# Book Reviews

## Etiology of Schizophrenia

**Abnormalities in Parents of Schizophrenics.** A Review of the Literature and an Investigation of Communication Defects and Deviances. STEVEN R. HIRSCH and JULIAN P. LEFF. Oxford University Press, New York, 1975. viii, 200 pp. $20.95. Institute of Psychiatry Maudsley Monographs, No. 22.

One of the major hypotheses guiding research into the etiology of schizophrenia is that there are peculiarities in the communication styles of the patient's parents and that these contribute significantly to the development of the disorder. This hypothesis has been presented in various forms. Bateson's notion of the "double-bind" and Lidz and Fleck's concept of "marital schism," for example, are variants of the view that parental communication with the child forms a basis for the later schizophrenia.

The obvious problem with this hypothesis is that it is unwise to deduce causes from correlations. It is at least as plausible a conclusion that the behavior of a child with preschizophrenic characteristics leads to communication anomalies in parents as it is that the reverse is true. If we wish to assign an etiological role to these anomalies, it is necessary to show that they antedate the appearance of behavioral deviance in the child. This can be done convincingly only through longitudinal observation of children at risk for schizophrenia. A weaker strategy, but a useful one, demands the selection of control groups of patients with severe nonschizophrenic behavioral deviations and with childhoods as difficult and atypical as those so often found in the histories of adult schizophrenics. Controls of normal adults or neurotic adult samples are essentially irrelevant to the main question.

Hirsch and Leff, British psychiatrists at the Institute of Psychiatry, London, have written their monograph in two parts. The first is a clear and comprehensive review of the main literature reporting on the search for psychological abnormality in the parents of schizophrenic patients. It covers five general classes of research, investigations that employ, respectively, clinical case study methods, questionnaires, group interactions, tests of abnormal thought process, and measures of deviant language and communication.

In the second half of the volume, the authors report an attempt to replicate the work conducted at the National Institute of Mental Health by Margaret Singer and Lyman Wynne, who, they believe, "have made the most promising contribution to this field of inquiry." The essential findings of the NIMH group were that the parents of schizophrenic patients exhibited deviancies of communication in responding to the Rorschach technique. These deviancies are coded according to a detailed manual. Wynne has reported that the technique discriminates satisfactorily between parents of schizophrenic patients and parents of neurotics, and between parents of schizophrenics and parents of normal controls.

Underlying this technique is a fundamental hypothesis. This is that the parental style of communication is characterized by disruptions, vagueness, irrelevance, and lack of closure; this, in turn, is assumed to impair the child's ability to focus attention, for the parental communication style is itself unfocused and lacking in direction. (We can note, parenthetically, that there is good reason to suppose that a deficit in attentional focusing is a major factor in schizophrenic pathology. It is not at all clear that it can be attributed to parental communication styles.)

Using the Singer and Wynne manual, Hirsch and Leff investigated the responses of the parents of 20 schizophrenic patients and of 20 neurotic patients. Their sample of schizophrenics' parents was selected with reference to explicit criteria; groups were matched for educational and social class of the parents. There was considerable exchange between the investigators and Singer aimed at establishing congruence between their and her use of the Rorschach scoring categories.

Suffice it here to say that this study basically failed to confirm the findings of Singer and Wynne. It did emerge, unsurprisingly, that the proportion of "deviant" communications uttered tends to increase with the verbosity of the speaker. The fathers of schizophrenic patients turned out to be unusually verbose—but not the mothers. When this confound was handled with suitable covariance techniques, the differences between the parents of the two groups vanished. The authors discuss the possibility that the failure to replicate might lie in differential diagnostic standards, differential sampling within the category of schizophrenia, and other methodological discrepancies. They do, however, point out that Singer and Wynne did not control for verbosity and that this might account for much of the discrepancy in outcomes. This is a valuable study. The reader cannot help wondering, however, why it was not published in an appropriate journal rather than embedded in a monograph of predictably more limited circulation.

Any serious student of the psychopathology of schizophrenia will profit from reading the initial literature review. The weaknesses of much of the reported research are indicated dispassionately. It is a matter of more than passing curiosity that the adherents of the family-etiology hypothesis are so often content with poor experimental design, global judgments of patients by investigators with prior knowledge of and enthusiasm for the hypothesis at test, failures to control for obvious confounds, and inadequate matching with control samples. Hirsch and Leff document these problems in concise fashion; they also point out the almost universal failure on the part of the family-etiology theorists to consider the possibility that the anomalies of parents and their schizophrenic offspring might arise from a genetic basis.

This volume makes a valuable contribution to the scientific study of this important problem.

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## Issues of Informed Consent

**Catastrophic Diseases.** Who Decides What? A Psychosocial and Legal Analysis of the Problems Posed by Hemodialysis and Organ Transplantation. JAY KATZ and ALEXANDER MORGAN CAPRON. Russell Sage Foundation, New York, 1975 (distributor, Basic Books, New York). xx, 274 pp. $10.

*Catastrophic Diseases* focuses upon ways in which medical decision-making can be broadened to offer maximum protection for human subjects as well as maximum clarity of policy issues. Katz, a professor of law and psychiatry at Yale, and Capron, a law professor at Pennsylvania, have previously collaborated on an important volume on human experimentation (a casebook entitled *Experimentation with Human Beings*) and

bring considerable expertise to the topic of the present book.

In the authors' usage a catastrophic disease is one for which an unusually expensive treatment is needed to sustain or extend life. With organ transplantation and hemodialysis as the prime examples, the book raises the question: Who does and who should participate in the difficult decisions being made in catastrophic-disease therapy and research? In the first half of the book the authors analyze current decision-making practices and review the history of dialysis and transplantation along with the complex ethical issues that have arisen in connection with these treatments. They point out that the "physician-investigator" now plays a predominant role in decision-making and that he underestimates the importance of his own self-interest in dealing with "patient-subjects." The current restraints upon the physician are not adequate to prevent abuse and do not allow for public review of fundamental issues. The decisions made in these circumstances may not be to the benefit of patients, science, or society. It is the authors' view that the procedures by which decisions are made need to be redesigned so as to include a heavier input from patient-subjects and from representatives of the public.

In one of the strongest chapters, the authors examine the current role of the patient-subjects in the decision-making. While recognizing the many psychological and social factors that interfere with patients' capacity to make sound decisions when ill, they press for an attempt to make consent more fully informed.

In the second half of the book the authors make specific policy suggestions related to transplantation and dialysis and propose an administrative structure to protect patients and resolve policy issues. At the broadest level a policy-setting body or bodies would be established with representatives from many disciplines. It is somewhat unclear where such bodies would be located and the extent to which their proposals would be mandatory for clinical scientists. At one point the authors suggest that study groups be set up at a few medical schools to recommend policy to decision-makers; at another point they suggest a new federal decision-making agency. While policy would be formulated by decision-makers from a broad range of backgrounds, day-to-day administration would be primarily in the hands of medical peers at the local institutions, who would operate within the clear limits of policy determined at a more national level.

At the local level there would be institutional advisory committees with three subdivisions: (i) a protocol approval group, which would review the adequacy of all plans for therapy and experimentation in catastrophic diseases where the risk to the patient is considerable and the attainment of informed consent is especially difficult; (ii) a subject advisory group, which would be available as advocates and educators for patient-subjects; and (iii) a local appeal group. National appeal groups for both patients and investigators are also envisioned, as well as some national machinery to enforce sanctions such as censure, fines, and suspension of the right to receive government research funds.

The strength of this well-written book appears to be its review of the issues in informed consent, of the ethical problems raised by organ transplantation and dialysis, and of the drawbacks of current ad hoc decision-making procedures. Most likely to be controversial are the administrative mechanisms the authors wish to set up. The weakest segment of the book seems to be the particular policy suggestions related to kidney transplantation.

One of the authors' suggestions is that, in order to resolve the problem of inequitable access of patients to scarce life-saving treatment, a national lottery be set up in which patients' opportunity for necessary therapy would be determined by chance. Yet, with the new federal funding for dialysis and transplantation, facilities have expanded, providing access for almost all patients. With this precedent, and with a national health insurance bill in the offing, it is unlikely that Congress would opt for such a lottery for any catastrophic disease.

The authors also recommend limiting the use of donors related to the patients and choosing instead living unrelated donors. That transplants of kidneys from relatives are more successful (*1*) and that such a policy might condemn many transplant patients to death or to traumatic rejection of the organ is not discussed. The authors base their recommendation on one study of only 18 living unrelated donors and some reports of related donors' being subject to family pressure. They do not discuss published evidence (*2*) that the act of donation is psychologically rewarding for many related donors. In fact, a more recent study (*3*) of 112 donors at a year after they donated a kidney to a relative indicates that all but three are without regret; 59 percent show boosts in self-esteem after having saved the life of a loved one, and overall they demonstrate levels of happiness and exhilaration greater than those found in control groups. Family stress does occur in connection with the donor search, but it centers primarily on those who fail to volunteer rather than on those who do make this extraordinary gift.

Katz and Capron especially distrust the instantaneous decisions of most donors. The majority of donors report that their decisions to donate were made immediately upon hearing of the relative's need. Policy-makers should facilitate matters for those potential donors who *do* wish to give careful consideration to all alternatives. It is probable, however, that major life decisions of other sorts are frequently made without extensive deliberation by the individuals involved.

In general, although mechanisms should be instituted to screen out ambivalent donors who may have been subject to family pressures, curtailing donation by relatives would seem premature in view of the current evidence.

The main difficulty with suggestions as specific as those advanced by Katz and Capron is that if mandated they could unnecessarily impede experimentation and progress in clinical science. The legal model of passing precise laws and allowing them to be implemented and eventually appealed may not be appropriate for an innovative scientific field, in which new results constantly suggest a speedy alteration of previous practices. Mechanisms to protect subjects against abuse are certainly necessary; and while it is important to have a wider forum for the discussion of policy-related issues than currently exists, the dangers of premature closure, overextensive regulation, and rigidity are real.

The stakes here are large. On the one hand the patients' dignity and right of access to medical care must be protected; on the other hand, scientific advance, with its possible benefits for present and future generations of patients, should be nurtured. Without extensive regulation, end-stage kidney disease has changed from a fatal illness to a curable disease in 15 years and inequity of access to treatment has been replaced by almost universal access within the United States. It is important that any regulatory or policy-formulating system not unduly check such momentum. Mechanisms to protect the scientific enterprise against unforeseen consequences of policy determination and specific regulations should receive as much attention as do mechanisms for preventing abuse of subjects.

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## Ionic Intermediates

**Halonium Ions**. GEORGE A. OLAH. Wiley-Interscience, New York, 1975. xvi, 190 pp., illus. $18.50. Reactive Intermediates in Organic Chemistry.

This monograph by George Olah, who is also the editor of the series in which it appears, is restricted to long-lived haloniums in solution or in the form of isolated salts, although important references to halonium ions as reaction intermediates are included. The coverage is comprehensive (there are 218 references, some from 1974), with full attention given to work done outside of Olah's laboratories.

Part A of the book, on acyclic halonium ions, has five chapters, including ones on dialkyl-, alkylaryl- and diarylhalonium ions. Part B, on cyclic halonium ions, has six chapters, including ones on ethylenehalonium and tetramethylenehalonium ions. Extensive tables of $^{1}H$ and $^{13}C$ nuclear magnetic resonance data are included, as are many spectra from the original papers.

The writing is clear and careful, although I noted perhaps 20 typographical errors. The book has a few controversial features. In the nomenclature section Olah has numbered the halogen "one" in the tetramethylene halonium ion and related cyclic ions. Since *Chemical Abstracts* regards the tetramethylene radical as an entity that must have carbon numbered one, the present book ensures that a hodgepodge of numbering systems will continue to be used. Olah's efforts to discriminate between sigma and pi bonding of positive halogen to alkenes involve considerable intuitive thinking in an area where there are no sharp dividing lines.

The reagent methyl fluoroantimonate is mentioned a number of times. However, work to be published in the *Journal of the American Chemical Society* in spring 1976 has indicated that the reagent is actually methylated sulfur dioxide (in sulfur dioxide solvent). The mechanisms, but usually not the products, of various halonium-ion-forming reactions will require some modification as a result of this reassignment of structure. The author index of the book often refers the reader only to a page in the list of references where the reference number can be found rather than to the page of the text where the reference is cited. The nine-page subject index appears to be comprehensive.

Olah's book is the first review of stable halonium ions that includes ions other than aryl halonium ions. Researchers who may wish to explore the use of halonium ions can proceed with confidence that the main areas explored to date are outlined in it.


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## Excited Atoms and Molecules

**The Excited State in Chemical Physics**. J. WM. MCGOWAN, Ed. Interscience (Wiley), New York, 1975. xii, 492 pp., illus. $25.50. Advances in Chemical Physics, vol. 28.

Excited atoms and molecules are important in many diverse environments, including planetary atmospheres, interstellar clouds, photolytic reactors, lasers, flames, discharges, and explosions. Experimental and theoretical techniques used to study excited states are equally varied. There is a definite need to summarize the widely scattered literature of this field and to unify our understanding of the physics and chemistry of excited species. This book is partially successful in providing such a summary. It is a collection of seven articles that review the properties and behavior of excited atoms and small molecules. Electronic, vibrational, and rotational excitation and their interconversions are examined from both theoretical and experimental viewpoints.

The book has one major deficiency: it is out of date. Most of the chapters appear to have been assembled about 1971. Some of them include supplements with more recent references, but they are not complete and newer work is not incorporated into the text. Important developments such as laser-induced fluorescence monitoring of excited products, molecular beam studies with excited reactants, modern theories of nonadiabatic collisions, and isotope separation are not discussed at all.

The most informative chapters, in my opinion, are those by McGowan, Kummler, and Gilmore on upper atmospheric processes and by L. Krause on sensitized fluorescence, both of which include useful and up-to-date tables of excited state properties. The chapters by Ian W. M. Smith on reactions of excited species and by Robert C. Amme on vibrational and rotational excitation also contain valuable information, although much of it can be readily found in other recent reviews. The chapter by E. E. Nikitin on nonadiabatic collision theory is particularly out of date, containing no mention of recent work by Bauer, Fisher, Pechukas, Preston, Miller, and George. Nevertheless, it is a valuable and important chapter, as is the other theoretical chapter, by Joyce J. Kaufman, on excited state potential energy surfaces.

The primary purpose of this book, according to its preface, is to gather together and critically summarize the various diverse aspects of excited state research. Although it falls short of this objective, it should be a valuable resource for the nonspecialist.


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## Integrative Marine Biology

**Marine Ecology and Fisheries**. D. H. CUSHING. Cambridge University Press, New York, 1975. xiv, 278 pp., illus. Cloth, $27.50; paper, $6.95.

This is an important book. In it Cushing attempts to integrate the theory and knowledge of fishery biology with that of marine ecology. Whether the reader thinks he has been successful will depend on background, bias, and degree of skepticism concerning the theory and content of either field. But such an integration is clearly necessary and, whatever one thinks of some of Cushing's interpretations, he has obviously chosen the right path and has made progress along it.

For the landlocked reader an explanation is in order. There are at least three classes of marine biologists. There are the fishery scientists, who study stocks, their recruitment, growth, and other aspects of population dynamics as affected by fishing pressure. They are frequently employed by the state, are in the unenviable position of being directed to do mission-oriented research, and often treat their subjects as if fish lived in a biological vacuum. There are the biological oceanographers (sometimes also called marine biologists), who are concerned with the structure, function, and efficiency of transfer of energy and materials through food webs. These are often academics and sometimes have the unfortu-