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Chance, Development, and Aging

Caleb E. Finch, Tom Kirkwood
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Caleb E. Finch, Tom Kirkwood : Chance, Development, and Aging before purchasing it in order to gage whether or not it would be worth my time, and all praised Chance, Development, and Aging:

9 of 9 people found the following review helpful. Chance is significant to life!By K. SchappertFinch and Kirkwood have written a great and insightful book reviewing the premise that chance, operating during the fetal development of an organism, has a significant influence on all future physiological events during the postnatal life of the organism. These intrinsic developmental variations lead to seemingly subtle and, until now, thought to be insignificant, physiological differences between organisms. Finch and Kirkwood convincingly argue that these subtle physiological

differences have a significant impact on later events during the life of the organism. For example, whether a given individual will get sporadic Alzheimer's disease or Parkinson's disease. Also, the same variations would have an impact on the severity of the disease (should a person get the disease). This book is a must for any biology scientist serious about having a complete library on her/his shelves.

In Chance, Development, and Aging, two leading biological gerontologists review and evaluate all of the available data to elucidate the respective roles played by genes and chance developmental events in determining the course of aging in individuals. The combination of genetic and external environmental influences provides only an incomplete answer. Inbred laboratory animals, for example, exhibit a wide range of life spans despite having nearly identical genes and environments. Similarly, uncovering the genetic risks for Alzheimer's disease has not enabled doctors to predict with confidence its onset and severity. This book argues that understanding chance events, specifically random variations during prenatal development, is essential for answering these questions. The book draws on the extensive research in developmental biology on random variations in form and function, while putting this research in a new context. The discussion sheds light on a range of questions, from understanding menopause to explaining why identical twins are not truly identical. The book will be invaluable for gerontologists, geneticists, developmental and reproductive biologists, physiologists, and a broad range of physicians and investigators in experimental medicine.

"Why do the lifespans and outcomes of aging in inbred and well cared for laboratory populations of nematodes, fruit flies and mice vary so much among individuals? And why are the variations in lifespans of these animals at least as great as that [between] human identical twins who experience much longer lifespans and more diverse environments? Such questions motivated the writing of this book. Finch and Kirkwood provide a novel analysis that should be widely read, for it raises important issues of general biological and medical relevance, about the significance of chance variations during development. ... The disposable soma theory of aging permeates the book and rightly so; this theory states that selection only maintains those aspects of bodily function required for reproduction ... Thus there is no selection against aging once reproduction is achieved. ... In summary, Finch and Kirkwood have very successfully opened up an important and largely neglected field for discussion."--CellAbout the AuthorDr. Caleb E. Finch is ARCO and William Kieschnick Professor of Gerontology at the Andrus Gerontology Center, University of Southern California. Dr. Tom Kirkwood is a Professor at the University of Manchester and the Director of the Joint Center on Aging at the Universities of Manchester and Newcastle.