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IN THE SUPREME COURT OF GEORGIA
FOR THE STATE OF GEORGIA

CHANDLER EXTERMINATORS, INC.,
DENNIS H. CHANDLER, JIMMY
KEITH CHANDLER, JOHN DOE I
AND JOHN DOE II

Petitioners,

v.

WILLIAM E MORRIS, SUSAN C.
MORRIS, LISA MORRIS, by her
next friends WILLIAM E.
MORRIS, SUSAN C. MORRIS and
HEATHER MORRIS, by her next
friends WILLIAM E. MORRIS
and SUSAN C. MORRIS,

Respondents.

SUPREME COURT CASE NO.
S91C1591

BRIEF OF AMERICAN PSYCHOLOGICAL ASSOCIATION
AS AMICUS CURIAE IN SUPPORT OF PETITION FOR RECONSIDERATION,
OR IN THE ALTERNATIVE SUGGESTING
AMENDMENT OF THIS COURT'S OPINION

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June 5, 1992

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AS AMICUS CURIAE IN SUPPORT OF PETITION FOR
RECONSIDERATION, OR IN THE ALTERNATIVE
SUGGESTING AMENDMENT OF THIS COURT'S OPINION

STATEMENT OF INTEREST

The American Psychological Association ("APA"),
appears before this Court pursuant to Supreme Court Rule 42,
supporting reconsideration, and in the alternative suggesting
amendment of this Court's opinion, in this case.

APA is a voluntary, scientific and professional
association with more than 108,000 members and affiliates,
including more than 1300 members in Georgia. Since its
founding in 1892, APA has been the major association of
psychologists in the United States. APA includes the vast
majority of psychologists holding doctoral degrees from
accredited universities in this country. More than 44,000 of

APA's United States members are psychologists who are licensed by their States to provide health care services. APA's Division of Clinical Neuropsychology (Division 40) is comprised of 2,775 members whose special skills are focused on the diagnosis, assessment and treatment of brain damage. APA's Division of Psychopharmacology (Division 28) is comprised of 917 members who specialize in studying the effects of chemical substances on the brain and behavior.

This Court's decision in this case will deprive the Georgia courts of highly competent and helpful testimony concerning the etiology of organic brain disorders. But it will cause far more damage outside the courtroom; in an unexplained, unnecessary and overly broad footnote, the decision effectively denies to the people of Georgia the unique skills psychologists in general and neuropsychologists in particular have to offer in diagnosing organic brain disorders, or other physical causes of mental disease. The decision suggests psychologists are somehow not qualified to perform activities which they have performed successfully for many years, as with the use of neuropsychological tests to diagnose the existence and extent of brain damage resulting from some physical cause or injury. See Slip op. at 2, n.2 (attached hereto as Addendum A). Without question, the Court's interpretation of the pertinent Georgia statutes will radically undermine the legislature's clear intent to permit and encourage the full scope of practice of psychology in this State. Its decision in this case, therefore, must be

reconsidered.

APA and its members have a direct interest in this case. The Court's decision will effectively deprive highly trained and qualified APA members of their livelihood and profession--that for which they have trained, prepared, and practiced for many years. APA also has concerns about those psychologists' potential patients who, due to this Court's erroneous reading of Georgia statutes, will be forced to rely on health care personnel less qualified than psychologists to diagnose their mental diseases or disorders.

As the national association of psychologists, APA is uniquely situated to inform the Court concerning the presumably unintended but severely damaging consequences of its ruling in this case.^{1/}

^{1/} APA also concurs entirely in the brief filed in this Court by the Georgia Psychological Association. See Georgia Psychological Association's Amicus Curiae Brief in Support of Motion for Reconsideration, filed in the Supreme Court for the State of Georgia, No. S91G1591 (June 4, 1992).

ARGUMENT

I.

INTRODUCTION

Pursuant to Supreme Court Rule 42, APA urges this Court to grant appellees' motion for reconsideration, and either to withdraw or amend its decision, issued May 21, 1992, in this case. Unnecessarily, and without published analysis, the Court in footnote two has declared that "a psychologist is not qualified to render an opinion concerning a diagnosis of a mental disorder when such disorder requires a professional opinion as to a physical disorder--here organic brain damage." Slip op., p.2, n.2. This conclusion:

- 1) flatly ignored the extensive authorities cited in APA's brief to the Georgia Court of Appeals, demonstrating that psychologists are qualified--and are often best qualified--to identify and diagnose the physical cause of a mental disorder;
- 2) is unsupported in the language of the Georgia statute on which the Court relied; and
- 3) is inconsistent with the overwhelming weight of authority in other jurisdictions.

If left unmodified, the Court's decision will impair not only the ability of the courts of this State to do justice, but

also the ability of the health care system of this State to safeguard her people's health. In fact, the Court could have clearly decided the case solely on the basis that the trial court did not abuse its discretion. There was no need for the overly broad, erroneous and highly damaging footnote.

Indeed, taken to its logical conclusion, the Court's apparent reasoning in footnote two would suggest psychology's licensed scope of practice does not include any of the activities physicians are authorized to provide. The result would be an inappropriate narrowing of the practice of psychology in this State, despite the legislature's clear and express intention that psychologists be permitted and encouraged to "diagnos[e] and treat[] nervous and mental disorders" consistent with their actual education and training.

II.

REASONS TO RECONSIDER THE COURT'S DECISION

- A. Footnote Two Will Deprive the Courts and People of This State of Services Psychologists are Uniquely Qualified by Training and Education to Perform.

In APA's amicus brief, originally filed in the Georgia Court of Appeals (hereafter "APA Brief") (attached hereto as Addendum B), APA demonstrated that psychologists in general and neuropsychologists in particular are qualified by training and education to diagnose the physical etiologies of mental disease. APA Brief at 13-30. Specifically, APA explained (and demonstrated with citations to the scientific

literature) that neuropsychological testing can identify behavioral patterns uniquely associated with particular forms of organic brain damage or other physical causes:

"Just as heart disease causes visible failure on cardiovascular tests, so brain disease produces visible patterns of impairment on neuropsychological tests. Properly administered and interpreted, neuropsychological tests diagnose the pathological behavioral output of an injured, diseased, or dysfunctional brain. Clinical neuropsychology is 'supported by a bulwark of empirical clinical research that has focused on directly relating test scores to central nervous system damage.' Consequently, 'it is now possible for an experienced [neuropsychologist] to use a series of test scores reliably to determine the presence or absence of brain damage.' "

APA Brief at 22-23 (citations omitted).

APA also demonstrated (with citations to the scientific literature) that neuropsychologists are sometimes best qualified to identify physical etiologies of mental disorders:

"The objectivity and diagnostic sensitivity of neuropsychology is highly

valued in the health professions. It is often the neuropsychologist who is called upon to make differential diagnoses, because neuropsychological examination is frequently employed where the findings of neurological and psychiatric examinations are equivocal. The diagnostic sensitivity of neuropsychological tests has been widely recognized; they have been observed to be 'among the most sensitive methods available for detecting the presence of cerebral pathology.'

Id. at 23 (citations omitted).

APA specifically demonstrated, with citations to the scientific literature, that "neurotoxic poisoning--the area at issue in this case--is [a] circumstance in which neuropsychological methods play a critical role in diagnosis." Id. at 24; see id. at 24-29. And APA showed, with citations to the scientific literature, that "neuropsychological expertise can be employed to determine etiology of observed brain damage, whether it is due to neurotoxic exposure or some other event or neuropathological process." Id. at 28 (emphasis added). Psychologists, therefore, unequivocally have the training and expertise to render precisely the kind of expert opinion at issue in this case.

For these reasons, it is clear that the abrupt and inexplicable edict of footnote two of the Court's opinion will deprive the courts of highly valuable--perhaps irreplaceable--testimony in many cases. Moreover, even more seriously, the Court did not stop at denying psychologists the capacity to testify on physical etiologies of mental disorders; it questions psychologists' qualifications to render such diagnoses in any setting. Thus, footnote two could be inappropriately used to deny patients the special diagnostic capacities of neuropsychological assessment--capacities routinely relied upon throughout the health care system in this State, at least until this Court's recent ruling.

B. Footnote Two is Unsupported in the Language of the Pertinent Statutes.

Although the Court provides no clear explanation for its statement in footnote two, it apparently depends on an inappropriate reading of OCGA § 43-39-1 (2). That reading, taken to its logical conclusion, would deny psychologists the right to practice any of the basic aspects of their profession which are also considered to be the practice of medicine. In doing so, the Court appears to mistake the distinction between psychology and medicine. In elaborating on that distinction, the Supreme Court of California has stated that the

"distinction turns on the nature of the treatment each can provide, not the

origin of the condition treated. Medical methods, especially medication, are commonly used to treat mental conditions of no known organic origin. Conversely, psychological methods, including testing, counseling and psychotherapy are used to treat organic disorders. Psychological tests, for example, are frequently used to diagnose the existence and extent of brain damage resulting from physical injury or disease."

California Association of Psychology Providers v. Rank, 51 Cal. 3d 1, 20, 793 P.2d 2, 13 (1990).

As this Court observed, OCGA § 43-39-1 (2) defines and limits the practice of psychology. The legislature specifically recognized psychologists' capacity "to render . . . any service involving the application of recognized principles, methods, and procedures of the science and profession of psychology." OCGA § 43-39-1 (2). The legislature then identified as expressly included within that practice a variety of specified services, including first and foremost "diagnosing . . . mental and nervous disorders."

Id. As the courts of several of Georgia's sister States have observed, language that confers the authority to "diagnose" mental disorders, by definition, confers the authority "to testify regarding the cause of such conditions," specifically including physical causes. See, e.g., Hooper v. Industrial

Comm'n, 126 Ariz. 586, 617 P.2d 538, 540 (Ct. App. 1980).

See APA Brief at 9-10 & n.9.

Indeed, "diagnosis" by definition means "the discovery of the source of a patient's illness or the determination of the nature of his disease from a study of its symptoms." Black's Law Dictionary (5th Ed.) at 408. On its face, therefore, OCGA § 43-39-1 (2) recognizes in law that psychologists have the capacity to identify the sources of psychological impairment, whatever those sources might be.^{2/}

^{2/} Indeed, as pointed out in the Brief Amicus Curiae of the Georgia Psychological Association ("GPA Amicus Brief"), with which APA concurs in its entirety, the dichotomy between organic and other etiologies for mental disease upon which the Court's decision depends is entirely false. GPA Amicus Brief at 7. "[I]t is assumed that all psychological processes, normal and abnormal, depend on brain function." American Psychiatric Association, Diagnostic and Statistical Manual of Mental Disorders, 3d Rev. 98 (1987) (hereafter "DSM-III-R"). In other words, there are presumably physical explanations for all psychological diseases or disorders.

Furthermore, it is simply wrong to speak, as the Court does in footnote two, as if organic brain damage is two disorders rather than one--a "physical disorder" that causes a "mental disorder." To the contrary, organic brain damage represents a mental disorder with physical etiology. Its

(continued...)

In taking away what the statute otherwise unambiguously confers, footnote two apparently relies on the obscure final phrase of OCGA § 43-39-1 (2). Having delineated the general scope of psychological practice ("the application of recognized principles, methods, and procedures of the science and profession of psychology") and specific competencies within but not exhausting that general scope ("such as, but not limited to, diagnosing and treating mental and nervous disorders," etc.), the statute provides:

"Nothing in this paragraph shall be construed as . . . in any way infringing upon the practice of medicine as defined in the laws of this state."

The practice of medicine, under the laws of Georgia, includes inter alia "the diagnosis and treatment of disease, defects, or injuries of human beings." OCGA § 43-34-20 (3). Because diagnosing the physical causes of a mental disorder also constitutes the "diagnosis . . . of disease, defects, or injuries of human beings," the Court apparently concluded that such diagnosis by psychologists would "infringe upon" the practice of medicine, and therefore is denied by OCGA § 43-39-1 (2).

^{2/} (...continued)
diagnosis is plainly within the competence of properly trained psychologists--as a matter of fact and as a matter of Georgia law.

This reasoning is clearly wrong. The legislature plainly intended psychologists in this State to diagnose and treat "mental and nervous disorders." But such mental and nervous disorders are always and inevitably, by definition, "diseases, defects, or injuries of human beings," which physicians are by statute declared competent to diagnose and treat. Physicians--e.g., psychiatrists--are by statute authorized to diagnose and treat non-organic brain disorders or diseases (e.g. adjustment disorders or schizophrenia), see DSM-III-R at 98, just as they diagnose and treat mental disorders with a known physical etiology. Such disorders are "diseases or defects of human beings." If, as the Court has ruled, the "infringing" language of OCGA 43-39-1 (2) denies to psychologists the authority to diagnose or treat any mental or nervous disorder physicians are authorized to diagnose or treat pursuant to OCGA § 43-34-20(3), then psychologists may perform no diagnosis or treatment of mental disorders whatsoever in this State!^{3/}

^{3/} The Court seems to have confused using psychological techniques to diagnose organic damage with using medical procedures to diagnose general areas of damage. If, for example, an individual had recovered from a stroke but continued to experience difficulty in memory and speech, an EEG would be used as a medical diagnostic procedure to locate general areas of damage. Neuropsychological testing, on the other hand, would be utilized to further assess the areas of organic damage.

This result cannot have been what the Georgia legislature intended when it specifically conferred statutory authority upon psychologists to "diagnos[e] and treat[] mental and nervous disorders." To the contrary, the legislature plainly intended the people of Georgia to receive the benefit of psychological diagnosis and treatment of mental and nervous disease. This Court's interpretation is flatly contradictory of that intent.

Obviously, the "infringing" language was not intended to limit or annihilate the specific psychological competencies recognized in OCGA § 43-39-1 (2). To the contrary, the clear purpose of the "infringing" language was to limit the statute's otherwise expansive grant of authority to perform services within the general scope of "the science and profession of psychology." Thus, the "infringing" language was meant to clarify that psychologists were not authorized by licensure to perform activities solely reserved for the practice of medicine (i.e., prescription of drugs). It was not meant to restrict the services the legislature specifically recognized and clearly meant to make available to the people of this State; to construe it as restricting the expressly enumerated services would read the enumeration entirely out of the statute.^{4/}

^{4/} It is thus clear that the legislature intended to tolerate and encourage considerable overlap between psychological and medical practice and expertise.

Moreover, neuropsychological testing is a quintessential example of a psychological diagnostic technique that is not within medical expertise. Psychiatric text books, like psychiatric practice, recognize that tests administered by neuropsychologists can identify the causes of brain disease in cases where medical diagnostic tools have failed. E.g., Kaplan and Sadok, Comprehensive Textbook of Psychiatry/IV, Section 12.7 (4th Ed. 1985). Physicians--including psychiatrists--do not perform neuropsychological testing. Recognizing the special competencies of neuropsychologists to identify the etiologies of brain disorder, therefore, would not duplicate medical expertise, nor would it infringe upon the practice of medicine.

Footnote two will do an enormous disservice by denying patients the right to ask for neuropsychologists' help in such cases, and denying the courts the expertise that neuropsychologists are singularly qualified to supply.

C. Footnote Two is Inconsistent with the Overwhelming Weight of Authority Nationwide and With Prior Georgia Case Law.

APA has previously demonstrated that the case law of Georgia and the overwhelming majority of other jurisdictions supports the admission of expert psychological testimony concerning physical etiologies of mental disorders. APA Brief at 3-13 (collecting cases). Not only state law, but also federal law mandates that psychologists be

recognized as competent to do assessment.^{5/} Footnote two flouts this precedent--including highly pertinent authorities from this Court itself--without comment or explanation.

^{5/} For example, the Vocational Rehabilitation Act, which requires assessments of persons with both mental and physical handicaps, permits such assessments to be made by a "licensed psychologist." 29 U.S.C. § 723(a)(1) (emphasis added).

III.

CONCLUSION

The Court's decision in general, and footnote two in particular, are inconsistent with the nature of psychological expertise, inconsistent with the Georgia legislature's manifest intention in OCGA 43-39-1 (2) to permit psychologists to diagnose and treat mental and nervous disorders in this State, and inconsistent with the overwhelming majority of modern precedents pertinent to the subject, including decisions of this Court. It is of the utmost urgency, therefore, that this Court grant appellees' motion for reconsideration. In the alternative, this Court should modify its opinion by deleting footnote two.

Respectfully submitted,

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ADDENDUM A

A

In the Supreme Court of Georgia

MAY 21 1992

Decided:

S91G1591. CHANDLER EXTERMINATORS, INC. v. MORRIS et al.

WELTNER, Presiding Justice.

We granted certiorari in Morris v. Chandler Exterminators, Inc., 200 Ga. App. 816 (409 SE2d 677) (1991) to consider:

Whether the Court of Appeals erred in concluding that the trial court should have permitted [a neuropsychologist] to give his opinion regarding the cause of a mental disorder.

1. Based upon the results of clinical interviews and evaluations of four members of the Morris family, a neuropsychologist testified by affidavit that each had organic brain damage "as a result of exposure to, and inhalation of, the chemical Aldrin."¹

2. The trial court granted Chandler Exterminators' motion to strike the affidavit of the psychologist, stating:

Dr. Currie, though qualified to state which mental dysfunctions Plaintiffs may be suffering, is not competent to testify as to causation to a reasonable degree of medical certainty.... Medical causation is not a subject within the scope of psychological expertise. Opinion evidence is insufficient where such evidence presumes exposure without showing evidence of significant toxicity levels. Hull v. Merck & Co.,

¹ The affidavit stated, in pertinent part: Affiant states that in his opinion the physical organic brain damage measured by him in the Morris family is in the cortical portion of the brain which is an area of the brain most likely to experience injury from the absorption by a person, by inhalation or skin contact, with a neuro-toxic chemical such as Aldrin.

Inc., 758 F2d 1474 (11th Cir. 1985).

The record shows, Dr. Currie's opinions are too speculative and incompetent as to medical causation.

3. The following authorities control:

(a) OCGA § 43-39-1 (2) defines and limits the practice of psychology as follows:

"To practice psychology" means to hold oneself out to be a psychologist and to render ... any service involving the application of recognized principles, methods, and procedures of the science and profession of psychology, such as, but not limited to, diagnosing and treating mental and nervous disorders, interviewing, administering, and interpreting tests of mental abilities, aptitudes, interest, and personality characteristics for such purposes as psychological classification or evaluation, or for education or vocational placement, or for such purposes as psychological counseling, guidance, or readjustment. Nothing in this paragraph shall be construed as permitting the administration or prescription of drugs or in any way infringing upon the practice of medicine as defined in the laws of this state.²

(b) In Hammond v. State, 156 Ga. 880 (2) (120 SE 539) (1923), we stated:

While expert witnesses may give their opinions as to facts, principles, and rules involved in the science in which they are learned, they are not, as to questions lying out of the domain of the science, art, or trade

² Compare OCGA § 43-34-20 (3):

"To practice medicine" means to hold one's self out to the public as being engaged in the diagnosis or treatment of disease, defects, or injuries of human beings; or the suggestion, recommendation, or prescribing of any form of treatment for the intended palliation, relief, or cure of any physical, mental, or functional ailment or defect of any person....

Hence, a psychologist is not qualified to render an opinion concerning a diagnosis of a mental disorder when such disorder requires a professional opinion as to a physical disorder--here, organic brain damage. Of course, a physical disorder may manifest psychological effects, concerning which a psychologist may render an opinion.

in which they are experts, exempt from the restriction of the rule which requires witnesses to state facts and not opinions.

(c) In Barrow v. State, 235 Ga. 635 (221 SE2d 416) (1975), we stated:

Georgia law [OCGA § 24-9-67] provides for the admission of opinions of experts on any question of science, skill, trade, or like questions. It is a matter within the sound discretion of the trial judge as to whether a witness has such learning and experience in a particular art, science or profession as to entitle him to be deemed prima facie an expert. [Cits.] [Id. at 639.]

The trial court did not abuse its discretion in striking portions of the affidavit of the psychologist.

Judgment reversed. All the Justices concur.

ADDENDUM B

A

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COURT OF APPEALS OF GA.

IN THE COURT OF APPEALS
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SUSAN C. MORRIS and HEATHER)
MORRIS, by her next friends)
WILLIAM E. MORRIS and SUSAN C.)
MORRIS)

Plaintiffs/Appellants,)

v.)

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DENNIS H. CHANDLER, JIMMY)
KEITH CHANDLER, JOHN DOE I and)
JOHN DOE II,)

Defendants/Appellees.)

COURT OF APPEALS CASE
NO. A91A0400

DOUGLAS COUNTY
SUPERIOR COURT
CIVIL ACTION FILE NO.
88-5965-MM-242

MOTION FOR LEAVE TO FILE BRIEF OF AMICUS CURIAE AND
BRIEF OF AMERICAN PSYCHOLOGICAL ASSOCIATION
AS AMICUS CURIAE

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<u>Maloney v. Wake County Hospital Systems,</u> <u>Inc.,</u> 45 N.C. App. 172, 262 S.E.2d 680 (1980)	5
<u>Montigo v. Secretary of Health and</u> <u>Human Services,</u> 729 F.2d 599 (9th Cir. 1984)	12
<u>Nicholas v. City of Alton,</u> 107 Ill. App. 3d 404, 437 N.E.2d 757 (1982)	5
<u>Nichols v. Colonial Beacon Oil Co.,</u> 284 A.D. 581, 132 N.Y.S.2d 72 (App. Div. 1954)	12
<u>Perkins v. State,</u> 260 Ga. 292, 392 S.E.2d 872 (1990)	4
<u>Price v. Mitchell Construction Co.,</u> 482 So. 2d 869 (La. Ct. App.), <u>writ</u> <u>denied,</u> 484 So. 2d 671 (1986)	10
<u>Sanchez v. Derby,</u> 230 Neb. 782, 433 N.W.2d 523 (1989)	12

<u>Sandow v. Weyerhaeuser Co.</u> , 252 Or. 377, 449 P.2d 426 (1969).....	10, 11
<u>Shaw v. Martin</u> , 155 Mich. App. 89, 399 N.W.2d 450 (1986).....	11
<u>Simmons v. Mullen</u> , 231 Pa. Super. 199, 331 A.2d 892 (1974).....	6, 10
<u>Smith v. Hospital Auth.</u> , 161 Ga. App. 657, 288 S.E. 2d 715 (1982).....	10
<u>Spann v. Bees</u> , 23 Md. App. 313, 327 A.2d 801 (1975).....	12
<u>State v. Sugar</u> , 100 N.J. 214, 495 A.2d 90 (1985).....	5
<u>Valiulis v. Scheffels</u> , 191 Ill. App. 3d 775, 547 N.E.2d 1289 (1989), <u>app.</u> <u>denied</u> , 132 Ill. 2d 555, 555 N.E.2d 386 (1990).....	11
<u>Vallejos v. KNC, Inc. -- A Rogers Co.</u> , 105 N.M. 613, 735 P.2d 530 (1987)...	5
<u>Virginia Acad. of Clinical Psychologists</u> <u>v. Blue Shield of Virginia</u> , 624 F.2d 476 (4th Cir. 1980), <u>cert. denied</u> , 450 U.S. 916 (1981).....	15
<u>Wells v. Ortho Pharmaceutical Corp.</u> , 788 F.2d 741 (11th Cir.), <u>cert.</u> <u>denied</u> , 479 U.S. 950 (1986).....	5
<u>Westinghouse Elec. Corp. v. Lawrence</u> , 488 So. 2d 623 (Fla. Dist. Ct. App. 1986).....	12
<u>Whalley v. Sakura</u> , 804 F.2d 580 (10th Cir. 1986).....	10
<u>Winder v. Martinez</u> , 88 N.M. 622, 545 P.2d 88 (Ct. App. 1975), <u>cert.</u> <u>denied</u> , 89 N.M. 6, 546 P.2d 71 (1976).....	12

STATUTES AND REGULATIONS:

5 U.S.C. § 8101(2).....	15
10 U.S.C. §§ 107 <u>et seq.</u>	15
29 C.F.R. § 94.4(bb).....	15
29 U.S.C. § 723(a)(1).....	15
29 U.S.C. §§ 801 <u>et seq.</u>	15
32 C.F.R. § 199.4(b)(vii).....	16
32 C.F.R. § 199.12(c)(3)(iii)(a).....	15
32 C.F.R. §§ 199, 119.4(c)(e)(ix).....	16
38 U.S.C. § 613(b).....	15

42 C.F.R. § 38.2(e).....	15
42 C.F.R. §§ 110.101, 110.104.....	15
42 U.S.C. § 300e-1.....	15
42 U.S.C. § 5183.....	15
Ga. Code Ann. § 17-7-103.1.....	9
Ga. Code Ann. § 24-9-67.....	3
Ga. Code Ann. § 34-34-1(2).....	8
Ga. Code Ann. § 43-39-1.....	10
Ga. Code Ann. § 43-39-8.....	14, 15
Ga. Code Ann. § 43-39-9.....	15

MISCELLANEOUS:

American Psychiatric Association, Diagnostic and Statistical Manual of Mental Disorders 378-387 (3d ed. revised 1987).....	8, 9
APA, <u>Criteria for Accreditation of Doctoral Training Programs and Internships in Professional Psychology</u> (1979).....	14
APA, <u>Ethical Principles of Psychologists</u> , 36 Am. Psychologist 633 (1981).....	15
APA, <u>General Guidelines for Providers of Psychological Services</u> , 42 Am. Psychologist 7 (1987).....	15
APA, <u>Specialty Guidelines for the Delivery of Services by Clinical Psychologists</u> , 36 Am. Psychologist 640 (1981).....	15

Baker, Feldman, White, Harley, Dinse, & Berkey, <u>Monitoring Neurotoxins in Industry: Development of a Neurobehavioral Test Battery</u> , 5 J. Occupational Medicine 125 (1983).	22, 26
E. Baker & R. White, Chronic Effects of Organic Solvents on the Central Nervous System and Diagnostic Criteria, published by World Health Organization and Nordic Council of Ministers, reprinted by U.S. Dep't of Health and Human Services, Public Health Service (1985).....	26
Baker, White & Murawski, <u>Clinical Evaluation of Neurobehavioral Effects of Occupational Exposure to Organic Solvents and Lead</u> , 14 Int'l J. Mental Health 135 (1985).....	26
Bell, <u>Aldrin Poisoning: A Case Report</u> , Med. J. Australia 698 (1960).....	29
Bieliauskas and Matthews, <u>American Board of Clinical Neuropsychology: Policies and Procedures</u> , 1 The Clinical Neuropsychologist 21-28 (1987).....	18
E. Bigler, <u>Diagnostic Clinical Neuropsychology</u> (1984).....	17, 22
Brown, Baird & Shatz, <u>The Effects of Cerebrovascular Disease and Its Treatment on Higher Cortical Functioning</u> , in Neuropsychological Assessment of Neuropsychiatric Disorders 384-414 (I. Grant & K. Adams eds. 1986).....	22
Carlin, <u>Neuropsychological Consequences of Drug Abuse</u> , in Neuropsychological Assessment of Neuropsychiatric Disorders 478 (I. Grant & K. Adams eds. 1986).....	22
Cassitto, Camerino, Hanninen & Anger, <u>International Collaboration to Evaluate the WHO Neurobehavioral Core Test Battery</u> , in Advances in Neurobehavioral Toxicology (B. Johnson ed. 1990).....	26
Cotton, <u>Comparative Psychological Studies of the Mental Capacity in Cases of Dementia Praecox and Alcoholic Insanity</u> , Nervous and Mental Disease Monographs Series 9, 123-154.....	21

Dikman, Machamer, Temkin & McLean, <u>Neuropsychological Recovery in Patients With Moderate to Severe Head Injury: Two-Year Follow-Up</u> , 12 J. of Clinical & Experimental Neuropsychology 507 (1990).....	22
D. Ecobichon and R. Joy, <u>Pesticides and Neurological Diseases</u> (1982).....	29
<u>Environmental Toxins: Psychological, Behavioral, and Sociocultural Aspects, 1973-1989</u> (C. Travis, B. McLean & C. Ribar eds. 1989).....	18, 24
Executive Committee, Division 40, APA, <u>Definition of a Clinical Neuropsychologist</u> , 7 Newsletter 40, May 1989.....	18
Filskov & Goldstein, <u>Diagnostic Validity of the Halstead-Reitan Neuropsychological Battery</u> , 42 J. of Consulting & Clinical Psychology 382 (1984).....	23
Filskov, Grimm & Lewis, <u>Brain-Behavior Relationships</u> , in Handbook of Clinical Neuropsychology 39 (S. Filskov & T. Boll eds. 1981)....	22, 23
Fischer, <u>Using the Wechsler Memory Scale-Revised to Detect and Characterize Memory Deficits in Multiple Sclerosis</u> , 2 Clinical Neuropsychologist 173 (1988).....	22
S. Franz, <u>Handbook of Mental Examination Methods</u> 12 (1919).....	21
Gamberale, <u>Use of Behavioral Performance Tests in the Assessment of Solvent Toxicity</u> , 11 Scandinavian J. of Work Env. & Health (Suppl. 1) 65 (1985).....	24
Gatewood, <u>An Experimental Study of Dementia Praecox</u> , Psychological Monographs (1909).....	21
C. Golden, J. Moses, J. Coffman, W. Miller & F. Strider, <u>Clinical Neuropsychology: Interface with Neurologic and Psychiatric Disorders</u> (1983).....	22
C. Golden & P. Vincente, <u>Foundations of Clinical Neuropsychology</u> (1983).....	17
Goldstein, Deysach & Kleinknecht, <u>Effect of Experience and Amount of Information on Identification of Cerebral Impairment</u> , 41 J. of Consulting & Clinical Psychology 30 (1973).....	23

G. Goldstein & L. Ruthven, <u>Rehabilitation of the Brain Damaged Adult</u> (1983)....	19
<u>Handbook of Clinical Neuropsychology</u> (S. Filskov & T. Boll eds. 2d ed. 1986).....	19
<u>Handbook of Clinical Neuropsychology</u> (S. Filskov & T. Boll eds. 1981)....	17
Hanninen, <u>The Neuropsychological Screening Test Battery: Validation and Current Uses in Finland</u> , in <u>Advances in Neurobehavioral Toxicology</u> 257 (B. Johnson ed. 1990).....	22, 26
Hanninen, <u>Psychological Picture of Manifest And Latent Carbon Disulfide Poisoning</u> , 28 <u>British J. Indus. Medicine</u> 374 (1971).....	25
Hanninen, <u>Twenty-five Years of Behavioral Toxicology Within Occupational Medicine: A Personal Account</u> , 7 <u>Am. J. Indus. Medicine</u> 19 (1985).....	24
D. Hartman, <u>Neuropsychological Toxicology: Identification and Assessment of Human Neurotoxic Syndromes</u> 2 (1988).....	16, 22, 24, 25, 27
Hartman, <u>Neuropsychological Toxicology Identification and Assessment of Neurotoxic Syndromes</u> , 2 <u>Archives of Clinical Neuropsychology</u> 45 (1987).....	27
Hawkins, <u>Occupational Neurotoxicology: Some Neurological Issues and Challenges</u> , 12 <u>J. Clinical & Experimental Neuropsychology</u> 664 (1990).....	27, 28
H. Hecaen & M. Albert, <u>Human Neuropsychology</u> (1978).....	19
K. Heilman & E. Valenstein, <u>Clinical Neuropsychology</u> (2d ed. 1985).....	17, 19
Hoch, <u>A Review of Some Psychological and Physiological Experiments Done in Connection With the Study of Mental Diseases</u> , 1 <u>Psychological Bull.</u> 241 (1904).....	20
International Neuropsychological Society Task Force on Accreditation, Education and Credentialing, Division 40, APA, <u>Guidelines for Doctoral Training Programs in Clinical Neuropsychology</u> , 4 <u>Newsletter</u> 40, Aug. 1986.....	18

International Neuropsychological Society Task Force on Education, Accreditation and Credentialing, Division 40, APA, <u>Report of Division 40 International Neuropsychological Society Task Force on Education, Accreditation and Credentialing</u> , 2 Newsletter 40, summer 1984.....	18
International Neuropsychological Society Task Force on Education, Accreditation and Credentialing, Division 40, APA, <u>Report on the Subcommittee on Psychology Internships</u> , 2 Newsletter 40, Spring 1984.....	18
Kasznik, <u>The Neuropsychology of Dementia</u> , in Neuropsychological Assessment of Neuropsychiatric Disorders 172, 189 (I. Grant & K. Adams eds. 1986).....	24
C. Klaasen, M. Amdur & J. Doull, <u>Casarett and Doull's Toxicology</u> 543-581 (1986).....	29, 30
Korgeski and Leon, <u>Correlates of Self-Reported and Objectively Determined Exposure to Agent Orange</u> , 140 American J. of Psychiatry 1443-1449 (1983).....	29
Korsak and Sato, <u>Effects of Chronic Organophosphate Pesticide Exposure on the Central Nervous System</u> 11 Clinical Toxicology 83-95 (1977)....	29
Letz, <u>The Neurobehavioral Evaluation System: An International Effort</u> , in Advances in Neurobehavioral Toxicology 189 (B. Johnson, ed. 1990).....	26
Levin, Rodnitzky, and Mick, <u>Anxiety Associated with Exposure to Organophosphate Compounds</u> , 33 Archives of General Psychiatry 225-228 (1976).....	29
M. Lezak, <u>Clinical Neuropsychological Assessment</u> (2d ed. 1983).....	19
Lezak, <u>Neuropsychological Assessment in Behavioral Toxicology -- Developing Techniques and Interpretive Issues</u> , 10 Scandinavian J. of Work Env. & Health (Suppl. 1) 25, 28 (1984).....	17
A. Luria, <u>Higher Cortical Functions in Man</u> (2d ed. 1980).....	17, 19

Matthews, Chapman & Woodard, <u>Differential Neuropsychologic Profiles in Idiopathic Versus Pesticide-Induced Parkinsonism</u> , in <u>Advances in Neurobehavioral Toxicology</u> 323 (B. Johnson ed. 1990).....	28
<u>Medical Neuropsychology: The Impact of Disease on Behavior</u> (R. Tarter, D. Van Thiel & K. Edwards eds. 1988).....	17, 22, 23
Milberg, Hebben & Kaplan, <u>The Boston Process Approach to Neuropsychology</u> , in <u>Neuropsychological Assessment of Neuropsychiatric Disorders</u> 65-86 (I. Grant & K. Adams eds. 1986).....	23
National Research Council, <u>Summary Report 1987: Doctorate Recipients from United States Universities</u> (Washington, D.C.; National Academy Press, Preliminary release (1989))..	13
<u>Neuropsychology Assessment of Neuropsychiatric Disorders</u> (I. Grant & K. Adams eds. 1986).....	19
S. Proctor & R. White, <u>Critical Evaluation of Test Batteries and Their Use in Epidemiology in Advances in Neurobehavioral Toxicology</u> 273-281 (B. Johnson ed. 1990).....	27
<u>Prevention of Neurotoxic Illness in Working Populations</u> (B. Johnson ed. 1987).....	22, 24, 26, 27
R. Reitan & L. Davison, <u>Clinical Neuropsychology: Current Status and Applications</u> (1974).....	17, 19
Richmond, <u>The Psychologist in the Psychopathic Hospital</u> , 18 J. Abnormal Psychology & Soc. Psychology 299, 309 (1924).....	20
Rodnitzky, <u>Neurological and Behavioral Aspects of Occupational Exposure to Organophosphate Pesticides</u> , in <u>Behavioral Toxicology: Early Detection of Occupational Hazards</u> 165-173 (C. Xintaras, B. Johnson, & I. deGroot eds. 1973).....	29
B. Rourke, D. Bakker, J. Fisk, & J. Strang, <u>Child Neuropsychology</u> (1983).....	19
P. Russell, <u>Neuropsychological Effects of Individuals Exposed to Telone (1,3-dichloropropene)</u> (1983).....	29

Ryan, Morrow, Bromet & Parkinson, <u>Assessment of Neuropsychological Dysfunction in the Workplace</u> , 9 J. of Clinical & Experimental Neuropsychology 665 (1987).....	26
E. Savage, T. Keefe, L. Mounce, J. Lewis, R. Heaton, & L. Parks, <u>Chronic Neurological Sequelae of Acute Organophosphate Pesticide Poisoning: A Case-Control Study</u> (1980).....	29
Smith, <u>Principles Underlying Human Brain Functions in Neuropsychological Sequelae of Different Neuropathological Processes</u> , in Handbook of Clinical Neuropsychology 184 (S. Filskov & T. Boll. eds. 1981).....	21
Sullivan, Sagar, Gabrieli, Corkin & Growdon, <u>Different Cognitive Profiles on Standard Behavioral Tests in Parkinson's Disease and Alzheimer's Disease</u> , 6 J. of Clinical & Experimental Neuropsychology 799 (1988).....	22
Tarter & Edward, <u>The Neuropsychology of Alcoholism</u> , in Alcohol and the Brain: Chronic Effects 217 (R. Tarter & D. Van Thiel eds. 1985).....	22
Trettien, <u>Practical Applications of Psychology in the Treatment of Certain Psychopathics (and Other Neuropathologies)</u> , 1 J. Applied Psychology 244, 247 (1917).....	20
J. Wagner, <u>Neurologic Disorders of Ambulatory Patients</u> 247 (1989).....	24
White, <u>Differential Diagnosis of Probable Alzheimer's Disease and Solvent Encephalopathy in Older Workers</u> , 1 Clinical Neuropsychologist 153 (1987).....	28
White, <u>The Role of Neuropsychological Testing in the Assessment of Solvent Exposure</u> , 2 The Occupational & Env. Medicine Rep. 54 (1988).....	27
White, <u>The Role of the Neuropsychologist in the Evaluation of Toxic Central Nervous System Disorders</u> , 1 Seminars in Occupational Medicine 191 (1986).	28
White & Feldman, <u>Neuropsychological Assessment of Toxic Encephalopathy</u> , 11 Am. J. Indus. Medicine 395 (1987).....	25, 27

White, Feldman & Proctor, <u>Behavioral Neurotoxicology</u> , in <u>Clinical Syndromes in Adult Neuropsychology</u> (R. White ed., in press).....	26
White, Feldman & Travis, <u>Neurobehavioral Effects of Toxicity Due to Metals, Solvents, and Insecticides</u> , 13 <u>Clinical Neuropharmacology</u> 392 (1990).....	24, 26, 27, 28, 30
2 Wigmore on Evidence § 569 at 789 (Chadbourn Rev. 1979).....	5
Whorton and Obrinsky, <u>Persistence of Symptoms After Mild to Moderate Acute Organophosphate Poisoning Among 19 Farm Field Workers</u> , 11 <u>J. Of Toxicology and Environmental Health</u> 347-354 (1983).....	29
R. Yerkes, J. Bridges & R. Hardwick, <u>A Point Scale for Measuring Mental Ability</u> (1915).....	21
Yozawitz, <u>Applied Neuropsychology in a Psychiatric Center</u> , in <u>Neuropsychological Assessment of Neuropsychiatric Disorders</u> 121 (I. Grant & K. Adams eds. 1986).....	19

MOTION FOR LEAVE TO FILE BRIEF OF AMICUS CURIAE

The American Psychological Association respectfully moves for leave to file a brief amicus curiae in this case.

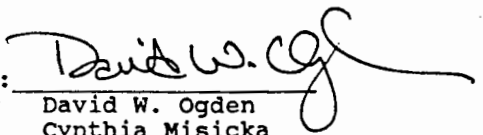
The American Psychological Association ("APA") is a voluntary, nonprofit, scientific and professional organization with approximately 102,000 members and affiliates, including 1,376 members in Georgia. Since its founding in 1892, APA has been the major association of psychologists in the United States. APA includes the vast majority of psychologists holding doctoral degrees from accredited universities in this country. More than 44,000 of APA's United States members are psychologists who are licensed by their States to provide health care services. APA's division of Clinical Neuropsychology (Division 40) is comprised of 2,775 members whose special skills are focused on the diagnosis, assessment and treatment of brain damage. APA's Division of Psychopharmacology (Division 28) is comprised of 917 members who specialize in studying the effects of chemical substances on the brain and behavior.

Granting defendants' motion for summary judgment in this case, the Superior Court of Douglas County rejected as incompetent for certain purposes the proffered expert testimony of John S. Currie, Ph.D., a psychologist and member of the American Psychological Association. Noting that "causation is a central element of proof of any negligence action," slip op. at 4, the court ruled that psychologists are not competent to testify as to the cause of an alleged mental defect: "Medical causation is not a subject within the scope of psychological expertise." Id. at 6.

If affirmed, this decision would put Georgia courts profoundly out of step with the vast majority of American jurisdictions, which have ruled that psychologists are competent to testify about the causes, including organic causes, of brain dysfunction. In fact, affirmance would deprive the Georgia courts in many cases of perhaps the best source of expert testimony concerning brain damage and its causes.

As the national association of psychologists, APA can offer this Court a comprehensive analysis of the central legal and scientific question in this case -- whether the lower court erred in ruling that psychologists are incompetent to testify as to the organic causes of psychological dysfunction. APA will demonstrate that psychologists are leaders in the scientific investigation of industrial and pharmacological agents' effects on the human nervous system and neuropsychological functioning. APA will also show that the ruling below is wrong as a matter of Georgia law and inconsistent with the law in virtually all other American jurisdictions that have considered the issue.

Respectfully submitted,

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BRIEF OF AMERICAN PSYCHOLOGICAL ASSOCIATION
AS AMICUS CURIAE^{1/}

STATEMENT OF THE CASE

Plaintiffs allege that on or about July 5, 1984 defendants negligently treated plaintiffs' home with aldrin, a neurotoxic substance commonly used for termite and insect control. Plaintiffs contend that as a result of defendants' negligent application of aldrin, Plaintiffs sustained neurocognitive and neuroaffective dysfunction, i.e., psychological dysfunction attributable to aldrin-induced damage to the brain.

Defendants moved for summary judgment. Central to plaintiffs' effort to overcome that motion was the affidavit of John S. Currie, Ph.D., a psychologist and member of amicus APA and the National Academy of Neuropsychologists. Based upon his examinations of the plaintiffs and his education and training, Dr. Currie concluded that plaintiffs were suffering psychological dysfunction, the cause of which was aldrin-induced toxic brain damage.

In granting defendants' motion for summary judgment, the trial court did not inquire into Dr. Currie's particular qualifications. Instead, it rejected Dr. Currie's affidavit on the ground that psychologists are as a class incompetent to testify concerning the causes of organic brain damage.^{2/}

^{1/} Counsel wishes to thank Antoinette R. Appel, Ph.D., David E. Hartman, Ph.D., Roberta F. White, Ph.D., and Ronald W. Wood, Ph.D., for their substantial assistance in the preparation of this brief.

^{2/} The superior court stated:

" . . . Dr. John G. Leonardy, M.D., stated that an examination of Plaintiffs would best be conducted by 'a physician specializing in neurology.' Dr. Currie, though qualified to state which mental dysfunctions Plaintiffs may be suffering is not competent to testify as to causation Dr. Currie's field of training is not within the scope of the proposed testimony Here Dr. Currie is attempting to
(continued...)

SUMMARY OF ARGUMENT

The superior court's categorical ruling is contrary to Georgia law and to rulings in the overwhelming majority of jurisdictions that have considered whether psychologists are qualified to testify concerning organic etiologies of psychological problems. It reflects a profound misunderstanding of the scientific process underlying etiological statements regarding psychological dysfunction, as well as of the science and practice of psychology. If affirmed, the superior court's ruling will deprive Georgia courts of experts often in the best position to provide testimony concerning the causes -- including organic causes -- of psychological dysfunction.

ARGUMENT

I. DE NOVO REVIEW IS APPROPRIATE.

A court's determination at trial whether a particular witness qualifies as an expert is generally reviewed for an abuse of discretion. Bowden v. State, 239 Ga. 821, 826, 288 S.E.2d 905 (1977), cert. denied, 435 U.S. 937 (1978). De novo review is appropriate here, however, for two reasons. First, in this case the superior court granted summary judgment, and ruled solely on the written record without hearing live testimony. "[S]ummary judgment rulings are strictly matters of law and are not based at all on findings of fact, made by court or jury, nor on weighing of evidence, nor on credibility of witnesses." Bishop v. Mangal Bhai Enterprises, Inc., 194 Ga. App. 874, 874, 392 S.E.2d 535, cert. denied (Apr. 12, 1990). Second, the superior court ruled as a matter of

^{2/} (...continued)
testify as to what caused an alleged mental condition, not what physical ailment the mental condition caused. Medical causation is not a subject within the scope of psychological expertise."

Slip op. at 5-6 (citations omitted).

law concerning the competency of psychologists as a class to testify concerning "medical" causation. Such a broad legal ruling must be reviewed de novo, because it affects not only Dr. Currie's proffered testimony but that of all other psychologists on similar subject matter.^{3/}

II. THE SUPERIOR COURT ERRED INSOFAR AS IT HELD THAT ONLY PHYSICIANS MAY QUALIFY AS EXPERTS CONCERNING "MEDICAL" CAUSATION.

Apparently because psychologists possess a Ph.D. and psychologist's license instead of an M.D. and a medical license, the superior court concluded that "[m]edical causation is not a subject within the scope of psychological expertise." Slip op. at 6. But it is clear that Georgia does not view the M.D. as a talisman indispensable to being expert on the subject of "medical" causation. To the contrary, like virtually every other jurisdiction in the United States, Georgia recognizes that non-physician specialists may possess expertise commensurate with or even superior to that of physicians concerning particular questions of "medical" causation. Georgia law allows testimony by non-physician experts where such testimony will assist the jury to resolve the causation question in a particular case. The issue in every case is whether the witness possesses expertise concerning the matter to which the testimony relates.

Ga. Code Ann. § 24-9-67 provides that "[t]he opinions of experts on any question of science, skill, trade, or

^{3/} Should the Court conclude otherwise, the superior court's ruling should nevertheless be reversed as an abuse of discretion because the court "applied the wrong criteria" in reaching its decision. See Hyde v. State, 377 S.E.2d 187, 189 Ga. App. 727, 729 (1988), cert. denied, 189 Ga. App. 912 (1989). Alternatively, the decision should be remanded for the trial court to initially exercise its discretion to determine whether Dr. Currie is a qualified expert on the issue of causation. Goodman v. Lipman, No. A90A1204, slip op. at 3-4 (Ga. App. Nov. 1, 1990) (trial court failed to exercise discretion where it excluded expert testimony concerning a physician's standard of care on the ground that the witness was not a physician).

like questions shall always be admissible; and such opinions may be given on the facts as proved by other witnesses." One is qualified if he or she has special knowledge in a particular skill or profession, derived from experience or study, concerning the matter in issue. Bowden v. State, 239 Ga. at 826.

No separate or heightened standards apply to expert testimony concerning a "medical" issue. "'Medical experts are persons possessing technical and peculiar knowledge, and any person learned in medical or physiological matters is qualified to testify as an expert thereon, even though he is not a medical practitioner." Avret v. McCormick, 246 Ga. 401, 401, 271 S.E.2d 832 (1980) (quoting 32 C.J.S. Evidence § 546(92)) (emphasis added). Georgia law "does not require that only medical doctors be permitted to give testimony regarding a medical issue, but allows others with certain training and experience to testify on issues within the scope of their expertise." Hyde v. State, 189 Ga. App. at 728.^{4/}

Georgia's recognition that witnesses with training in disciplines other than medicine may qualify as experts on "medical" matters, including causation, is consistent with

^{4/} Indeed, as discussed more fully in the following section, in Jacobs v. Pilgrim, 186 Ga. App. 260, 367 S.E.2d 49, cert. denied, 186 Ga. App. 918 (1988), this Court recognized that psychologists are qualified to testify as experts concerning the causes of psychological disorders, including those with organic etiologies. Georgia courts have also recognized that nurse practitioners may be qualified as experts concerning causation of vaginal scarring, Hyde v. State, 189 Ga. App. at 729, and concerning the applicable medical standard of care, Avret v. McCormick, 246 Ga. at 401. In Perkins v. State, the Georgia Supreme Court held that a non-M.D. medical examiner was qualified to provide expert testimony concerning the causal relationship between a particular gunshot wound and death. 260 Ga. 292, 392 S.E.2d 872 (1990). Most recently, in Goodman v. Lipman, No. A90A1204, slip op. at 4 (Ga. App. Nov. 1, 1990), the Georgia Court of Appeals held that it was error to exclude the expert testimony of a witness concerning a physician's standard of care on the ground that the witness was not yet licensed at the time of the alleged malpractice.

the overwhelming majority of jurisdictions that have considered the issue. See Jenkins v. United States, 307 F.2d 637, 644 (D.C. Cir. 1962) ("The kinds of witnesses whose opinions courts have received, even though they lacked medical training . . . are legion.") (emphasis in original).^{5/} 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).

The appropriate question, therefore, is not whether a witness has a medical degree, but whether the witness has "'such skill, knowledge or experience in a field or calling as to be able to draw an inference that could not be drawn by the average layman.'" Hyde v. State, 189 Ga. App. at 728 (quoting Agnor, Georgia Evidence, § 9-5). As developed below, psychology assuredly affords opportunity for specialized training and expertise sufficient to draw inferences concerning organic etiologies of psychological

^{5/} Opinions permitting psychologists to testify on matters as to which physicians may also have expertise are discussed in the following section. With regard to other non-medical experts, see Hermes v. Pfizer, Inc., 848 F.2d 66, 69 (5th Cir. 1988) (pharmacist -- "nothing generally disqualifies a non-physician as an expert on causation"); Backes v. Valspar Corp., 783 F.2d 77, 79 (7th Cir. 1986) (chemist "may, indeed be more competent to give such an opinion than the [examining] doctor"); Wells v. Ortho Pharmaceutical Corp., 788 F.2d 741, 744 (11th Cir.), cert. denied, 479 U.S. 950 (1986) (pharmacologist); Chalupa v. Industrial Comm'n, 109 Ariz. 340, 509 P.2d 610 (1973) (chiropractor); Nicholas v. City of Alton, 107 Ill. App. 3d 404, 437 N.E.2d 757 (1982) (pharmacologist); State v. Sugar, 100 N.J. 214, 495 A.2d 90 (1985) (toxicologist and chemist); Vallejos v. KNC, Inc. -- A Rogers Co., 105 N.M. 613, 735 P.2d 530 (1987) (chiropractor); Maloney v. Wake County Hospital Systems, Inc., 45 N.C. App. 172, 262 S.E.2d 680 (1980) (nurse).

disorders, including brain damage induced by industrial chemicals such as aldrin.

III. PSYCHOLOGISTS ARE QUALIFIED TO GIVE EXPERT TESTIMONY CONCERNING THE CAUSES OF PSYCHOLOGICAL CONDITIONS.

In Hyde, this Court upheld admission of a nurse's testimony concerning medical causation because the issue there existed within "'an overlap of medical and nursing expertise' which permits nurses . . . to testify as expert witnesses." 189 Ga. App. at 729 (quoting Bethea v. Smith, 176 Ga. App. 467, 470, 336 S.E.2d 295 (1985)). With respect to the causes of psychological disorders, there is enormous "overlap" between psychology and medicine. See, e.g., Durflinger v. Artiles, 563 F. Supp. 322, 328-30 (D. Kan. 1981), aff'd, 727 F.2d 888 (10th Cir. 1984) (noting with approval psychiatric opinion that "there is but one body of knowledge common to the practice of psychology and psychiatry"); Capp v. Rank 51 Cal. 3d 1, 793 P.2d 2, 12 (1990) (noting that the distinction between psychology and medicine "turns on the nature of the treatment each can provide, not the origin of the condition treated," and that there "is no bright line distinguishing conditions of physical from those of psychological origin"); Simmons v. Mullen, 231 Pa. Super. 199, 331 A.2d 892, 898-99 (1974) ("present medical and psychological practice" makes clear psychologists are competent as experts on organic brain malfunctions; "when dealing with the brain, consultation with non-medical practitioners may be not only desirable but necessary").^{6/} Georgia law, the law of virtually every other U.S. jurisdiction, and the realities of

^{6/} In Simmons, the Court recognized psychologists might possess expertise pertinent to causation but declined to so rule because the record in the case was inadequate on the point. 331 A.2d at 899.

psychological and neuropsychological training and experience, all mandate reversal in this case.

A. Under Georgia Law, Psychologists are Qualified and Competent to Identify the Causes of Mental and Nervous Disorders.

1. This Court has acknowledged that psychologists are qualified to testify as expert witnesses concerning the causes of psychological disorders.

In Jacobs v. Pilgrim, 186 Ga. App. 260, 367 S.E.2d 49, cert. denied, 186 Ga. App. 918 (1988), this Court upheld admission of expert testimony by a neuropsychologist concerning the diagnosis and cause of plaintiff's mental disorder, and recognized the expertise of psychologists to diagnose brain damage and assess its causes. Plaintiff brought suit for injuries allegedly sustained in a car accident. Two examining psychologists testified that plaintiff had suffered brain damage caused by the collision. A neuropsychologist testified that the psychological test results were not consistent with brain damage, and opined that the plaintiff's disorder could be a psychophysiological reaction that could have been caused by stress.

This Court held that the neuropsychologist's testimony was "relevant to cast doubt on the other psychologist's explanation of the causal relationship between the collision and appellant's problems." Id. at 262. The Court found that the neuropsychologist was shown to be an expert in interpreting the psychological test administered to the plaintiff and his opinion on causation based on this interpretation was properly admitted. Id. The trial court's ruling in this case is patently contrary to this Court's ruling in Jacobs.

2. By statute, Georgia recognizes psychologists' competence to "diagnos[e] and treat[] mental and nervous disorders" -- and therefore necessarily recognizes psychologists' expertise in identifying the causes of such disorders.

The Georgia Code provision pursuant to which Dr. Currie is licensed defines the practice of psychology as, inter alia, "any service involving the application of recognized principles, methods, and procedures of the science and profession of psychology, such as, but not limited to, diagnosing and treating mental and nervous disorders." Ga. Code Ann. § 34-34-1(2). See Ellis v. State, 168 Ga. App. 757, 759, 309 S.E.2d 924 (1983) ("only a qualified expert such as a psychiatrist, psychologist, or medical doctor would be competent to diagnose and define . . . a mental disorder") (emphasis added). The statute makes no distinction between mental and nervous disorders with organic etiologies and those caused otherwise. To the contrary, consistent with this Court's holding in Jacobs, the statute recognizes that psychologists are skilled at diagnosing and treating all psychological disorders regardless of their etiologies.

Diagnosing mental and nervous disorders, which is within the statutory competence of psychologists, requires the competence to differentiate between disorders with organic and non-organic etiologies. Indeed, before reaching a diagnosis that a patient is suffering from a nervous or mental disorder thought without organic etiology, the clinician must exclude organic bases for the symptom pattern before making a diagnosis.^{1/} Clearly, to

^{1/} American Psychiatric Association, Diagnostic and Statistical Manual of Mental Disorders 378-387 (3d ed. revised 1987); id. at xxiv-xxv ("diagnostic hierarchies are governed by two principles; 1. When an Organic Mental Disorder can account for the symptoms, it preempts the diagnosis of any other disorder that could produce the same symptoms").

exclude an organic basis for a symptom pattern, one must be able to determine whether that symptom pattern either can or does arise from an organic cause. Moreover, to diagnose and treat mental and nervous disorders that do have organic etiology, diagnosis of the specific factor causing the symptoms -- often including particular chemical agents -- is clearly fundamental.^{8/}

The Superior Court's ruling that identifying the causes of organic brain disorder "is not . . . within the scope of psychological expertise," slip op. at 6, would thus preclude psychologists from doing the very thing the Legislature has concluded they are competent to do. As the Arizona courts have recognized, "[s]ince by statute psychologists are entitled to diagnose, treat and correct mental conditions within their field it follows that they are also competent to testify regarding the cause of such conditions." Hooper v. Industrial Comm'n, 126 Ariz. 586, 617 P. 2d 538, 540 (Ct. App. 1980).^{9/} Because the kind

^{8/} E.g., amphetamine withdrawal (DSM-III-R 292.00); amphetamine intoxication (DSM-III-R 305.70 et seq.). It is noteworthy as well that the Georgia Code declares psychologists competent to testify as "medical expert[s]" concerning an insanity defense. See Ga. Code Ann. § 17-7-130.1. To so testify, an expert must have the ability to exclude voluntary intoxication as the cause of mental illness. Id.

^{9/} 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 an 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

(continued...)

of diagnosis at issue here is clearly within an area of competency shared pursuant to statute by psychology and medicine, the Georgia Code alone, § 43-39-1, also mandates reversal of the Superior Court's ruling in this case.^{10/}

B. Consistent with Georgia Law, the Overwhelming Majority of Jurisdictions to Rule on the Issue Have Held that Psychologists are Qualified Experts on the Causes of Psychological Disorders.

The vast majority of courts that have considered the issue have ruled that psychologists are qualified to testify as experts about physical causes of mental disorders.^{11/}

^{9/} (...continued)
authorization to diagnose and treat complaints embraced by psychological practice); Chalupa v. Industrial Comm'n, 109 Ariz. 340, 509 P.2d 610 (1973) (because statute permits chiropractors to treat spinal maladjustments, they are competent to give expert testimony as to the cause of these conditions). Indeed, the dissenting opinion in Hyde v. State, 189 Ga. App. at 730-31, which would have excluded nurses' expert testimony concerning medical causation, rests on the premise that unlike the diagnosis here at issue, which both psychology and medicine are free to make, the sort of "diagnosis" at issue in Hyde was said to be "the exclusive province" of medical doctors under the Georgia Code.

^{10/} Smith v. Hospital Auth., 161 Ga. App. 657, 288 S.E.2d 715 (1982), therefore is entirely inapposite for the same reason it was not controlling in Hyde. The nurse's testimony excluded in Smith -- judgments regarding performance of a Caesarian section -- concerned matters not within a nurse's professional skills. See Hyde v. State, 189 Ga. App. 727, 729-730 (1988).

^{11/} See, e.g., Whalley v. Sakura, 804 F.2d 580 (10th Cir. 1986); Sandow v. Weyerhaeuser Co., 252 Or. 377, 449 P.2d 426 (1969); Howle v. PYA/Monarch, Inc., 288 S.C. 586, 344 S.E.2d 157, 160-161 (Ct. App. 1986) (noting that "[p]sychologists have been allowed to give expert opinions as to mental and emotional condition, and often causation, in many different types of cases," and citing cases); Kravinsky v. Glover, 263 Pa. Super. 8, 396 A.2d 1349 (1979); Madrid v. University of California, 105 N.M. 715, 737 P.2d 74 (1987); Hooper v. Industrial Comm'n of Arizona, 126 Ariz. 586, 617 P.2d 538 (Ct. App. 1980).

See also Horne v. Marvin Goodson Logging Co., 83 N.C. App. 96, 349 S.E.2d 293 (1986) (holding it was error to conclude that neuropsychologist was incompetent to testify as to diagnosis of brain damage); Buckler v. Sinclair Refining Co., 68 Ill. App. 2d 283, 216 N.E.2d 14 (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); Simmons v. Mullen, 231 Pa. Super. (continued...)

The Oregon Supreme Court in Sandow v. Weyerhaeuser Co. 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 disorder," including the "'differentiat[ion] between organic and functional disorders." 449 P.2d at 428-429 (emphasis added).

Indeed, most jurisdictions to rule on the subject have held that psychologists and neuropsychologists are qualified as experts on the cause of organically based disorders, including brain damage.^{12/}

^{11/} (...continued)
199, 331 A.2d 892, 898 (1974) (holding psychologist qualified as 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"); James v. State, 498 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.), writ denied, 484 So. 2d 671 (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); Hill v. State, 473 So. 2d 1253, 1255 (Fla. 1985) (accepting psychologist's testimony regarding defendant's epilepsy); Gore v. Daniel O'Connell's Sons, Inc., 17 Mass. App. Ct. 645, 461 N.E.2d 256, 258 (1984) (accepting diagnosis of psychologist regarding accident victim's "chronic, mild, organic syndrome, associated with brain trauma"); In Interest of Doe, 1 Haw. App. 226, 617 P.2d 826, 829 (Haw. Ct. App. 1980) (accepting court-appointed psychologist's diagnosis that appellant had "no gross signs of organic impairment of function"); Collins v. State, 361 So. 2d 333, 336 (Miss. 1978) (noting testimony of clinical psychologist that appellant suffered from organic brain syndrome).

^{12/} See Fabianke v. Weaver, 527 So. 2d 1253 (Ala. 1988) (neuropsychologist held qualified as expert to testify that respiratory distress could have caused speech problems); Valiulis v. Scheffels, 191 Ill. App. 3d 775, 547 N.E.2d 1289 (1989), app. denied, 132 Ill. 2d 555, 555 N.E.2d 386 (1990) (neuropsychologist held qualified to testify as expert that car accident caused brain damage and precipitated onset of multiple sclerosis symptoms); Shaw v. Martin, 155 Mich. App. 89, 399 N.W.2d 450 (1986) (neuropsychologist held qualified as expert to testify that car accident caused higher cortical

(continued...)

So far as amici are aware, only three jurisdictions have had a contrary rule. See Spann v. Bees, 23 Md. App. 313, 327 A.2d 801 (1975); Kriewitz v. Savoy Heating & Air Conditioning, 396 So. 2d 49 (Ala. 1981); Executive Car and Truck Leasing v. DeSerio, 468 So. 2d 1027 (Fla. Dist. Ct. App. 1985). Fifteen years ago, the Spann Court went as far as to hold that psychologists are not qualified as experts as to even the existence of mental conditions, as well as their etiology. Based on an Alabama statute defining the practice of psychology that did not authorize independent diagnosis of "medical problems," the Alabama court in Kriewitz held that a psychologist could not give expert testimony concerning the organic cause of brain damage. 396 So. 2d at 52-53. But see Fabianke v. Weaver, 527 So. 2d 1253 (1988) (holding a psychologist qualified to provide expert testimony that speech dysfunction may have been caused by oxygen deprivation). Alabama and Maryland are thus severely out of step with the rest of the Nation, and are likely to reverse themselves eventually. Indeed, four years after one Florida district court of appeals in DeSerio ruled a psychologist not qualified to give such testimony; but see Westinghouse Elec. Corp. v. Lawrence, 488 So. 2d 623 (Fla. Dist. Ct. App. 1986) (permitting clinical psychologists to testify

^{12/} (...continued)
dysfunction); Sanchez v. Derby, 230 Neb. 782, 433 N.W.2d 523 (1989) (neuropsychologist held qualified as expert to testify that car accident may have caused brain damage); Winder v. Martinez, 88 N.M. 622, 545 P.2d 88 (Ct. App. 1975), cert. denied, 89 N.M. 6, 546 P.2d 71 (1976) (psychologist held qualified to testify as expert that car accident caused change in intellectual function); Nichols v. Colonial Beacon Oil Co., 284 A.D. 581, 132 N.Y.S.2d 72, (App. Div. 1954) (medical testimony by neuropsychologist related delirium tremens to hernia operation); In re Stephanie, 456 A.2d 268 (R.I. 1983) (neuropsychologist testified that fall caused behavioral problems organic in origin); Montigo v. Secretary of Health and Human Services, 729 F.2d 599, 600 (9th Cir. 1984) (accepting psychologists' diagnosis of problem as "psychological reaction to an underlying organic pathology").

as to causal relationship between physical injuries sustained in accident and plaintiffs' mental disorder, and noting clinical psychologists' competency to testify as to the existence of organic brain damage), the Florida legislature overturned the ruling by statute.^{13/}

In addition to flouting the intentions of the Georgia Legislature and this Court's precedent, the superior court's ruling in this case is thus contrary to the overwhelming weight of legal authority throughout the United States.

C. 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 contains rigorous academic coursework, relevant research endeavors, and intensive practical experience leading to the doctoral degree.^{14/} 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

^{13/} Psychology in Florida is now statutorily defined as including "neuropsychological evaluation, diagnosis, prognosis, etiology, and treatment." Fla. Stat. Ann. § 490.003(4) (West 1990) (amendment eff. Oct. 1, 1989).

^{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.

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 possible 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 psychological factors related to the cause and management of these disorders.^{15/}

Receipt of the doctorate alone is not sufficient to enable the independent practice of psychology. To offer services (including evaluations and diagnoses) to the public for a fee as an independent practitioner, all 51 jurisdictions, including Georgia, see, Ga. Code Ann. § 43-39-8, require psychologists to be licensed or certified. In Georgia, licensure requires successful completion of a doctoral program in psychology at an accredited university, demonstration of sufficient mastery of psychological knowledge on a state examination in

^{15/} See generally APA, Criteria for Accreditation of Doctoral Training Programs and Internships in Professional Psychology (1979). 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.

psychology, and effective July 1, 1991, at least two years of germane experience. See Ga. Code Ann. §§ 43-39-8, 43-39-9. No profession requires a higher degree of education and training in mental and behavioral processes.^{16/}

Recognition of psychology as an independent profession providing mental health services on a coequal footing with physicians is expressed in federal and state 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 476 (4th Cir. 1980), cert. denied, 450 U.S. 916 (1981). Most relevant federal statutes require direct recognition of clinical psychologists as independent health-care providers, i.e., as persons qualified to deliver services without mandatory referral or supervision by a physician.^{17/} One notable example of such a statute is the Civilian Health and Medical Program of the Uniformed Services (CHAMPUS),^{18/} which is the single largest health plan in the United States. CHAMPUS pays for psychologists' independent

^{16/} To further ensure 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 has also 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).

^{17/} 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. § 300e-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); Veterans Health Care Expansion Act, 38 U.S.C. § 613(b) (1976); Comprehensive Employment and Training Act, 29 U.S.C. §§ 801 et seq. (1976); 29 C.F.R. § 94.4(bb) (1978).

^{18/} 10 U.S.C. §§ 1071 et seq. (1976); 32 C.F.R. § 199.12(c)(3)(iii)(a) (1981).

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 added). Diagnostic tests are covered "when required by the diagnosis" reached by the psychologist. 32 C.F.R. § 199.4(b)(vii). Thus, like Georgia, the federal government recognizes psychologists have exactly the expertise that the superior court's opinion says they do not have.

2. Neuropsychology is a respected and established scientific and professional discipline expert in identifying the existence, causes, and consequences of organic brain damage.

The superior court's decision was reached in disregard of the role of neuropsychology in the assessment and evaluation of the existence, causes, and consequences of brain damage.

- a. The Discipline and Practice of Neuropsychology.

Neuropsychologists bring a unique perspective to assessing the etiology of central nervous system disorders generally and those specifically caused by exposure to neurotoxins, i.e., chemicals producing central nervous system damage. Clinical neuropsychology is a specialty within psychology that integrates the specific educational, scientific, and professional contributions of the discipline of psychology with relevant developments in the neurosciences.^{19/} Although

^{19/} "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").

many other health care disciplines are also involved in the diagnosis and treatment of exposure to neurotoxic substances, it has been observed that "neuropsychological assessment probably offers the most sensitive means of examining the effects of toxic exposure, of monitoring for industrial safety, and of understanding the complaints and psychosocial problems of persons exposed to these toxins."^{20/}

In addition to the rigorous training required of all psychologists, neuropsychologists have specialized education, training, skills and experience in the science of brain-behavior relationships, including functional neuroanatomy;^{21/} 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.^{22/} One of the major divisions of amicus APA is the Division of Clinical Neuropsychology, comprised of 2,775 members whose special skills and interests are

^{20/} Lezak, Neuropsychological Assessment in Behavioral Toxicology -- Developing Techniques and Interpretive Issues, 10 Scandinavian J. of Work Env. & Health (Suppl. 1) 25, 28 (1984), quoted in D. Hartman at 2.

^{21/} E.g., disorders of attention, sensation, perception, concept formation, language, memory, physical movement, and emotions.

^{22/} 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); A. Luria, Higher Cortical Functions in Man (2d ed. 1980); K. Heilman & E. Valenstein, Clinical Neuropsychology (2d ed. 1985); Medical Neuropsychology: The Impact of Disease on Behavior (R. Tarter, D. Van Thiel & K. Edwards eds. 1988); R. Reitan & L. Davison, Clinical Neuropsychology: Current Status and Applications (1974).

focused in the science and practice of neuropsychology.^{23/} The Division of Clinical Neuropsychology has developed guidelines that define the field^{24/} and provide recommendations for graduate, post-graduate^{25/} and internship^{26/} training in neuropsychology; and it is possible to attain distinction as a diplomate in the field after five years of experience and an examination sponsored by the American Board of Professional Psychology.^{27/} Several professional journals in the United States are devoted almost entirely to clinical neuropsychological research,^{28/} and many other journals publish neuropsychological research.^{29/}

^{23/} APA's Division of Psychopharmacology (Division 28) is comprised of 917 members who specialize in studying the effects of chemical substances on the brain and behavior.

^{24/} 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.

^{25/} International Neuropsychological Society Task Force on Accreditation, Education and Credentialing, Division 40, APA, Guidelines for Doctoral Training Programs in Clinical Neuropsychology, 4 Newsletter 40, Aug. 1986, at 4-5.

^{26/} 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.

^{27/} Bieliauskas and Matthews, American Board of Clinical Neuropsychology: Policies and Procedures, 1 The Clinical Neuropsychologist 21-28 (1987).

^{28/} See, e.g., Clinical Neuropsychology; Archives of Clinical Neuropsychology; The Clinical Neuropsychologist; Journal of Clinical and Experimental Neuropsychology; International Journal of Clinical Neuropsychology, Neuropsychology Review; Neuropsychologia; and Brain & Cognition.

^{29/} APA recently published a bibliography of journal articles specifically concerning research on environmental toxins, much of it performed by psychologists. The bibliography has 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

(continued...)

The established nature of the discipline is also reflected in a long series of books published on the topic.^{29/}

b. The Early History of
Neuropsychological Assessment and
Diagnosis of Brain Damage.

Psychological methods have been used long and productively to diagnose brain damage. 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.^{31/} A leading psychologist's 1917 address before the Toledo Academy of Medicine affirmed that psychology was even then making diagnostic and didactic contributions to psychiatric and neurological practice:

"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. . . . With the aid

^{29/} (...continued)
Sociocultural Aspects, 1973-1989 (C. Travis, B. McLean & C. Ribar eds. 1989) (hereafter "Travis, McLean & Ribar"). A copy of this bibliography has been lodged with the Court.

^{30/} A representative but not exhaustive sample includes: Handbook of Clinical Neuropsychology (S. Filskov & T. Boll eds. 2d ed. 1986); K. Heilman & E. Valenstein, Clinical Neuropsychology (2d ed. 1985); Neuropsychology Assessment of Neuropsychiatric Disorders (I. Grant & K. Adams eds. 1986); M. Lezak, Clinical Neuropsychological Assessment (2d ed. 1983); B. Rourke, D. Bakker, J. Fisk, & J. Strang, Child Neuropsychology (1983); G. Goldstein & L. Ruthven, Rehabilitation of the Brain Damaged Adult (1983); A. Luria, Higher Cortical Functions in Man (2d ed. 1980); H. Hecaen & M. Albert, Human Neuropsychology (1978); R. Reitan & L. Davison, Clinical Neuropsychology: Current Status and Applications (1974).

^{31/} Yozawitz, Applied Neuropsychology in a Psychiatric Center, in Neuropsychological Assessment of Neuropsychiatric Disorders 121 (I. Grant & K. Adams eds. 1986).

of the psychiatrists . . . [psychologists] are teaching the nature and causes of mental arrests as well as the processes of deterioration as they occur in the various forms of psychopathology and neuropathology."^{32/}

Another psychologist in 1924 claimed that "[i]t is possible with the [psychological] means now at command, to distinguish between original mental defect or feeble mindedness and the deteriorated state resulting from mental disease."^{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 tests were administered to diagnose neurological or psychiatric abnormalities. Using such methods, psychologists have for many years investigated the effects of neurotoxic substances and mind-influencing chemicals on behavior.^{34/} Psychologists have diagnosed general and specific mental disabilities by comparing the performance of patients with brain injury against undamaged subjects.^{35/}

^{32/} Trettien, Practical Applications of Psychology in the Treatment of Certain Psychopathics (and Other Neuropathologies), 1 J. Applied Psychology 244, 247 (1917) (emphasis added).

^{33/} Richmond, The Psychologist in the Psychopathic Hospital, 18 J. Abnormal Psychology & Soc. Psychology 299, 309 (1924).

^{34/} Hoch, A Review of Some Psychological and Physiological Experiments Done in Connection With the Study of Mental Diseases, 1 Psychological Bull. 241 (1904) (discussing investigations of neurotoxic effects of alcohol, paraldehyde, trional, bromide of sodium, and caffeine).

^{35/} For example, one early study compared and contrasted the performance of patients with alcohol psychosis and dementia (continued...)

c. The Current Practice of Clinical 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."^{36/} As predicted, the health disciplines have evolved toward collaboration in diagnosis and treatment. In clinical psychology, 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."^{37/}

Neuropsychologists evaluate diagnostic patterns in neurological illness, determine stage of illness, and evaluate treatment effectiveness. Neuropsychological evaluations are routinely utilized in the differential diagnosis and tracking of treatment effects in a wide

^{35/} (...continued)
praecox on cognitive tests. Cotton, Comparative Psychological Studies of the Mental Capacity in Cases of Dementia Praecox and Alcoholic Insanity, Nervous and Mental Disease Monographs Series 9, 123-154. Another early investigator used a battery of eleven tests to compare eight patients with "dementia praecox" to four normal patients. Gatewood, An Experimental Study of Dementia Praecox, Psychological Monographs (1909). A third used mental function tests to evaluate and differentiate among patients with chorea, epilepsy, syphilis, demential praecox, hysteria, hypopituitarism, and other disorders. R. Yerkes, J. Bridges & R. Hardwick, A Point Scale for Measuring Mental Ability (1915).

^{36/} S. Franz, Handbook of Mental Examination Methods 12 (1919).

^{37/} 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).

range of neurological disorders, including the influence of neurotoxic chemicals on behavior.^{38/}

Operating on the principle that "as the heart pumps blood, the brain pumps behavior,"^{39/} clinical neuropsychologists employ psychometric tests to reliably assess both quantitatively and qualitatively the behavioral output of the brain. Just as heart disease causes visible failure on cardiovascular tests, so brain disease produces visible patterns of impairment on neuropsychological tests. Properly administered and

^{38/} D. Hartman, Neuropsychological Toxicology (1988); Prevention of Neurotoxic Illness in Working Populations (B. Johnson ed. 1987); Baker, Feldman, White, Harley, Dinse, & Berkey, Monitoring Neurotoxins in Industry: Development of a Neurobehavioral Test Battery, 5 J. Occupational Medicine 125 (1983); Hanninen, The Neuropsychological Screening Test Battery: Validation and Current Uses in Finland, in Advances in Neurobehavioral Toxicology 257 (B. Johnson ed. 1990). Other disorders in which neuropsychological evaluations are utilized include brain tumor, C. Golden, J. Moses, J. Coffman, W. Miller & F. Strider, Clinical Neuropsychology: Interface with Neurologic and Psychiatric Disorders (1983); cerebrovascular disease, Brown, Baird & Shatz, The Effects of Cerebrovascular Disease and Its Treatment on Higher Cortical Functioning, in Neuropsychological Assessment of Neuropsychiatric Disorders 384-414 (I. Grant & K. Adams eds. 1986); intracranial infections, E. Bigler, Diagnostic Clinical Neuropsychology (1984); multiple sclerosis, Fischer, Using the Wechsler Memory Scale-Revised to Detect and Characterize Memory Deficits in Multiple Sclerosis, 2 Clinical Neuropsychologist 173 (1988); closed head injury, Dikman, Machamer, Temkin & McLean, Neuropsychological Recovery in Patients With Moderate to Severe Head Injury: Two-Year Follow-Up, 12 J. of Clinical & Experimental Neuropsychology 507 (1990); Parkinson's and Alzheimer's diseases, Sullivan, Sagar, Gabrieli, Corkin & Growdon, Different Cognitive Profiles on Standard Behavioral Tests in Parkinson's Disease and Alzheimer's Disease, 6 J. of Clinical & Experimental Neuropsychology 799 (1988); alcoholism, Tarter & Edward, The Neuropsychology of Alcoholism, in Alcohol and the Brain: Chronic Effects 217 (R. Tarter & D. Van Thiel eds. 1985); and drug use, Carlin, Neuropsychological Consequences of Drug Abuse, in Neuropsychological Assessment of Neuropsychiatric Disorders 478 (I. Grant & K. Adams eds. 1986). Indeed, in recent years neuropsychologists have helped establish that a variety of systemic abnormalities, including liver disease, lung damage, cardiovascular abnormalities and many other conditions may generate brain/behavior impairments. See Medical Neuropsychology: The Impact of Disease on Behavior (R. Tarter, D. Van Thiel & K. Edwards eds. 1988).

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

interpreted, neuropsychological tests diagnose the pathological behavioral output of an injured, diseased, or dysfunctional brain. Clinical neuropsychology is "supported by a bulwark of empirical clinical research that has focused on directly relating test scores to central nervous system damage." 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."^{40/}

The objectivity and diagnostic sensitivity of neuropsychology is highly valued in the health professions. It is often the neuropsychologist who is called upon to make differential diagnoses, because neuropsychological examination is frequently employed where the findings of neurological and psychiatric examinations are equivocal.^{41/} The diagnostic sensitivity of neuropsychological tests has been widely recognized; they have been observed to be "among the most sensitive methods available for detecting the presence of cerebral pathology."^{42/} Psychometric tests are cited as superior to the EEG and neurological examination in various situations involving diagnosis of mild brain impairment,^{43/} and thus several common neurological

^{40/} Milberg, Hebben & Kaplan, The Boston Process Approach to Neuropsychology, in Neuropsychological Assessment of Neuropsychiatric Disorders 65-86 (I. Grant & K. Adams eds. 1986).

^{41/} See Filskov, Grimm & Lewis, Brain-Behavior Relationships, in Handbook of Clinical Neuropsychology 39 (S. Filskov & T. Boll. eds. 1981).

^{42/} Medical Neuropsychology, The Impact of Disease on Behavior 2 (R. Tarter, D. Van Thiel & K. Edwards eds. 1988).

^{43/} 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).

disorders are diagnosed primarily by neuropsychological methods. Because neurologists' mental status exams used to detect dementia, for example, are "considered relatively insensitive to very mild dementia and . . . lack sufficient specificity to separate various disorders presenting as dementia,"^{44/} a recent neurology textbook instructs that "more formal neuropsychologic testing is required."^{45/}

Neurotoxic poisoning -- the area at issue in this case -- is another circumstance in which neuropsychological methods play a critical role in diagnosis.

d. Psychologists Are Leading Experts in the Diagnosis of Neurotoxic Poisoning.

The field of study that examines the effects of neurotoxic substances on behavior (including cognition and mood) is usually referred to as behavioral neurotoxicology or neurobehavioral toxicology. Psychologists have been deeply involved in such research for many years.^{46/} There is a large literature in the field, which has been summarized in a number of recent reviews.^{47/} As is true

^{44/} Kaszniak, The Neuropsychology of Dementia, in Neuropsychological Assessment of Neuropsychiatric Disorders 172, 189 (I. Grant & K. Adams eds. 1986).

^{45/} J. Wagner, Neurologic Disorders of Ambulatory Patients 247 (1989) (emphasis added).

^{46/} So important are psychological measures to this field that one of the pioneering investigators referred to the field as "toxicopsychology," Hanninen, Twenty-five Years of Behavioral Toxicology Within Occupational Medicine: A Personal Account, 7 Am. J. Indus. Medicine 19 (1985), and another author has recently referred to the field as "neuropsychological toxicology," D. Hartman, supra n. 19.

^{47/} Travis, McLean & Ribar, supra n. 29 (collecting psychological, behavioral, and sociocultural literature); White, Feldman & Travis, Neurobehavioral Effects of Toxicity Due to Metals, Solvents, and Insecticides, 13 Clinical Neuropharmacology 392 (1990) (hereafter "White, Feldman & Travis"); Prevention of Neurotoxic Illness in Working Populations (B. Johnson ed. 1987); Gamberale, Use of Behavioral Performance Tests in the Assessment of Solvent

(continued...)

for other neurological diseases, neuropsychological methods are considered to be the most sensitive measures of subtle toxic effects on brain function and structure.^{48/}

The earliest systematic studies in this area used clinical psychological and neuropsychological test batteries and experimental sensory/motor tests as outcome measures. Hanninen, working as a clinical psychologist in the field of occupational medicine, developed a well-known battery of test instruments in order to assess the effects of chemicals thought to be neurotoxic. In a landmark study, Hanninen showed that psychological tests could detect carbon disulfide exposure both in subjects in whom resultant occupational disease was obvious and in subjects with no obvious clinical evidence of carbon disulfide poisoning.^{49/} Since that time, psychological and neuropsychological test instruments have repeatedly demonstrated that exposure to toxins can cause a demonstrable change in cognitive function without also causing obvious physical disease. This important phenomenon is now usually referred to as "subclinical toxic encephalopathy."^{50/}

Psychologists continue to be leaders in assessing the effects of neurotoxic exposure, and psychological tests and outcome measures are routinely used to assess the effects of such exposure. For example, several test

^{47/} (...continued)
Toxicity, 11 Scandinavian J. of Work Env. & Health (Suppl. 1) 65 (1985).

^{48/} D. Hartman, supra n. 19, at 2, 10.

^{49/} Hanninen, Psychological Picture of Manifest And Latent Carbon Disulfide Poisoning, 28 British J. Indus. Medicine 374 (1971).

^{50/} White & Feldman, Neuropsychological Assessment of Toxic Encephalopathy, 11 Am. J. Indus. Medicine 395 (1987).

batteries useful in epidemiologic studies or extended clinical studies have been developed by psychologists,^{51/} including a group of tests which has been recommended by the World Health Organization for application to neurotoxic studies.^{52/} Psychologists have also contributed to the development of criteria for diagnosing toxin encephalopathy that have been published in a World Health Organization paper.^{53/}

- e. Neuropsychology Can Assess Organic Damage Caused by Neurotoxicants and Can Often Diagnose Which Agent Has Caused the Organic Damage.

Because neuropsychological testing has been demonstrated to assess specific questions about brain-behavior relationships, the results of neuropsychological assessments can be used to assess neuropathological damage

^{51/} E.g., White, Feldman & Travis, supra n. 47; Hanninen, The Neuropsychological Screening Test Battery: Validation and Current Uses in Finland, in Advances in Neurobehavioral Toxicology 257 (B. Johnson ed. 1990); Letz, The Neurobehavioral Evaluation System: An International Effort, in Advances in Neurobehavioral Toxicology 189 (B. Johnson, ed. 1990); Prevention of Neurotoxic Illness in Working Populations (B. Johnson ed. 1987); Ryan, Morrow, Bromet & Parkinson, Assessment of Neuropsychological Dysfunction in the Workplace, 9 J. of Clinical & Experimental Neuropsychology 665 (1987); Baker, Feldman, White, Harley, Dinse & Berkey, Monitoring Neurotoxins in Industry: Development of a Neurobehavioral Test Battery, 5 J. Occupational Medicine 125 (1983).

^{52/} Cassitto, Camerino, Hanninen & Anger, International Collaboration to Evaluate the WHO Neurobehavioral Core Test Battery, in Advances in Neurobehavioral Toxicology (B. Johnson ed. 1990); Prevention of Neurotoxic Illness in Working Populations (B. Johnson ed. 1987).

^{53/} E. Baker & R. White, Chronic Effects of Organic Solvents on the Central Nervous System and Diagnostic Criteria, published by World Health Organization and Nordic Council of Ministers, reprinted by U.S. Dep't of Health and Human Services, Public Health Service (1985); Baker, White & Murawski, Clinical Evaluation of Neurobehavioral Effects of Occupational Exposure to Organic Solvents and Lead, 14 Int'l J. Mental Health 135 (1985); White, Feldman & Proctor, Behavioral Neurotoxicology, in Clinical Syndromes in Adult Neuropsychology (R. White ed., in press) (copy available to court through counsel upon request).

caused by exposure to neurotoxicants.^{54/} Because of their demonstrated sensitivity to subtle as well as severe brain damage and as measures of the central nervous system effects of toxic exposure, neuropsychological assessment techniques have appropriately been applied to the clinical assessment of patients with known or suspected neurotoxic exposure.^{55/} Several papers have appeared in the occupational and environmental health literature describing the applicability of neuropsychological assessment techniques to the diagnosis of toxic encephalopathy in exposed persons;^{56/} books have been published addressing this issue;^{57/} and papers have appeared in the neuropsychological literature addressing issues in neuropsychological assessment of patients with neurotoxic exposures.^{58/} Taken together, these papers demonstrate that neuropsychological test batteries have been developed and adjusted specifically for assessment of

^{54/} White & Feldman, Neuropsychological Assessment of Toxic Encephalopathy, 11 Am. J. Indus. Medicine 395 (1987); White, Feldman & Travis, supra n. 47.

^{55/} For at least twenty years, psychologists have been devising test batteries for research and clinical investigation of neurotoxic exposure. Proposed guidelines for the development of psychological test batteries appropriate to research and clinical situations have recently been summarized in S. Proctor & R. White, Critical Evaluation of Test Batteries and Their Use in Epidemiology in Advances in Neurobehavioral Toxicology 273-281 (B. Johnson ed. 1990); White, Feldman & Travis, supra n. 47.

^{56/} White, Feldman & Travis, supra n. 47; White, The Role of Neuropsychological Testing in the Assessment of Solvent Exposure, 2 The Occupational & Env. Medicine Rep. 54 (1988); White & Feldman, Neuropsychological Assessment of Toxic Encephalopathy, 11 Am. J. Indus. Medicine 395 (1987).

^{57/} D. Hartman, supra n. 19; Prevention of Neurotoxic Illness in Working Populations (B. Johnson ed. 1987); Advances in Neurobehavioral Toxicology (B. Johnson ed. 1990).

^{58/} E.g., Hawkins, Occupational Neurotoxicology: Some Neurological Issues and Challenges, 12 J. Clinical & Experimental Neuropsychology 664 (1990); Hartman, Neuropsychological Toxicology Identification and Assessment of Neurotoxic Syndromes, 2 Archives of Clinical Neuropsychology 45 (1987).

exposed patients, and that these batteries are often sensitive to central nervous system damage even when neurologic examination and other assessment techniques such as EEG and neuroimaging studies are normal.^{59/}

Critically for purposes of this case, neuropsychological expertise can be employed to determine etiology of observed brain damage, whether it is due to neurotoxic exposure or some other event or neuropathological process. Papers have been published, for example, that compare neuropsychological deficits in two patient groups, carbon-disulfide-induced Parkinsonism and idiopathic Parkinson's Disease,^{60/} and which summarize criteria for differentiating chemically-caused brain damage from Alzheimer's Disease.^{61/} In determining etiology, as well as course of treatment and predicted recovery, the clinical diagnostic process is no different than that engaged in by physicians or psychiatrists, and includes the clinician's judgment, interpretation of test results, and assessment of case history.

^{59/} White, Feldman & Travis, supra n. 47; White, Differential Diagnosis of Probable Alzheimer's Disease and Solvent Encephalopathy in Older Workers, 1 Clinical Neuropsychologist 153 (1987).

^{60/} Matthews, Chapman & Woodard, Differential Neuropsychologic Profiles in Idiopathic Versus Pesticide-Induced Parkinsonism, in Advances in Neurobehavioral Toxicology 323 (B. Johnson ed. 1990).

^{61/} White, Differential Diagnosis of Probable Alzheimer's Disease and Solvent Encephalopathy in Older Workers, 1 Clinical Neuropsychologist 153-160 (1987). The literature on neuropsychological assessment of toxin-exposed patients also addresses the issue of diagnosis when there are questions of malingering or secondary gain, Hawkins, Occupational Neurotoxicology: Some Neurological Issues and Challenges, 12 J. Clinical & Experimental Neuropsychology 664 (1990), or when neurologic, developmental or psychiatric disorders co-exist, complicating the process of evaluating and diagnosing possible toxic encephalopathy. White, The Role of the Neuropsychologist in the Evaluation of Toxic Central Nervous System Disorders, 1 Seminars in Occupational Medicine 191 (1986); White, Feldman & Travis, supra n. 47.

f. Aldrin is a Neurotoxicant.

Neuropsychological examination is an ideal mechanism for detecting and assessing the neurological,^{62/} cognitive^{63/} and affective^{64/} impairments that can result from neurotoxic pesticide exposure,^{65/} including exposure to aldrin. Aldrin is a chlorinated cyclodiene pesticide, and is known to be neurotoxic.^{66/} Aldrin can be absorbed through unbroken skin, the respiratory system, and the gastrointestinal tract.^{67/} Symptoms of acute aldrin poisoning may include irritability, nausea, weight loss, tremors, muscle spasms, dizziness, diplopia, abnormal sweating, insomnia, and personality change.

^{62/} It has been demonstrated that pesticide exposure clearly affects the central nervous system. D. Ecobichon and R. Joy, Pesticides and Neurological Diseases (1982).

^{63/} P. Russell, Neuropsychological Effects of Individuals Exposed to Telone (1,3-dichloropropene) (1983).

^{64/} Levin, Rodnitzky, and Mick, Anxiety Associated with Exposure to Organophosphate Compounds, 33 Archives of General Psychiatry 225-228 (1976).

^{65/} There are numerous neuropsychological studies of the behavioral effects of central nervous system damage resulting from pesticide exposure. See, e.g., Korsak and Sato, Effects of Chronic Organophosphate Pesticide Exposure on the Central Nervous System, 11 Clinical Toxicology 83-95 (1977); E. Savage, T. Keefe, L. Mounce, J. Lewis, R. Heaton, & L. Parks, Chronic Neurological Sequelae of Acute Organophosphate Pesticide Poisoning: A Case-Control Study (1980) (available from the Epidemiologic Studies Program, Health Effects Branch, Hazard Evaluation Division of the U.S. Environmental Protection Agency); Whorton and Obrinsky, Persistence of Symptoms After Mild to Moderate Acute Organophosphate Poisoning Among 19 Farm Field Workers, 11 J. Of Toxicology and Environmental Health 347-354 (1983); Rodnitzky, Neurological and Behavioral Aspects of Occupational Exposure to Organophosphate Pesticides, in Behavioral Toxicology: Early Detection of Occupational Hazards 165-173 (C. Xintaras, B. Johnson, & I. deGroot eds. 1973); and Korgeski and Leon, Correlates of Self-Reported and Objectively Determined Exposure to Agent Orange, 140 American J. of Psychiatry 1443-1449 (1983).

^{66/} C. Klaasen, M. Amdur & J. Doull, Casarett and Doull's Toxicology 543-581 (1986).

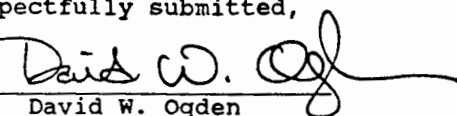
^{67/} Bell, Aldrin Poisoning: A Case Report, Med. J. Australia 698 (1960).

Severe exposure may result in convulsions, coma, or death.^{68/} Systematic studies of aldrin encephalopathy are lacking in the literature. However, a case report -- performed by psychologists -- on a family exhibiting central nervous system effects of exposure to the closely related pesticide, chlordane, summarized neuropsychological test data collected on children evaluated both pre- and post-exposure. These children showed declines in concept formation and visuospatial organization associated with exposure.^{69/}

CONCLUSION

Georgia law recognizes the competence of psychologists to diagnose mental and nervous disorders, including those organically caused. Psychologists are clearly competent to testify concerning the existence and causes of organic brain damage. Indeed, neuropsychology may be best situated of all disciplines to determine whether an individual has suffered brain damage as a result of exposure to a neurotoxic substance such as aldrin. For the foregoing reasons, the judgment of the Superior Court for Douglas County declaring psychologists as a class incompetent to testify as experts concerning the causes of organic brain damage should be reversed and the case remanded for further proceedings.

Respectfully submitted,

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Dated: December 20, 1990

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^{68/} Id.; C. Klaasen, M. Amdur & J. Doull, Casarett and Doull's Toxicology 543-581 (1986).

^{69/} White, Feldman & Travis, supra n. 47.

CERTIFICATE OF SERVICE

I hereby certify that on December 20, 1990, a copy of the foregoing document was served on all counsel by sending it U.S. Mail, postage prepaid, to:

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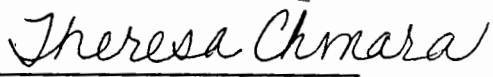
I hereby certify that on this 5th day of June, 1992, a copy of the foregoing "NOTICE OF APPEARANCE AND BRIEF OF AMERICAN PSYCHOLOGICAL ASSOCIATION AS AMICUS CURIAE IN SUPPORT OF PETITION FOR RECONSIDERATION, OR IN THE ALTERNATIVE SUGGESTING AMENDMENT OF THIS COURT'S OPINION" was served by first-class mail, postage prepaid on:

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