TQ: Mr. Rodenen Memo/Reply From JOSHUA LEDERBERG After a dozin your of discussion (from 1960) this was intered to be my last wond on the subject I was victimized by too many popularizers trying to make me mt De Frankenstein But I believe west of what's in this 1978 piece is stay would ... Theo what you wad about on Sunday your remarks about awakening proetical people remarked with my service. It took me 3 years to I amy dry company serously interes ted in recombinant ONA I was glad to here from you Joshua Lederberg President The Rockefeller University New York, N.Y. 10021 (212) 360-1234 FORM-

most of the preading **1** Biological Innovation Dand Genetic Intervention

JOSHUA LEDERBERG

DEPARTMENT OF GENETICS Stanford University PROGRAM ON SCIENCE, TECHNOLOGY AND SOCIETY

Center for Advanced Study in the Behavioral Sciences

Stanford, California

This volume is intended to be a glimpse of the future as a way of celebrating the history of an exciting era in biological science. The hazards of prophecy (not least to the prophets) are well known. Still, it would be a relatively simple task to post lookouts at the frontiers of contemporary insight and knowledge in fields like genetics and molecular biology. If, mercifully, our range is confined to the next 25 years, shrewd observers may miss no more than half of the significant questions that will unpredictably emerge and may score even better in outlining the solutions to some of the major problems that are clearly recognized-like the structure and development of the nervous system, immunity, or neoplasia. We should, however, be uneasy (or delighted, according to one's temperament) about the prevalent mood that tells that most of the really exciting fundamental questions have been answered-for history teaches that this often foretells a new scientific revolution that could shake our beliefs to their very roots.

This purview is based on an autonomous model of science that has uncertain durability. Perceived ignorance (or error) is postulated to be

The latter portion of this essay has been adapted from a presentation to the Jubilee Symposium of Hoffman-LaRoche & Co., Ltd., held at Basel, Switzerland in September 1971, and is used here with their kind permission.