NIH/NICHD History: A Graphic Documentation

1. NIH Record --September 16, 1970
2. NIH Record--January 4, 1972
3. Violence Portrayed--Prescott, 1977
5. SSAD Neural Pathways Portrayed

James W. Prescott, Ph. D. 1966-80 Health Scientist Administrator, Developmental Behavioral Biology Program, National Institute of Child Health and Human Development, National Institutes of Health
Dr. Law Appointed NCI's Cell Biology Lab Chief

Dr. Lloyd W. Law, National Cancer Institute, was recently appointed chief of the Laboratory of Cell Biology by Dr. Carl G. Baker, Institute Director. Dr. Law was formerly head of the Laboratory's Cellular and Tumor Immunology Section.

The Laboratory, organized last February, is concerned with the study of the mechanisms involving the transformation of normal cells to malignant cells.

Dr. Law will coordinate and guide the five-section Laboratory's research effort. Under his direction, techniques in the fields of immunology, biochemistry, cell hybridization, and virology will be used in studying the cell's growth and development processes.

Dr. Law is a graduate of the University of Illinois. He received both his M.A. and Ph.D. degrees in Biology from Harvard University. He joined NIH in 1947 as a geneticist with NCI.

He is the author of numerous publications, and has also been associated with various medical societies and advisory and directory boards, particularly in the field of cancer. He retired from the Public Health Service Commissioned Corps in July 1970.

Dr. Law has been recognized for his outstanding contributions in cancer research. His most recent honor was the Alessandro Pascoli Prize from the University of Ferrigna, Italy, and his selection this year as a G. Burroughs Miler Lecturer.

Brain Function Studies Using Monkeys Increase Knowledge of Human Behavior

Fifty young rhesus monkeys—deprived of maternal care and also isolated—all for the sake of science. But the monkey finds a friend in Janet Racus of the Hazleton Laboratories. Dr. Prescott and Dr. Symmes (r) and NICHD colleagues will conduct studies on the brain function and behavior traits of these animals.

Twenty-two infant monkeys between ages 10 to 15 months have been donated to the National Institute of Child Health and Human Development for studies of their brain functions and behavior patterns.

The monkeys were reared without maternal care and have been in isolation since birth.

The primary objective is to determine if there is abnormal brain function in the monkeys and if such dysfunction can be related to their abnormal behavior.

This research is intended to increase man's knowledge of his experiences in his early years that affect his development and behavior.

The monkeys were presented to Dr. James W. Prescott by Dr. O. E. Payzlet, assistant manager, Hazleton Laboratories, Falls Church, Va. Dr. Prescott is health scientist administrator in the Growth and Development Branch, NICHD.

Some will be studied in NICHD's Section on Brain and Behavior, headed by Dr. David Symmes, others were given to investigators across the country who are doing brain and behavior studies.

The abnormal behavior of isolated and maternally deprived rhesus monkeys was described by Dr. Harry Harlow and his colleagues of the University of Wisconsin.

Dr. Fouts Joins NIH: Plans to Study Effect of Toxicologic Hazards

Dr. James R. Fouts has been appointed chief of the Pharmaco-Toxicology Branch at the National Institute of Environmental Health Sciences in Research Triangle Park, N.C. Dr. Paul K. Institute Director, announced.

Dr. Fouts will conduct studies on the adverse effects of environmental agents on man's health. Studies will be based on epidemiological observations as well as the chemical and physical properties of toxic environmental agents.

Dr. Fouts has received many awards and honors, among them the Marjorie Schwartz Award in Chemistry from Northwestern University and the Abel Award in Pharmacology from the American Society for Pharmacology and Experimental Therapeutics.

Dr. Fouts received his B.S. in Chemistry in 1955 and his Ph.D. in Biochemistry and Pharmacology in 1964 from Northwestern University.

He worked in the Laboratory of Chemical Pharmacology of the

Dr. C. E. Morris Leaves Chapel Hill to Condu NINDS Studies on Gout

An associate professor of Nemerology has agreed to give up his post at Duke University and accept a position as director of the National Institute of Arthritis and Metabolism Diseases at the National Institute of Neurological and Stroke Diseases.

Dr. Charles E. Morris, University of North Carolina, will become the new NINDS director.

The Center is run by the National Institute of Arthritis and Metabolism Diseases (NIAID) and the National Institute of Neurological Diseases and Stroke (NINDS), which includes both American Guamanian, The Center was established 1966 as part of the Institute.
New Office to Recruit
Minorities for Careers
In Health Service Opens

In an effort to recruit members of minority groups into health careers, an Office of Health Man-
power Opportunity has been set up as part of BHME. Dr. George Blue Spruce, the Nation's only full-blooded Indian dentist, will head the new office.

Last June, Dr. Blue Spruce was appointed special assistant to the BHME Director, Dr. Kenneth M. Endlott. Prior to that, he was with the Division of Dental Health.

According to Dr. Endlott, the new component . . . will provide leadership in identifying disad-
vantaged young people with po-
tential for health careers. . . .
And it will enable schools to of-
er special assistance to help in-
crease the chances of success of these disadvantaged students."

Focus on 5 Groups

The Office will focus on five groups: black Americans, Ameri-
can Indians, Spanish-surnamed Americans, women, and students.

It will administer grant pro-
grams under Section 321 of the
Health Manpower Educa-
tion Initiative Act, a part of the Com-
prehensive Health Manpower
Training Act of 1971, which Pres-
ident Nixon signed on Nov. 18.

This section provides for grants
to increase the enrollment of stu-
dents in health training courses
who are likely to practice in un-
derserved areas.

It supports projects that help disad-
vantaged persons who have
potential for health training to
enroll in schools and complete
their training.

Grants may be awarded to pub-
lic or nonprofit private health or
educational entities.

Two Area Schools Announce
Spring Registration Dates

Registration dates for the com-
ing spring semester in two area
schools have been announced.

The U. S. Department of Agri-
culture Graduate School spring
semester schedule of classes
for 1972 is now available.

A catalog and schedule may be
obtained from USDA, Room 1031, South Agriculture Bldg., or by 
calling 285-4149 (Government code 111-4419).

Registration may be completed
by mail until Jan. 14, or in per-
son on the patio Administration
Bldg., 14th and Independence Ave., S.W., between Jan. 25-29.

Tuition is $22 per credit hour
or $20 if paid in full at the time
of registration.

The Federal "After Hours"
Education Program, conducted by
George Washington University
will hold registration Thursday
and Friday, Jan. 15-16, 10 a.m.
to 8 p.m., in Conference Rooms
A, B, and C, Department of Com-
commerce Bldg., 14th and Con-
stitution Ave., N.W.

Tuition is $54 per credit hour.
Classes will begin Jan. 24.

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3. Violence Portrayed -- Prescott, 1977

**ASPECTS OF HUMAN AFFECTIONAL DEVELOPMENT**

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**Fig. 5.** Self-biting and self-mutilation of an adult isolation reared rhesus.

**Fig. 6.** Motherless mother crushing 20 day old infant to the floor.

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**Fig. 7.** Normal sexual posturing in the normal male & female rhesus (A, B). Abnormal sexual posturing in the isolation reared male & female rhesus (C, D).

**Fig. 8.** Physical pain in child abuse: 3 month old child with scaled milk thrown on its face.

ASPECTS OF HUMAN AFFECTIONAL DEVELOPMENT

Fig. 1. "Swinging" surrogate reared monkey freely interacts with human attendant.

Fig. 2. "Stationary" surrogate reared monkey avoids interacting with human attendant.

Fig. 3. Two 8 month old isolate reared monkeys who avoid touching and social interaction.

Fig. 4. Two normally reared monkeys touch and cuddle one another.
5. SSAD Neural Pathways Portrayed

Neural Pathways and Structures in SSAD Theory

The neural pathways and structures of SSAD theory are outlined in this section. Excerpts from the basic paper by Prescott (1970) are presented. The pioneering studies of Heath (1971) with his graphic model of neural pathways and brain structures are illustrated. http://www.violence.de/prescott/mp/article.html

The comparative anatomy of frontal cortex and thalamofrontal connections provided by Akert (1964) document connections between Medialis Dorsalis (MD) and frontal cortex, specifically, the tri-partite structure of MD where *Pars Magnocellularis* thalamic projections defines the frontal orbital cortex.

Berman, Berman and Prescott (1974) documented that paleocerebellar decortication but not neocerebellar decortication transformed an adult pathologically violent mother deprived monkey into a peaceful, social and inquisitive monkey. The paleocerebellum has primary connections with the brain stem and limbic system; the neocerebellum with the cerebral neocortex. http://www.violence.de/berman/article.html


Prescott (1992) presents data that support sexual dimorphism in the developing human brain that shows differential coupling of frontal-cerebellar connectivity in male and female brains. These data are based upon NICHD supported research on cranial-facial growth and development, through lateral-skull X-rays, by the Krogman Growth Center, Children's Hospital, Philadelphia, PA. (Solomon Katz, PI and Geoffrey F. Walker, Biometrics Laboratory, University of Michigan). http://www.violence.de/archive.shtml

There are statistically significant differences between males and females where females show a greater neuronal interconnectivity between the cerebellum and frontal cortical areas throughout development. Males show no brain maturational frontal-cerebellar connectivity. These findings suggest a more neurointegrative brain in the female than the male; a greater neural integration between cortical and subcortical brain structures; and the observed greater nurturance and peaceful behaviors in the female than the male. The environment plays a major role in the structuring of these relationships and the underlying biology.

Modern MRI and fMRI are needed to confirm these growth pattern differences, their sexual dimorphism and the implications that these findings have for the emotional-social-sexual and mental development of the human male and female and the future of *Homo sapiens*. 


Physiologic Basis of Emotional Expression

Fig. 11. Diagram of principal pathways of emotional expression based on Tulane studies. Those pathways considered most significant on the basis of our studies are shown as solid lines. (This diagram is not intended to show all pathways involved in emotional expression.) A, anterior thalamic nucleus; Am, amygdaloid nucleus; AC, anterior commissure; CBL, deep nuclei of the cerebellum, indicating fastigius and dentate; CG, central grey substance; DNG, dorsal tegmental nucleus of Gudon; Hip, hippocampus; IC, inferior colliculus; IP, interpeduncular nucleus; MB, mammillary bodies; NCS, nucleus centralis superior; OC, optic chiasma; O Cx, orbital cortex; PVH, paraventricular hypothalamus; PVL, postero ventro lateral thalamus; S, septal nuclei; SC, superior colliculus; SR, septal region.
Figure 12. Diagram illustrating connections between amygdaloid complex (AM), medial part of dorsomedial thalamic nucleus (DMm), caudal orbitofrontal cortex (OF), and ventral regions of temporal lobe (TI). All except the last-mentioned project directly to the lateral preoptic-hypothalamic region (PL and HL), which in turn has efferent connections with the mesencephalic reticular formation. From Brain, 1962. (Courtesy of the Macmillan Company, New York.)

(From Akert, 1964)

Figure 11. Cytarchitectural map showing projections from zones of medialis dorsalis to subregions within frontal granular cortex. (From Akert, 1964)