that involve collecting, processing, and organizing diverse sources of data, scores of smaller decisions are made in the course of each interview. For example, moment-to-moment decisions are made during an interview about how to respond. Options include questions, advice, reflections, interpretations, self-disclosures, and silence. Decisions are made about what concerns to focus on, what information to gather, what intervention methods to use, and how to evaluate progress. The usefulness of different outcomes must be weighed, the risks of different options must be evaluated, and probabilities must be estimated. Judgmental tasks include describing clients and situations, deciding on causes, and making predictions about outcomes. For example, a clinician may have to describe a child's injuries and decide whether these were a result of parental abuse or were caused by a fall (as reported by the mother). She will have to decide what criteria to use to make this decision, what type of data to gather, and when she has 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. Clinical 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 [given that this is not true].)

THE IMPORTANCE OF THINKING CRITICALLY ABOUT DECISIONS

Clinical practice allows a wide range of individual discretion: how to structure 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. Shortcuts may be taken that may not enhance accuracy. 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, depending in part on the nature of corrective feedback. 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 accepted bogus claims about the effectiveness of a practice 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 findings suggest that clinical decisions can be improved:

1. There are wide variations in practices including racial disparities (e.g., Kuno & Rothbard, 2002; Smedley, Stith, & Nelson, 2003).
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 & deLeon, 2002; Goulding, 2004; Ofshe & Watters, 1994; Sharpe & Faden, 1998; Silverman, 1980).
4. Methods found to be harmful continue to be used (e.g., Petrosino, Turpin-Petrosino, & Buehler, 2003).
5. Methods shown to be invalid continue to be used (e.g., see Hunsley, Lee, & Wood, 2003).
6. Methods that have been found to be effective are often not offered to clients (e.g., see Olds, et al., 1998).
7. There are large gaps between claims of effectiveness and evidence for such claims. In fact, often there is counterevidence, as illustrated by mandated receivership of child welfare services in many U.S. states (contrary to claims that such services are effective).
8. Good intentions are relied on as indicators of good outcomes.
9. Research suggests that nonprofessionals are as effective as professionals in helping clients attain many outcomes (e.g., see Christensen & Jacobson, 1994; Dawes, 1994a).
10. Exposes of professional practice and policy by journalists are common.
11. Avoidable errors are common (e.g., DePanfilis, 2003; Reason, 2001).
12. 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 experience (Gambrill, 2002).
13. 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). And clients are not involved in designing, conducting, and interpreting critical tests of the effectiveness of services (for exceptions see Hanley, Truesdale, King, Elbourne, & Chalmers, 2001).
14. There seems to be an inverse correlation between growth of the helping professions and problems solved (see Gambrill, 2001).

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 in relation to different kinds of clients. Gaps between knowledge available and what was used was a key reason for the development of evidence-based practice and care as described in Chapter 10. 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). (See Exhibit 1.1.) Reviews of the history of psychiatry reveal a long list of intrusive interventions that can best be described as torture (e.g., see Scull, 2005; Valenstein, 1988). Consider Darwin's chair, in which a patient was spun until bleeding from his or her nose.

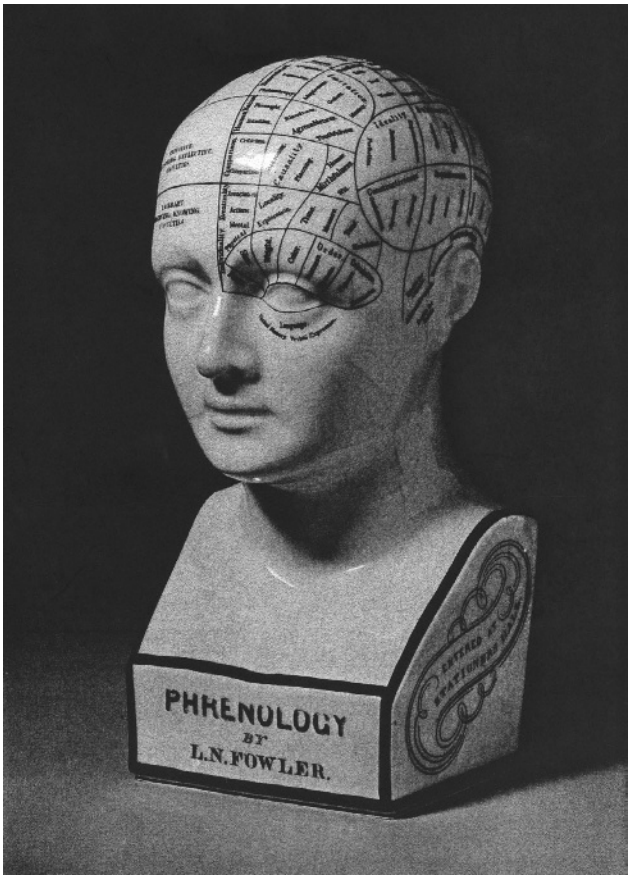

Exhibit 1.1 Phrenological head, by L. N. Fowler, mid-19th century, porcelain, 11 in. high. Courtesy Mrs. Erick T. Carlson. Reprinted from *Madness in America* (p. 86), by L. Gamwell and N. Tomes, 1995, Ithaca, NY: Cornell University Press.

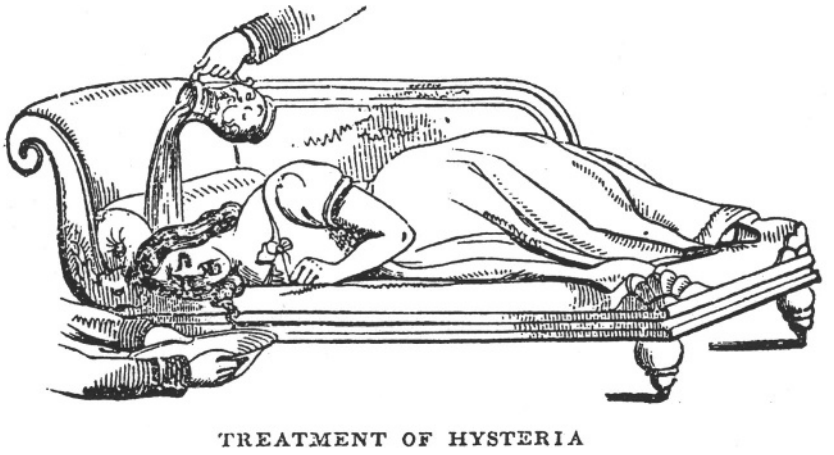

Exhibit 1.2 "Treatment of Hysteria," in Russell T. Trall, *Hydropathic Encyclopedia* (New York, 1868). The New York Academy of Medicine Library. Reprinted from *Madness in America* (p. 157), by L. Gamwell and N. Tomes, 1995, Ithaca, NY: Cornell University Press.

Water-based "cures" were a popular strategy (see Exhibit 1.2). A former patient, Ebenezer Haskell, said he witnessed the spread-eagle cure 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 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 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 was one of the key reasons for the development of evidence-based medicine and health care (Gray, 2001b; Wennberg, 2002). The question naturally arises: "Do they all do more good than harm?"

The exposure of clinical 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) and abuse of patients in facilities that purport to help them such as group homes for the "mentally ill" (e.g., see Levy, 2002). Thousands of patients suffer the consequences of avoidable errors in hospitals each year (e.g., see Naylor, 2002). 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

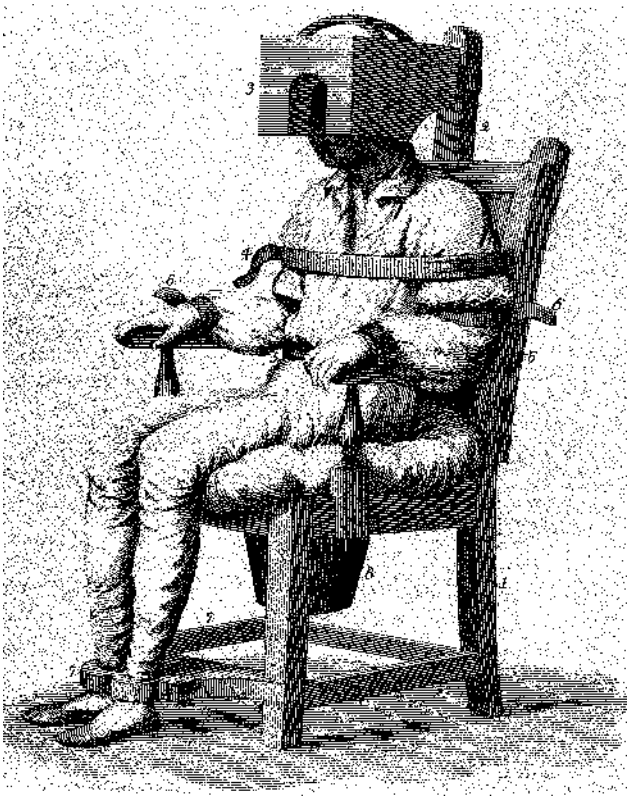

Exhibit 1.3 "The Tranquilizing Chair," in Benjamin Rush, "Observations on the Tranquilizer," The Philadelphia Medical Museum (1811). Archives of Pennsylvania Hospital, Philadelphia. Reprinted from *Madness in America* (p. 33), by L. Gamwell and N. Tomes, 1995, Ithaca, NY: Cornell University Press.

in the fifties 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 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. 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—

Exhibit 1.4
Examples of Types of Errors in Medicine

Diagnostic
Error or delay in diagnosis
Failure to employ indicated tests
Use of outmoded tests of therapy
Failure to act on results of monitoring or testing
Treatment
Error in the performance of an operation, procedure, or test
Error in administering the treatment
Error in the dose or method of using a drug
Avoidable delay in treatment or in responding to an abnormal test
Inappropriate (not indicated) care
Preventive
Failure to provide prophylactic treatment
Inadequate monitoring or follow-up of treatment
Other
Failure of communication
Equipment failure
Other system failure

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.

that is, knowledge (defined here as information and procedural know-how that reduces or reveals 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, and with the influence of social-psychological variables in the therapeutic context. The interpersonal context within which counseling occurs offers many potential opportunities for mutual influence that may have beneficial or dysfunctional effects (see Chapter 2). Errors may occur because of personal characteristics of the clinicians, such as excessive need for approval (see Chapter 17).

Avoidable errors may result in (1) failing to offer help that could be provided and is desired by clients, (2) forcing clients to accept "help" 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 three phases of clinical practice: assessment, intervention, and evaluation. Errors may occur during assessment by overlooking important data, using invalid

assessment measures, or attending to irrelevant data; during intervention by using ineffective methods; and during evaluation by using inaccurate measures of progress. If irrelevant or inaccurate sources of data are relied on during assessment, the result may be incorrect and irrelevant accounts of client concerns and consequent recommendation of ineffective or harmful intervention 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 treatment decisions. Failure to seek information about the evidentiary status of different methods may result in use of an ineffective method rather than one that would help clients attain valued outcomes. We may fail to recognize important cues or our attention may drift. We may forget important intentions or attend to irrelevant content/events. 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 sixties (see, for example, L. J. Chapman, 1967; L. J. Chapman & J. P. 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 (see, for example, 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 the conditions that encourage these fallacies and that increase the likelihood that their influence on decisions will slip by unnoticed. Students may not be exposed to sociological views of psychological and psychiatric concepts (e.g., Busfield, 2001; Conrad & Schneider, 1992; Goffman, 1961; Scheff, 1984a, 1984b): that the labeling of attributes or actions as symptoms of psychopathology is intimately associated with political and economic concerns and social conventions; that therapists function as "moral managers" (Sedgwick, 1982, pp. 141, 147; see Chapter 2 of this book).

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 avoided. 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 he cannot do (see, for example, 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. This was a key reason for the development of evidence-based practice (see Chapter 10). Consider a claim that recovered memory therapy works. Usually, the questions we should ask to reveal the evidentiary status of a claim are not visible, such as "What is the source?" "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?" (See, for example, Ofshe & Watters, 1994.) 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 our claims and arguments, no matter how cherished, and considering alternative

views when needed to arrive at decisions that do more good than harm. "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). 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 problems occur (to connect private troubles with public issues; Mills, 1959), 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.

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 a problem), 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 descriptions of research and advertisements, for example for drugs. Consider the examples below. 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 therapy is effective in decreasing anxiety. (Is it?)
- "Four hours a month can keep a kid off drugs forever. Be a mentor" (*New York Times,* 12/31/02, p. A15. The 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?)
- THREE MINUTE THERAPY: Change your thinking, change your life (Edelstein, flyer distributed). (Does it work?)

Both critical thinking and EBP value clarity over obscurity, accuracy over inaccuracy, deep versus superficial analysis, and fairminded versus 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 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).

(For a more optimistic view see J. A. M. Gray, 2001a.) 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, 2003a).

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 openmindedness, an interest in and respect

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; 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 though 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 in 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.

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 less preferred 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?

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 (e.g., see Ennis, 1987; Paul, 1993) are:

- Clarify problems.
- Identify significant similarities and differences.
- Recognize contradictions and inconsistencies.
- Refine generalizations and avoid oversimplifications.
- Clarify issues, conclusions, or beliefs.
- 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.
- Raise and pursue significant questions.
- Make interdisciplinary connections.
- Analyze and evaluate actions or policies.
- Evaluate perspectives, interpretations, or theories.

We often fail to solve problems not because we are not intelligent but because we fall into intelligence traps such as jumping to conclusions. This highlights the value of acquiring strategies that avoid these "defaults" in thinking.

In addition to content knowledge, we need performance skills. For example, being aware of pitfalls 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 (1986a) 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, 2005). Without self-knowledge, content and performance knowledge may remain unused. Three of the nine basic building blocks of reasoning suggested by Paul (1993) (ideas and concepts drawn on, whatever is taken for granted, and the point of view in which one's thinking is embedded), concern background beliefs that influence how we approach problems.

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). 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) 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 alter-

natives 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. 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 & Delhar, 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. 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.

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. We must often settle for less than the best. 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. Some barriers, such as selective perception, are common to all judgmental tasks. Others, such as the lack of agreed-on criteria for determining the accuracy of decisions, are more problematic in clinical contexts than they are 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 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 the associations between variables may result in more accurate judgments. Although strategies used to simplify judgmental tasks and decrease effort may usually work well in making accurate judgments, at other times they may result in errors. Our memories may not be accurate. Data that decrease uncertainty may not be available. It is often difficult to discover whether our beliefs are compatible with one another, since they may be implicit rather than explicit. Preferences for certain views or theories may result in propaganistic attacks rather than reasoned discussion (e.g., see Gresham & MacMillan, 1997). We may give exaggerated importance to some findings to justify retention of a favored hypothesis—the ubiquitous confirmation bias, in which we seek data that support our views and ignore data that do not (Nickerson, 1998). 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) are other limiting factors (see Chapter 17). We are often "unskilled and unaware of it" (Dunning, Heath, & Suls, 2005; Kruger & Dunning, 1999).

There are often no agreed-on criteria against which to check the accuracy of decisions in clinical practice in psychology, social work, and psychiatry—unlike in medical practice in which there are signs (e.g, temperature reading) as well as symptoms (feeling hot). The reports of a pathologist may verify clinical assumptions, although here, too, there may be more disagreement than we recognize. 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). Clients 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. As noted earlier, this reflects a key reason for the development of evidence-based practice—gaps between available practice-related knowledge and what practitioners draw on (Sackett, Richardson, Rosenberg, & Haynes, 1997). Nor may clients realize that a clinician's selection of outcomes to focus on may involve an error in that the choice may not address the clients' real interests—although it may serve other ends (see Chapter 2).

Economic and political interests influence decisions in interpersonal helping, as they do in fields such as medicine (see Chapter 2). Clinicians may not be aware of how these larger influences such as the pharmaceutical industry affect the very definitions of problems and recommended practice methods. Decisions are made in a particular context that influences their nature (see Chapter 2). These situations 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. 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 practice questions. Indeed, a key aim of evidence-based practice is addressing these application challenges (see Chapter 10).

Lack of understanding of and misrepresentation of science may result in rejection of this approach to 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). 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 that rather 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). Within a scientific approach, it would be just as ill advised to claim that some people are psychic as it would be to claim that there is no such thing as "psychic abilities" without results from critical tests. An understanding of the scientific method is usually not available to the public. "It itself is esoteric knowledge" (Stevens, 1988, p. 382). "There is a grave crisis in science education. The basic principles of the scientific method are not being taught in a manner that enables otherwise well-educated people to apply them to problems in their daily experiences" (p. 385) (See also National Science Foundation reports, 2002). Clinicians are not immune from this educational deficit, which is so 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. 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. Clinicians may become disenchanted with science as a problem-solving method (for example, to discover what helps clients) because of being confronted repeatedly with trivializing or bogus examples of its use in professional newsletters and professional journals. Because of this, they may discard a method that is vital in finding out how to help clients and avoid harm. The tendency to ignore practice-related research may result from ineffective search skills or disappointment that more knowledge is not available.

We have a tendency to believe in initial judgments, even when we are informed that the knowledge on which we based our judgments was arbitrarily selected, for example, by the spin of a roulette wheel (Tversky & Kahneman, 1974). 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. As Snyder and Thomsen (1988) note, the view that these initial judgments are accurate is questionable, since different therapists may form quite different impressions of the same client (Houts & Galante, 1985; Strupp, 1958). Not only are initial beliefs resistant to new evidence, but they also are remarkably resistant to challenges of the evidence that led to those beliefs. Primacy or anchoring effects (influence by what we see or first consider) may be a result of our tendency to generate theories that bias our interpretation of additional material. 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 the primacy effect.

Evidence in support of preferred theories tends to be accepted, and evidence contrary to such views tends to be discounted; different standards are used to criticize opposing evidence than to evaluate supporting evidence. Moreover, data that provide some support for and some against preferred views increase the confidence of holders of both views. For example, both students who were in favor of capital punishment and those who were not, read studies supporting and critical of their views about capital punishment and were more confident of their initial position than they were before they had

read any evidence (Lord, Ross, & Lepper, 1979). The generation of data, as well as the retrieval of material, are influenced by causal assumptions. Clinicians have a tendency not to search for evidence against their views; this tendency may result in errors. The more clinicians are biased in favor of an argument and the more unaware they are of these biases, the less likely they will be to weigh (or even identify) points against an argument as carefully as they do points in favor of it. Expectations tend to be self-fulfilling: assumptions about how clients will respond encourage reactions compatible with these beliefs. Snyder and Thomsen (1988) describe the many opportunities for confirmation bias in therapeutic exchanges. They, as well as others (Pyszczynski & Greenberg, 1987), note the many stages at which confirmation biases may occur; assumptions in earlier phases influence actions in later phases. For example, 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 counter-evidence. The behavior of clients, their histories, and relevant current situations may be scanned selectively for data that support initial assumptions. 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.

Errors may occur because certain logical-statistical principles are ignored, such as the size and representativeness of samples, the importance of base-rate data, and the importance of considering relative frequencies in assessing covariations (see Chapter 15). Checklists are available to help us pay attention to important characteristics when critically appraising practice-related research (e.g, see Gibbs, 2003; Greenhalgh, 2001). The tendency to attribute problems to dispositional (personal) characteristics of clients and to ignore environmental factors is common in clinical practice. This is known as 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). Specific examples of their influence and guidelines designed to avoid them are given in later chapters. Being forewarned is being prepared—the more familiar we are with sources of error that compromise the quality of decisions, the more likely we may be to avoid them. Many of these biases result in too little, in contrast to too much thinking—a "premature cessation of search" (Baron, 1985a, p. 208). The process of evidence-based practice and related tools such as systematic reviews are designed to facilitate critical appraisals of practice-related beliefs.

CLINICAL REASONING AS A TEACHABLE SKILL

The good news is that we can learn to make better decisions, for example by learning through our mistakes. Research in a variety of areas including decision making, judgment, problem solving, creativity, and teaching of reading, writing, and reasoning relates to this topic. A rich literature is available de-

scribing 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 about how to attain outcomes desired by clients and possibilities for resolution (see Chapters 10 and 11). Debiasing strategies can be acquired, as described in later chapters. We can learn how to allocate scarce resources, such as time, wisely. We can become familiar with barriers to problem solving including inaccurate self-assesments 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. We can become more aware of our reasoning process, as described in Chapter 3. 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). They can help us to use effective approaches to problem solving and to avoid common intelligence traps. Increasingly metacognitive levels of thought include: (1) *Tacit:* Thinking without thinking about it; (2) *Aware:* Thinking and being aware that you are thinking; (3) *Strategic:* Organizing our thinking by using strategies that enhance its efficacy; and (4) *Reflective:* Reflecting on our thinking (pondering how to proceed and how to improve; Swartz & Perkins, 1990, p. 52).

In a skill-based metaphor for reasoning, it is assumed that critical thinking requires a repertoire of strategies, such as anticipating questions and focusing on key information. Successful managers, for example, 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). Mathematical problem solving, reading, and invention can be improved by teaching (Schoenfeld, 1982). Accurate estimates of risk can be made by thinking in terms of frequencies rather than probabilities (see Chapter 15). 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. Consider the difference between skilled and unskilled drivers. The ability of chess masters to quickly identify effective moves depends on pattern recognition. (See discussion of primed decision making in Chapter 9.) 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 of practical intelligence include managing emotions, developing and using interpersonal skills, responding to setbacks and failures, and dealing with procrastination.

THE 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).

The 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 influence by bogus claims/human service propaganda.
- Recognize errors and mistakes as learning opportunities.
- Recognize pseudoscience, quackery, and fraud.
- Focus on outcomes related to clients' complaints.
- 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 programs and policies that achieve hoped-for outcomes with a minimum of harmful side effects.
- Make accurate predictions.
- Select effective plans.
- Accurately assess the effects of policies, programs, and plans.
- Make timely changes in plans, programs, and policies that have unintended negative effects.
- Use resources (e.g., time) wisely and justly.
- Respect and have empathy for others.
- Continue to learn and to enhance your skills.
- Increase your self-awareness; for example, contradictions between what you say ("I care about clients") and what you do (not keep up-to-date with research findings about clients' concerns).

Thinking critically about practice beliefs and judgments should increase the accuracy of decisions. Informal fallacies and weak rhetorical appeals used in human service propaganda will be less likely to be influential, and clinicians may be more aware of cognitive biases that influence their 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 attri-*

bution error, in which environmental influences are overlooked, such 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. Only when more thought is devoted to exploring preferences, for example regarding different outcomes, may these be discovered.

Thinking carefully about a decision will minimize regret. If the advantages and disadvantages of alternative courses of action are identified at an early point, they are not as likely to be a surprise after an option has been selected and acted on (Janis & Mann, 1977). 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 strawman arguments were often successful in swaying colleagues. After becoming fami1iar with persuasive tactics and the variety of fallacies that may occur, as well as reasons for their effectiveness, I understood their popularity and was also 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 should encourage a collaborative, critical approach to decision making and decrease the frequency of weak appeals and adversarial tactics.

Increasing your knowledge related to decisions including skills involved in evidence-based practice, as well as critical thinking skills, should increase your effectiveness in helping clients and avoiding harm. You and your clients will be in a better position to assess whether an outcome can be pursued successfully. Some clinicians may believe that, because of the gap between resources needed to help clients and those available, their hands are tied. In some instances, this may be true; at other times, there may be options for change. 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. It is also distressing to see clinicians using methods that do not help clients because other methods are needed (and available) to do so. 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—that there is little if any empirical knowledge of value in increasing the accuracy of decisions and that, therefore, taking the time to become familiar with and to draw on this is not only a waste of time, it 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. For example, there is evidence in many areas that certain decisions are better than others in maximizing the likelihood of helping clients achieve outcomes they value and minimizing use of harmful methods (see, for example, Cochrane & Campbell Reviews). Perhaps you should ask yourself, "In what area would I want my dentist or doctor to be spontaneous?", 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 the list given earlier in this chapter.) If not, why so? Comparison of criteria used when making decisions that affect one's own health with those relied on with clients show that what's good for the goose (ourselves) may not be good for the gander (our clients). For example, 92 percent 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 all equally effective or all are of unknown effectiveness.

Considerable time may be spent thinking about problems that are unsolvable (that is, there is little or nothing that can be done that would make the slightest difference). Conversely, too little thinking time may be devoted to problems that are solvable. Increasing critical thinking skills should result in a wiser allocation of thinking time. Knowledge about different kinds of decision-making strategies and the situations in which they can be used to good effect may 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). Simon (1983) refers to this approach as "bounded rationality" (see discussion of primed decision making in Chapter 9). In many situations, it may not be cost-effective to spend time trying to identify the optimal alternative, since there may be a range of indifference within which any one of a number of options would be satisfactory. For example, if any one of several methods can be used with equal effectiveness to enhance client participation, trying to select the

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

	Client (%)	Physician (%)	Ideally with 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.

optimal one is a waste of time. A more systematic approach to problem solving will be required at other times.

The 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. People (including clinicians) may falsely believe that only experts can understand what is going on in a field, and that it will take too much to understand views related to decisions they must make. The media often perpetuate this belief, and scientists do too little to make their efforts accessible to those outside their field. 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 (see later chapters).

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, 1985a). 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 quality of parent-child exchanges), and encouraging colleagues to consider alternatives in case conferences. Addressing application problems in drawing on practice-related research is of high priority in evidence-based practice. 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, 1985a). Learning to question inferences requires the cultivation of compatible values and goals–a commitment to helping clients and avoiding harming them; for example, not using ineffective or harmful practices or policies. Effort will be required to learn how to critically appraise different kinds of research relevant to different kinds of decisions including both quantitative and qualitative research. The time and effort involved in increasing critical thinking skills can be reduced by using effective learning skills and helpful tools, as well as by encouraging compatible beliefs about knowledge, thinking, and learning that will make the process efficient and enjoyable. Once statistical tools are mastered, using them to increase the likelihood of accurate decisions will take less time than will the usual, intuitive means of making decisions (Nisbett, Krantz, Jepson, & Kunda, 1983). Time and effort devoted to critical thinking should be saved many times over in increased accuracy of decisions. Errors in assessment or intervention may 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. If self-efficacy is low, this tolerance probably has a narrow edge, resulting in neglect of sources of bias and disconfirming data. The belief that our current preferences and judgments are fine "as is" is helpful in maintaining self-esteem and value in the eyes of others. Our biases and prejudices and patterns of thinking have served us well—at least so we think. Thinking about problems and issues entails the possibility of discovering that "we were wrong"—of having to admit error. 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. If self-efficacy is low and the desire for social approval is greater than the interest in helping clients by discovering accurate answers, divergent perspectives may not be shared. Even though critical thinking skills are used with consummate diplomacy, negative reactions may result. Complementing these skills with effective interpersonal skills and 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. For example, in child protection agencies, social workers have to tackle problems even though they realistically estimate the chances of success to be low. The likelihood that a parent may curtail the use of cocaine that interferes with adequate parenting of her child may be 10 percent, given available resources. Still, the effort may have to be made in a context of permanency planning, in which other goals such as termination of parental rights can be pursued only after services have been provided to a parent and these have failed to alter problems. Being aware of the slim probability of effectiveness in this larger context should be helpful in highlighting the necessity of this step as well as in preventing clinicians from blaming themselves for lack of success, given that they have offered the best services possible. Not recognizing situations in which chances of success are slim may contribute to burnout.

Most decisions involve costs as well as benefits. Thinking about a decision may reveal tradeoffs that have been ignored. People, clinicians included, are engaged in two tasks: (1) they seek to know more about the world and (2) at the same time, they wish to protect themselves from the world, especially from information that might prove upsetting. As the need for defense against disturbing information gets stronger, curiosity gets weaker. Yet another cost is the time needed to critically review practice claims. Many clinicians accept practice beliefs without asking questions such as "Is it true?" "Is there any evidence that this claim is correct?" "Would another explanation offer greater leverage in helping this client?" Not asking questions saves time and effort. Also, if we do not have goals, tools, and beliefs that encourage such questions (e.g., to help clients, access to relevant databases describing practice-related research findings, and a belief that seeking this information is important), we are less likely to raise questions and seek answers. Use of critical thinking skills will increase responsibility for providing the help that can be offered to clients and decrease tendencies to blame clients for resistance. Increased responsibility in the absence of skills to act effectively is unpleasant. No wonder so many people opt for answers based on unfounded authority (see Chapter 7)—they

do not realize that doing so limits their freedom (Fromm, 1963). The flip side of responsibility is freedom; giving up responsibility entails giving up freedom. 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 practice-related claims leaves you at the mercy of what others think as well as 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 your willingness to risk looking.

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.

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 uncritically accept bogus claims in professional publications. Research suggests that some errors occur because of misuse of generally effective information-processing strategies. Tendencies that decrease accuracy include discounting conflicting evidence, failing to search for disconfirming evidence, 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 in-

formation from diverse sources, which places a strain on memory and on capacities to combine different kinds of data. Unique barriers to making sound decisions arise in clinical practice because of disagreements about criteria to be used to assess the accuracy of decisions, the cultural relativity of definitions of personal troubles and social problems, and the gaps in knowledge about how to achieve given outcomes. Critical thinking skills can be enhanced and helpful strategies for improving accuracy can be acquired. Evidence-based practice offers an evolving process for integrating evidentiary, ethical, and application issues, as discussed in Chapter 10.

Critical thinking should yield long-term benefits for short-term investments. The benefits of enhancing related knowledge, values, and skills far outweigh the costs, both for you and your clients. 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 may increase 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. On the other hand, 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.