

COPY

SUPREME COURT, STATE OF COLORADO

CASE NO. 97SC480

CERTIORARI TO THE COLORADO COURT OF APPEALS, CASE NO.

95CA1944

FILED IN THE
SUPREME COURT

APR 16 1998

OF THE STATE OF COLORADO
MAC V. DANFORD, CLERK

SHARON L. HUNTOON

Petitioner

v.

FILE

TCI CABLEVISION OF
COLORADO, INC., a
Colorado Corporation,

Respondent

**BRIEF AMICI CURIAE OF THE
AMERICAN PSYCHOLOGICAL ASSOCIATION
THE NATIONAL ACADEMY OF NEUROPSYCHOLOGY
THE COLORADO PSYCHOLOGICAL ASSOCIATION
THE COLORADO NEUROPSYCHOLOGICAL SOCIETY**

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ISSUE PRESENTED

Is a neuropsychologist unqualified as a matter of law to testify about causation of brain injuries?^{1/}

STATEMENT OF THE CASE

On October 15, 1992, a truck owned by defendant, TCI Cablevision of Colorado, Inc., struck a car driven by plaintiff Sharon Huntoon, who later sued. At trial, a neuropsychologist, Dr. Denis McCarthy, testified that Ms. Huntoon suffered from organic brain injury, the symptoms of which included impairment of memory and attention span. He also testified that Ms. Huntoon's organic brain injury had been caused by the collision of defendant's truck with Ms. Huntoon's car.^{2/} As a neuropsychologist, Dr. McCarthy was specifically trained to diagnose and assess the cause of physical brain injuries.

The trial court directed a verdict on the issue of liability, and a jury awarded damages. The Court of Appeals reversed the directed verdict and ordered a remand for a new trial. The court also held that on remand, Dr. McCarthy's

^{1/} This Court also granted certiorari on a second issue concerning the appropriateness of a directed verdict in this case. Amici's interest does not concern this second issue.

^{2/} In the Court of Appeals, plaintiff contended that Dr. McCarthy did not testify about causation. The court resolved this issue against plaintiff, and, in this Court, amici assume that the court correctly resolved that issue.

testimony on causation would be inadmissible. The court did not base this conclusion on the particular qualifications or methodology of Dr. McCarthy. Instead, it categorically concluded that, under Colorado Rule of Evidence 702, neuropsychologists as a group lack the necessary qualifications to testify concerning causation of physical injuries. The court relied both on its reading of the caselaw from other jurisdictions and on the Colorado statutes defining the practice of medicine and of psychology.

SUMMARY OF ARGUMENT

By categorically excluding neuropsychologists from testifying as to the physical cause of brain injury, the Court of Appeals denied the trier of fact in this and future cases a vital source of information on causation. In doing so, it ignored the liberal standard for admission of expert testimony under Colorado Rule of Evidence 702 and reached a conclusion contrary to that reached by the large majority of courts to consider this or analogous questions. This Court should reverse, because it would be highly unfortunate if an entirely unjustified categorical exclusion of useful expert testimony were to become the rule in this State.

ARGUMENT

I. THE RULES OF EVIDENCE COMMAND LIBERAL ADMISSION OF EXPERT OPINION TESTIMONY

The Court of Appeals' ruling that a neuropsychologist is not qualified to testify as an expert regarding the physical cause of brain dysfunction fails to recognize the breadth of Colorado Rule of Evidence 702 governing admissibility of expert testimony. The plain language of Rule 702 makes clear that "the primary consideration in determining a witness' qualifications is the witness' actual 'knowledge, skill, experience, training or education,' rather than the particular title attributed to the witness." Melville v. Southward, 791 P.2d 383, 387 (Colo. 1990).

This Court has repeatedly emphasized the breadth of Rule 702. In particular, it has explained that expert testimony is properly admissible if it appears that the "proffered evidence will assist the fact finder." Lanari v. People, 827 P.2d 495, 504, 502 (Colo. 1992); Scognamillo v. Olsen, 795 P.2d 1357 (Colo. App. 1990) (citation omitted). As a result, this Court has defined an expert as "one who has superior knowledge of a subject and is, therefore, able to afford [the finder of fact] a special assistance, and his knowledge may have been acquired by professional, scientific, or technical training or by practical experience.'" Stone v. People, 157 Colo. 178, 182, 401 P.2d 837, 839 (1965)

(quoting Ausmus v. People, 47 Colo. 167, 107 P. 204 (1909)). See also Sims v. Industrial Claim Appeals Office of Colorado, 797 P.2d 777, 779 (Colo. App. 1990). Accordingly, it is not necessary for an expert witness to have "specific degrees, certificates of training, certain designations, or membership in a professional organization." Colorado Arlberg Club v. Board of Assessment Appeals, 719 P.2d 371, 374 (Colo. App. 1986), rev'd on other grounds, 762 P.2d 146 (1988); White v. Colorado, 175 Colo. 119, 123, 486 P.2d 4, 6 (1971). In addition, the determination of a trial court that an expert's qualifications are sufficient to enable him to assist the jury "is discretionary" and "will not be disturbed without a clear showing of an abuse of discretion." White 175 Colo. at 123, 486 P.2d at 6; Corcoran v. Sanner, 854 P.2d 1376, 1382 (Colo. App. 1993).

In the instant case, the Court of Appeals did not inquire whether Dr. McCarthy was better qualified than the jury to ascertain the cause of Ms. Huntoon's symptoms. Nor did it take into account the discretion of trial courts in making decisions on admissibility. Instead, relying partly on statutes defining the practice of medicine and psychology, the Court of Appeals concluded that admission of neuropsychological testimony on causation of physical injuries is always an abuse of discretion, because neuropsychologists lack the particular title "medical

doctor." Huntoon v. TCI Cablevision, 95 CA 1944, 1997 Colo. App. LEXIS 87, *7 (1997).

The statutes on which the Court of Appeals relies, however, are entirely unrelated to the admissibility of expert testimony. They therefore do not undercut the controlling force of Rule 702 under which a witness' knowledge, skill and training, rather than his particular title, are dispositive of his qualification as an expert. Melville, 791 P. 2d at 387. In applying Rule 702, Colorado courts, as well as courts in other jurisdictions with statutory schemes similar to that of Colorado, routinely have allowed witnesses' with training in disciplines other than medicine to qualify as experts on "medical" matters. See Gast v. City of Fountain, 870 P.2d 506, 511-12 (Colo. App. 1994), rev'd on other grounds, 904 P.2d 478 (Colo. 1995) (admitting testimony of neuropsychologist on the existence of organic brain injury); Sims v. Industrial Claim Appeals Office of Colorado, 797 P.2d 777 (Colo. App. 1990) (admitting testimony by a physician assistant on medical probabilities);^{3/} Hutchinson v. American Family Mut. Ins.

^{3/} Colorado courts have viewed a witness' training rather than the state licensure scheme as dispositive outside the medical context as well. See Corcoran v. Sanner, 854 P.2d 1376, 1381-82 (Colo App. 1993) (holding architect qualified to testify concerning standard of care for Colorado practitioners even though architect was not licensed in Colorado); Klein v. State Farm Mut. Auto. Ins. Co., 948 P.2d 43 (Colo. App. 1997) (holding that osteopath was qualified to

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Co., 514 N.W.2d 882, 886 (Iowa 1994). In fact, "[t]he 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) (emphasis in original).^{4/}

As will be made clear below, among the witnesses that courts have regularly received on the basis of their expertise are neuropsychologists. This is because neuropsychologists have the requisite knowledge and training to accurately assess causation of brain injuries. The Court of Appeals' categorical exclusion of neuropsychologists on the basis that they lack a medical degree thus deprives the trier of fact of important evidence in contravention of the

^{3/} (...continued)

testify as expert even though he was not certified in the use of the exercise machine at issue).

^{4/} See, e.g., Hopkins v. Dow Corning Corp., 33 F.3d 1116, 1124-25 (9th Cir. 1994) (toxicologist); Hermes v. Pfizer, Inc., 848 F.2d 66, 69 (5th Cir. 1988) (pharmacist); Backes v. Valspar Corp., 783 F.2d 77, 79 (7th Cir. 1986) (chemist); Wells v. Ortho Pharmaceutical Corp., 788 F.2d 741, 744 (11th Cir. 1986) (pharmacologist); Chalupa v. Industrial Comm'n, 509 P.2d 610 (Ariz. 1973) (chiropractor), Maloney v. Wake County Hosp. Sys., Inc., 262 S.E.2d 680 (N.C. Ct. App. 1980) (nurse). As a leading evidence treatise explains, 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).

liberal principles of Rule 702 and the caselaw interpreting that rule.

II. COURTS HAVE WIDELY RECOGNIZED THAT PSYCHOLOGISTS ARE EXPERTS IN DIAGNOSING THE EXISTENCE AND CAUSES OF BRAIN DYSFUNCTIONS

As courts have widely 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 Com'n. of Arizona, 617 P.2d 538, 539 (Ariz. Ct. App. 1980). 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.^{5/} Indeed, even the

^{5/} See Kinsey v. Kolber, 431 N.E.2d 1316, 1329 (Ill. App. Ct. 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. 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); Horne v. Marvin L. Goodson Logging Co., 349 S.E.2d 293 (N.C. Ct. App. 1986) (holding that it was error to conclude that neuropsychologist was incompetent to testify as to diagnosis of brain damage); Buckler v. Sinclair Refining Co., 216 N.E.2d 14 (Ill. App. Ct. 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. 1986) (allowing testimony of psychologist regarding defendant's organic brain damage); Simmons v. Mullen, 331 A.2d 892, 898 (Pa. Super. Ct. 1974) (holding psychologist qualified as an expert on existence of brain damage, and stating that "[i]t is not essential that an expert witness be a medical practitioner to testify on organic problems"); Phillips v.

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Court of Appeals in this case seemed to accept the decision, in Gast v. City of Fountain, 870 P.2d 506, 511-12 (Colo. App. 1994), rev'd on other grounds, 904 P.2d 478 (Colo. 1995), holding that neuropsychological testimony is admissible to show the existence of organic brain injury. Huntoon, 1997 Colo. App. LEXIS 87 at *5.

^{2/} (...continued)

Lincoln Nat'l. 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); Price v. Mitchell Const. Co., 482 So. 2d 869, 872-73 (La. Ct. App. 1986) (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); Gore v. Daniel O'Connell's Sons, Inc., 461 N.E.2d 256, 258 (Mass. App. Ct. 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); 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. Ct. Spec. App. 1974), superseded by statute as stated in Yount v. State, 636 A.2d 50 (Md. Ct. Spec. App. 1994). See Generally 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.").

But the Court of Appeals failed to recognize that if neuropsychologists are qualified to diagnose organic brain injury, as Gast held that they were, it follows that they are qualified to testify to the cause of such injuries.^{6/} This is because the neuropsychological method of assessing causation is part and parcel of the method of diagnosis. Making a diagnosis of organic brain injury, for example, involves establishing that the injury has a physical rather than purely mental cause.^{7/}

The vast majority of courts, therefore, have held that neuropsychologists are qualified to testify not only on the existence of brain injury but also on the causation of

^{6/} See, e.g., Hooper v. Industrial Comm'n of Ariz., 617 P.2d 538, 539 (Ariz. 1980) (holding that because psychologists are qualified to diagnose mental conditions, "they are also competent to testify regarding the causes of such conditions."). Like the Arizona Supreme Court in Hooper, the Oregon Supreme Court, after surveying the relevant psychological literature, 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 disorder,'" including the "'differentiat[ion] between organic and functional disorders.'" Sadow v. Weyerhaeuser Co., 449 P.2d 426, 428-29 (Or. 1969).

^{7/} As early as the beginning of this century, clinical psychologists called upon to determine that psychotherapy was a worthwhile treatment for hospitalized psychiatric patients first had to rule out physical causes of their symptoms. See Filskov and Leli, Assessment of the Individual in Neuropsychological Practice, in Handbook of Clinical Neuropsychology 545 (S. Filskov & T. Boll eds. 1981).

that injury.^{8/} Courts have allowed neuropsychologists to testify that an individual's brain damage resulted from premature birth and respiratory distress,^{9/} that it resulted from electrical shock,^{10/} that it resulted from exposure to toxins or other substances,^{11/} or, as is alleged to be the

^{8/} See Richardson & Adams, supra, at 298; 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.").

^{9/} See 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).

^{10/} Cf. Price v. Mitchell Constr. Co., 482 So. 2d 869, 872 (La. Ct. App. 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).

^{11/} See Cunningham v. Montgomery, 921 P.2d 1355, 1358-59 (Or. Ct. App. 1996) (reversing refusal to admit neuropsychologist's testimony that dentist's administration of nitrous oxide caused plaintiff's hypoxia), review denied, 930 P.2d 851 (Or. 1996); Shilling v. Mobile Analytical Services, Inc., 602 N.E.2d 1154 (Ohio 1992) (reversing the trial court's decision 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. Ct. 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 (N.Y. App. Div. 1954) (relying on testimony of a neuropsychologist that decedent had postoperative delirium probably as a result of taking drug, medicine, or alcohol). Cf. Kannakeril v. Terminix Int'l, Inc., 128 F.3d

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case here, that it resulted from an automobile accident or other physical blow.^{12/} Thus, the Court of Appeals decision

^{11/} (...continued)

802, 807-09 (3d Cir. 1997) (reversing exclusion of physician's testimony on connection between pesticides and plaintiffs' injuries in part because physician reasonably relied on report prepared by a neuropsychologist). 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); New Jersey 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), cert. denied, 118 S. Ct. 864 (1998)..

^{12/} Adamson v. Chiovaro, A-3168-9573, 1998 N.J. Super. LEXIS 40, *7-8 (App. Div. Feb. 4, 1998) (upholding trial court's decision to admit neuropsychologist's testimony that auto accident caused plaintiffs' cognitive deficits); Landers v. Chrysler Corp., No. 72028, 1997 Mo. App. LEXIS 2098, *19-20 (E.D. Div. 2, Dec. 9, 1997) (holding neuropsychologist qualified to testify that blow to head caused plaintiffs' cognitive deficits); 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. Ct. 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. Ct. 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.

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in this case is contrary to the great weight of relevant authority.^{12/} And, as will be explained below, the caselaw

^{12/} (...continued)

1989) (holding that trial court abused its discretion in limiting testimony of a neuropsychologist regarding brain damage suffered by plaintiff in an automobile accident); Buckler v. Sinclair Ref. Co., 216 N.E.2d 14, 19-20 (Ill. App. Ct. 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 (N.M. Ct. App. 1975) (psychologist held qualified to testify as expert that car accident caused change in intellectual function); Howle v. PYA/Monarch, Inc., 344 S.E.2d 157 (S.C. Ct. App. 1986) (upholding admissibility of psychologist's testimony that auto accident caused neurosis and depression); Beiger v. Shreeve, C.A. N. 95C-06-104 RRC, 1997 Del. Super. LEXIS 306, *6 (Apr. 15, 1997) (upholding jury's decision on damages in part based on neuropsychologist's testimony that there were no residual effects of auto accident on plaintiff); 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).

^{13/} Only a small number of courts in other states have excluded neuropsychologists' testimony on issues of causation. See, e.g., Bilbrey v. Industrial Comm'n, 556 P.2d 27 (Ariz. Ct. App. 1976). The Court of Appeals cites five ostensibly contrary decisions for its conclusion that other jurisdictions have refused to allow neuropsychologists to testify concerning causation. See Huntoon, 1997 Colo. App. LEXIS at *6. However, of these five decisions, two, Edmonds v. Ill. Cent. Gulf R.R. Co., 910 F.2d 1284 (5th Cir. 1990), and Chandler Exterminators, Inc. v. Morris, 416 S.E.2d 277 (Ga. 1992), turned on case-specific facts involving the particular tests performed by the psychologist or the discretionary nature of the trial court's decision; two, Chandler and Executive Car & Truck Leasing, Inc. v. DeSerio, 468 So. 2d 1027 (Fla. Dist. Ct. App. 1985), were superseded by statutes, see Drake v. Larue Constr. Co., 451 S.E.2d 792, 794 (Ga. Ct. App. 1994); Fla. Stat. Ann § 490.003(4) (West (continued...))

holding admissible neuropsychologists' testimony on the causation of brain injuries is correct--neuropsychologists do have the requisite knowledge and training to accurately assess causation.

III. NEUROPSYCHOLOGISTS BY TRAINING AND EXPERIENCE ARE QUALIFIED TO PROVIDE EXPERT TESTIMONY CONCERNING CAUSATION OF PSYCHOLOGICAL CONDITIONS

- A. Psychological Training and Practice are Rigorous, Scientific, and Relevant to the issues at Bar.

By categorically excluding neuropsychologists from testifying on causation of brain injury, the Court of Appeals' decision excludes a group of experts who are often the most qualified to testify on causation.

Psychologists must adhere to rigorous training standards and are required to complete demanding training programs. 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; research design and methodology; and extensive clinical rotations followed by at least one year of a full-time, closely supervised internship experience in a hospital, medical

^{13/} (...continued)

1990), and one, Valiulis v. Scheffels, 547 N.E. 2d 1289 (Ill. App. Ct. 1989), held that a psychologist was qualified to testify concerning causation.

center, or clinic.^{14/} Doctoral candidates receive considerable training in the biological aspects of mental disorders; courses on psychopathology, for example, review in detail organic bases for mental disorders.^{15/}

Neuropsychology is a specialty within psychology that integrates the educational, scientific, and professional contributions of the discipline of psychology with relevant developments in the neurosciences.^{16/} Neuropsychology brings a unique perspective to assessing the etiology of mental disorders. In addition to the rigorous training required of

^{14/} 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.

^{15/} 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.

^{16/} "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").

all psychologists, neuropsychologists have specialized training in the science of brain-behavior relationships, including functional neuroanatomy; 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.^{17/}

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^{18/} and has provided recommendations for graduate, post-graduate,^{19/} and internship^{20/} training in

^{17/} 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).

^{18/} 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.

^{19/} International Neuropsychological Society Task Force on Education, Accreditation, Education and Credentialing,

(continued...)

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.^{21/} 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. The 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

^{19/} (...continued)

Division 40, APA, Guidelines for Doctoral Training Programs in Clinical Neuropsychology, 4 Newsletter 40, Aug. 1986, at 4-5.

^{20/} 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.

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

such as the American Academy of Neurology.^{22/} Psychologists also teach in medical schools.

B. The Methodology of Neuropsychologists Enables Them to Assess Causation.

Seventy years ago, Sheperd 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."^{23/} Indeed, even in Franz' time, it was recognized that "[m]odern psychology is a biological science [I]n the matter of tracing causes . . . psychology is rendering important service. . . ."^{24/} In fact, Franz himself was among the most influential developers of the mental status examination still

^{22/} 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).

^{23/} S. Franz, Handbook of Mental Examination Methods 12 (1919).

^{24/} Trettien, Practical Applications of Psychology in the Treatment of Certain Psychopathics (and Other Neuropathologies), 1 J. Applied Psychology 244, 247 (1917) (emphasis added).

in use today by psychiatrists and neurologists as well as psychologists to assist in the diagnosis of neurologic or psychiatric abnormalities.

As Franz predicted, the health disciplines have evolved toward even greater 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.^{25/}

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. 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 abilities when used in an overall evaluation by neuropsychologists.

In fact, neuropsychological tests have been observed to be "among the most sensitive methods available

^{25/} 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).

for detecting the presence of cerebral pathology."^{26/} They are "supported by a bulwark of empirical clinical research that has focused on directly relating test scores to central nervous system damage."^{27/} Neuropsychological tests are cited as superior to the EEG and neurological examination for measuring several types of mild brain impairment,^{28/} 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 dementia,"^{29/} a recent neurology textbook instructs that "more formal neuropsychological testing is required."^{30/}

^{26/} Medical Neuropsychology, The Impact of Disease on Behavior, supra, at 2.

^{27/} Milbert, Hebben & Kaplan, The Boston Process Approach to Neuropsychology, in Neuropsychological Assessment of Neuropsychiatric Disorders 65 (I. Grant & K. Adams eds. 1986).

^{28/} 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).

^{29/} Kaszniak, The Neuropsychology of Dementia, in Neuropsychological Assessment of Neuropsychiatric Disorders 172, 189 (I. Grant & K. Adams eds. 1986).

^{30/} J. Wagner, Neurologic Disorders of Ambulatory Patients 247
(continued...)

Neuropsychologists evaluate these neuropsychological 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 and assessment of causation 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).^{31/}

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

^{30/} (...continued)
(1989) (emphasis supplied).

^{31/} 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).

neuropsychologists to diagnose neurological conditions including organic brain disease.^{32/} 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."^{33/}

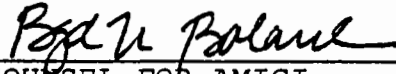
^{32/} See Eskenzi and Maizlish, Effects of Occupational Exposure to Chemicals on Neurobehavioral Functioning in Neuropsychology 255; Filskov, Grimm and Lewis, Brain-Behavior Relationships, in Handbook of Clinical Neuropsychology 39 (S. Filskov & T. Boll eds. 1981).

^{33/} Valiulis v. Scheffels, 547 N.E.2d 1289, 1296-97 (Ill. App. Ct. 1989).

CONCLUSION

The ruling of the Court of Appeals should be reversed.

Respectfully submitted,


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