

Daubert v. Merrell Dow and Expert Testimony by Clinical Psychologists: Implications and Recommendations for Practice

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The role and practice of clinical psychologists as expert witnesses is discussed in light of the United States Supreme Court decision in *Daubert v. Merrell Dow Pharmaceuticals* (1993). *Daubert v. Merrell Dow* is reviewed, and its implications for clinicians who testify as expert witnesses are presented. A distinction is made between *expert* testimony in a generic sense, and *scientific* expert testimony. By virtue of clinical psychology's adoption of the mantle of science, clinical psychologists should adhere to scientific standards of data gathering in order to qualify as scientific experts. Guidelines are provided to assist clinicians in assessing the confidence with which conclusions can be termed *scientific*, and ethical concerns are reviewed.

Expert court testimony based on scientific research has increased significantly in recent years (Huber, 1991). Clinical psychologists are among the many experts whose testimony is relied on by the courts to make sense out of human behavior that is difficult to understand. Although some assert that the knowledge base on which clinical psychologists rely in formulating expert opinions is inadequate (e.g., Campbell, 1994; Faust & Ziskin, 1988; Yuille, 1989), expert testimony by clinical psychologists has become commonplace in the courts of the United States. That such testimony also has an impact on jury decisions is suggested by studies of mock juries (Crowley, O'Callaghan, & Ball, 1994; Rogers, Bagby, & Chow, 1992; Schuller, Smith, & Olsen, 1994). The empirical evidence of the effect of expert testimony on jury decision making coupled with criticisms of the practice of expert testimony by clinical psychologists and psychiatrists make it all the more imperative that the courts exercise caution in admitting clinical-psychological expert testimony.

Several legal tools have been devised to aid the court in deter-

mining the value of expert testimony in deciding a particular case. These tools, primarily the *Federal Rules of Evidence* and the so called *Frye* rule, guide the court in determining the admissibility of evidence given by experts (Le Blanc, 1993). These tools are especially critical when the testimony is presented as being based on scientific knowledge. The *Frye* rule, derived from a 1923 Federal Court of Appeals decision, holds that for scientific evidence to be admissible in court it must be gathered using techniques that have gained general acceptance in their field (*Frye v. United States*, 1923). Failure to meet the standard of "general acceptance" under the *Frye* rule could result in the expert's being forbidden to testify.

Despite attempts to use the *Frye* rule to limit expert testimony that is based on questionable scientific grounds, so called "junk scientists" (Cornfeld, 1993; Huber, 1991) have been allowed to present opinions that are based on such grounds. Testimony of this nature may be misleading to juries and result in decisions that are at odds with scientific knowledge about a particular phenomenon. The failure of attempts to limit the admissibility of junk science has prompted a continuing search in the courts for a means of establishing the admissibility of scientific evidence and insuring its reliability and validity.

In 1993 the United States Supreme Court handed down a decision in *William Daubert et ux., etc., et al. petitioners v. Merrell Dow Pharmaceuticals, Inc.* (hereinafter cited as *Daubert*), a case involving a suit for damages against Merrell Dow Pharmaceuticals that provided a more clear-cut, though sometimes ambiguous and often quite liberal, set of guidelines for admissibility of scientific expert testimony. In *Daubert*, the court held that the *Frye* rule, including the criterion of general acceptance as the primary determinant of admissibility of evidence based on scientific techniques, had been superseded by the revised *Federal Rules of Evidence*, which were adopted by Congress in 1974. This decision has important implications for clinical psychologists and other health care professionals, particularly those whose professions have taken on the mantle of science (e.g., medicine).

In the discussion that follows, we argue that clinical psychology has adopted the mantle of science, and therefore clinical

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psychologists who testify as experts in court may be held to the requirements of *Daubert*. We then briefly review the legal aspects of *Daubert* and discuss its implications, both ethical and practical, for expert testimony by clinical psychologists. Finally, we present guidelines and caveats based on our analysis of *Daubert* that we hope will help clinicians prepare to testify as experts in court.

Clinical Psychology in Court: Science, Art, or Both?

Clinical psychologists are relative latecomers to the forensic scene, having ridden the coattails of psychiatrists into the court room. While adopting a role in court similar to that of the early experimentalists, clinical psychologists have often used a somewhat different knowledge base to ground their testimony. Specifically, clinicians have tended to rely on theoretical formulations and techniques of data gathering whose validity has not been scientifically established either for general clinical purposes or for specific use in addressing the questions often asked of clinicians by the courts. Assessment tools such as projective testing based on psychoanalytic theoretical formulations are one example of the fragile scientific basis for some expert testimony by clinical psychologists. This practice raises concerns regarding the validity and utility of their expert testimony.

The practice of clinical psychology can be conceived of as the art of applying scientific knowledge of human behavior to the analysis of the behavior and psychological states of individuals. Peterson (1991) has noted that the practice of clinical psychology is based on an assessment of the client in which the practitioner combines knowledge from the empirical scientific literature with his or her own experiential database of cases to derive a formulation of a particular client's problems. According to Peterson, assessment

is guided by a conception of the process under study, which includes a theoretical identification of the aspects of functional process that need to be examined, as well as the epistemological assumptions and axiological values that underlie the theory. The assessment is also influenced by the prior experience and knowledge of the examiner. This includes any empirical research that pertains to the class of conditions represented by the client, but also includes remembered examples of similar cases in the previous experience of the practitioner. (pp. 426-427)

Clinical judgment and art enter into the assessment process in the form of the clinician's decisions about what procedures to use for assessment. Training in the application of scientifically validated methods of data gathering is essential to the practice of professional clinical psychology. Unfortunately, the scientific literature lags behind clinical need as many of the phenomena encountered in professional practice have not been scientifically studied (Peterson, 1991). Although this is less true with certain assessment methods, many clinicians shun those methods that have been scientifically validated and continue to use less reliable methods for data gathering and client description.

Despite the doubtful scientific status of many theories and assessment techniques in the field, clinical psychologists have held themselves out to both the public and the courts as utilizing scientifically valid theories and methods in practice. In a recent public information pamphlet published by Division 12

(Clinical Psychology) of the American Psychological Association, a clinical psychologist is described as one who "is educated and trained to generate and integrate *scientific* [italics added] and professional knowledge and skills so as to *further psychological science* [italics added], the professional practice of psychology and human welfare." A reasonable reading of this definition is that generation of scientific knowledge and the integration of that knowledge into practice is a central aspect of the practice of clinical psychology.

In addition to the pamphlet just mentioned, Division 12 has made other commitments to scientific clinical psychology. A recent report to the Board of Division 12 from the Task Force on Promotion and Dissemination of Psychological Procedures recommends that clinical psychology emphasize training in and dissemination of "empirically validated" approaches (1993).

Given these strong public positions by organized clinical psychology, it is fair to expect clinical psychologists who provide expert testimony to use the most scientifically tested theories and methodologies in formulating their opinions. It is our view that clinical psychologists have adopted the mantle of science and are therefore likely to be held to the same standards by courts as other professions that have done the same (e.g., medicine). In *Daubert*, the United States Supreme Court has outlined standards for admissibility of scientifically based testimony. We turn now to a discussion of that decision.

Daubert v. Merrell Dow: Criteria for Admitting Expert Testimony

In deciding whether to admit the testimony of a psychologist, or any other person, as an expert witness in a particular case, Federal courts rely on the *Federal Rules of Evidence* (*Federal Rules of Evidence of United States Courts and Magistrates*, 1975). States are free to adopt their own evidentiary rules; some choose to use the *Federal Rules* as a model. As noted earlier, federal and state courts have historically applied the *Frye* general acceptance standard as well.

In *Daubert v. Merrell Dow*, the United States Supreme Court has set forth certain nonexclusive criteria to be used in determining admissibility of scientific expert testimony. The *Daubert* case involved Merrell Dow's manufacture and sale of Bendectin, a drug marketed to pregnant women as an over-the-counter remedy for nausea and vomiting. By the early 1980s, thousands of lawsuits had been brought against Merrell Dow alleging that the use of Bendectin had resulted in the birth of infants with severe birth defects.

In 1984, *Daubert* was initiated by the families of two children born with major birth defects. The lawyers alleged that the children's injuries had occurred as a result of their mother's ingestion of Bendectin. At this point in time there were more than 30 epidemiological studies of Bendectin, none of which clearly established a link between Bendectin and major birth defects (Zonana, 1994).

Experts testifying on behalf of the families attempted to refute the findings of these studies by offering conclusions drawn from three sources: in vitro and in vivo animal studies; pharmacological studies comparing the structure of Bendectin with known teratogens; and a reanalysis of the previously published epidemiological studies. The district court granted Merrell Dow

summary judgment. In its decision, the court focused on the epidemiological data that failed to establish a link between Bendectin and birth defects. The court refused to admit the reanalyses of the epidemiological studies on the grounds that they had not been published or subjected to peer review. The Court of Appeals for the Ninth Circuit affirmed, citing the failure of the reanalyses to meet the *Frye* general acceptance standard (Zonana, 1994).

The Supreme Court agreed to review *Daubert* in order to address long-standing divisions among the lower courts regarding the relationship between the *Federal Rules of Evidence* and the *Frye* rule when determining the admissibility of scientific evidence by expert testimony. Federal Rule of Evidence 702 establishes the threshold criteria for admission of expert testimony: (a) whether the scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue and (b) whether the expert is sufficiently qualified to render such testimony based on his or her knowledge, skill, experience, training, or education. Standards regarding what constitutes an expert vary among courts. Some courts look to objective measures such as degrees, licenses, and professional accomplishments. Others apply Rule 702 liberally, determining that an expert's qualifications go to the weight of the evidence rather than to its admissibility.

Once the proposed expert is deemed qualified in a field of expertise and the relevance of the proffered evidence has been established, Federal Rule 703 looks to whether the facts or data in the particular case on which an expert bases his or her opinion are of a type reasonably relied on by experts in that field. As with the application of Rule 702, judges have traditionally enjoyed wide latitude in the application of Rule 703. Interpretation of the phrase "of a type reasonably relied upon" has been left to the judge's discretion within the context of the particular case at hand.

The *Frye* general acceptance standard has traditionally been invoked by courts as another level of inquiry. This standard evolved out of a 1923 case involving the admissibility of evidence derived from a systolic blood pressure deception test. Evidence based on the deception test was ruled inadmissible because it had not yet gained general acceptance in the scientific community. Following *Frye*, some courts began to impose this general acceptance standard to expert testimony: inquiring whether the expert had employed a well-founded methodology "sufficiently established to have gained general acceptance in the particular field in which it belongs" (*Frye v. United States*, 1923).

It is important to note that in federal court and those state courts adopting the *Federal Rules*, even if an expert's testimony has met certain hurdles, it may be deemed inadmissible if the testimony's potential for unfair prejudice is judged to substantially outweigh its value in assisting the trier of fact to reach a decision (Rule 403). For example, some forms of expert testimony on theories of heritability of intelligence might be excluded from a trial in which there were strong overtones of racial or ethnic bias, where the proffered expert testimony was deemed to be inflammatory to the jury or otherwise might interfere with a reasoned verdict.

In *Daubert*, the Supreme Court has clarified the criteria for determining the admissibility of expert testimony, holding that

the *Frye* general acceptance rule is superseded by the adoption of the *Federal Rules of Evidence* (1975). According to the Court, there is nothing in the *Federal Rules* as a whole, or Rule 702 in particular, which indicates that general acceptance is a necessary precondition to the admissibility of scientific evidence. The Court's rationale was based on the notion that the general acceptance test imposes a strict standard for admissibility that is at odds with the more relaxed approach to opinion testimony envisioned in the *Federal Rules of Evidence*.

The proper framework for assessing admissibility of scientific testimony, according to *Daubert*, is found in the language of Rule 702. The trial judge must act as a "gatekeeper," preliminarily deciding whether the scientific testimony is both relevant and reliable. That the evidence must be reliable is implied by the use in Rule 702 of the term *scientific knowledge*. According to the Supreme Court, "The adjective 'scientific' implies a grounding in the methods and procedures of science." Similarly, "the word 'knowledge' connotes more than subjective belief or unsupported speculation." In order to qualify as scientific knowledge, expert testimony must be based on conclusions derived from a scientific method. According to the Court, in any case involving scientific evidence, "*evidentiary reliability* [italics added] will be based upon *scientific validity* [italics added]."

As to Rule 702's requirement that the evidence be helpful to the trier of fact, the Court declares that the proper test is one of "fit." There must be "a valid scientific connection to the pertinent inquiry" in order for scientific expert testimony to be admissible. That is, the court must be able to discern that scientific research has been done that is pertinent to the legal questions at hand, that the evidence to be presented is based on that research, and that the expert utilized scientifically reliable methods for gathering the data on which conclusions are based.

The Court sets forth a number of factors that should be considered when determining whether a theory or technique qualifies as scientific knowledge that will assist the trier of fact. In brief, these factors are as follows: (a) Is the theory or technique based on a methodology that can or has been tested? (b) Has the theory or technique been the subject of peer review and publication? (c) What is the known or potential rate of error? and (d) Does the technique enjoy general acceptance within the scientific community? (the old *Frye* rule). It is important to note that this analysis extends only to the question of the admissibility of *scientific* evidence and leaves open the question of standards for the admission under Rule 702 of "technical or other specialized knowledge."

The Court concludes its analysis with a reminder that the inquiry into admissibility should be a flexible one, "based solely on principles and methodology." It notes that any concerns regarding the potential harm to jurors' decision making of exposure to bad science are more appropriately countered by methods such as cross-examination, presentation of opposing evidence, and proper instruction to the jury, rather than by rigid standards such as general acceptance.

Given the extent to which organized clinical psychology has publicly adopted the mantle of science, the Supreme Court's decision in *Daubert* bears great significance for clinical psychologists who testify in court. Gold, Zaremski, Lev, and Shefrin (1993) summarized the significance of *Daubert* succinctly:

The significance of the *Daubert* decision lies, first and foremost, in its ringing endorsement of the principles that there is a difference between science and pseudoscience, and that it is the judge's role to ensure that testimony offered as "scientific" meets a minimum test of validity before it may be put before the jury. (p. 2966)

We now turn to a brief discussion of those implications from the perspective of professional practice.

Scientific or Generic Experts: Which Are We?

The *Federal Rules of Evidence* do not distinguish between scientific and other expert testimony per se. Rather, experts of any ilk must satisfy the court as to the nature and quality of their expertise on the basis of standards that vary according to whether the expert is claiming a scientific basis for his or her testimony, or whether other bases are claimed (e.g., "technical or other specialized knowledge"). Thus, it is conceivable, for example, that a defendant in a criminal case might attempt to call a skilled novelist as an expert on the emotional impact of life experiences on a person's behavior under circumstances similar to those that led to the commission of a crime of passion. A Nobel Prize winning novelist who was a student and explicator of human experience as illuminated in the world's great literature might conceivably be able to offer expert testimony under the *Federal Rules of Evidence* if a court were convinced of the uniqueness and validity of that novelist's knowledge. However, the novelist's testimony would not be scientific, but might conceivably be admitted as "other specialized knowledge."

In a similar fashion, a skilled and experienced plumber might be called upon to render expert testimony, based on his or her technical knowledge of plumbing, as to the adequacy of installation of a drainage pipe. However, he or she would not be permitted to testify as to the underlying physical or engineering science principle that could account for why the pipe might have failed under stress. The addition of the scientific component to professional practice means that testimony derived from that practice must meet certain requirements and places the decision as to admissibility of that testimony squarely under *Daubert*.

Clinical Psychological Testimony as "Scientific"

The *Specialty Guidelines for Forensic Psychologists* (Committee on Ethical Guidelines for Forensic Psychologists, 1990) promulgated by Division 41 (American Psychology-Law Society) of the American Psychological Association contain several sections that exhort psychologists to "provide services in a manner consistent with the highest standards of their profession" (II.a, p. 657) and to "present to the court, regarding the specific matters to which they will testify, the boundaries of their competence, the factual bases (knowledge, skill, experience, training, and education) for their qualification as an expert, and the relevance of those factual bases to their qualification as an expert on the specific matters at issue [italics added]" (III.B, p. 658).

Organized clinical psychology has clearly endorsed and promulgated a scientific identity for itself. Given the prominent role of scientific knowledge in Division 12's public statements, as well as in the training of professional psychologists (Peterson,

1991), it seems reasonable to expect that clinical psychologists will present their expertise to the courts as having a scientific basis. The majority of doctoral level clinical psychologists have extensive formal training in scientific and research methods. The scientific basis of psychological knowledge thus plays a focal role in the training of professional clinical psychologists and, putatively, in our practice.

Clinical psychologists are not typically asked to testify in court solely on the basis of their personal or professional experiences alone, although both may play a role in shaping opinions on specific issues. Rather, the courts have come to expect, and perhaps implicitly assume, that the clinical psychologist brings to the legal setting a specialized set of skills and knowledge that has a scientific basis, and has used those skills and knowledge in a fashion that enables the clinical psychologist to fulfill the role of an expert witness defined by the *Federal Rules of Evidence*.

As noted earlier, other writers have expressed the view that psychological expert testimony should play a broader evidentiary role in the courtroom. Taslitz (1993) argues that psychological expert testimony should provide judges and juries with evidence of the client's character in order to ensure that justice is individualized. In addition, he posits such testimony should be viewed as a means of promoting the "cathartic function" of justice, as opposed to being merely aimed at "truth-seeking." In order to accomplish these ends, Taslitz asserts, the courts should permit the psychologist to go far beyond scientifically based assessment methods into the arena of clinical judgment, personality dynamics description, and even psychological "storytelling." The presumption is that clinical psychologists possess some definable body of knowledge that is not scientific but that will be of assistance to the court in understanding a particular individual. In contrast, we believe that clinical-psychological expert testimony is admissible largely as a result of psychology's posture as a discipline and profession that is heavily rooted in science. It follows that the guidelines proposed in *Daubert* apply to clinical psychologists. What constitutes a scientific basis for a clinical psychological expert opinion?

The court in *Daubert* has adopted a view of science that is distinctly positivistic. The court cites the work of the philosophers of science Carl Hempel and Karl Popper, specifically. Despite the calls for development of a different philosophy of science for psychology (e.g., Fishman, 1988; Gergen, 1985), much of psychological science and scientific methodology continues to be grounded in the positivistic or neopositivistic philosophy of science. The debate is heated as to which approach to psychology will be most fruitful, but entry into that debate is beyond our scope in this article. It seems to us that, in the arena of the courts, clinical psychologists have to be prepared to play by the court's rules (although there are also contrary positions, cf. Goldman, 1986).

Furthermore, the view of science adopted by the Supreme Court in *Daubert* is marked by a recognition that "scientific conclusions are subject to perpetual revision" and an understanding that "the scientific project is advanced by broad and wide-ranging consideration of a multitude of hypotheses." Nonetheless, although the Court clearly appreciates the evolving nature of scientific knowledge, they firmly adopt scientific testability as a fundamental criterion against which to judge the admissibility of scientific evidence. The Court's view of science

is also consistent with the view of clinical psychology outlined earlier as a scientifically based profession. On the basis of the Court's criteria for admissibility of scientific evidence, we now turn to a discussion of some of the qualities that a clinical psychologist should bring to his or her practice in the courts.

Guidelines for Clinicians' Testimony

Both ethical and practical considerations arise for psychologists who testify as experts. The *Ethical Principles of Psychologists and Code of Conduct* (American Psychological Association, 1992) include four standards of professional conduct that appear clearly applicable to psychologists' expert testimony (other standards may also apply in specific instances) and are specifically reinforced by the Court's decision in *Daubert*. Standard 1.06, "Basis for Scientific and Professional Judgments," enjoins psychologists to rely on scientific and professionally derived knowledge in their practice. Standard 2.02, "Competence and Appropriate Use of Assessments and Interventions," requires psychologists to select assessment instruments on the basis of research indicating the appropriateness of the instruments for the specific issue at hand and enjoins psychologists to actively work to prevent misuse of those instruments. Standard 2.04, "Use of Assessment in General and With Special Populations," requires familiarity with the psychometric properties and limitations of assessment instruments used in the practice of psychology. Finally, Standard 2.05, "Interpreting Assessment Results," requires psychologists to directly state reservations they may have about the accuracy and limitations of their assessments.

In addition to the *Ethical Principles of Psychologists and Code of Conduct*, the *Specialty Guidelines for Forensic Psychologists* (Committee on Ethical Guidelines for Forensic Psychologists, 1990) address similar issues from a specialized perspective. Although only the *Ethical Principles of Psychologists and Code of Conduct* are enforceable by the American Psychological Association, both sets of principles and guidelines provide the ethical basis for many of the practical considerations we now address.

Although clinical psychologists rely on their own logical and conjunctive reasoning to draw conclusions about individuals in rendering expert opinions, they should, if our argument is sound, approach the process of arriving at those conclusions in a particular way and should be prepared to defend their methods within the boundaries defined in *Daubert*. In contrast to the novelist who may derive knowledge of human emotion and behavior by reading other's novels, or through nonscientific observation of people and their interactions, a clinical psychologist should be expected to adhere to certain guidelines and standards of data gathering and synthesis in rendering a conclusion. This assertion leads us to make four broad recommendations to clinical psychologists who testify as expert witnesses under our interpretation of *Daubert* as requiring that evidentiary reliability be based on scientific validity.

Use Theoretically and Psychometrically Adequate Data-Gathering Instruments

Probably the most scientific aspect of clinical psychology has been its development of empirically validated measurement

tools. Consistent with the *Specialty Guidelines for Forensic Psychologists*, data should be gathered using the most scientifically reliable and valid assessment tools available. This implies that a clinical psychologist should be acutely aware of the limitations of various assessment tools from both a theoretical and psychometric perspective, particularly ones that are not standardized or that have limited scientific research findings documenting their reliability or validity.

It is also important for clinical psychologists to recognize that assessment instruments may be inadequate not only because they fail to measure a particular construct adequately, but because the construct itself may be theoretically inadequate, poorly defined, or so broad as to be meaningless. A good example of this sort of problem in a clinical construct is the concept of *denial* often invoked in explaining why substance abusers fail to seek treatment. Traditional conceptions of denial based on uncontrolled clinical observation and theorizing view it as a process seen in most, if not all, substance abusers and assert that it is a characteristic of the "disease" of substance abuse. More recent analyses of denial based on findings from the social psychological literature implicate the confrontational situation that often characterizes initial interactions between substance abuse clients and counselors as the main cause of "denial" (Miller & Rollnick, 1991). Thus, a more thorough, scientifically based analysis of a widely used but scientifically untested concept has resulted in a vastly different and more clinically and practically useful conception of a commonly observed behavior. When a more scientifically adequate theory was brought to bear on the behavior, a very different characterization of its causes and potential change emerged. The point to be made is that clinicians need to question not only the psychometric adequacy of their assessment instruments, but also the adequacy of the underlying theoretical construct on which the instrument is based.

A more forensically relevant example of the latter can be seen in the promotional materials for the Ackerman-Schoendorf Scales for Parental Evaluation of Custody (ASPECT), a procedure to arrive at recommendations in child custody cases (Ackerman & Schoendorf, 1992). The ASPECT combines data from a variety of widely used assessment procedures (including the Minnesota Multiphasic Personality Inventory, or MMPI, the clinical assessment tool that is most widely used by clinical psychologists in preparing expert opinions) with data from a structured clinical interview in a regression equation that yields an index of putative parental adequacy for each parent. Recommendations based on the ASPECT procedure are touted as being highly correlated with judge's custody decisions in actual cases. The research on which this assertion is based appears to have been methodologically adequate, but the relevance of judges' decisions as the criterion variable for determining validity of the ASPECT is questionable. In addition, the construct validity of the various measures combined in the ASPECT with regard to parenting appears not to have been questioned. Although the ASPECT may be a useful procedure, its use should be based, in accordance with Standard IV.A.4 of the *Specialty Guidelines for Forensic Psychologists*, on a clear recognition that it has not yet been shown to be correlated with variables associated with good parenting, a construct that has resisted attempts at adequate scientific definition. It is incumbent on the

clinical psychologist using the ASPECT to specifically delineate these sorts of limitations as part of any expert testimony.

Draw Conclusions Using Scientifically Validated Theoretical Positions

In the previous section we addressed the issue of using scientifically validated data-gathering methods. Once data is gathered, it is of no use to the court unless it can be integrated into a theoretical account of events and presented in a fashion that assists the court in resolving the legal issues at hand. In this section we address the issue of the scientific validity of the *theory* used to make sense of the data gathered.

There are many competing theories of behavior on which clinical psychologists draw in reaching diagnoses and treatment recommendations. There is also a large scientific literature that has addressed empirically testable predictions based on those theories. However, many theoretical constructs are presented by clinicians in expert testimony for which there is no scientific validation, or for which the scientific basis is very slim. The current emergence of "syndrome" testimony is a case in point. Although it is possible to identify common behavior patterns among persons who are known to have suffered traumatic experiences of various types, syndrome theory, and often the testimony based on it, goes well beyond this possibility to state that "all" persons who suffer particular types of trauma show characteristic behaviors. Some practitioners have even been willing to engage in reverse logic and state that because an individual demonstrated a particular behavior pattern, trauma must have occurred. Wood (1994) has discussed at length the potential harm of such reasoning in an analysis of the Parental Alienation Syndrome (Gardner, 1992). Although the fit between syndrome theories and particular legal questions is often good, these theories have not been scientifically tested. This lack of scientific testing makes any conclusions or accounts of events that are based on syndrome theories problematic. Even if the data relied upon are gathered using scientifically valid methods, if the theoretical explanation underlying the data is faulty, the data may be presented in a fashion that misleads the trier of fact.

Clinical psychologists who base expert opinions on such theories need to make that fact clear to the court and to explain the limitations of their opinions as a result. Failure to do so could result in an abuse of the expert role and a distortion of the fact-finding process of the case in question.

Weigh and Qualify Testimony on the Basis of the Adequacy of Theory and Empirical Research on the Question Being Addressed

The questionable nature of syndrome testimony leads to another issue that is important for clinical psychologists to consider before offering expert testimony. Many questions clinical psychologists are asked to address have not been specifically or adequately studied in the scientific literature, or if they have, the data are equivocal or incomplete (cf. Peterson, 1991, p. 426). Testimony of any kind with regard to those sorts of questions is likely to be speculative and of limited scientific validity, no

matter how sound the clinician's reasoning in drawing conclusions. In *Daubert* the court specifically cites evidence of the scientific reliability and validity of the methods and theories on which expert testimony is based as touchstones for determining whether particular testimony is admissible. As professional psychologists, clinicians must adhere to "the highest standards" of practice, which include being well-informed regarding the empirical status of the methods and theories on which they rely, and the scientific status of those methods and theories with regard to their ability to answer specific questions posed by the courts in specific cases.

Most courts require experts to testify with a "reasonable degree of professional certainty" as to their conclusions. Although the exact meaning of this phrase is unclear, it almost certainly requires that an expert adhere to the standards of his or her profession in reaching conclusions.

Be Prepared to Defend the Scientific Status of Your Data-Gathering Methods During the Process of Qualification as an Expert Witness

Clinical psychologists who testify as experts need to be aware of the psychometric properties of the instruments they use and the strengths and limitations of those instruments. Most important, they must be prepared to justify their use of less psychometrically valid instruments over ones that have better psychometric properties. Although attorneys do not always examine prospective witnesses on these issues, a well prepared expert witness will always be ready to address them on the witness stand. An ethical expert witness will also be prepared to report the limitations of his or her data-gathering procedures and discuss how those limitations affect the conclusions drawn from those data.

The foregoing discussion may lead many readers to despair of the possibility of responsible, ethical clinical psychologists testifying as experts with regard to any but a very few circumscribed legal questions. This may seem especially true given the not uncommon perception that attorneys only want experts whose opinions strongly support their client's position. We are far more optimistic about clinical psychological testimony than this discussion might indicate. In the next section we present a decision-making guide that we believe can help facilitate responsible courtroom practice by clinicians and still allow for participation in a variety of legal proceedings. It is clear, however, that there are many areas in which clinical psychologists must be cautious about the nature and strength of their testimony.

Deciding Whether and How to Testify

There are few easily applied criteria available for gauging the adequacy of the scientific basis of expert testimony. *Dauber* itself provides guidelines that should be considered, and we have devised a rudimentary grid system that can help focus the clinician's thinking regarding the scientific status of theory and method in a particular area and aid in warning attorneys and the courts of the limitations of the testimony to be offered.

As noted earlier, the court in *Daubert* decided that a "four-pronged inquiry" (Emmerich, 1994) was necessary to deter-

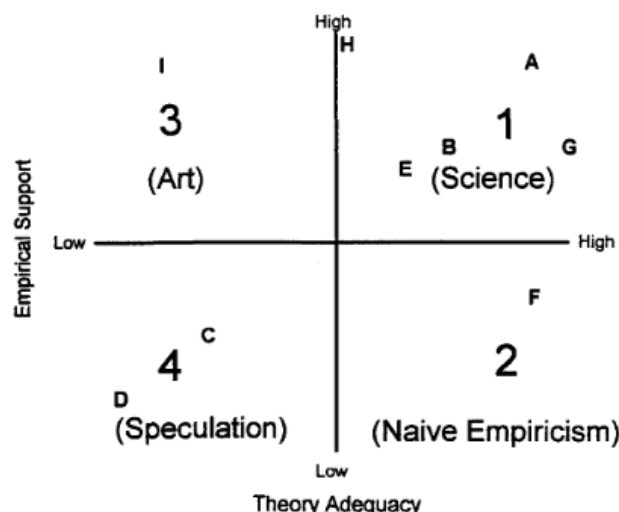


Figure 1. Grid for determining the confidence with which forensic conclusions can be stated. Examples are as follows: A = cognitive effects of alcohol and drugs; B = competency; C = parenting; D = child sexual abuse syndrome; E = battered woman syndrome; F = prediction of violence; G = aspirin as headache remedy; H = Einstein's theory of relativity; and I = literary theory of behavior. Conclusions can be stated with varying degrees of confidence depending on the interaction of theory adequacy with empirical evidence. When a legal-psychological question falls in Quadrant 1, expert conclusions can be drawn with greatest confidence, all other things being equal. Expert conclusions on issues that fall in Quadrant 4 can be made with least confidence. Conclusions on questions in areas that fall in Quadrants 2 and 3 should be qualified to reflect the relative adequacy of current psychological knowledge in those areas.

mine the admissibility of scientific expert testimony. The four prongs are to be applied to the methods of data gathering on which testimony is based, not the conclusions drawn. Although the court is not required to consider the "prongs" in any particular order, *Daubert* requires (a) that scientific expert testimony be based on scientifically tested or testable theories; (b) that the theories and data-gathering methods on which testimony is based have been "subjected to peer review and publication"; (c) that known error rates in the application of the theory be explicitly stated; and (d) that the theory be generally accepted within the applicable field. This fourth prong is clearly derived from the *Frye* standard, which has been retained but subordinated by *Daubert*.

Figure 1 presents a rough guide to characterization of the limitations of clinical forensic conclusions that is based on an estimation of the degree of empirical support that exists for particular theoretical formulations and/or measurement techniques, crossed with the logical adequacy and articulation of the theoretical constructs being used. The grid is meant to be a rough guide. The position occupied by a particular forensic issue or procedure on the grid is to a large extent based on the individual clinician's evaluation of the adequacy of empirical and theoretical support for a particular position. By using this grid, as well as considering the four-pronged test outlined in *Daubert*, a clinician can come to some conclusions about the

adequacy of information gathering procedures on which an expert opinion might be based. The clinician can then choose data-gathering procedures that are most closely in accordance with the standards set forth by the court for admitting scientific expert testimony.

Questions that fall in Quadrant A, which we have labeled *Science* are those for which there is both well articulated and logical theory and empirically well validated methodology for data gathering. In addressing questions in the science quadrant, clinical psychologists can feel confident that there are scientifically adequate methods available and should make use of them. For example, with regard to questions regarding the behavioral and cognitive effects of alcohol on a defendant's capacity to form particular mental states or conform behavior to legal requirements, there are a number of well articulated theories of alcohol's cognitive and behavioral effects (e.g., Pihl, Peterson, & Lau, 1993; Steele & Josephs, 1988), as well as well validated methods for determining blood alcohol concentrations. Questions in this area can be answered quite adequately, and with a relatively high level of confidence in view of the requirements of *Daubert*.

Other commonly asked forensic questions can likewise be placed on the grid. The frequently posed question of parenting adequacy falls into the quadrant of the grid we label *Speculation*. That is because there is little agreement as to what behaviors, cognitions, personality variables, and so forth characterize a good parent. There is much speculation as to what those variables might be but little empirical support for any general constellation of variables that can be adequately measured. Thus, any broad statements about a particular individual's parenting adequacy are likely to be difficult to defend from a scientific standpoint. This problem may result as much from the nature of psychological theories currently available (which tend to emphasize individual psychological or behavioral variables rather than interactional and contextual ones) as from our inability to describe what it is that makes a good parent. The answer to that question, to paraphrase Gordon Paul's (1969) classic question regarding efficacy of psychotherapy, may be better framed with regard to defining which parent, under what living conditions, with what skills would be better given this specific child or set of children. The clinician who is offering testimony in this regard needs to be prepared to report the limitations of currently available data-gathering procedures and theories for answering questions of parenting adequacy.

Issues falling in the *Naive Empiricism* and *Art* quadrants of the grid should also be approached with caution by psychologists who testify as experts. When a forensic question falls into one of these quadrants, the testifying psychologist should be prepared, and in fact should actively endeavor, to alert the court as to the limitations of scientific knowledge in these areas.

Although it is clear that opinions may vary as to where particular psychological constructs and types of testimony fall on the grid, and our own placements of various questions could be argued, engaging in this process may aid psychologists in adhering to the *Specialty Guidelines for Forensic Psychologists* and the *Ethical Principles of Psychologists and Code of Conduct* and in defending his or her opinions and the basis for them during the process of qualification as an expert witness in courts in which *Daubert* governs.

Conclusion

We have attempted to draw out the implications of *Daubert v. Merrell Dow* for provision of expert testimony by clinical psychologists. Although we believe that our position makes professional, scientific, and ethical sense, we realize that there are other, at times quite variant, views of the nature and role of clinical psychological testimony in the court. Our intention is not to provide rigid rules for testimony, but to urge clinical psychologists to think more deeply and clearly about their role in assisting the courts in reaching legal conclusions. We hope to stimulate both debate and research, as well as to provide a means by which good (e.g., scientific) clinical psychological testimony is emphasized and increased in frequency, and bad (e.g., speculative and scientifically unvalidated or junk science) testimony is reduced and perhaps eliminated.

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