some ways to mitigate the challenges) inherent in life course epidemiology and in particular the study of healthy ageing from a life course perspective.

This book is presented in 19 chapters divided into four parts. Part I (four chapters) is an overview of the life course perspective on healthy ageing; Part II (five chapters) is devoted to the challenges of, and guidance on, study design and analysis including a chapter on using a qualitative approach to understand healthy aging. The second two parts of the book are more content oriented, and Parts III (six chapters) and IV (four chapters) present the underlying biology of ageing and how lifestyle factors (diet, physical activities, geography) influence healthy ageing, respectively.

An important challenge faced when taking a life course approach to healthy ageing is the paucity of longitudinal studies with adequate information on early life (or even early adulthood) measures collected as a basis to study healthy ageing. To date much of the research has been based on cross-sectional studies or studies of adults aged 65 and over at enrolment. In the book, the authors summarize results from several completed and ongoing studies and one is struck by the gaps in knowledge. With the ageing of several birth cohorts, these gaps may begin to be filled. The authors make a pitch for harmonization of various cohorts through the development of research networks as another important strategy to move the field forward.

This is a small book packed with very useful information. I consider Parts I and II must-reads for graduate students and researchers involved in ageing research, as they form an essential introduction to the field, an overview of the evidence in selected areas and methods for studying ageing from a life course perspective. Parts III and IV provide important background for those with a specific interests. Part III includes chapters on neuroendocrine systems, vascular and metabolic function, musculoskeletal ageing, biomarkers, genetics and epigenetics. Part IV focuses on ‘The way we live’, with chapters on diet, physical activity and the role of place in healthy ageing.

Overall, this is an easy to read, excellent book.

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Understanding Brain Aging and Dementia: A Lifecourse Approach


This book is a rollercoaster ride through diverse fields of neuroscience, systems biology and epidemiology, swooping in to discuss details of neuronal structure then out into the broader contexts of evolutionary biology, via Freud, Piaget and reductionism.

The lifecourse emphasis of the title plays out not only in due consideration of data such as the longitudinal cohort studies on which the author has worked, but also from a constant revisiting of the importance of developmental processes acting both early and late in life. From the opening chapters, the reader is orientated to a lifecourse starting from conception, or even in preceding generations, and extending right through to what is known about the oldest old—with appropriate caveats about the strengths and limitations of studies in each of these various phases.

Whalley describes both the micro- and the macro-changes observed as the brain ages, from a cellular level to that of a functionally organized system adapting to experience and environmental change. In a particularly interesting section on evolution, he argues that Alzheimer’s pathology is relatively specific to humans and that this may reflect increased vulnerability to damage of evolutionarily recent parts of the brain, which most distinguish human brains from those of other species.

The book considers the surprisingly tricky question of whether the dementias reflect merely an exacerbation of ‘normal’ brain ageing, or something that is qualitatively or quantitatively distinct. Whalley argues persuasively that this matters because understanding whether they are the same processes, affected by the same risk factors and individual variation, is key to understanding how dementia might be prevented. The final sections of the book are dedicated to weighing up the opportunities for dementia risk reduction, with particularly emphasis on the
implications of the clear but messy effects of childhood education and, in later life, the equally cluttered relationships between various markers of a healthy lifestyle. Coming at a time when multi-domain secondary prevention studies are finally coming of age, these chapters are a careful and timely summary of both the observational and (paucity of) interventional data previously available.

It is difficult to know who is the intended audience for this book, though its scope is so broad that there will be much to interest both specialists and the interested layperson. Epidemiologists will be familiar with an approach that leans heavily on the Barker hypothesis (and variants thereof), but may be surprised to find themselves learning more than they ever knew they wanted to about topics as varied as embryonic development, tau biology and emotional intelligence. Whalley clearly has a massive appetite for embracing data from diverse fields and, drawing on a lifetime’s work, he does so with style. His narrative cuts directly across research fields which have often progressed with some degree of isolation. The stand-alone chapters summarizing the neurobiology of ageing, cognitive epidemiology and dementia neuropathology are excellent and useful reviews; those attempting integration across these fields make the book both a fascinating read and a slightly disconcerting medley of ideas. On occasion the inevitable lag between date of writing and date of publication show through (for example when describing the state of the art of amyloid imaging technologies) but, by and large, this is an excellent read.

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The Life Project: The Extraordinary Story of Our Ordinary Lives


A dark, wet January afternoon in Cheshire; I’m recovering from some kind of infection and reading The Life Project, Helen Pearson’s meticulously researched and vividly written account of cohort birth studies in Britain.

I’m a member of the world’s longest-running study, the National Survey of Health and Development, which began keeping tabs on me and 5361 other babies born between 3 March and 9 March 1946. After 70 years, the survey knows me better than I do; it knows how many nappies I had when I was born and how bad my failing memory is now. I and the other 1946ers are, says Pearson, some of the best-studied people on the planet. On page 41, I find a bracket that details what one cohort member had for breakfast (bread and dripping) one morning in 1950. That’s me.

As rain batters my windows, I read that Diana Kuh, the survey’s director, now has ‘the sad scientific task of carefully watching the cohort members grow old, fall ill and die’, news that makes me sigh and reach for another dose of antibiotics. It seems 85% of the 1946 members have at least one serious medical disorder on a list of 15, and that we have on average two each. I scan the list and find I have just one (a touch of osteoporosis). I cheer up and learn that I might make it to 100, since statistics suggest that 300 out of the 3500 remaining members of us will. I hope they give us as good a party then, as they did in 2011 when we were all 65.

Pearson answers lots of questions our cohort years have prompted. Why, when we were 53 and often since, have we had to stand on one leg with our eyes shut, an exercise that has resulted in frequent epic-scale tottering across the land? It seems that those who did badly in this test (and a couple of others) have a higher mortality rate than those who did well. These simple checks could be used more widely to predict those most at risk of life-threatening health conditions in years to come.

That, of course, is why cohort studies exist: as time passes, cascades of information flow and provide ‘a fascinating window on human health’ and much more besides. Members of the 1946 cohort have contributed information that has gone into at least eight books and 700 other publications; my part in all that will be a nice legacy even if I don’t make it to 100.

But it’s not just we 70-year-olds. There are other birth cohort studies that began with the babies of 1958, 1970, 1991 and 2000 (and there was almost another in 2015)