of corporate research sponsorship on academic integrity. Yet 35 years ago the Defense Department, with its strong connections to private industry, was a far more pervasive influence in campus laboratories than are biotechnology companies today.

At the very beginning of *Science, Money, and Politics*, Greenberg asks the most important questions in science policy: "Could science serve us better? Does it ignore important opportunities for the advancement of knowledge and the betterment of humankind?" Declaring, quite correctly, that these questions "are unwelcome" in the arena of science policy, and that "close examinations have not taken place," he abandons them to the succeeding 460 pages of political exposé. In doing so, however, he misses the opportunity to give greater meaning to his work. Questions about the societal value of government-funded science remain off-limits in political debate because more money for science is widely and uncritically accepted as a guarantee of more benefits for the public. Greenberg could have investigated the validity of this guarantee. In choosing not to do so, he seems content simply to show that the science community's monomaniacal pursuit of bigger budgets is often unsavory. Whether or not this behavior ultimately serves the public interest remains unanswered.

References

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BOOKS: NEUROSCIENCE

Clear View of a Promising Future

Michael Rutter

Over the years, biological psychiatry has had more than its fair share of false dawns and unfulfilled promises. Are the new claims stemming from the just-concluded "Decade of the Brain" any different? In *Brave New Brain*, a fascinating book written for the lay public, Nancy Andreasen argues persuasively that there are now some real and important discoveries and that these are already altering psychiatric practice and will do so increasingly in the years ahead. She writes as a distinguished clinical neuroscientist, but one whose career began in the field of English literature. Both features are clearly evident in this gripping account, which will be of as much interest to clinicians and to scientists in adjacent fields as to the public at large. Her portrayal of the science is accurate and up to date, and the quality of her writing is outstanding.

The book is distinctive in several respects. Andreasen describes it as a story about a voyage of discovery. Without burdening the reader with technical detail, she depicts biological science as finding out how nature "works"—with the emphasis on the process of discovery as much as on the factual knowledge that accrues. Unusual for a popularizer, she notes some of the key blind alleys and premature claims, whilst going on to describe the accomplishments and what they may mean for patients.

Brave New Brain
Conquering Mental Illness in the Era of the Genome
by Nancy C. Andreasen
Oxford University Press, New York, 2001. 380 pp. $29.95. ISBN 0-19-514509-7.

Andreasen brings out very well the crucial role of basic science in the progress towards improved health care. She shows very good judgment in her discussions of the scientific discoveries, which include useful reminders of the numerous Nobel prizes won in the fields of neuroscience and genetics. Highlighted as part of the broader discussion of brain plasticity are Hubel and Wiesel's demonstration of the effects of experience on brain development and Kandel's delineation of the processes involved in the preservation of memories. Both Carlsson's research on the role of dopamine as a neurotransmitter and Axelrod's studies of the mechanism of norepinephrine reuptake in relation to antidepressant drug action are considered in relation to the neural basis of mental disorders and the development of drug treatments. Crick and Watson's discovery of the structure of DNA is, of course, noted as the crucial step in the work leading to the sequencing of the human genome. Jacob and Monod's research on the on-off switch in gene expression and Berg's work on making recombinant DNA are considered as examples of the investigation of gene action. Hounsfield and Cormack's development of computerized tomography and Purcell and Bloch's development of nuclear magnetic resonance are picked out as milestones in the brain imaging field. These Nobel Prize–winning examples constitute an impressive array of scientific discoveries that are both exciting in terms of their science and important in terms of their clinical implications. But the book does not merely name-drop; Andreasen admirably conveys just what the science comprised and why it mattered.

The coverage of research in the book ranges over a broad territory but stays focused, with the main emphases on brain development, cognitive processing, neurotransmission, gene action, disease genes, and neuroimaging. Even the least scientifically literate should get a good feel for the meaning of the research, and the book allows other readers to learn about areas of science in unfamiliar territory. The language is deceptively simple, the examples are vivid but not misleading, and the specific connections to real everyday clinical issues bring the whole subject to life. Altogether a riveting account.

The coverage of clinical topics is comparable—presenting schizophrenia, mood disorders, anxiety states, and the dementias as the main examples. Through her balanced discussions, Andreasen conveys exactly why the biology is so crucial and why human experiences are vitally important. She is even-handed, and it is clear that she understands such an approach is required for a proper understanding of the functioning of the brain and the workings of the mind.

Brave New Brain concludes with a thoughtful and upbeat discussion of the legal, ethical, and practical issues involved in ensuring that the scientific advances actually improve health care and that potential abuses are avoided. At the end of this chapter, Andreasen raises the question of whether psychiatry should be concerned with curing people or curing society. Her position is clear: "psychiatry must recognize that its role is to treat diseases, not the social discontent of 'unhappy people' or pervasive psychosocial malaise. We simply lack the knowledge to cure society as well as individuals."

Andreasen has written a truly outstanding book. *Brave New Brain* informs, provokes thought, conveys the excitement of science, indicates why science matters, and considers both the achievements with respect to clinical application and the difficulties involved. Quite an achievement!

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BROWSINGS

Nature Loves to Hide. Quantum Physics and the Nature of Reality from a Western Perspective. *Shimon Malin.* Oxford University Press, New York, 2001. 383 pp. $27.50, £27.50. ISBN 0-19-513894-5.

Several popular books have explored the affinity of modern physics with Eastern mysticism. Noting the background of the founders of quantum mechanics, Malin argues instead for a continuity with the traditions of Western philosophy. After presenting a non-mathematical account of quantum physics and discussing the course and outcome of the Bohr-Einstein debate, he explores the relations of the science to the tenets of realism and to the ideas of Plato, Plotinus, and Whitehead.