Prediction in Forensic and Neuropsychology

Sound Statistical Practices

Edited by
RONALD D. FRANKLIN

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PREFACE

Considerable controversy exists between and within factions of neuropsychologists who hold any number of circumscribed views that they often attribute to the superiority of one training model over another. Differences include the number of tests to administer, which among the many available tests should be administered, and how administered tests should be interpreted. Some argue for a purely quantitative analysis where test scores are compared against established standards. Others demand inclusion of qualitative measures, such as a patient's approach to the test or the way a patient constructs a drawing. Both approaches demonstrate merit; both present limitations. Common to each approach is a reliance on the scientific method for the formation and testing of hypotheses. This work explores scientific methods common to neuropsychological approaches for establishing diagnosis and predicting future or prior performances. Particular emphasis is placed on statistical methods that are readily available to clinical practitioners.

Predictive statistics attempt to identify relationships between different data sets by using mathematical models for forecasting unknown behavior patterns from known patterns of behavior. Predictive statistics are distinguished from inferential statistics by their reliance on tests of association rather than test of differences between means. Inferential statistics concerned themselves with describing and interpreting differences occurring within or between data sets. In neuropsychological applications, these distinctions are often moot. For example, probability statements derived from inferential statistics are often used to test hypothetical differences between test scores presented by a patient and scores presented by others. From these data a diagnosis may be rendered. The rendering of a diagnosis is a form of prediction. This book explores ways that both inferential and predictive statistical models are helpful in answering clinical questions about individuals.

Most of the chapters were written for practicing professionals. An understanding of basic statistics is assumed by most authors. However, much of the work is within the grasp of practicing attorneys, physicians, and others who have practical experience working with psychological test data. Several sections were discussed in the hope that their inclusion in future neuropsychological research will produce greater clinical efficacy.

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Many others have offered advise, support, and criticism. The most vocal of these individuals follow here. Please think of them and the contributors when ideas in this work inspire you. Think of me when you are confused or disagree with content. The appreciation expressed to these individuals in no way implies their endorsement, approval, (or in some cases knowledge) of this work. Some disagree with the content, but all concerns they have expressed to me were carefully considered and often resulted in significant revisions of the work.

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1
Introduction

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As a clinical practitioner, I am often asked by my patients, or family members of my patients, to tell them what is wrong, how a problem developed, and what can be done to "fix it." As a neuropsychologist who works with forensic patients, these questions take one of four forms. First, I am asked how much brain damage the patient has. In most circumstances some other doctor has already opined that the patient has brain damage and the referral is to establish degree of damage. Less often, I am asked to opine if the patient has brain damage. Second, the patient (or the patient's attorney) is eager to determine who was at fault, or who "caused" the brain damage. Third, patients and others want to know what kind of impact will the brain damage have on the future life of the patient, the family, or their interactions. Finally, patients or family members seek treatment recommendations. This book is written to provide clinicians with sound objective methods for developing and evaluating answers to these and other questions as they arise during the neuropsychological evaluation. I am guided by the observations of Robert Abelson (1995), who described properties of data that make data *MAGIC*: magnitude, articulation, generality, interestingness, and credibility. It is my view that neuropsychological assessment is so interdependent with data analysis methodologies, that attempts to make neuropsychological inference in the absence of considering statistical implications is malpractice.

In an effort to address statistical issues that aid in the development of inference and principled argument, I cover three topical areas in this book. In doing so, I realize that other topics could have been chosen. Those selected coincide with my work experiences during the previous quarter century. Because topical areas contain substantial overlap with

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one another, the contents of each area are disbursed within the work in order to limit redundancy and aid in overall readability. First, I review statistical methods that appear with some frequency in the neuropsychology literature. The discussion is largely limited to statistical methods that are used in developing inferences regarding specific patients rather than methods that are appropriate for research. Consequently some statistical methods, such as meta-analysis and nonlinear modeling, are beyond the scope of this work. Topical area 1 includes chapters addressing hypothesis testing, Bayesian inference, statistical evidence, and neuropsychological change. Second, I present several statistical models that are less well known in neuropsychology but have shown promise in other areas of science. Topical area 2 describes Bayesian belief networks, configural frequency analysis, and Rohling's interpretive method. Finally, I consider reviews of frequent referral concerns along with proposals for expanding the evaluation models offered in each chapter. Topical area 3 reviews patient advocacy, malingering, recovery of function, and prediction of violent behavior. I do not review several common problems such as prediction of premorbid function or evaluation of traumatic brain injuries. Although much has been written about the prediction of premorbid abilities[2], it seems to me that when demographic data are the default standard against which other prediction models are compared, then the value of using neuropsychology data in this way must be questioned. Instead, chapter 5 provides a model for evaluating differences between scores taken from earlier and later testings that can compare multiple data types[3]. Chapter 6 also discusses the topic, going into considerable detail using data appropriate to parametric analysis.I have ordered the chapters so that chapters 2–6 form a background that is helpful to developing an understanding of later chapters. Readers will better understand 7–11 by reading chapters 2–6, in order of presentation, first. The remaining chapters can be read in any order. The following

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[2] As of September 10,2001 *Psych Scan* listed 243 articles using a keyword of "premorbid," 146 with a keyword of "TBI," and 1,194 under "brain injury."

[3] Statistical data in psychology have four types: nominal, ordinal, interval, and ratio. Nominal consists of named categories such as male or female. Ordinal allows classification such as greater than or less than. Interval compares items that are measured in equal distances, such as inches or feet. Ratio refers to interval data that have a known starting point. Data types are important because they determine which, if any, statistical tests are appropriate in their analysis. See Glenberg (1996) for a complete description of data types and their uses.

chapter-by-chapter descriptions may help readers identify the sections most relevant to their concerns and interest.

"Advocacy in the Forensic Practice of Neuropsychology" (chap. 2) is an extremely important issue for both forensics and neuropsychology. The term advocacy typically evokes different beliefs among attorneys and other helping professionals. Dr. Ruffalo is a seasoned forensic psychologist who reviews the importance of differing views of the topic while providing a good overview of the litigation process,

"Neuropsychological Hypothesis Testing" (chap. 3) reviews models of hypothesis testing as they are used in statistical analysis within psychology. The chapter highlights essential components of each model, comparing their relative value in the neuropsychological decision-making process. Greatest emphasis is placed on variants of the null-hypothesis model as the most frequently used hypothesis-testing process in psychology. The chapter introduces the Bayesian model of hypothesis testing and its inclusion of prior probabilities in the statistical model.

"Bayesian Inference and Belief Networks" (chap. 4) expands the Bayesian model of hypothesis testing introduced earlier. Here, the rationale for the model is explored and discussed by example. Bayesian belief networks are introduced as a multifactorial extension of modeling beliefs such as diagnosis and recovery.

"Neuropsychological Evaluations as Statistical Evidence" (chap. 5) discusses differences between legal and statistical evidence. The chapter argues that exclusive reliance on findings from null-hypothesis models as the basis for professional opinions always produces impeached evidence. I describe a Bayesian model, likelihood ratios, as a better method for establishing neuropsychological findings as evidence.

"Assessing Reliable Neuropsychological Change" (chap. 6) presents Gordon Chelune's classical review of change analysis appropriate to parametric data sets. He discusses the importance moderator variables, such as regression toward the mean and intratest consistency, have on prediction accuracy. Included in the chapter are statistical corrections for the best understood moderator effects.

"Configural Frequency Analysis in the Practice of Neuropsychology" (chap. 7) introduces an analysis model that holds much promise for neuropsychology research. Drs. von Eye, Spiel, and Rovine have demonstrated many useful research applications for the technique. This chapter is the first to explore the model in neuropsychology.

"Actuarial Assessment of Malingering: Rohling's Interpretive Method" (chap. 8) is a variation on the null-hypothesis-testing model. RIM (Rohling's interpretive method) attempts to integrate and summarize large amounts of neuropsychological data into a quantifiable interpretive model. Rohling, Langhinrichsen-Rohling, and Miller present methods for data analysis that appear to update the model first proposed by Reitan. The chapter presents a review of the malingering assessment literature that is well thought out and concisely presented.

"Recovery of Function" (after traumatic brain injury) (chap. 9) offers readers a comprehensive review of the TBI (traumatic brain injury) literature from the perspectives of a trauma surgeon and a neuropsychologist. The chapter provides reviews of measurement instruments, considering their efficacy in predicting recovery. We also provide readers with a Bayesian network model for predicting recovery that is based on the studies presented.

"The Prediction of Violent Behavior" (chap. 10) offers readers a review of applied methods for assessing and predicting violence. Dr. De Jesus-Zayas presents personal views, developed through years of experience working in the federal correctional facilities. Dr. Fleming provides reviews reflecting public policies. As in all clinical application sections, there is a Bayesian network proposed from research findings.

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2
Advocacy in the Forensic Practice of Neuropsychology

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INTERPRETATIONS OF ADVOCACY

Any discussion of witnesses might best begin with the basic distinction between a percipient or lay witness and an expert witness (Bronstein, 1999), A percipient witness is a witness who testifies to facts and perceptions, and who is not permitted to provide opinions to the court. A psychologist could be called as a percipient witness. For example, the psychologist might be asked if a given person was, in fact, their patient and was that person in session with them at 3:00 *PM* on January 4,1999. The psychologist, as a percept witness, would not be allowed to answer a question as to why that patient was in therapy with them because that would involve the psychologist providing an opinion, unless the psychologist was simply providing witness to the statement made by the patient as to why they said they were in therapy.

An expert witness is a witness who has special knowledge that the average person is presumed not to possess. An expert witness is permitted to testify as to their opinion and the basis for their opinions concerning special knowledge within the scope of their expertise. The expert may testify about that body of special knowledge or about the application of that special knowledge to the issues being addressed by the court. The present analysis addresses primarily the issue of the expert, not the percipient witness.

In the following sections, a number of different types or interpretations of advocacy are addressed: (a) scientific advocacy (evaluation-oriented advocacy), (b) case-oriented advocacy (side-

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oriented advocacy or collaborative bias), and (c) proposition advocacy (issue-oriented advocacy or issue bias).

Scientific Interpretation of Advocacy

Scientific advocacy can be considered from the perspective of typical academic discourse. The wide range of typical arguments and analysis tools used in the assessment and evaluation of research and propositions in psychology are equally available in the analysis of the opinions of experts. It remains easy for those outside the adversarial system of justice to poke fun at the system and to sincerely believe that it is both preposterous and heinous. However, if one defines advocacy as the presenting of data and argument supportive of an opinion that one has, then a fair and objective look at research in general, whether academically based or otherwise, quickly uncovers the fact that some type and degree of advocacy is involved in all research activities and publications. Examination of the meaning of advocacy from this perspective of traditional research provides one way of approaching advocacy in a legal setting that may well satisfy both the needs of the legal system and the ethics of the professions. For example, a common approach to research is to provide the method of assessment of an issue, the data so acquired, a meaningful and appropriate analysis of that data, and to some degree an advocation of an interpretation of that data. An expert in a legal situation could be seen to be taking a similar approach.

Ziskin and Faust (1988) suggested that neuropsychology as a science was not sufficiently developed to offer accurate or useful information to aid the trier of fact. A challenge to this position was voiced by Barth, Ryan, Schear, and Puente (1992) and Giuliano, Barth, Hawk, and Ryan (1997), who described Ziskin and Faust as "method skeptics" because their position addresses general issues of the scientific method as the method applies to psychology.

Case- or Side-Oriented Advocacy

One form of advocacy occurs when an expert provides or develops support for the side employing the expert; this can be termed case-or side-oriented advocacy. Though case-or side-oriented advocacy has consistently been criticized, it is generally recognized that such advocacy is prevalent and supported by marketplace economic factors. Some experts have argued that it is the work of the expert to be an advocate for the side that employs him or her. Kuvin (1986) responded to an article by Marcus (1986a) in the *American Journal of Forensic Psychiatry* by objecting to Marcus' position that a psychiatrist should

become an advocate for his or her patient during litigation of the patient's injuries. Kuvin described an oppositional dichotomy between advocacy and honesty, and indicated that the court expects and depends on the psychiatrist to provide honesty to the court. Marcus originally (1983, 1985) asserted that the testimony of experts should not be taken at face value and that bias in medical testimony should be taken into account Marcus (1986a, 1986b) presented plaintiff and defense perspectives on psychiatric disability evaluations and suggested that the psychiatrist becomes a client advocate when the client is examined for mental injury and compensation due to injury.

Although there are more sober, scientific, and less adversarial treatments of issues that finally boil down to addressing the matter of the case-or side-oriented expert such as those by presented by Huber (1991) and Foster and Huber (1997), currently some expositions attacking this type of advocacy have exploded into rather dramatic controversy with the introduction of such publications as Hagen's *Whores of the Court* (1997). Hagen barred no holds and dropped right into being about as intensely adversarial as one can be while attacking expert case-or side-oriented advocacy. She painted a very dark picture of the psychological experts in the legal arena. One could become entirely "swallowed "by the insufficiently informed and glibly presented arguments regarding psychologists' assistance in the legal system. Yet, Hagen's arguments are just as adversarial and misrepresentative as many others seen in the legal arena coming from experts who were acting with apparent side-oriented advocacy.

Case-or side-oriented advocacy can be well divided into two general categories: (a) advocacy for patients and (b) advocacy for nonpatients.

Advocacy for Patients. Advocacy for patients should be considered separately because it involves some very strong biases that are built into the helping professions from which experts in psychology and neuropsychology originate. In fact, some authorities have argued that a division of roles is necessary between experts and treating doctors so that experts can be objective and independent and treating doctors can remain advocates for their patients (Moser & Barbrack, 2000). This issue is covered in greater detail in later section.

Advocacy for Nonpatients. This is perhaps the most criticized of all forms of advocacy. It represents the use of psychological and/or neuropsychological expertise to deliberately provide expert evidence or argument regarding the position or condition of a "nonpatient" (someone with whom the expert does not have a doctor-patient relationship) that favors the position of the individual or institution that has hired the expert. Such experts are often referred to as "hired guns" and they are characterized as being experts who are willing to adopt

whatever position most benefits their employer. These experts appear to receive the most dire and serious criticism when they are employed to attack the injury that is being claimed by a patient, and this may be because such a role is in complete contradiction to what it is that those in the helping professions are supposed to be committed to doing, that is, accurately diagnosing and appropriately treating people with diseases and disorders.

Issue-Oriented Advocacy

There are many experts who may be called upon to testify because of their known or published positions on a particular issue or issues. Though issueoriented advocacy can often amount to being specific examples of scientific advocacy, at times more may be involved, because there may be other motivations for the advocacy of certain issues than the simple pursuit of scientific truth. For instance, if an expert carefully sets out to provide data, research, evidence, or arguments to support a particular issue that is often litigated, then that expert may be involved in issue bias. Issue bias is addressed further in a later section of this chapter.

Advocacy From a Clinical Practice
Treatment Perspective

Moser and Barback (2000) provided some arguments in favor of separating the role of treating psychologists from that of expert witnesses in the legal arena. Moser and Barback asserted that treating psychologists should not answer questions in the legal arena that are directed to elicit new opinions, but that such answers should come from expert witnesses. It is their assertion that percipient or "fact" witnesses should testify only about past opinions that they had about their patient. An example of such a past opinion might be to answer the question, "Was it your opinion while treating the patient that the patient's anxiety was caused by the accident they sustained on July 15, 1995?" However, the treating doctor or "fact witness" should not answer questions like "Would it be your opinion now that the anxiety you observed in 1995 is related to the anxiety Mr. Smith is presently experiencing?"; instead this type of question should be answered by an expert witness.

It is not uncommon for a person with mild brain injury to seek out an "expert" in the field of neuropsychology to get an "expert" opinion as to what is wrong with them and to ask that "expert" to provide them some psychotherapy or rehabilitation related to their brain injuiy. Furthermore, it would be typical for many of such cases to later result

in the patient's attorney requesting the expert to write a report concerning the results of their evaluation and to call the expert to testify as to their expert opinion in court when litigating the issue of compensation for the patient's injury. Imposing a requirement that the patient who goes on to litigation find another expert who has not treated them and who may never come to know the patient's condition as well as the initial evaluating/treating doctor is a considerable additional financial and emotional burden upon the patient in and of itself that must be given serious consideration before being recommended or implemented.

Another consideration in this matter is that it would certainly be more than reasonable for the injured person to ask the expert whom they have hired for litigation purposes to give them feedback concerning their test results and their diagnosis. Yet, how can this be handled without some consideration of the therapeutic impact of statements made to the patient? That is, even the simplest feedback must be seen as an educational procedure of a psychotherapeutic nature when the patient has come to be evaluated by that expert.

Hence, perhaps the statement that "treating psychologists are not expert witnesses" is too strong and absolute a statement and further examination of the subtleties of this issue is clearly indicated. It may be that in some cases, in some ways, and in some situations treating psychologists can be expert witnesses to some extent provided that proper guidelines are developed and followed.

ETHICAL INTERPRETATIONS OF ADVOCACY

Behaviors of experts are greatly influenced by the behaviors of the courts and litigating attorneys, all of which can vary greatly from state to state. Some attorneys clearly express very ethical principles of practice such as those presented by Simkins (1997): "This is crucial and if a plaintiff is less than 100% honest and accurate about this, we decline to represent them, or if we find out about it during the course of representation, if appropriate, we seek permission of the court to withdraw from the case" (p. 281). All too often, however, appropriate ethical guidelines are ignored. Although the ethical practices of attorneys are beyond the scope of this work, revision proposals recommended for the APA Ethics Code (Jones, 2001) greatly expand ethical constraints for forensic practice in psychology. Important proposed changes permeate the text in both the inttroduction and specific sections. Principles B, C, and F contain important changes as

do Standards 1.01, 3.01, 3.10, and 6.10. Standards 9 (Assessment) and 11 (Forensic Activities) hold particular salience.

Assessment (APA Standard 9)

Historically this section of the ethics code required forensic examiners to conduct a forensic examination before forming opinions (§7.02). Additionally, conclusions and recommendations had to be based on examination data. Issues of competence in administering and interpreting data were loosely addressed (§2.02) as were test construction issues (§2.03). The 2001 revision proposes adding a category to include record review as a type of examination (§901(d)). Section 902 adds subsections with added documentation requirements when patients are tested in the absence of "appropriate tests" (§9.01 (b)). Limitations on assessments using interpreters are added (§9.0 l(c)) with special caveats for delegating work to others, maintaining confidentiality, informed consent, and assessment by unqualified persons. New standards are proposed regarding informed consent, (§9.03(a)) and providing evaluations mandated by courts (§9.03(b)). Considerable revision of §9.04 provides for reduced requirements when test results are released to another professional. The section also limits release to courts, attorneys, and patients.

Forensic Activities (Standard 11)

Two important new sections are proposed for this standard. For the first time, forensic activities are defined but methods for evaluating practitioners or specialists remain vague. The second important addition (§ 11.02) defines informed consent for forensic practice in more specific terms, requiring the evaluator to anticipate potential use of assessment results, implying that informed consent should be based on a philosophy of "avoiding harm." The section expands responsibilities for court-ordered evaluations: "When an evaluation is court ordered, the psychologist informs the individual and the individual's legal representative of the nature of the anticipated forensic service before proceeding with the evaluation" (§11.02(b)).

Cross-referenced are sections addressing third-party requests for services, avoiding harm, describing the nature and results of services, informed consent, boundaries of competence, and maintaining expertise. Once approved, revisions of the ethical standards have the force of law in many jurisdictions. More restrictive "clarifications" may prove problematic in states such as Florida where the standards become

the basis for disciplinary actions and interpretations are made by nonpsychologists.

PROBLEMS CAUSED BY THE EXPERTS
AS ADVOCATES

Misleading the Defense in Civil Litigation

The expert who is an advocate may mislead his or her employer by providing them with what they may want to hear, which is supportive of their positon, but that expert is failing them in another sense by not providing them with a more objective assessment of the situation they are being paid to "assess." If the expert provides a written opinion or testimonial opinion that is actually contrary to the "more objective" and "confidential" feedback that the expert may provide to the attorney directly, then, in effect, one would have to ask whether that expert has not thereby entered into a conspiracy with the attorney to undermine justice and the law.

Blacklisting

Experts may feel forced to provide positions of advocacy because they believe that otherwise they significantly decrease the likelihood of their reemployment, a form of blacklisting. Many if not most of all insurance claims representatives have their lists (written or unwritten) of experts and know very well who will give them the opinion that they want to hear and who may not. Although I'm certain that a working claims representative would not publicly admit to such practices readily, I have been told in confidence by more than one claims representative from large and reputable insurance companies that this was in fact the case.

Attorney-Expert Relationships

Although there are likely to be exceptions, the political reality of the attorney-expert relationship is generally that more often than not the expert who develops a good working relationship with an attorney is an expert who can be counted on to come through with an opinion of some degree of advocacy for the attorney's case and to be able to present that opinion in a professionally authoritative (i.e., convincing) manner.

At least two types of nonmutually exclusive bias can be distinguished. One might be called *collaborative bias* and the other *issue bias*.

Collaborative Bias. If an expert is judged to be a ready advocate for either side of an issue depending primarily on who has hired him or her, then he or she might have what is termed collaborative bias. During examination of an expert witness, the opposing counsel most often will carefully question the expert about the frequency with which he or she has provided evaluations for the insurance company or the attorney who is calling them as a witness because this type of underlying relationship (collaborative bias) is known to exist with notable frequency. For instance, when an expert is examined by the opposing attorney, that attorney usually asks how many times the expert has worked on a case handled by the particular attorney who has called the expert or who has hired the expert in the particular case in order to suggest to the trier of fact that the expert has a collaborative bias.

Issue Bias. It is customary for attorneys to question experts called by the other side as to what percentage of their cases are ones in which they are called by the defense or by the plaintiffs, attempting thereby to suggest to the jury or judge that a bias is present in the form of the expert having a general side-oriented bias. However, the expert might, in fact, not be a case-or side-oriented advocate at all. The expert could simply have a professional opinion about an issue that effectively biases that expert toward rendering a certain type of opinion. That is, the expert may have an issue bias that is favorable to either the defense or plaintiff side of certain types of injury cases. For instance, some experts may be more skeptical than others about the presence of posttraumatic stress disorder, brain injury, or some other particular type of disability. Hence, they would be attractive to defense attorneys in cases where such injuries were claimed. Their form of advocacy also amounts to an issue bias. Alternatively, some experts may deliberately develop data, research, or other information supporting a position or issue that they champion that will make them attractive to attorneys who are litigating particular issues.

Advocacy Begets Advocacy. If the defense has an expert who is a side-oriented or issue-oriented advocate for them and the plaintiff has only an expert who is unbiased, intellectually painstakingly "honest," or taking great effort to not act as an advocate in any way, then the plaintiff may be at a serious disadvantage. Disadvantage occurs because the position of advocacy is often intended to create a compromise most likely resolved with nonpatient advantage. That is, if one advocating expert claims that the person is 50% disabled and the

other claims the person is only 10% disabled, then a trier of fact that has no reason to believe one expert versus the other would be expected to give a compromising judgment of 30% disability. Yet, if the "10% expert" is an advocate who might have otherwise judged the person to be 50% disabled if providing their most objective and independent opinion, then the disability rating would actually have be judged to be 50%, a significant difference for the plaintiff. Hence, the advocacy system as such could be seen consistently to benefit the side that hires an expert to be an advocate for their position.

The exception to this rule would of course be that too much of an extreme difference between expert opinions could backfire, particularly for the defense, against whom large damages could be potentially justified and awarded. That is, if the person is obviously 100% disabled for work purposes and the defense doctor opines that there is 0% disability and the defense rests their case upon this position, an overwhelming verdict might well be awarded to the plaintiff in a civil case. On the other hand, if the defense expert simply asserts that, yes, the person is quite disabled, perhaps even 75%, but makes a convincing argument that the disability is overreaching, exaggerated, or misrepresented, then the trier of fact may well award a verdict based on the apparent "honesty" of the defense's position. In this situation the verdict is much more friendly to the nonpatient even if the actual level of disability (if it could be discovered) was truly 100%.

In effect, one could reason that the advocacy system tends to benefit the side that can obtain the most sophisticated advocacy from an expert. Yet, if the defense gets a painstakingly "honest" or nonadvocating expert and the plaintiff has an advocate, then the plaintiff has an advantage, thus motivating the defense to find an advocate. This reasoning makes it fairly clear that in the arena of litigation advocacy creates advocacy. Hence, one way to bring more honesty to the dueling of experts is to have some way to expose or measure the advocacy of an expert because advocacy is generally successful to the degree that it is not recognized as advocacy.

There may be some benefit seen to the attorney who has an expert having both favorable issue biases and favorable collaborative biases that are unobtrusive. Such a combination can be most effective when the expert has published an authoritative article or research describing an issue salient to a case in ways that are supportive of the attorney's client. The attorney may very ably disguise this subtle form of bias.

PROBLEMS CAUSED BY FAILURE
OF ADVOCACY

Looking at both sides of the advocacy issue can also be helpful. In fact, in many cases a plaintiffs injuries or simulations are not sufficiently represented or conceptualized by the evaluation. Professionals sometimes try so strongly to avoid advocacy that they can do a disservice to the plaintiff or the defense by failing to formulate a clear opinion or present that opinion and its basis with the full degree of confidence that it deserves. What then occurs could be termed a failure on the part of the expert to advocate their own opinion.

Probabilistic Fallacy

One reason for the expert's failure to make a proper presentation of his or her opinion can be due to what might be termed "the probabilistic fallacy." A probabilistic fallacy occurrs when a professional adopts a position grounded in the assumption that all opinions concerning human behavior are based on statistical reasoning about probabilistic events and that therefore nothing can or should be opined with certainty.

It is true that the results and conclusions provided by psychologists from their research are generally based on statistical probabilities. However, it does not follow that all psychological opinion should be properly categorized as merely a guess based on statistics. Weiner (1995) provided wise advice for practitioners who are likely to face legal scrutiny of their assessments by observing that, because all test batteries produce some frequency of false negative results, "assessors will be well advised to avoid ruling out the possibility of disorder or handicap, no matter how free from indices of disorder or handicap the test findings appear to be " (p. 100). Weiner's advice appears founded on his belief that any absolute statement about a probabilistic event can expose a psychologist to embarrassment and criticisms. The psychologist could be viewed as reckless in his or her judgments or as having made unwarranted overstatements. Weiner's statement underscores the fact that psychological assessments are more than the reporting and probabilistic interpreting of test results alone. A probabilistic analysis can be applied to any diagnosis or assessment whereby some attempt will be made to classify the accuracy of those diagnoses and assessments, but that does not make the diagnoses or assessments probabilistic.

A simple example is given by the comparison of a Minnesota Multiphasic Personality Inventory-2 (MMPI-2) profile being used in

the diagnosis of depression. The MMPI-2 provides probabilistic evidence of depression or its absence. On the other hand, a clinical diagnosis can be made quite independently of statistical probabilities. For instance, depression can be diagnosed from clinical observations and reports that a patient has attempted suicide, feels great sadness after a break-up of a marital relationship, lost 20 pounds, and increased sleep from 7 to 12 hours per day. In the absence of other signs of illnesses, a diagnosis of depression must be made. Though one could apply statistical reasoning to the diagnosis and find the probability that such a diagnosis would be correct, this does not change the nature of the assessment from its being a clinical diagnosis based on awareness of the body of knowledge about depression and other illnesses as distinct from one based on probability alone. In fact, in the case of a blind MMPI-2 assessment an expert would rightly conclude that the diagnosis from the MMPI-2 is only a probable one, whereas the diagnosis from clinical examination would be a clinical diagnosis based on the presence of the signs and symptoms of depression, a diagnosis of reasonable medical or psychological certainty. In fact, the very validation of the MMPI depression scale is based on a clinical identification of persons suffering from clinical depression. The purpose of obtaining MMPI scores is to provide additional important data that will contribute to the diagnosis. Nonetheless, the criterion used to evaluate the validity of a probabilistic indicator is ultimately a clinical diagnosis. In short, the clinical diagnosis is the *sine qua non* for a diagnosis and not just one more probabilistic event. In this regard it is also true that psychological testing often provides data that add to the patient's history and manifest behavior.

The probabilistic fallacy leads some to believe that there can be no certain or absolute conclusion rendered on virtually any issue addressed. However, in clinical sciences absolute statements and conclusions are often made, conditional upon clinical exigencies. For instance, given a certain score on a psychological test index, a psychologist might well opine that there is a high probability that the individual suffered a brain injury, yet not be able on the basis of that score alone to conclude that brain injury is more than highly probable. However, if psychologists were limited to such statistical assessments, then this would put the psychologist at considerable and unnecessary disadvantage compared to the neuropsychiatrist. The neuropsychiatrist simply opines that the patient suffered brain damage on the basis of a thorough clinical examination and history taking, given the fact that in his or her assessment the presence of brain damage is determined by certain clinical signs according to defined criteria set up by the Mild Traumatic Brain Injury Committee of the Head Injury Interdisciplinary

Special Interest Group of the American Congress of Rehabilitation Medicine (1993) as presented in Table 2.1.

The neuropsychiatrist might simply identify that the patient suffered an on-site loss of consciousness witnessed by multiple observers at the time of an auto accident. The only subsequent issue then to be addressed would be to determine the severity of the brain injury and its temporary and/or lasting effects on the individual. Yet the psychologist or neuropsychologist caught by the probabilistic fallacy might be unable to diagnose brain injury if he or she relied solely on conditional statistical probabilities represented by psychological test scores. In order to provide the diagnosis of brain injury, the psychologist or neuropsychologist must make a clinical diagnosis that goes beyond the probabilistic use of test scores. A clinical diagnosis can be based on knowledge of psychological, neuropsychological, neurological, biological, or other structures and functions in the same way that the diagnosis of a broken arm bone can be made upon knowledge of what the structure and function of an arm should be like in comparison with the structure and function of the identified patient's arm. In fact, as neuropsychology has progressed in its development it appears to be moving away from statistical assessment toward clinical assessment of structure and function.

TABLE 2.1 Criteria for Mild Traumatic Head Injury

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1. Any period of loss of consciousness.

2. Any loss of memory for events immediately before or after the accident.

3. Any alteration in mental state at the time of the accident (e.g., feeling dazed, disoriented, or confused).

4. Focal neurological deficit(s) that may or may not be transient; but where the severity of the injury does not exceed the following:

    ● Loss of consciousness of approximately 30 minutes or less.

    ● After 30 minutes, an initialGCS of 13–15.

    ● Posttraumatic amnesia (PTA) not greater than 24 hours.

Functional Versus Organic Fallacy

There are many areas that can be examined in order to elucidate some of the practical implications of the conflicting roles of the expert. One interesting dichotomy is that between assigning pathology to that which is neuropathologically based and assigning it which is