

BOOK REVIEWS

DRUG-INDUCED NUTRITIONAL DEFICIENCIES

Daphne Roe
AVI Publishing,
Westport, Connecticut, 1976.

"Does acid hurt your brain?"

A student wrote this question for me to mull over, research, and answer in a discussion on alcohol and drugs in a 10th grade health class. My initial response was a dazzling riposte, "No, not any more"—not bad, I thought, for one whose brain had been "hurt" plenty. But at the same time it occurred to me the question—does acid hurt your brain?—stands as a good example of tabloid thinking about drugs and drug abuse. Tabloid thinking depends upon the sensational and the oversimplified. Tabloid thought resembles the reflex in action and occurs at the brain stem level; it requires no cortical activity whatsoever. (It closely parallels the comic book mentality that characterizes social disorder and crime as the activity of super-villains who are best subdued by crime fighters with extraordinary powers).

For far too long tabloid thought has dominated the general topic of drug abuse and we have been occupied with the relatively minor problems of exotic drug abuse, misuse, and abuse. Renowned researchers and high-up government sachems (elevated, no doubt, by sublime workings of the Peter Principle) clamor about heroin and methadone, ardently debate the toxicity of THC, conduct recondite investigations into the

molecular chemical reactivity of the brain and central nervous system of Rattasaurus rex in response to certain imported alkaloids, and then have lively conferences at which all parties earnestly conclude that more money is needed for more research . . . Light up a cigarette and adjourn to the bar.

It's a red herring, folks. The distraction, a divertissement, like the bread and circuses of old, like the current comic book interpretation of social disorder. While we are looking over here the exotic and sensational, licit drug technology grows exponentially and continues conspicuously to become a more common daily requirement of our psychosocial life.

Daphne Roe is definitely not a tabloid thinker. Her previous book, **A Plague of Corn: The Social History of Pellagra** (1973), was an excellent study of the multifaceted problems encountered by those attempting to deal with a most unusual epidemic, a vitamin-deficiency disease. In her latest work,

Drug-Induced Nutritional Deficiencies, Roe has produced a very timely work on a widespread phenomenon which is occurring in epidemic proportions. Not much attention has been paid to this epidemic: It is rather mundane and undramatic, and it is quite complicated. Roe's latest book will not be widely read, even by physicians. It contains no heroic accounts of battles against

addiction, no paeans to pot, no moralizing about dissipated youth and failure of the modern family. **Drug-Induced Nutritional Deficiencies** is a straightforward, somewhat technical account of the widespread effects of over-the-counter preparations and prescription medications on nutrient metabolism, absorption, and utilization.

Roe's message is consistent with the teachings of drug consumer safety education: drugs have multiple effects. Drugs don't just relieve headaches or make sinuses stop dripping; they don't just zero in on the bad germs, do their business, and then self-destruct. **All drugs do something else.** And many drugs alter the body's ability to properly process nutrients. When this occurs, as it does with most chronic drug users, the result will be some form of drug-

induced nutritional deficiency. Nutrients most likely to be affected by drugs are B vitamins and folate.

Roe notes that just as the elderly are more likely to be drug users, they are also more likely to be malnourished because of faulty eating patterns, lack of money, and less appetite. She states unequivocally that drug-induced nutritional deficiency is a major cause of malnutrition in the elderly. Moreover, Roe states: "Habitual self-medication may be associated with excessive intakes of over the counter drugs, such as antacids and laxatives which are then capable of causing malnutrition . . . The nutritional side effects of drugs may be a necessary concomitant of therapeutic drug usage..."

Some Representative Drug Effects on Nutrients

Drug	
Isonicotinic acid, cycloserine and other antituberculous drugs;	Vitamin B ₆ antagonists or increase turnover of B ₆ in body
Hydralazine (antihypertensive)	
Penicillamine	
L-dopa	
Oral contraceptives	
Alcohol	
Methotrexate (cytotoxic)	Act as folate antagonists or increase turnover or loss of folate from the body
Pyrimethamine (antimalarial)	
Phenobarbital	
Triamterene (diuretic)	
Oral contraceptives	
Cycloserine (antituberculous)	
Aspirin	Affect absorption of vitamin B ₁₂
Diamidine (anti-infective aromatic)	
Alcohol	
Metformin and phenformin (oral hypoglycemics)	
Paraminosalicylic acid (anti-tuberculous)	
Cholestyramine	
Potassium Chloride	
Alcohol	

"Effects of drugs on vitamin B₆, folate, and vitamin B₁₂ absorption or utilization account for the largest proportion of all drug-induced nutritional deficiencies." (Roe, p. 15, 1976.)

According to Roe, the problem is exacerbated by a number of factors:

Certain people receiving drugs may be particularly susceptible to nutritional side effects. Such high risk individuals or groups have not been sufficiently identified. Physicians have not been made sufficiently aware that their patients may be pre-disposed to the development of drug induced malnutrition through genetic or pharmacogenetic factors.

genetic characteristics, faulty diet, malabsorption, renal or hepatic dysfunction, or alcoholism. The additive or synergistic effects of drugs, diet and disease and the production of malnutrition have not been adequately presented in widely read medical journals. Thus, the medical profession is often unaware of nutritional hazards brought about by long-term administration of drugs.

Roe suggests measures to reduce incidence of drug-induced nutritional deficiency:

Such measures would include avoidance of unnecessary prescriptions, limitations of multiple drug regimens, support of the control of over the counter drug sales and the dissemination of information on the nutritional effect of drugs to nurses, para-professional personnel and their patients themselves. However, she is not optimistic about the success of nutritional counseling:

In general, dietary counseling for people taking drugs known to affect nutritional status is unlikely to be an effective means of reducing the risk, because food intake is dictated by ingrown habits as well as economic considerations. Although this book has profound implications for drug programs, I don't expect to see any striking changes in status quo operations. Drug programs are heavily politicized and are more responsive to rhetoric than need. Heavily geared for illicit drug addiction, methadone detoxification, and maintenance, and supportive of the highly visible (and relatively sensational) therapeutic community, people who run drug programs are ill-prepared to deal with chronic and unspectacular consequences of drug use and misuse. "Why not you ask, dreaming of Charlie Chan, Batman and Robin and assorted superheroes. "Did asid hert there braner

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**A PSYCHOBIOLOGICAL STUDY OF
DELINQUENTS**

George von Hilsheimer Humanist Press, 549
Turnpike Road, Golden Valley, Minn. 55416
Paperback, 1978: 386 pages, \$7.50

It is unusual to ask an author to write a book review on his or her own thesis or book, but it seems to me this is something an author might be able to do better than anyone else. I have therefore asked this author to prepare a book review for me, which he has done. I also have read the material very thoroughly and find the review George von Hilsheimer has written is accurate. I make these comments in order to draw your attention to his book.

- A. Hoffer, M.D., Ph.D. Editor-in-Chief

Von Hilsheimer, with Herman Lerner, a G. P., and Solomon D. Klotz, a prominent clinical immunologist, set out in 1967 to replicate the work of Hoffer and Osmond. They began with long trials on themselves and their staff and then treated a wide variety of patients. They confirmed Hoffer's basic findings, and demonstrated improved memory, task performance, tuning of the EEC, and other effects from pharmaceutic doses of niacin.

The Humanist Press has now published von Hilsheimer's doctoral dissertation based on studies on 114 delinquents (including psychotics) in 1973-74 and representing a maturation of the work begun in 1967. Two pioneer Orthomolecular researchers, Bernard Rimland and Robert Buckley, were on von Hilsheimer's doctoral committee.

It is ironic and fitting that a fundamental piece of research which firmly establishes mental illness in a matrix of biochemical interactions is reported from the Humanistic Psychology Institute, whose senior faculty member, Gregory Bateson, is usually credited with Milton Erickson's hypothesis of the "double bind."

Readers will find von Hilsheimer's "Author's Prologue" a very readable and

amusing recitation of delinquent character types. He applies the systems analysis proposed by Weiss, Anokin, Weiner, and Corson to "delinquency" which he more or less treats as a synonym for mental illness. He proposes a pragmatic system of approximations in diagnosis and supports this system with evidence from a review of the literature on diabetes, "latah," Gilles de la Tourette's syndrome, the psychotomimetic drug, phencyclidine, *cancer*, intelligence, and stress. Von Hilsheimer insists on describing behavior in terms of competence, rather than illness. This usage is often cumbersome. However the concept provides a useful way of thinking about mental illness. We don't often ask, "What is it the patient does well?" or, "What is it that this gland does well?" Diani suggested that diabetes is due to an evolutionarily efficient "thrifty gene." If the diabetic is guided to live in the arena for which he has been evolved for pancreatic competence, he doesn't have to be thought of as diseased—merely misapplied!

Von Hilsheimer suggests that delinquents are competently functioning in a mode conditioned by chronically high circulating AC-TH. This is a conservative, neophobic mode where learning is more efficiently carried out by escape conditioning, and where high input is needed for perception to initiate learning. Ritualistic behavior, in this concept, is not bizarre, but biochemically demanded, and efficient. Following an outline developed by Gellhorn and Buckley he supports this hypothesis with data emerging from research on constitutionally fixed modes of learning, social and nutritional deprivation, psychoendocrinology, immunopsychology, and psychophysiology.

He then proposed that a common hypothalamic "regulator" in mental illness will be malabsorption syndrome. This point of view is supported by an extensive review and a summary of a number of preliminary studies which led to the research reported in this dissertation.

These introductory chapters are heavy going at times. Von Hilsheimer assumes the reader thinks in terms of dynamic systems, and can see the whole biodynamic network as he does. Connections which are obvious to the author are

not as painstakingly traced as one might desire.

Von Hilsheimer applied 61 tests to 114 adolescents who were in residential treatment. While he submits the data to the usual statistical analysis, he also uses Wechsler's "method of successive sieves," and adopts Russell's suggestion of applying a Taxonomic Key to the data for a differential diagnosis directed at reliable clinical outcome. This report may be the only study in print applying a wide range of paper and pencil, biochemical, psychophysiological, and neuropsychological measurements to a substantial number of subjects all living in the same controlled environment.

The results in this study are impressive. The statistical analysis rejects the notion that delinquents are just like you and me at a probability of less than one in a billion. Using a biological Key the data predicted active cooperation, passive incompetent cooperation, and active agitated acting out among the delinquents with great accuracy (.82, $p < .001$). All of these biochemical tests are readily available to the general practitioner (physical, CBC, lipids). Neuropsychological data was organized into a Key which assessed prognosis accurately (.87, $p < .001$).

Von Hilsheimer organized his study to avoid the use of esoteric tests, or tests requiring elaborate equipment. His goal was to develop assessments readily applicable by "barefoot doctors" in a jungle setting. To a great extent he has succeeded. He suggests a new profession, "clinical ethology," which might as readily be called "Orthomolecular psychology."

Von Hilsheimer concludes his study, *When the flesh is weak, it is difficult for the spirit to be strong. When the flesh is afflicted with pernicious anemia, pellagra, pyuria or brain lesion it is nigh unto impossible for the spirit to be strong. How the flesh and spirit interact with more subtle or less well-known disorders is not yet clear; however, my delinquents are biologically less competent than my nondelinquents and I suspect that this will be found to be*

true wherever delinquents may be. This study is buttressed by 49 pages of references. Von Hilsheimer has provided an excellent reference source for Orthomolecular researchers. This is a difficult but important book for Orthomolecular psychiatrists. It is precisely the sort of disciplined study required to substantiate the Orthomolecular hypothesis.

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THE PSYCHOLOGICAL SOCIETY

Martin L. Gross
Random House, New York
369 pages, \$10.95.

This excellent book is subtitled: "A Critical Analysis of Psychiatry, Psychotherapy, Psychoanalysis and the Psychological Society." It is a critical analysis, and it is a book that is long overdue and very welcome.

In September, 1963, I wrote to Martin Gross to compliment him on his book, **The Brain Watchers**, which was an expose of the misuse of psychological tests. I urged him to undertake another expose, this one a long-needed critique of psychotherapy. I cited references to the research literature which clearly showed that psychotherapy was not beneficial to the patient, and I expressed my indignation at the evasions and rationalizations that psychotherapists had been using to defend themselves when they were accused of unethically continuing the practice of psychotherapy in the face of the massive evidence showing it to be useless. I decried the unconscionable tendency of physicians to label as "psychosomatic" every illness that they were not competent to treat effectively. "Tell it like it is," I urged. "Here are the sources. Go get 'em!"

He was a little slow in responding. Now, almost 15 years later, Martin Gross has at last filled my order—and then some. It was worth the wait. The book is a blockbuster; Gross has done his homework very thoroughly. He doesn't pull his punches, and as befits the editor of the **Book Digest**, he writes clearly, interestingly, and persuasively.

This is by no means the first book-length expose of psychotherapy. A quick search of my shelves produced the following, and I am sure there are others:

1963 Wells, H.K.: **The Failure of Psychoanalysis** (International Pub., N.Y.C.)

1965 Pinckney, E.R., and Pinckney, C: **The Fallacy of Freud and Psychoanalysis** (Prentice-Hall, Engelwood Cliffs, N.J.)

1969 Eysenck, H.J.: **The Effects of Psychotherapy** (Science House, N.Y.)

1971 Rachman: **The Effects of Psychotherapy** (Pergamon, London)

1974 Jurjevich, R.M.: **The Hoax of Freudianism** (Dorrance, Philadelphia)

1975 Tennov, D.: **Psychotherapy: The Hazardous Cure** (Abelard-Schuman, N.Y.)

The world ignored these earlier books, perhaps because their authors all had doctorates. It can't and won't ignore this book. Gross is the first professional journalist to tackle the problem. Gross writes to be read and understood and believed.

Gross shoots to kill rather than to impress us with his marksmanship. Bang! There goes psychotherapy. Bang again! There goes psychoanalysis. Another hard-hitting chapter and the various primals groups, encounters, and nude marathons bite the dust. Wham! Down go the psychologists and psychoanalysts who freely pontificate about child-rearing, drugs, politics, sex, and every other topic they know less about than your Aunt Tillie. Pow! Out go the pompous social workers and mental health experts whose 30-year follow-up study showed an **increased** rather than a **decreased** crime rate in delinquent-prone youngsters who had been "counseled." There is more—much more.

This is a good book, a long-needed book, and an important book. Read it! Enjoy it. Send a copy to your senator before he decides that payment for psychotherapy should be incorporated in any national health insurance legislation.

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PUBLICATIONS FROM THE LINUS PAULING INSTITUTE OF SCIENCE AND MEDICINE

Vol. 1, 1973-76 2700 Sand Hill Road, Menlo Park, California 94025 503 pp. \$9.45

The Linus Pauling Institute stands out for the quality of its work and the high caliber of its personnel. The purposes of the Institute are "to engage in research in the sciences of biology and medicine, to establish and maintain one or more research laboratories in the sciences of biology and medicine, and to engage in research into the factors and circumstances conducive to the increase in the value of human life and the diminution of the amount of human suffering."

This book, containing the Institute's publications from 1973 to 1976, is a dramatic illustration of the remarkable work of the Institute. In spite of poor funding and opposition, the pioneers working in the Institute have managed to do a great deal of important research and to publish their findings so that they are readily available to other researchers, professionals, and the public. It is encouraging to read "that there is a strong case for prescribing large doses of ascorbic acid to cancer patients,"

and that "there is now accumulating evidence that ascorbic acid is directly involved in a whole pattern of specific biochemical reactions that collectively enhance host resistance to malignant invasive growth."

The subjects include articles on the treatment of the common cold, treatment of cancer with vitamin C, human biochemical individuality, the relation between nutrition and cancer, aging and degenerative diseases, multiple sclerosis, schizophrenia, Orthomolecular diagnosis and treatment, and preventive Orthomolecular medicine. The book includes popular papers such as "Five Ways To Live Longer," "Good Nutrition for Good Life," and "What Can We Expect for Chemistry in the Next 100 Years?" It also includes more technical articles such as "The Relative Stability of Isoteric Ions and Molecules," "The Molecular Basis of Biological Specificity," and "The Identification of Volatile Compounds in Human Urine."

In general, this is a book full of important information which will lay the foundation for work to bring about a healthier society.

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