

NO. 119A97

EIGHTEENTH DISTRICT

IN THE SUPREME COURT OF NORTH CAROLINA

JANNETT J. MARTIN and
RICHARD W. MARTIN,
Plaintiffs/Appellees,

v.

JOHN MICHAEL BENSON and
INDUSTRIAL ELECTRIC, INC.,
Defendants/Appellants.

From Guilford County
No. 93 CVS 9803

IN THE OFFICE OF
CLERK SUPREME COURT
OF NORTH CAROLINA

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BRIEF AMICUS CURIAE OF THE
AMERICAN PSYCHOLOGICAL ASSOCIATION,
THE NORTH CAROLINA PSYCHOLOGICAL ASSOCIATION
AND THE NATIONAL ACADEMY OF NEUROPSYCHOLOGY

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INTEREST OF AMICI CURIAE

The American Psychological Association ("APA"), a nonprofit scientific and professional organization founded in 1892, is the major association of psychologists in the United States. APA has more than 151,000 members and affiliates, including the vast majority of psychologists holding doctoral degrees from accredited universities in the United States. Among APA's major functions are promoting psychological research, promulgating the results of that research, and assuring proper understanding of that research.

APA has submitted amicus briefs in important cases that raise issues to which psychological research, opinion, and testimony pertain. The United States Supreme Court has relied on APA's amicus briefs in cases of national importance. See, e.g., Maryland v. Craig, 497 U.S. 836, 855

(1990); Hudgson v. Minnesota, 497 U.S. 417, 437 n.24, 454 n.38 (1990).

The North Carolina Psychological Association, with approximately 900 members, represents the interests of licensed psychologists in the state. The National Academy Of Neuropsychology, with over 3,000 members, is the only independent professional society representing clinical neuropsychology.

The three organizations have requested to participate as amici in this case because of their concern that the Court of Appeals fundamentally misapprehends the important role of one branch of psychology -- known as neuropsychology -- in the diagnosis of brain dysfunctions. Amici believe the current state of this science dictates the following conclusions: (1) because of the complex interrelationship between medicine and psychology in evaluating the etiology of brain dysfunctions, physicians may have far less understanding of neuropsychological testing or the method of differential diagnosis than do neuropsychologists; (2) neuropsychologists -- by virtue of their educational training in research methodology and the biological bases of mental illnesses -- have an understanding of neurological disorders of brain function; (3) neuropsychologists' expertise in neuropsychological evaluation and differential diagnosis enables them to provide significant assistance to a factfinder in determining the cause of brain dysfunction and excluding other causes.

STATEMENT OF THE CASE

On November 28, 1990, a truck owned by defendant Industrial Electric, Inc. and driven by defendant John Benson struck a car driven by plaintiff Jannett Martin. Following the incident, Ms. Martin experienced headaches, loss of memory, and other mental problems. Plaintiffs sued defendants for damages, and the parties stipulated to defendants' negligence.

At trial, plaintiffs presented expert testimony by Dr. James Adelman, a neurologist who specializes in treating headaches and who had treated Ms. Martin following her collision. Dr. Adelman testified that, in his opinion, the collision had caused Ms. Martin a closed head injury.

Subsequently, defendants presented expert testimony by Dr. Elizabeth Gamboa, a neuropsychologist. Dr. Gamboa testified that she holds a doctorate in clinical psychology. She specializes in brain injuries and currently works as part of a brain injury team at a rehabilitation hospital. She is on the Department of Public Instruction's list of neuropsychologists who are qualified to diagnose brain injuries.

Dr. Gamboa examined Ms. Martin, administered psychological tests to her, and examined her medical records and additional test results. Based on this information, Dr. Gamboa testified that Ms. Martin's headaches, memory problems, and other symptoms resulted from the medications she had been taking since the collision and from depression.

Dr. Gamboa testified that, in her opinion, Ms. Martin had not suffered a closed head injury.

At the close of trial, the jury awarded plaintiffs damages of \$50,000. Plaintiffs appealed. Their principal contention on appeal was that neuropsychologists are categorically unqualified to testify regarding the existence and physical causes of brain dysfunction.

A divided Court of Appeals agreed and granted plaintiffs a new trial on the ground that the trial court abused its discretion in admitting the testimony of Dr. Gamboa. See Martin v. Benson, 481 S.E.2d 292 (N.C. App. 1997). The court acknowledged that North Carolina Rule of Evidence 702 provides broad grounds for admission of expert testimony. See Martin, slip op. at 8. The Court emphasized, however, that North Carolina law prohibits psychologists from practicing medicine. See N.C. Gen. Stat. § 90-270.3 (1996). Because "it is evident that the practice of psychology does not include the diagnosis of medical causation," Martin, slip op. at 9, the court held that Dr. Gamboa's testimony had "invade[d] the field reserved for the practice of medicine in the state." Id. at 10. The majority did not discuss Dr. Gamboa's specific professional credentials or the factual grounds for her testimony but held categorically that psychologists may not testify as experts to the physical causes of brain injuries.

Judge Lewis dissented. His review of this Court's and the Court of Appeals' interpretations of Rule 702 led him

to emphasize three points. First, trial courts have extremely broad discretion to decide whether expert testimony should be permitted under Rule 702. Martin, slip op. (dissent) at 1. Second, an expert need not have any specific professional training; he or she need only have a stronger basis than the finder of fact for drawing a conclusion about the subject at issue. Id. at 1-2. Third, case law from North Carolina and other jurisdictions runs strongly contrary to the majority's conclusion. Id. at 2-3. Based on these legal considerations and on Dr. Gamboa's professional credentials, Judge Lewis concluded that the trial judge properly had exercised his discretion in permitting Dr. Gamboa's testimony.

SUMMARY OF ARGUMENT

The Court of Appeals' ruling that trial courts may not allow neuropsychologists to testify as experts regarding the physical causes of brain dysfunction misapplies the liberal standard for admission of expert testimony under North Carolina Rule of Evidence 702. The ruling also contradicts decisions of this Court and the substantial majority of courts that have considered this question or analogous issues.

At the same time, the decision below reflects a significant misunderstanding of the diagnostic process regarding psychological dysfunction, as well as of the science and practice of neuropsychology. It would be highly unfortunate if a categorical exclusion of useful expert

testimony -- unjustified both legally and factually -- were to become the rule in this State.

ARGUMENT

I. THE COURT OF APPEALS' DECISION CONFLICTS DIRECTLY WITH STATUTORY LAW AND WITH NUMEROUS PRIOR CASES.

The Court of Appeals' ruling that a neuropsychologist is not qualified to testify as an expert regarding the existence and physical cause of brain dysfunction failed to recognize the breadth of the evidentiary rule governing admissibility of expert testimony. In addition, the majority completely ignored several precedents that flatly preclude its holding. The reasons the majority gave for its decision are baseless and cannot cure its error.

A. The Rules of Evidence Command Liberal Admission of Expert Opinion Testimony and Vest Trial Courts With Significant Discretion To Determine Admissibility.

The admissibility of expert testimony is governed by N.C. Gen. Stat. § 8C-1, Rule 702 (1996) (hereinafter "Rule 702"). Rule 702 provides as follows:

If scientific, technical or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion.^{1/}

^{1/} Rule 702 was amended in 1995 to include additional subparts, and the portion quoted in the text was renumbered Rule 702(a). Because that amendment was not effective at the time this suit was filed, see Commentary, N.C. Gen. Stat.

The plain language of the rule makes clear that any person qualified in one of several ways may offer expert opinion testimony, as long as the testimony can help the trier of fact to decide a factual issue.

Courts repeatedly have emphasized the breadth of Rule 702. In particular, this Court has held that Rule 702 does not establish any specific standard of expertise for a witness; rather, "[e]xpert testimony is properly admissible when it can assist the jury in drawing certain inferences from facts and the expert is better qualified than the jury to draw such inferences." State v. Evangelista, 319 N.C. 152, 163, 353 S.E.2d 375, 383 (1987).^{2/} Accordingly, "[i]t

^{1/} (...continued)

§ 8C-1, Rule 702 (Michie 1996) (noting that 1995 amendment applies to actions filed on or after Jan. 1, 1996), amici will refer to the quoted language as Rule 702.

^{2/} Under this standard, subjects on which courts have held expert testimony sufficiently helpful to the jury include a defendant's capacity to form specific intent, see State v. Burgess, 345 N.C. 372, 480 S.E.2d 638 (1997); bloodstain pattern interpretation, see State v. Goode, 341 N.C. 513, 529, 461 S.E.2d 631, 640-41 (1995); the effect of alcohol abuse on mental condition, see State v. Daniels, 333 N.C. 756, 763, 429 S.E.2d 724, 728 (1993); whether a defendant had used cocaine and the drug's effect on his behavior, see Evangelista, 319 N.C. at 164, 353 S.E.2d at 384; identification of a footprint, see State v. Bullard, 312 N.C. 129, 140-41, 322 S.E.2d 370, 376 (1984); battered child syndrome, see State v. Wilkerson, 295 N.C. 559, 569, 247 S.E.2d 905, 911 (1978); the effect of post-traumatic stress disorder (PTSD) on a rape survivor's behavior in reporting the crime, see State v. Hughes, 114 N.C. App. 742, 746-47, 443 S.E.2d 76, 79, disc. review denied, 337 N.C. 697, 448 S.E.2d 536 (1994); effectiveness of medical treatments, see State v. Howard, 78 N.C. App. 262, 270, 337 S.E.2d 598, 604 (1985), appeal dismissed, 316 N.C. 198, 341 S.E.2d 581 (1986); the medical character and symptoms of PTSD, see State v. Huang, 99 N.C. App. 658, 664-65, 394 S.E.2d 279, 283-84, disc. review denied, 327 N.C. 639, 399 S.E.2d 127 (1990);

(continued...)

is not necessary that an expert be experienced with the identical subject matter at issue or be a specialist, licensed, or even engaged in a specific profession." Id., 319 N.C. at 164, 353 S.E.2d at 384.^{3/} The limits of a witness' expertise can be exposed on cross-examination. State v. Daniels, 337 N.C. 243, 271, 446 S.E.2d 298, 315 (1994), cert. denied, 115 S.Ct. 953 (1995).

This Court has held repeatedly that "[t]he trial court has broad discretion in the determination and admission of expert testimony." State v. East, 1997 N.C. Lexis 27, *21 (N.C. March 7, 1997).^{4/} A trial court's determination that a witness has the requisite skill to give expert testimony is a finding of fact that an appellate court may reverse only

^{2/} (...continued)
profiles of child sexual abusers, see State v. Parks, 96 N.C. App. 589, 592, 386 S.E.2d 748, 750-51 (1989); and suitability of parents for custody and visitation rights, see Hamilton v. Hamilton, 93 N.C. App. 639, 646, 379 S.E.2d 93, 96 (1989).

^{3/} See also Goode, 341 N.C. at 529, 461 S.E.2d at 640-41; Bullard, 312 N.C. at 140, 322 S.E.2d at 376; In the Matter of Chasse, 116 N.C. App. 52, 446 S.E.2d 855 (1994) (holding that refusal to admit psychologist's testimony as to matters outside his clinical experience was an abuse of discretion); Robinson v. Seaboard Sys. R.R., 87 N.C. App. 512, 361 S.E.2d 909 (1987), disc. review denied, 321 N.C. 474, 364 S.E.2d 924 (1988); Howard, 78 N.C. App. at 270, 337 S.E.2d at 603-04.

^{4/} See also Goode, 341 N.C. at 529, 461 S.E.2d at 640-41; Evangelista, 319 N.C. at 164, 383 S.E.2d at 384; Bullard, 312 N.C. at 140, 322 S.E.2d at 376; State v. Davis, 106 N.C. App. 596, 418 S.E.2d 263, 267 (1992), disc. review denied, 333 N.C. 347, 426 S.E.2d 710 (1993); Parks, 96 N.C. App. at 592, 386 S.E.2d at 750; Howard, 78 N.C. App. at 270, 337 S.E.2d at 603-04.

for an abuse of discretion. See id. at *22-*23.^{5/} Thus, a "trial court's finding that a witness is qualified as an expert will not be reversed unless there is no evidence to support it." State v. Jones, 337 N.C. 198, 210, 446 S.E.2d 32, 39 (1994) (emphasis supplied).^{6/}

The majority in this case did not inquire whether Dr. Gamboa was better qualified than the jury to ascertain the cause of Ms. Martin's symptoms, such that her opinion could help the jury determine that cause. Nor did the majority inquire whether any evidence supported the trial court's admission of Dr. Gamboa's testimony. Instead, the majority concluded that a neurologist was better qualified than a neuropsychologist. That conclusion, even if it were correct, would be irrelevant given the narrow scope of review this Court has mandated under Rule 702.

B. The Court of Appeals' Decision in This Case Flatly Contradicts Previous Decisions of This Court and the Court of Appeals.

The Court of Appeals characterized the question before it as one of first impression. In fact, the courts of this State long ago precluded both the Court of Appeals' ultimate holding' and its erroneous basis for that holding.

^{5/} See also State v. Jones, 337 N.C. 198, 210, 446 S.E.2d 32, 39 (1994); Evangelista, 319 N.C. at 164, 353 S.E.2d at 384; Bullard, 312 N.C. at 144, 322 S.E.2d at 378; Parks, 96 N.C. App. at 592, 386 S.E.2d at 750.

^{6/} See also Bullard, 312 N.C. at 140, 322 S.E.2d at 376; State v. King, 287 N.C. 645, 658, 215 S.E.2d 540, 548-49, death sentence vacated, 428 U.S. 903 (1976); Howard, 78 N.C. App. at 270, 337 S.E.2d at 603.

The Court of Appeals has held a psychologist qualified to testify to the existence and physical cause of brain dysfunction. In Horne v. Marvin L. Goodson Logging Co., 83 N.C. App. 96, 349 S.E.2d 293 (1986), the Industrial Commission denied the appellant's claim for disability benefits based on a brain injury. A neurosurgeon had testified that the appellant was not disabled, but a neuropsychologist had testified that he was. The Court of Appeals found that the commission improperly had excluded the neuropsychologist's testimony as incompetent. Accordingly, the court remanded the case, instructing the commission to accept the neuropsychologist's testimony as competent and simply to weigh its credibility. See 83 N.C. App. at 98-99, 349 S.E.2d at 294-95. The instant case closely resembles Horne. A medical specialist gave competent expert testimony on one side; the issue was whether a neuropsychologist's contrary testimony was competent to be weighed by the factfinder. The Horne court held that it was.^{2/}

^{2/} The Court of Appeals in this case tried but failed to distinguish Horne. After acknowledging that the issue in Horne was the neuropsychologist's competence to testify, see Martin, slip op. at 10, the majority inexplicably suggested that Horne held only that "a properly qualified neuropsychologist is competent to testify as an expert about psychological and emotional conditions of a patient without expressing an opinion as to the organic causes of those conditions." Martin, slip op. at 10 (emphasis supplied). In Horne, however, the verbatim statement of the commissioner, based on which the court remanded the case, was that "to the extent that the testimony of [the neuropsychologist], which if believed, would tend to establish that he has [such an injury], said testimony is neither accepted as competent nor credible to do so but rather, is in direct conflict with the competent and credible medical testimony of [the

(continued...)

The courts of this State similarly have held psychologists competent to testify as experts in a wide range of other settings involving medical causation, including the presence of intoxication and stress, see State v. Jackson, 340 N.C. 301, 308-09, 457 S.E.2d 862, 867 (1995); symptoms and characteristics of sexually abused children, see State v. Kennedy, 320 N.C. 20, 31-32, 357 S.E.2d 359, 366-67 (1987); the effects of cocaine on physical and mental responses, see Evangelista, 319 N.C. at 163-64, 353 S.E.2d at 383-84; the presence of post-traumatic stress disorder, see State v. Davis, 106 N.C. App. 596, 418 S.E.2d 263, 266-67 (1992), disc. review denied, 333 N.C. 347, 426 S.E.2d 710 (1993); sexual abuse survivors' responses to trauma and stress, see State v. Huang, 99 N.C. App. 658, 661-62, 394 S.E.2d 279, 281-82, disc. review denied, 327 N.C. 639, 399 S.E.2d 127 (1990); mental retardation, see State v. Teeter, 85 N.C. App. 624, 629-30, 355 S.E.2d 804, 807-08, appeal dismissed, 320 N.C. 175, 358 S.E.2d 67 (1987); and the probable cause of death by suicide, see Harvey v. Raleigh Police Dept., 85 N.C. App. 540, 355 S.E.2d 147, disc. review denied, 320 N.C. 631, 360 S.E.2d 86 (1987).

2/ (...continued)
neurosurgeon] that no such permanent brain injury resulted." Horne, 83 N.C. App. at 98, 349 S.E.2d at 294 (quoting opinion of Industrial Commission; second bracketed phrase added by Court of Appeals; emphasis and other bracketed phrases supplied). The issue in Horne was precisely the same as the issue here -- a neuropsychologist's competence to testify to the existence and physical cause of brain dysfunction.

Moreover, this Court and the Court of Appeals explicitly have rejected the precise basis for the holding in this case -- the assumption that medical doctors own an exclusive right to testify as to issues of medical causation. In Maloney v. Wake Hospital Systems, Inc., 45 N.C. App. 172, 262 S.E.2d 680 (1980), the trial court had excluded the testimony of a nurse about the cause of a patient's death because "she is not licensed to diagnose or to prescribe treatment for her field of expertise." 45 N.C. App. at 176, 262 S.E.2d at 682 (quoting trial transcript). The Court of Appeals held that the trial judge had abused his discretion. The court explained that "[a nurse's] expertise is different from, but no less exalted than, that of the physician." 45 N.C. App. at 179, 262 S.E.2d at 684. Accordingly, her testimony could not be excluded simply because she was not a physician:

The license, if any, held by a witness may properly be one fact for the court to take into account. However, the controlling factors for the court's consideration must be the education, knowledge, information, skill, and experience of the witness. The exclusion of [the nurse's] testimony, on grounds that such exclusion is mandated as a matter of law, constitutes reversible error.

45 N.C. App. at 179-80, 262 S.E.2d at 684. This Court adopted the reasoning and holding of Maloney in State v. White, 340 N.C. 264, 457 S.E.2d 841 (1995), cert. denied, 116 S.Ct. 530 (1995), stating bluntly that "[n]urses are qualified to render expert opinions as to the cause of a physical injury even though they are not licensed to diagnose illnesses or to provide treatment, and there is no basis for

any preference of licensed physicians for such medical testimony." 340 N.C. at 294, 457 S.E.2d at 859 (emphasis supplied).^{8/}

C. None of the Reasons the Court of Appeals Gave for Its Holding Justifies That Holding.

The Court of Appeals nevertheless held that Rule 702 was trumped by another legislative enactment: the prohibition on the practice of medicine by psychologists. The majority held, in effect, that a psychologist's testimony about the existence and physical cause of brain dysfunction constituted the unlawful practice of medicine. That holding, as explained above, cannot withstand this Court's decision in State v. White that nurses are competent to testify to

^{8/} Numerous other jurisdictions have agreed with this Court's conclusion that nonphysicians should be able to testify as experts on medical subjects. "The kinds of witnesses whose opinions courts have received, even though they lacked medical training . . . are legion." Jenkins v. United States, 307 F.2d 637, 644 (D.C. Cir. 1962). See, e.g., Hopkins v. Dow Corning Corp., 33 F.3d 1116, 1124-25 (9th Cir. 1993) (toxicologist), cert. denied, 115 S.Ct. 734 (1995); Hermes v. Pfizer, Inc., 848 F.2d 66, 69 (5th Cir. 1988) (pharmacist); Wells v. Ortho Pharmaceutical Corp., 788 F.2d 741, 744 (11th Cir.), cert. denied, 479 U.S. 950 (1986) (pharmacologist); Backes v. Valspar Corp., 783 F.2d 77, 79 (7th Cir. 1986) (chemist); Chalupa v. Industrial Commn., 109 Ariz. 340, 509 P.2d 610 (1973) (chiropractor). A leading evidence treatise argues that requiring experts on "medical" matters to have a medical license or training would be "ill-advised," first, because the line between other disciplines and medicine often is too indefinite to admit of a practicable separation of topics and witnesses;" and second, "because some of the most capable investigators have probably not needed or cared to obtain a license to practice medicine." 2 Wigmore on Evidence § 569 at 789 (Chadbourn Rev. 1979), quoted in Maloney v. Wake Hospital Systems, Inc., 45 N.C. App. 172, 178, 262 S.E.2d 680, 683-84 (1980).

physical causation. But even aside from White, the majority's reasoning fails on its own terms.

In concluding that the legislature had reserved to physicians the right to provide expert testimony on medical causation, the Court of Appeals failed even to mention the statute that defines the practice of medicine. That statute, which also forbids the unlicensed practice of medicine, states in relevant part:

Any person shall be regarded as practicing medicine or surgery within the meaning of this Article who shall diagnose or attempt to diagnose, treat or attempt to treat, operate or attempt to operate on, or prescribe for or administer to, or profess to treat any human ailment, physical or mental, or any physical injury to or deformity of another person.

N.C. Gen. Stat. § 90-18 (1996). Nothing in that statute possibly could be read to include giving expert testimony on physical causation. Moreover, "the intent of [the bar on unlicensed practice of medicine] is to protect the public against those who would hold themselves out as medical doctors who would expect compensation in return for those services." State v. Nelson, 69 N.C. App. 638, 642, 317 S.E.2d 711, 714 (1984). Expert testimony in no way implicates that policy.

The majority based its statutory holding solely on the statutory definition of the practice of psychology, N.C. Gen. Stat. § 90-270.2 (1996), and the prohibition on the practice of medicine and optometry by psychologists, § 90-270.3. The majority concluded from those provisions that "the practice of psychology does not include the diagnosis of

medical causation." Martin, slip op. at 9. This case, however, is about expert testimony, a matter about which the statutory definitions of medical and psychological practice say nothing at all but for which Rule 702 sets an explicit standard.^{2/}

The majority also tried to bolster its holding by positing a division of authority among recent decisions in other states. The division is illusory. The majority correctly noted two recent decisions that affirmed the competence of neuropsychologists to testify as experts on the existence and physical cause of brain dysfunction. See Cunningham v. Montgomery, 143 Ore. App. 171, 177-78, 921 P.2d 1355, 1358-59 (1996) (reversing "refus[al] to admit [neuropsychologist's] testimony solely because [she] was not a medical doctor"); Hutchison v. American Family Mutual Ins. Co., 514 N.W.2d 882, 886-88 (Ia. 1994) (specifically rejecting "contention that [statutory] restrictions on the practice of psychology . . . pose limits on the competence of

^{2/} Even if diagnosis were at issue in this case, the majority's conclusion would be in error. As the Administrative Code makes clear:

Health services in psychology include the diagnosis, evaluation, treatment, remediation, and prevention of: mental, emotional, and behavioral disorder, disability, and illness; substance abuse; habit and conduct disorder; and psychological aspects of physical illness, accident, injury, and disability.

21 N.C. Admin. Code § 54.2701 (1997) (emphasis supplied). Thus, the law of this State leaves no doubt that psychologists are legally qualified to diagnose the causes of mental dysfunction.

psychologists to testify as experts beyond the limits in the rules of evidence"). The majority ignored both of those carefully reasoned opinions, instead purporting to follow the Georgia Supreme Court's cursory opinion in Chandler Exterminators, Inc. v. Morris, 262 Ga. 257, 416 S.E.2d 277 (1992). The Georgia court, however, held only that "[t]he trial court did not abuse its discretion in striking portions of the affidavit of the psychologist." 262 Ga. at 259, 416 S.E.2d at 279. That case-specific ruling lends no support to the broad holding in the instant case: that a trial court categorically does abuse its discretion when it does not bar completely a psychologist's testimony on physical causation.^{10/}

II. PSYCHOLOGISTS ARE QUALIFIED TO GIVE EXPERT TESTIMONY
DIAGNOSING THE CAUSES OF PSYCHOLOGICAL CONDITIONS.

A. Courts Have Widely Recognized that Psychologists
Are Experts in Diagnosing the Existence and Causes
of Brain Dysfunctions.

As the vast majority of courts have recognized, because psychologists "are entitled to diagnose, treat and correct mental conditions within their field it follows that they are also competent to testify regarding the causes of such conditions." Hooper v. Industrial Commn. of Arizona,

^{10/} Moreover, a subsequent decision recognized that the Georgia Legislature enacted a statutory amendment that effectively overrode Chandler, compelling the conclusion that a neuropsychologist should have been allowed to testify that a blow to the head caused psychological problems. Drake v. Larue Constr. Co., 451 S.E.2d 792, 794 (Ga. App. 1994), cert. denied, 1995 Ga. Lexis 427 (Ga. 1995).

617 P.2d 538, 539 (Ariz. 1980). Thus, it is well established that psychologists are qualified to testify as to whether an individual is suffering from a mental disorder that has a physical cause -- including brain damage.^{11/}

^{11/} See Phillips v. Lincoln Natl. Life Ins. Co., 978 F.2d 302, 304-05 (7th Cir. 1992) (citing the evaluation of a neuropsychologist that a beneficiary of an ERISA plan had organic brain syndrome as part of the basis for evaluating whether this fell within the mental illness limitation of the plan); Kinsey v. Kolber, 431 N.E.2d 1316, 1329 (Ill.App. 1982) (upholding trial court's decision to allow psychologist to testify based on psychological tests that plaintiff had organic brain syndrome); Weider v. Senebouthyrath, 583 N.Y.S.2d 94, 94 (N.Y. S. Ct. App.Div. 1992) (explaining that since a neuropsychologist can testify regarding a brain injury, neuropsychologist's affirmation in a personal injury action is enough to raise an issue of fact); Buckler v. Sinclair Refining Co., 216 N.E.2d 14 (Ill. App. 1966) (rejecting argument that because psychologists are not medical doctors, they are not qualified as experts on existence or diagnosis of organic injuries or conditions); James v. State, 489 So. 2d 737, 739 (Fla.), cert. denied, 477 U.S. 909 (1986) (allowing testimony of psychologist regarding defendant's organic brain damage); Price v. Mitchell Construction Co., 482 So. 2d 869, 872-73 (La. Ct. App.) (upholding trial judge's finding regarding plaintiffs' organic brain damage, which was based largely on psychologist's diagnosis and which ran counter to testimony of psychiatrists), cert. denied, 484 So. 2d 671 (1986); Gore v. Daniel O'Connell's Sons, Inc., 461 N.E.2d 256, 258 (Mass. App. 1984) (accepting diagnosis of psychologist regarding accident victim's "chronic, mild, organic syndrome associated with brain trauma"); In Interest of Doe, 617 P.2d 826, 829 (Haw. Ct. App. 1980) (accepting court-appointed psychologist's diagnosis that appellant has "no gross signs of organic impairment of function"); Collins v. State, 361 So. 2d 333, 336 (Miss. 1978) (quoting testimony of clinical psychologist that appellant suffered from organic brain syndrome); Simmons v. Mullen, 331 A.2d 892, 898 (Pa. Super. 1974) (holding psychologist qualified as an expert on existence of brain damage, stating that "[i]t is not essential that an expert witness be a medical practitioner to testify on organic problems"); Hill v. State, 473 So. 2d 1253, 1255 (Fla. 1985) (accepting psychologist's testimony regarding defendant's epilepsy). So far as amici are aware, the only court to reach a contrary conclusion is the Maryland Court of Special Appeals. See Spann v. Bees, 327 A.2d 801 (Md. App. 1974), superseded by statute as stated in Yount v. (continued...)

Similarly, a significant majority of courts have allowed psychologists and neuropsychologists to testify as to the specific physical cause of an individual's organic brain syndrome.^{12/} Courts have allowed neuropsychologists to testify that an individual's brain damage resulted from an automobile accident or other physical blow,^{13/} that it

^{11/} (...continued)

State, 636 A.2d 50 (Md. App. 1994). Cf. Robert L. Richardson & Russell L. Adams, Neuropsychologists as Expert Witnesses: Issues of Admissibility, The Clinical Neuropsychologist 295, 297 (1992) ("Apparently each and every jurisdiction which has ruled on the current brain functioning issue since 1980 has allowed clinical psychologists and neuropsychologists to testify as expert witnesses on the current condition of the brain.").

^{12/} See Robert L. Richardson & Russell L. Adams, Neuropsychologists as Expert Witnesses: Issues of Admissibility, The Clinical Neuropsychologist 295, 298 (1992); Hutchison v. American Family Mut. Life Ins. Co., 514 N.W. 2d 882, 886 (Iowa 1994) ("The majority of the states that have passed on the issue have permitted such testimony.").

^{13/} Drake v. Larue Constr. Co., 451 S.E.2d 792, 794 (Ga. App. 1994), cert. denied 1995 Ga. LEXIS 427 (under amendment to Georgia statute, neuropsychologist should have been allowed to testify that blow to head caused psychological problems); Hutchison v. American Family Mut. Life Ins. Co., 514 N.W.2d 882 (Iowa 1994) (psychologist's testimony that plaintiff's auto accident did not result in brain injury was admissible even though psychologist was not board certified in neuropsychology); Brannon v. Sharp, 554 So. 2d 951 (Ala. 1990) (upholding trial court's decision to allow psychologist to testify that headaches and chronic pain were caused by auto accident); Valiulis v. Scheffels, 547 N.E.2d 1289, 1296 (Ill. App. 1989) (upholding trial court's decision to allow neuropsychologist to testify that collision had caused plaintiff's multiple sclerosis); Shaw v. Martin, 399 N.W.2d 450, 454 (Mich. App. 1986) (stating that a conflict between plaintiff's neuropsychologist and defendant's doctors as to whether auto accident had caused him to have memory loss and other cortical dysfunction made it a jury question); Sanchez v. Derby, 433 N.W.2d 523 (Neb. 1989) (holding that trial court abused its discretion in limiting testimony of a neuropsychologist regarding brain damage suffered by

(continued...)

resulted from premature birth and respiratory distress,^{14/} that it resulted from electrical shock,^{15/} or that it resulted from exposure to toxins or other substances.^{16/} As

^{13/} (...continued)

plaintiff in an automobile accident); Buckler v. Sinclair Ref. Co., 216 N.E.2d 14, 19-20 (Ill. App. 1966) (upholding trial court's decision to allow psychologist to testify that plaintiff suffered brain damage arising from an auto accident); Winder v. Martinez, 545 P.2d 88 (Ct. App. 1975), cert. denied, 546 P.2d 71 (1976) (psychologist held qualified to testify as expert that car accident caused change in intellectual function); Hughes v. Royal-Globe Ins. Co., 496 So. 2d 1241, 1247 (La. App.), cert. denied, 497 So. 2d 1388 (La. 1986) (affirming trial judge's conclusion, partly based on testimony of a psychologist, that worker was entitled to worker compensation because accident aggravated his psychological problems -- possibly including Alzheimer's disease); In re Stephanie, 456 A.2d 268 (R.I. 1983) (neuropsychologist testified that fall caused behavioral problems organic in origin). But see Executive Car and Truck Leasing, Inc. v. DeSerio, 468 So. 2d 1027 (Fla. Dist. Ct. App. 1985) (psychologist unqualified to testify that accident caused organic brain damage). The holding in DeSerio was overturned by statute. Fla. Stat. Ann. § 490.003(4) (West 1990) (defining psychology to include "neuropsychological evaluation, diagnosis, prognosis, etiology, and treatment").

^{14/} Fabianke v. Weaver, 527 So. 2d 1253, 1257 (Ala. 1988) (upholding decision of trial court to allow neuropsychologist to testify that premature birth and resulting respiratory distress had caused plaintiff's complications and could cause a future learning disability).

^{15/} Cf. Price v. Mitchell Constr. Co., 482 So. 2d 869, 872 (La. Ct. App.), cert. denied, 484 So. 2d 671 (1986) (relying in part on psychologist's testimony to uphold trial court's decision that plaintiff's brain damage existed well before the electrical shock he received in an industrial accident and did not result from that accident); Gast v. City of Fountain, 870 P.2d 506, 512 (Colo. Ct. App. 1993), cert. granted in part on other grounds, cert. denied in part, 1994 Colo. LEXIS 310 (upholding district court decision to admit testimony by neuropsychologist that plaintiff had suffered organic brain injury (from his contact with electrical lines)).

^{16/} See Shilling v. Mobile Analytical Services, Inc., 602 N.E.2d 1154 (Ohio 1992) (reversing the trial court's decision (continued...))

many of these courts expressly have recognized, it would be incongruous to hold that, although psychologists are experts in diagnosing and treating neurological disorders, they cannot assist the trier of fact in understanding the nature and cause of those disorders.^{17/}

^{16/} (...continued)
to exclude the testimony of a neurotoxicologist/psychologist that plaintiffs suffered brain damage from drinking water contaminated with gasoline); Seneca Falls Greenhouse & Nursery v. Layton, 389 S.E.2d 184 (Va. App. 1990) (relying on neuropsychologist's testimony that plaintiff was suffering from panic attacks related to being sprayed with insecticide; in reaching this conclusion, the neuropsychologist seemed to have considered other causes such as exposure to the pesticide and chronic exposure to organophosphates); Nichols v. Colonial Beacon Oil Co., 132 N.Y.S.2d 72, 76 (S. Ct. App. Div. 1954) (relying on testimony of a neuropsychologist that decedent had postoperative delirium probably as a result of taking drug, medicine, or alcohol). In other cases, such testimony has been admitted without issuance of a reported decision discussing admissibility issues. See People v. Sixto, 17 Cal. App. 4th 374, 388-89 (Cal. App. 4th 1993) (discussing testimony by neuropsychologists that criminal defendant was brain damaged and had an acute psychotic episode triggered by alcohol or drugs); State v. Bey, 610 A.2d 814 (N.J. 1992) (discussing testimony by neuropsychologist that criminal defendant had suffered brain damage as a result of preutero exposure to alcohol, consumption of drugs and alcohol, and early head injuries). The only cases of which amici are aware that reached contrary results are easily distinguished. In Kriewitz v. Savoy Heating & Air Conditioning, 396 So. 2d 49 (Ala 1981), the court relied on Alabama's licensing statute for psychologists to preclude psychological testimony on the cause of brain damage (in that case allegedly carbon monoxide poisoning). In a more recent decision, Fabianke v. Weaver, 527 So. 2d 1253 (Ala. 1988), the court held that a psychologist was qualified to testify that speech dysfunction may have been caused by oxygen deprivation.

^{17/} The Oregon Supreme Court in Sadow v. Weyerhaeuser Co., 449 P.2d 426 (Or. 1969), reached its conclusion based upon a survey of the relevant psychological literature. The court correctly concluded that psychologists are competent to determine "'antecedent circumstances'" to mental disorders or disabilities, and to achieve the goals of diagnosis: "'completely describing the etiological factors causative of (continued...)"

Thus, in attempting to draw such a distinction in this case, the Court of Appeals has taken a position contrary to the great weight of relevant authority.

B. Psychologists By Training and Experience Are Qualified to Provide Expert Testimony Concerning Causation of Psychological Conditions.

1. Psychological Training and Practice are Rigorous, Scientific, and Relevant to the Issues at Bar.

Psychologists must adhere to rigorous training standards and are required to complete demanding training programs. The minimum training required for psychologists includes rigorous academic coursework, relevant research endeavors, and intensive practical experience leading to the

^{17/} (...continued)
disorder,' " including the "'differentiat[ion] between organic and functional disorders.'" Id. at 428-29. The New Mexico Supreme Court also put it well:

It consequently appears to us a curious proposition that the legislature has enough confidence in the competence of non-physician health care providers to grant them licenses to practice their professions, and to authorize treatment by them to injured compensation claimants, but to have intended that those same health care providers be prohibited from testifying concerning the cause of injury which lies squarely within the areas of their competency.

Madrid v. University of California, 105 N.M. 715, 737 P.2d 74, 76 (1987). Cf. Howle v. PYA/Monarch, Inc., 288 S.C. 586, 344 S.E.2d 157 (Ct. App. 1986) (in holding that a psychologist qualified by education or experience may testify as an expert on causation, court emphasizes statutory authorization to diagnose and treat complaints embraced by psychological practice).

doctoral degree.^{18/} The doctoral program requires demonstrated competence in theories of normal and abnormal behavior; clinical diagnostic skills; the full range of approaches to treatment; ethics and professional standards; and research design and methodology. Clinical psychologists' training further includes extensive clinical rotations followed by at least one year of a full-time, closely supervised internship experience in a hospital, medical center, or clinic.

Doctoral candidates receive considerable training in the biological aspects of mental disorders, including physiological psychology, comparative psychology, neuropsychology, and pharmacology. In addition to coursework specifically focused on brain structure and central nervous system mechanisms, clinical coursework includes substantial applied biological education. Courses on psychopathology review in detail organic bases for mental disorders. In many graduate programs, students also receive training in "health" or "medical" psychology, where they become familiar with the physiology and symptoms of medical disorders such as hypertension and cardiac infarction, as well as with the

^{18/} This training takes an average of 7.1 years to complete. National Research Council, Summary Report 1987: Doctorate Recipients from United States Universities (Washington, D.C.; National Academy Press, Preliminary release (1989)). This is in addition to the undergraduate degree, which typically involves a psychology major.

psychological factors related to the cause and management of these disorders.^{19/}

Receipt of the doctorate alone is not sufficient to enable a recipient to practice psychology independently. Before a psychologist may offer services (including evaluations and diagnoses) to the public for a fee as an independent practitioner, all 51 jurisdictions require him or her to be licensed or certified. No profession requires a higher degree of education and training in mental and behavioral processes.^{20/}

Recognition of psychology as an independent profession providing mental health services on a coequal footing with physicians is expressed in statutory and regulatory law and in private-sector practices. See Blue Shield v. McCready, 457 U.S. 465 (1982); Virginia Acad. of Clinical Psychologists v. Blue Shield of Virginia, 624 F.2d

^{19/} See generally APA, Guidelines and Principles for Accreditation of Programs in Professional Psychology (1996). In contrast, physicians not specializing in neurology are required to have very little training specifically related to mental or emotional disorders or to central nervous system deficits. Moreover, basic medical education includes only very limited casework or clinical experience with mentally disordered or brain-injured persons, while psychological education involves extensive experience with such patients.

^{20/} To ensure further a high quality of professional practice, APA has promulgated and states have adopted ethical codes for psychologists. APA, Ethical Principles of Psychologists, 36 Am. Psychologist 633 (1981). APA also has promulgated General Guidelines for Providers of Psychological Services, 42 Am. Psychologist 7 (1987), which specify minimally acceptable levels of performance for psychologists engaged in providing services. These guidelines are supplemented with Specialty Guidelines for the Delivery of Services by Clinical Psychologists, 36 Am. Psychologist 640 (1981).

476 (4th Cir. 1980), cert. denied, 450 U.S. 916 (1981). For example, most relevant federal statutes require direct recognition of clinical psychologists as persons qualified to deliver services without mandatory referral or supervision by a physician.^{21/} In particular, the Civilian Health and Medical Program of the Uniformed Services (CHAMPUS),^{22/} the single largest health plan in the United States, pays for psychologists' independent services "when rendered in the diagnosis or treatment of a mental disorder by a CHAMPUS-authorized qualified mental health provider." See 32 C.F.R. §§ 199, 119.4(c)(3)(ix) (emphasis supplied). Diagnostic tests are covered "when required by the diagnosis" reached by the psychologist. 32 C.F.R. § 199.4(b)(vii). Thus, the federal government recognizes psychologists have exactly the expertise that the Court of Appeals' opinion says they lack.

2. Neuropsychology Is a Respected and Established Scientific Discipline Expert in Identifying the Existence, Causes, and Consequences of Organic Brain Damage.

a. The Discipline of Neuropsychology.

Neuropsychology is a specialty within psychology that integrates the educational, scientific, and professional

^{21/} See, e.g., Federal Employees Compensation Act, 5 U.S.C. § 8101(2) (1976); Vocational Rehabilitation Act, 29 U.S.C. § 723(a)(1) (1976); Health Maintenance Organization Act, 42 U.S.C. § 300-e-1 (1976); 42 C.F.R. §§ 110.101, 110.104 (1980); Disaster Relief Act, 42 U.S.C. § 5183 (1976); 42 C.F.R. § 38.2(e) (1980); Comprehensive Employment and Training Act, 29 U.S.C. §§ 801 et seq. (1976) (repealed); 29 C.F.R. § 94.4(bb) (1978).

^{22/} 10 U.S.C. §§ 1071 et seq. (1976); 32 C.F.R. § 199.12(c)(3)(iii)(a) (1981).

contributions of the discipline of psychology with relevant developments in the neurosciences.^{23/} Neuropsychology brings a unique perspective to assessing the etiology of mental disorders.

In addition to the rigorous training required of all psychologists, neuropsychologists have specialized training in the science of brain-behavior relationships, including functional neuroanatomy;^{24/} clinical diseases; clinical and behavioral neurology; psychophysiological principles underlying pathology; sociocultural influences on behavior; principles of assessment and interviewing; principles of test construction, administration, and validation; and specialized neurodiagnostic technologies.^{25/}

^{23/} "Developed as a clinical science within the past 60 years, neuropsychology is the study of the relationship between brain structure and function. It attempts to understand patterns and variations of cognition, emotion and behavior in the context of cortical and subcortical neuroanatomical organization. Clinical applications of neuropsychology more specifically integrate the effects of brain dysfunction or damage on these same psychological and behavioral processes." D. Hartman, Neuropsychological Toxicology: Identification and Assessment of Human Neurotoxic Syndromes 2 (1988) (hereafter "D. Hartman").

^{24/} E.g., disorders of attention, sensation, perception, concept formation, language, memory, physical movement, and emotions.

^{25/} See generally E. Bigler, Diagnostic Clinical Neuropsychology (1984); C. Golden & P. Vincente, Foundations of Clinical Neuropsychology (1983); Handbook of Clinical Neuropsychology (S. Filskov & T. Boll eds. 1981); Handbook of Neuropsychological Assessment (A. Puente & R. McCaffrey eds. 1992); A. Luria, Higher Cortical Functions in Man (2d ed. 1980); Heilman & Valenstein, Clinical Neuropsychology (2d ed. 1985); Medical Neuropsychology: The Impact of Disease on Behavior (R. Tarter, D. Van Thiel & K. Edwards eds. 1988); Reitan & Davison, Clinical Neuropsychology: Current Status and Applications (1974).

One of the major divisions of amicus APA is the Division of Clinical Neuropsychology. The Division of Clinical Neuropsychology has developed guidelines that define the field^{26/} and has provided recommendations for graduate, post-graduate,^{27/} and internship^{28/} training in neuropsychology. A candidate may attain distinction as a diplomate in the field after five years of experience, peer review, and an examination sponsored by the American Board of Professional Psychology.^{29/} Several professional journals in the United States are devoted almost entirely to neuropsychological research, and many other journals, including medical journals such as Neurology and Annals of Neurology, publish neuropsychological research.^{30/} The

^{26/} International Neuropsychological Society Task Force on Education, Accreditation and Credentialing, Division 40, APA, Report of Division 40 International Neuropsychological Society Task Force on Education, Accreditation and Credentialing, 2 Newsletter 40, summer 1984, at 3-8; Executive Committee, Division 40, APA, Definition of a Clinical Neuropsychologist, 7 Newsletter 40, May 1989, at 4.

^{27/} International Neuropsychological Society Task Force on Education, Accreditation, Education and Credentialing, Division 40, APA, Guidelines for Doctoral Training Programs in Clinical Neuropsychology, 4 Newsletter 40, Aug. 1986, at 4-5.

^{28/} International Neuropsychological Society Task Force on Education, Accreditation and Credentialing, Division 40, APA, Report on the Subcommittee on Psychology Internships, 2 Newsletter 40, Spring 1984, at 7.

^{29/} Bieliauskas and Matthews, American Board of Clinical Neuropsychology: Policies and Procedures, 1 The Clinical Neuropsychologist 21-28 (1987).

^{30/} APA published a bibliography of journal articles specifically concerning research on environmental toxins, much of it performed by psychologists. The bibliography has
(continued...)

established nature of the discipline is also reflected in a long series of books published on the topic and in the membership of neuropsychologists in medical organizations such as the American Academy of Neurology.^{31/} Psychologists also teach in medical schools.

b. The Early History of
Neuropsychological Assessment of
Etiology

Psychological methods have long been used to diagnose brain damage and thus to ascribe a physical cause to an individual's mental dysfunction. Early in this century, it was clinical psychologists who were called upon to diagnose or rule out neurological disorder or organic brain impairment in hospitalized psychiatric patients, so that psychotherapy might be performed only on those of normal mental status.^{32/} The diagnoses rendered by these

^{30/} (...continued)

962 entries, which include articles on human and animal research in the areas of behavioral toxicology, pesticides, solvents, metallic elements, food additives and gases. Environmental Toxins: Psychological, Behavioral, and Sociocultural Aspects, 1973-1989 (C. Travis, B. McLean & C. Ribar eds. 1989) (hereafter "Travis, McLean & Ribar").

^{31/} A representative but not exhaustive sample includes: Handbook of Clinical Neuropsychology (S. Filskov & T. Boll eds. 2d ed. 1986); Heilman & Valenstein, Clinical Neuropsychology (2d ed. 1985); Neuropsychology Assessment of Neuropsychiatric Disorders (2d ed. 1983); Rourke, Bakker, Fish, & Strang, Child Neuropsychology (1983); Goldstein & Ruthven, Rehabilitation of the Brain Damaged Adult (1983); A. Luria, Higher Cortical Functions in Man (2d ed. 1980); Hecaen & Albert, Human Neuropsychology (1978); Reitan & Davison, Clinical Neuropsychology; Current Status and Applications (1974).

^{32/} Yozawitz, Applied Neuropsychology in a Psychiatric Center, in Neuropsychological Assessment of Neuropsychiatric Disorders 121 (I. Grant & K. Adams eds. 1986).

psychologists inherently involved an assessment of etiology, as a leading psychologist's 1917 address before the Toledo Academy of Medicine demonstrates:

The second role which psychology is playing today is that of a diagnostic function in certain neural disturbances Modern psychology is a biological science [I]n the matter of tracing causes . . . psychology is rendering important service^{33/}

A psychologist was among the most influential developers of the modern mental status examination, still in use today by psychiatrists and neurologists as well as psychologists. Shepherd Ivory Franz (1874-1933) used psychological and psychophysiological methods to create standardized clinical and psychometric examinations of mental status. These methods were administered to assist in the diagnosis of neurologic or psychiatric abnormalities.

c. The Current Practice of Neuropsychology.

Seventy years ago, Franz recognized the intersecting aims of neurology, psychology, psychiatry, and psychopathology. He predicted "it will be seen that these four sciences which are independent to a great extent are, nevertheless, overlapping and it is impossible to separate by sharp lines one of these disciplines from the other three."^{34/} As predicted, the health disciplines have

^{33/} Trettien, Practical Applications of Psychology in the Treatment of Certain Psychopathics (and Other Neuropathologies), 1 J. Applied Psychology 244, 247 (1917) (emphasis added).

^{34/} S. Franz, Handbook of Mental Examination Methods 12 (1919).

evolved toward collaboration in diagnosis and treatment. The sub-discipline of neuropsychology has been at the forefront of diagnostic collaboration, and the development of clinical neuropsychology has "contributed to the accuracy of neuropsychological diagnosis" of a wide range of neurological disorders, including closed head injury.^{35/}

In determining the existence of illness, etiology, course of treatment, and predicted recovery, the clinical diagnostic process employed by neuropsychologists is no different than that employed by physicians or psychiatrists. Operating on the principle that "as the heart pumps blood, the brain pumps behavior,"^{36/} neuropsychologists employ scientifically validated psychometric tests as part of the procedure reliably to assess both quantitatively and qualitatively the behavioral output of the brain. Just as heart disease causes visible failure on cardiovascular tests when used in an overall evaluation by cardiologists, so brain disease causes visible patterns of impairment on tests of memory, attention, psychomotor skills, and other cognitive

^{35/} Smith, Principles Underlying Human Brain Functions in Neuropsychological Sequelae of Different Neuropathological Processes, in Handbook of Clinical Neuropsychology 184 (S. Filskov & T. Boll. eds. 1981). Disorders in which neuropsychological evaluations are utilized include brain tumors, intracranial infections, toxic encephalopathy, Parkinson's Disease, Alzheimer's Disease, alcoholism, and drug use.

^{36/} Filskov, Grimm & Lewis, Brain-Behavior Relationships, in Handbook of Clinical Neuropsychology 39, 39 (S. Filskov & T. Boll eds 1981).

abilities when used in an overall evaluation by neuropsychologists.

Neuropsychologists evaluate these tests in light of a patient's particular case history. They compare the results of neuropsychological tests with those on medical tests, with their observation of a patient, with that patient's report of symptoms, and with the test results of people known to have brain damage of the same etiology. They then evaluate this patient profile against their understanding of which medical problems are consistent with that profile. They further narrow down their assessment of the problem by gathering information on a patient's personal history. Thus, a differential diagnosis made by a neuropsychologist, like those made by other medical professionals, is based on the clinician's judgment, interpretation of test results, and evaluation and assessment of the patient and the patient's case history (all in light of the relevant scientific literature).^{37/}

Properly administered neuropsychological tests, interpreted in light of an individual's case history, are a critical part of the neuropsychological evaluation used to diagnose the pathological behavioral output of an injured, diseased, or dysfunctional brain. Clinical neuropsychology is "supported by a bulwark of empirical clinical research

^{37/} See, e.g., Filskov and Leli, Assessment of the Individual in Neuropsychological Practice, in Handbook of Clinical Neuropsychology 545 (S. Filskov & T. Boll eds. 1981).

that has focused on directly relating test scores to central nervous system damage."^{38/} Consequently, "it is now possible for an experienced clinician to use a series of test scores reliably to determine the presence or absence of brain damage."^{39/}

In fact, neuropsychological tests have been observed to be "among the most sensitive methods available for detecting the presence of cerebral pathology."^{40/} Neuropsychological tests are cited as superior to the EEG and neurological examination for measuring several types of mild brain impairment,^{41/} and thus several common neurological disorders are diagnosed primarily by neuropsychological methods. Because the mental status exams neurologists use to detect dementia, for example, are "considered relatively insensitive to very mild dementia and . . . lack sufficient specificity to separate various disorders presenting as

^{38/} Milbert, Hebben & Kaplan, The Boston Process Approach to Neuropsychology, in Neuropsychological Assessment of Neuropsychiatric Disorders 65-86 (I. Grant & K. Adams eds. 1986).

^{39/} Id.

^{40/} Medical Neuropsychology, The Impact of Disease on Behavior, supra, at 2.

^{41/} Filskov & Goldstein, Diagnostic Validity of the Halstead-Reitan Neuropsychological Battery, 42 J. of Consulting & Clinical Psychology 382 (1984); Goldstein, Deysach & Kleinknecht, Effect of Experience and Amount of Information on Identification of Cerebral Impairment, 41 J. of Consulting & Clinical Psychology 30 (1973).

dementia,"^{42/} a recent neurology textbook instructs that "more formal neuropsychological testing is required."^{43/}

The diagnostic sensitivity and objectivity of neuropsychology is highly valued in the health professions. Neurologists, psychiatrists, and practitioners of occupational medicine all frequently refer patients to neuropsychologists to diagnose neurological conditions including organic brain disease.^{44/} For that reason, a rule that barred courts from utilizing this one category of professional expertise would be indefensible. As the Illinois Appellate Court explained, "it would be somewhat anomalous to conclude that [a neuropsychologist] would not be qualified to testify about [a neurological disease] when the neurologists and psychologists who sought out his expertise and assistance in diagnosing the disease would most likely be qualified to do so."^{45/}

^{42/} Kaszniak, The Neuropsychology of Dementia, in Neuropsychological Assessment of Neuropsychiatric Disorders 172, 189 (I. Grant & K. Adams eds. 1986).

^{43/} J. Wagner, Neurologic Disorders of Ambulatory Patients 247 (1989) (emphasis supplied).

^{44/} See Eskenzi and Maizlish, Effects of Occupational Exposure to Chemicals on Neurobehavioral Functioning in Neuropsychology 255; Filskov, Grimm and Lewis, Brain-Behavior Relationships, in Handbook of Clinical Neuropsychology 39 (S. Filskov & T. Boll eds. 1981).

^{45/} Valiulis v. Scheffels, 547 N.E.2d 1289, 1296-97 (Ill. App. 1989).

CONCLUSION

The ruling of the Court of Appeals should be reversed.

Respectfully submitted, this 16th day of April, 1997.

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CERTIFICATE OF SERVICE

I certify that I served a copy of the this Motion for Leave To File and Brief Amicus Curiae of the American Psychological Association, the North Carolina Psychological Association and the National Academy of Neuropsychology upon counsel for the parties by mailing copies to them by first-class mail, postage prepaid, addressed as follows:

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This 16th day of April, 1997.

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