

THE CAMBRIDGE HANDBOOK OF AGE AND AGEING

The Cambridge Handbook of Age and Ageing is a state-of-the-art guide to the current body of knowledge, theory, policy and practice relevant to age researchers and gerontologists around the world. It contains almost eighty original chapters, commissioned and written by the world's leading gerontologists from sixteen countries and five continents. The broad focus of the book is on the behavioural and social sciences but it also includes important contributions from the biological and medical sciences. It provides comprehensive, accessible and authoritative accounts of all the key topics in the field ranging from theories of ageing, to demography, physical aspects of ageing, mental processes and ageing, nursing and healthcare for older people, the social context of ageing, cross-cultural perspectives, relationships, quality of life, gender, and financial and policy provision. This handbook will be a must-have resource for all researchers, students and professionals with an interest in age and ageing.

MALCOLM L. JOHNSON is Professor of Health and Social Policy (Emeritus), University of Bristol, and Director of the International Institute on Health and Ageing. From 1984 to 1995 he was Professor and Dean of the School of Health and Social Welfare at the Open University. He has published 9 books and over 150 chapters and articles reflecting the broad range of his academic interests, of which ageing, the lifespan and end-of-life issues are the most prominent. He is a former Associate Editor of *Sociology of Health and Illness*, was Secretary of the British Society of Gerontology and Founding Editor of the international journal *Ageing and Society* (1980–92). He has taught and researched widely in the UK and has been Distinguished Visiting Professor at several North American universities.

VERN L. BENGTON is the AARP/University Chair in Gerontology and Professor of Sociology at the University of Southern California. He has published 15 books and over 220 articles. He was elected President of the Gerontological Society of America and has been granted a MERIT award from the National Institute on Aging for his 35-year Longitudinal Study of Generations.

PETER G. COLEMAN is Professor of Psychogerontology at the University of Southampton, Fellow of the British Psychological Society (FBPsS), a Chartered Health Psychologist, and Academician of the Academy of Learned Societies for the Social Sciences (AcSS). His publications include *Ageing and reminiscence processes*, *Ageing and development: theories and research* (with Ann O'Hanlon), *Life-span and change in a gerontological perspective* (co-ed.) and *Ageing in society* (co-ed.). He was Assistant Editor of *Reviews in Clinical Gerontology* from 1990 to 1993, and Editor of *Ageing and Society* from 1992 to 1996.

THOMAS B. L. KIRKWOOD is Professor of Medicine and Co-Director of the Institute for Ageing and Health at the University of Newcastle upon Tyne, and a Council Member of the UK Academy of Medical Sciences. He is Co-Editor of *Mechanisms of Ageing and Development* and his books include *Chance, development and ageing* (with Caleb Finch), the award-winning *Time of our lives: the science of human ageing* and *The end of age* based on his BBC Reith Lectures in 2001.

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Edited by

MALCOLM L. JOHNSON

University of Bristol

Association with

VERN L. BENGTON

University of Southern California

PETER G. COLEMAN

University of Southampton

THOMAS B. L. KIRKWOOD

University of Newcastle upon Tyne



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*For
Christine*

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Contributors

Isabella Aboderin, Institute of Ageing, University of Oxford

W. Andrew Achenbaum, College of Liberal Arts and Social Sciences, University of Houston

Katherine R. Allen, Department of Human Development, Virginia Polytechnic Institute and State University

Toni C. Antonucci, Department of Psychology, University of Michigan

Sara Arber, Centre for Research on Ageing and Gender, Department of Sociology, University of Surrey

Claudine Attias-Donfut, CNAV, Paris

Paul B. Baltes, Max Planck Institute of Human Development, Center for Lifespan Psychology, Berlin

Sandhi Maria Barreto, Ageing and Health, World Health Organization

Vern L. Bengtson, Andrus Gerontology Center and Department of Sociology, University of Southern California

Simon Biggs, Age Concern Institute of Gerontology, King's College, University of London

Joanna Bornat, Faculty of Health and Social Care, The Open University

Julie B. Boron, College of Health and Human Development, Pennsylvania State University

Mike Boulton, School of Optometry and Vision Sciences, Cardiff University

Clive E. Bowman, Medical Director, BUPAcare Services, UK

Marjolein Broese van Groenou, Sociology and Social Gerontology, Vrije University, Amsterdam

Edna Brown, Department of Psychology, University of Michigan

Robert N. Butler, Co-Chair, Alliance for Health of the Future; Geriatrics and Adult Development, Mount Sinai School of Medicine, New York

- Bill Bytheway**, Faculty of Health and Social Care, The Open University
- Neena L. Chappell**, Centre on Ageing and Department of Sociology, University of Victoria
- Neil Charness**, Department of Psychology, Florida State University
- Kaare Christensen**, Ageing Research Centre, and Epidemiology, Institute of Public Health, University of Southern Denmark.
- Peter G. Coleman**, School of Psychology, University of Southampton
- Ingrid Arnet Connidis**, Department of Sociology, University of Western Ontario
- Neal E. Cutler**, Financial Gerontology, Widener University, Chester, Penn.
- Sara J. Czaja**, Department of Psychiatry and Behavioral Sciences, University of Miami School of Medicine
- Svein Olav Daatland**, Norwegian Social Research, Oslo
- Lia Susana Daichman**, International Network for the Prevention of Elder Abuse (INPEA), Buenos Aires, Argentina
- Adam Davey**, Polisher Research Institute, Philadelphia
- Bleddyn Davies**, Personal Social Service Research Unit at the LSE and universities of Kent and Manchester
- Freya Dittmann-Kohli**, Center for Psychogerontology, University of Nijmegen
- Glen H. Elder, Jr**, Carolina Population Center, The University of North Carolina at Chapel Hill
- Carroll L. Estes**, Institute for Health and Ageing, University of California, San Francisco
- Mike Featherstone**, Theory, Culture and Society Centre, Nottingham Trent University
- Amy Fiske**, University of Southern California
- Alexandra Freund**, School of Education and Social Policy, Northwestern University
- Daphna Gans**, Andrus Gerontology Center, University of Southern California
- Linda K. George**, Department of Sociology, Duke University
- Roseann Giarrusso**, California State University
- Chris Gilleard**, St George's Hospital Medical School, London
- Jay Ginn**, Centre for Research on Ageing and Gender, Department of Sociology, University of Surrey
- Edlira Gjonça**, Department of Epidemiology and Public Health, University College London

XIV LIST OF CONTRIBUTORS

- Elena L. Grigorenko**, Department of Psychology, Yale University
- Jaber F. Gubrium**, Department of Sociology, University of Missouri
- Sarah Harper**, Oxford Institute of Ageing, University of Oxford
- Jutta Heckhausen**, School of Ecology, University of California – Irvine
- Akiko Hashimoto**, Department of Sociology, University of Pittsburgh
- Jon Hendricks**, Department of Sociology, Oregon State University
- Mike Hepworth**, Department of Sociology and Anthropology, University of Aberdeen
- Charlotte Ikels**, Department of Anthropology, Case Western Reserve University
- James S. Jackson**, Department of Psychology, University of Michigan
- Yuri Jang**, Gerontology Center, University of Georgia
- Bernard Jeune**, Ageing Research Centre, and Epidemiology, Institute of Public Health, University of Southern Denmark
- Malcolm L. Johnson**, International Institute on Health and Ageing and University of Bristol
- Randi S. Jones**, Emory University
- Alexandre Kalache**, Ageing and Health, World Health Organization
- Robert L. Kane**, Health Services Research and Policy, University of Minnesota
- Rosalie A. Kane**, Health Services Research and Policy, University of Minnesota
- Ingrid Keller**, Ageing and Health, World Health Organization
- Rose Anne Kenny**, Department of Geriatrics, Royal Victoria Infirmary, Newcastle upon Tyne
- Thomas B. L. Kirkwood**, Institute for Ageing and Health, Newcastle General Hospital, University of Newcastle upon Tyne
- Kees Knipscheer**, Sociology and Social Gerontology, Vrije University, Amsterdam
- Martin Kohli**, European University Institute, Florence
- Gisela Labouvie-Vief**, Department of Psychology, Wayne State University
- Kristina Larsson**, Stockholm Gerontology Research Center, Stockholm, Sweden
- Shu-Chen Li**, Max Planck Institute of Human Development, Center for Lifespan Psychology, Berlin
- Charles F. Longino, Jr**, Sociology Department, Wake Forest University, N.C.
- Ariela Lowenstein**, Centre for the Research and Study of Ageing, University of Haifa, Israel
- Erick McCarthy**, Gerontology Center, University of Georgia

- Gerald E. McClearn**, Center for Developmental and Health Genetics and Department of Biobehavioral Health, The Pennsylvania State University
- Brendan McCormack**, Nursing Research, University of Ulster / Royal Hospitals
- Elizabeth MacKinlay**, Centre for Ageing and Pastoral Studies, School of Theology, Charles Sturt University
- Alfons Marcoen**, Department of Psychology, Catholic University Leuven
- Michael Marmot**, Department of Epidemiology and Public Health, University College London
- Tom Margrain**, School of Optometry and Vision Sciences, Cardiff University
- Victor W. Marshall**, Institute of Ageing, The University of North Carolina at Chapel Hill
- Elizabeth A. Maylor**, Department of Psychology, University of Warwick
- Ruud ter Meulen**, Department of Caring Sciences, University of Maastricht
- Harry R. Moody**, International Longevity Center – USA, New York
- Robert A. Neimeyer**, Department of Psychology, University of Memphis
- Demi Patsios**, Centre for Health and Social Care, School for Policy Studies, University of Bristol
- Margaret J. Penning**, Centre on Aging and Department of Sociology, University of Victoria
- Stephen A. Petrill**, Center for Developmental and Health Genetics and Department of Biobehavioral Health, The Pennsylvania State University
- Chris Phillipson**, Institute of Ageing, Keele University
- Leonard W. Poon**, Gerontology Center, University of Georgia
- Norella M. Putney**, Andrus Gerontology Center, University of Southern California
- Jill Quadagno**, Pepper Institute on Aging and Public Policy, Florida State University
- Pat Rabbitt**, Age and Cognitive Performance Research Centre, University of Manchester
- Jennifer Reid Keene**, Department of Sociology, University of Nevada – Las Vegas
- Sandra G. Reynolds**, Gerontology Center, University of Georgia
- Steven R. Sabat**, Department of Psychology, Georgetown University
- Clive Seale**, Department of Human Sciences, Brunel University, London
- Merril Silverstein**, Leonard Davis School of Gerontology, University of Southern California
- Hannes B. Staehelin**, Geriatric University Clinic, University Hospital Basel

XVI LIST OF CONTRIBUTORS

Ursula M. Staudinger, Institute for Educational and Developmental Psychology,
Dresden University

Robert J. Sternberg, Department of Psychology, Yale University

Debra Street, Pepper Institute on Aging and Public Policy, Florida State
University

Philip Taylor, Cambridge Interdisciplinary Research Centre on Ageing,
University of Cambridge

Fleur Thomése, Sociology and Social Gerontology, Vrije University, Amsterdam

Mats Thorslund, Department of Social Work, Stockholm University

Jinzhou Tian, Institute of Geriatrics, Beijing University of Chinese Medicine

Theo van Tilburg, Sociology and Social Gerontology, Vrije University,
Amsterdam

Fernando M. Torres-Gil, School of Public Policy, University of California,
Los Angeles

Josy Ubachs-Moust, Department of Caring Sciences, University of Maastricht

Christina Victor, School of Health and Social Care, University of Reading

K. Warner Shaie, College of Health and Human Development, Pennsylvania
State University

Anthony M. Warnes, Sheffield Institute for Studies on Ageing, Northern General
Hospital, Sheffield

James L. Werth, Jr, Department of Psychology, The University of Akron

Sherry L. Willis, College of Health and Human Development, Pennsylvania
State University

François-Charles Wolff, Faculty of Economics, University of Nantes; CNAV and
INED, Paris

Bob Woods, School of Psychology, University of Wales, Bangor

Foreword

Ageing of individuals and populations of humankind has long been studied and described out of simple academic curiosity, in search of scientific explanation, to enunciate better the social, health and economic consequences and in the quest for solutions to the imagined or real negative outcomes of the phenomena. The level of public and political attention given to the issues has recently expanded to an astonishing degree epitomised by the global response represented by the United Nations World Assemblies on ageing convened in 1982 in Vienna and again in 2002 in Madrid. At these global summits the member states of the UN convened to review the implications and necessary policy responses to the unprecedented scale and rapidity of population ageing. During the second half of the last century the UN Population Division had observed that the global population of those persons aged 60 years and over almost trebled from 205 million to 606 million, and average global human life expectancy increased by 20 years from 46 years in 1950 to 66 years by 2000. During the same period unprecedented rates of decline in fertility saw many developed countries drop close to or below replacement levels, with the developing world following similar trends and progressively showing signs of 'catching up'. While the 1982 Assembly focussed on the situation of older persons, particularly in the developed nations of the world, at the 2002 event the increasing significance of the ageing in developing countries, where more than half of the world's older (aged 60 years and over) population reside, was

recognised. The 2002 Madrid World Assembly was preceded by The Valencia Forum, an event auspiced by the International Association of Gerontology that brought together some 580 scientists, practitioners and educators in ageing to present, debate and articulate the evidence base in support of the 'political' deliberations of the Assembly. An important accompaniment to the Madrid International Plan of Action on Ageing 2002, the product of the Second World Assembly on Ageing, was the joint UN Office on Ageing and the International Association of Gerontology project report – the Research Agenda on Ageing for the Twenty-First Century, which identified priorities for policy-relevant research world wide. A series of expert group meetings had been convened during 1999–2000 which led to formulation of this global research agenda. The Valencia Forum endorsed the final version that was subsequently presented at the Second World Assembly on Ageing in Madrid. The United Nations General Assembly, in its resolution 57/177, subsequently 'welcomed the adoption in April 2002 by the Valencia Forum of research and academic professionals of the Research Agenda on Ageing for the Twenty-First Century, to support the implementation of the Madrid International Plan of Action on Ageing, 2002'.

The importance of high-quality relevant research and the continuing expansion in knowledge and understanding of ageing and all its ramifications has been acknowledged at the highest levels. Over this time and continuing into the present era there has been a commensurate growth in research,

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knowledge and information on human ageing from a myriad of perspectives. Anyone with an interest in the subject is now literally bombarded by a burgeoning literature on the issues at many levels, from the most fundamental evolutionary genetic, biomolecular, physiological and psychological, to social, economic and national socioeconomic developmental scenarios.

Any powerfully informed effort to marshal systematically and concisely the breadth and depth of our contemporary knowledge and understanding of the phenomena of human ageing must be applauded as timely and highly relevant in these present times.

This handbook has admirably achieved that goal, presenting as it does an impressive set of contributions from some of the world's leading scholars, educators and practitioners across the many fields, enhancing our knowledge and understanding of ageing. While the array of knowledge and information set forth is impressive, it is also important to note the call in many areas for more research and exploration of key issues and questions yet unanswered or only incompletely tapped.

The triumphs of increasing human longevity and population control, as well as the challenges posed by the need to change societal perceptions and attitudes and adjust social and economic institutions, are becoming a universally shared experience of the developed and developing countries of the world. The time frames, demographic trajectories and socioeconomic contexts vary widely but the overall trends are a collective experience. Even the many other challenges to human well-being and prosperity, such as emerging epidemics of HIV/AIDS and other infectious diseases, terrorism, war, environmental decay, sectarian strife and violence, extensive poverty and major natural disasters, have links to population ageing through the role shifts and consequences imposed on ageing persons.

Closer to home, national social institutions are variously grappling with the policy implications of increasing longevity and population ageing. Responses vary greatly from relatively scant attention to comprehensive aged care policies and programmes covering social security, health insurance, acute and chronic care, residential and community programmes, treatment, rehabilitation and long

term care services. In addition some more enlightened nations have enacted legislation to deal with such issues as age based discrimination, rights of older persons, labour force participation and so on.

The human landscape viewed from the perspective of population age structure and intergenerational roles and relationships has changed dramatically over the last century and will continue to do so at many levels. Greater knowledge and understanding of the processes shaping these changes and their inevitable consequences in polity, social, economic, health and broader humanitarian terms are critically needed.

Chapters in this book attest to the extent we have progressively uncovered the complex mechanisms underlying ageing at evolutionary genetic, biomolecular and cellular levels in ways that have potential to identify positive interventions, especially where the fundamental links between ageing processes and age associated chronic diseases lie.

The realms of demography, social science, anthropology, epidemiology, psychology, mental and physical health, sexuality, quality of life, care, technology, ageism, images, attitudes, families, intergenerational relations, cultural influences, death, dying, spirituality, ethics and economics among others are explored in this extensive collection of contributions.

Moreover, the big questions concerning health and social policy are explored and lessons drawn from some of the policy initiatives of the past and current models for social security provision and health care coverage that are in place in various situations around the globe.

This is a wide-ranging tome that draws on an extraordinary multidisciplinary and erudite scholarship, which is demanded by the comprehensive study of ageing and its implications. While it is multifaceted, nonetheless the insights offered by so many informed perspectives seem to present a common thread, clear at points and faint at others but consistent throughout, that suggests some potential for the evolution of what Edmund O. Wilson defined as 'consilience', a word originally coined by William Whewell who used it in his book *The philosophy of the inductive sciences* in 1840 to describe the interlocking of explanations of cause and effect between disciplines. At least in the fields of study which provide commentary on human ageing from the vantage

points of genetics, biology, medicine, sociology, psychology, anthropology, economics and social policy, as well as art, literature and philosophy, we seem to be making our way little by little towards some very fundamental and shared truths about the nature and rewards of the experience of human ageing. It may be some time before these rich and diverse understandings of the expression of ageing can be reconciled in some common and more fundamental scientific framework but the production of an authoritative multidimensional exploration of the state of the art(s) as set forth here provides a very interesting point at which such an exploration might begin.

Within a common framework or not, there is a need for all of those associated with human ageing as scientists, practitioners, educators, policy and decision makers to be better informed across a very broad range of arenas. Decisions of all kinds and policies, whether precisely targeted or broad, should be made on the basis of sound evidence. This is perhaps more

cogent in an area like ageing where myths, misconceptions and false assumptions have abounded through all of recorded history.

Certainly, in this book we are led to a more enlightened positive and proactive perspective on, and understanding of individual and population ageing. This handbook may well be heralded as marking an important turning point in how we see and respond to ageing in both personal and societal terms. With greatly improved knowledge and understanding across many realms – informed by realities, clearer in appreciation of the challenges – comes a greater confidence in our capacity to achieve maximum benefit from humankind's maturation and to deal more effectively and positively with the much chronicled real and imagined vicissitudes of ageing.

GARY R. ANDREWS
University of South Australia
Immediate past President
International Association of Gerontology

General Editor's Preface

AGEING IN THE MODERN WORLD

The invitation to design and edit a major new *Handbook* which captures the state of research and knowledge in relation to human ageing came both as a rare and exciting privilege and as a daunting prospect. Having spent a significant part of my academic career engaged in the developing field of gerontology, I felt I knew what the research and public policy agendas were around the world. But capturing the exponential growth in the body of knowledge at the beginning of the twenty-first century inevitably required a careful selection of issues and perspectives rather than a representative sample of the whole burgeoning output. Early notions that such a volume could reasonably encompass all the main disciplinary areas were soon set aside. Not only was the sheer volume of research emerging from the human and policy sciences (which I could make some claim to know) now vast and diverse, the prodigious expansion of research in the medical and biological sciences was both monumental in scale and beyond my range. So the enterprise had to become somewhat more focused and more collaborative, involving three Associate Editors of unrivalled scholarship and vision: Vern Bengtson, Peter Coleman and Tom Kirkwood.

Despite the need to acknowledge that a single comprehensive sourcebook for gerontology was no longer achievable, I wanted the *Handbook* still to represent the full range of contemporary knowledge and debate. So what the reader will find here is a very substantial representation of what is known about

age and the processes of ageing across the lifespan, from the social and behavioural sciences. This is the core of the book. But in order to contextualise and connect with the social and psychological dimensions, there is a series of expert and accessible distillations of key developments in biomedicine.

These contributions are, for me, an essential part of the rationale of the Handbook. They ensure that the core readership remains in touch with areas of science which are central to the study of ageing and which will certainly transform the lived experience of it, as the human genome project provides new and previously unimagined forms of intervention which will re-write the health and illness map of later life and produce a paradigm shift in life expectation. Any future edition will find the consequences of these changes have reshaped the rest of the gerontological enterprise. They will set new and urgent agendas for families, worklife, pensions, inheritance, intergenerational relations, images of ageing, mental health, lifespan perspectives, assistive technology, long term care. They will give rise to new forms of wellbeing and a range of new stresses and maladies as relationships in every context are stretched to meet even longer duration and new sets of expectations.

Yet, much of what is to come will be an extension of familiar ground. The twentieth century saw unprecedented reductions in premature death, in the developed world, which in turn led to a spectacular increase of life expectation. As a result, the second half of the century saw similarly unanticipated changes in family patterns, gender and generational

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relations, the emergence of the Third Age and the beginnings of a globalisation of extended life.

To fulfil the intention of providing the reader with a comprehensive view of the subject area, in the form of 'state of the art' chapters from leading authorities, the book is organised into seven parts, which represent the major domains of debate and empirical enquiry. Within each part the selection is offered in a relatively unstructured way. No attempt has been made to sequence or link the contributions, as this would create a false construction of the way research and ideas proceed. Nonetheless, there is a multitude of points of contact which will assist readers to gain a coherent picture of the extent to which there is agreement amongst scholars and where there is unresolved contest and debate.

Part One was, nonetheless, designed to provide a panoramic introduction to the study of age and ageing. Those who choose to read all of these opening chapters should gain an authoritative perspective on the state of gerontology, in all its dynamic diversity. They will observe emerging trends as the lifespan approach gains favour, new ethical concerns, approaches to health are being re-configured, the neurologists and the psychologists struggle to establish the scientific foundations of human behaviour, and the sociologists and policy analysts debate the most effective ways of ensuring a good but affordable old age. In all of this discourse there remains a lack of over-arching concepts which provide a coherent view, a mind-map, of what ageing is and what its principal components are. This absence of an integrating framework is simply the reality in an area of enquiry which is still relatively young. It also represents the enormous complexity of age and ageing as enduring but constantly changing features of the global human landscape.

Emerging themes

For more than thirty years I have been a participant observer of the inter-disciplinary field we call gerontology. One important segment of this endeavour has been to be an editor of academic journals and of books. As founding Associate Editor of *Sociology of Health and Illness* (1978–80) and for twelve years the founding Editor of the international journal published by Cambridge University Press *Ageing*

and Society (1980–92), it was a necessary task to view how this emerging field was shaping up. So, from time to time, I have attempted to assess the trends of development and, in so doing, drawn attention to areas of neglect.

In the opening editorial of *Ageing and Society* in March 1981 I raised a continuing theme about the narrowness of focus in the existing literature:

The stock of existing research on ageing is characteristically about retirement; it is also largely about 'being old' at particular chronological ages and at particular times. It has in the recent past been excessively concerned with the social characteristics, experiences, views and maladies of cohorts of retired people . . . these enquiries contained relatively little which recognized the dynamics and continuities of social ageing, nor did they use personal or group history as a tool for interpreting their snap-shots of older people. (p. 2)

A year later, after having read over a hundred submitted manuscripts, I continued the critique: 'How can we begin to create a convincing gerontology if its enquiries are confined to what the French call the third and fourth ages? So much of what has been published to date consists of sets of data offering descriptions of the performance and characteristics of older people as though they were in themselves meaningful.' Then turning to another persistent theme, the lack of theory and the parochial nature of such work as there was, I asked: 'Why is it, . . . there is no prominent debate within ageing studies of those theoretical and ideological concerns which suffuse other related fields of study?' (Johnson, 1982).

My aspiration was to make the journal a distinctive vehicle for research which, in addition to presenting the results of research, gave a good account of its methodology, set the new material in the context of existing literature and drew conceptual observations from the new contributions to the body of knowledge. I also wished to stimulate research into aspects of ageing which were under-represented or non-existent at the time. Some modest success was achieved in publishing the work of economists, but this key discipline has still to engage fully with gerontology. Contributions from the arts remained rare as did work from lawyers. But the political economy of ageing was born in the first issue, with seminal papers from Peter Townsend (1981) and Alan Walker (1981), as was the stream of work on biographical analysis initiated by Leopold Rosenmayr

(1981). In later years the journal sponsored work on the linkages between oral history and ageing, lifespan psychology, gender, the moral economy of ageing and a landmark special issue on history and ageing (4) (1984), amongst other themes. These important articles helped to establish a reputation for serious discourse, which then as now seemed so vital to a proper understanding of the lifespan of individuals, groups, institutions and societies.

The *Cambridge Handbook* is a further attempt to present the latest and most important developments in research, in a way which provides the reader with a body of concepts and ideas to shape interpretations of the ever growing resources of data and commentary. Again, the achievement is partial, reflecting the state of the field. Yet within the almost eighty chapters there is ample evidence of diversification and a developing capacity for integrating knowledge across disciplines, nation states and continents.

THE PREOCCUPATION WITH HEALTH

From its inception the core area of gerontology has been health. If the principal narrative of the past thirty years has been about apocalyptic demography, the motive force of that story is the global extension of life. As any introductory lecture in gerontology will now relate, in the developed world people, on average, have around a 50 per cent greater expectation of life at birth than their forefathers had a hundred years ago. Moreover, recent statistical studies have shown that the tide of life extension has not stopped. Oeppen and Vaupel (2002) demonstrated that there has been an annual gain in expectation of life in northern Europe of three months per year, consistently over the last 160 years. If the trend was coming to an end, the increments would show signs of tailing off. But the trend is as strong and consistent as ever. So regardless of any scientific breakthrough which might lead to further reduction in the causes of death, our collective age will continue to rise.

It is part of contemporary received wisdom, that 'having your health' is the foundation of a good old age. We equally acknowledge that there is a global gradient in health and this reflects income, wealth and education. So it is not surprising that health and its promotion has been the central arena of gerontology for the whole of its relatively short col-

lective life. Indeed the whole field was developed originally by physicians who were concerned about the impact of chronic diseases and the pathologies of later life. As Andrew Achenbaum points out in his elegant history of gerontology, *Crossing frontiers* (1995), this interdisciplinary field has been dominated by preoccupations with oldness and its linked profile of physical decline associated with the Western world's epidemic of chronic illnesses which make up the principal causes of death – cancers and heart diseases. Despite the growing importance of research on the social features of life in the Third and Fourth Ages, which explore the positive potentialities of being an older person, these studies are overwhelmed by the sheer weight of inquiries about illnesses – physical and psychological – and the interventions which might ameliorate their consequences. An analysis of the hundreds of presentations at national and international conferences shows that their programmes are little different in structure and balance of content from those of ten, twenty or even thirty years ago.

What has changed is the nature of the focus on health, illness and its remediation. The research is more methodologically and technically proficient. It is more likely than in the past to produce data which can be translated into scales, typologies and professional procedures with their accompanying protocols for assessment and evaluation. This increasing sophistication is not to be regretted. It represents a higher degree of professional skill and a strong knowledge base, for use in addressing the requirements of the growing legions of old people worldwide. But, there is no parallel development in our conceptualising. Theoretical work remains a remarkably neglected area of gerontological work. So the oft-repeated observation that gerontology is 'data rich and theory poor' is demonstrably still the case (see Bengtson *et al.*, 1999; and in this volume, Chapter 1.1).

Research on the causal connections between health and age is activated by the push from governments and the funding for 'big science', which together have fuelled a huge drive towards: (a) the development of biologically based studies that are designed to yield interventions to halt or divert the effects of physical ageing; (b) clinical medical studies to produce drugs and surgical and technical procedures to treat age-related illnesses; and (c) research

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related to the roles of health professionals and those engaged in long term care and the development of techniques which enhance the capacity of older people (with the support of family carers) to live in so-called 'independence' in their own homes.

These preoccupations can be seen as the strongest domains of gerontological work, for the past fifty years. The latest manifestation is a belated recognition that prevention is both better and cheaper. So across the developed world there is what almost amounts to a tidal wave of measures to reduce smoking and obesity, promote exercise and the manifestations of what is called 'healthy living'. None of this is new of course. The evidence base has been there for decades. So too was the literature on ageing populations and the need to see pensions policy reflect demography. Nonetheless, this body of evidence and analysis has remained comparatively neglected by politicians and policy makers until market collapse with its dramatic impact on pension funds thrust the issue onto the public agenda. These observations are not new revelations to contemporary observers. We are aware of the pressures and inducements to a health and employment focus which is supported by governmental funding and leads to peer reviewed publications. So what is the purpose of drawing attention to them now?

First, because there is an emerging awareness that these strategies – both for research and for service delivery – are not sustainable. They require too much of the GNP. Projections of health and pension costs to 2030 or 2050 already show us that current health and social care systems will be undeliverable as the post- Second World War 'baby boomer' generations enter the Fourth Age. Countries like China, India and Brazil with rampantly ageing populations and unsustainable dependency ratios will quite possibly lead the way in developing new paradigms of health care. But Western nations must seriously reconsider their own strategies if a care crisis is to be avoided.

History and experience tell us that major transitions in public policy usually occur at the confluence of a real or perceived crisis along with the availability of worked-out ideas and evidence, which find that their time is come: what C. M. Cornford in his masterly essay called 'ripe time' (1908). There are many issues addressed within the *Handbook* which still await their day in the sun; but fortunately gerontol-

ogists have already seen their importance and made them the subject of serious enquiry. Amongst these issues in waiting, are: the consequences of ageing in Asia, Sub-Saharan Africa and South America; death and dying in very old age; spirituality in later life; the ethics of intergenerational tensions at the macro and micro levels; the consequences of declines in cognition, memory and self-esteem in an ever more complex world; the role of inheritance in the personal, familial and national economy. All these, and more, are to be found in this volume.

So, what are the emerging new perspectives? Drawing on the experience of creating this book, designed to benchmark the current state of gerontology, I can see a selection of developments which may provide the next generation of research and policy. Some are in the list just noted. Others will derive from the growing understanding of the changing psychology of the human lifespan, which Paul Baltes *et al.* unfold in Chapter 1.4. Their conclusions are:

that the major challenge for research is to understand, on a behavioural level, the mechanisms of adaptive resource allocation that help individuals compensate for the inevitable loss of neurobiological and psychological resources in old age and, at the same time, permit them to direct a sizeable share of their resources to maintaining functions, and addressing new tasks that are unique to the conduct and meaning of life in old age.

This intersection of psychological functioning, existential meaning and the practical realities of advanced old age represents one enormously important facet of the search for lifelong wellbeing.

Whilst the complexities of human behaviour will rise in the priority list, it seems unlikely that it will, in the near future, displace our preoccupation with physical health. That is where gerontology began and where the funds for research are likely to be most available.

Health as an individual human resource

The epidemiologists are homing into the notion of investment in personal health profiles in a way that can be seen to parallel the huge investment in education in the second half of the twentieth century. The point is not explicitly made, but the evidence that higher levels of education lead to increased longevity and higher resistance to illness and disease

is leading to 'avoidance of disability' as a key element of successful ageing. This is perceived, as Christina Victor indicates in Chapter 2.2, as a mix of genetics, environment, occupational, work and individual behaviours. There is an emerging narrative which speaks of the public/private contract for health. It requires the individual to avoid or to stop smoking, taking drugs, over-consuming alcohol and over eating, and to take serious regular exercise.

Robert Butler (Chapter 6.7), drawing on his lifetime of distinguished work in gerontology, says we are still driven by the fears of Adam Smith and Thomas Malthus which indicated that more (people) means greater cost. He observes that this has led to a focus on 'shortevity' and illness reduction. This is refocusing the governmental view. Michael Marmot, a clinical epidemiologist who has turned his attention latterly to issues of ageing, argues that the principal focus must be on the quality of life. He suggests that we have gone through the first three stages of epidemiological transition and have now reached the fourth stage of delayed degenerative disease – which is dominated by cardiovascular disease and cancer. The situation is not the compression of morbidity predicted in the seminal work by Fries and Crapo (1981) but longer periods of severe disability.

Michael Marmot's impressive interpretation of the evidence is that education, plus income, plus autonomy are the keys to healthy old age. He says in *Status syndrome* (2004), and in Chapter 2.3 of this book, that the answer to the age/health nexus lies in autonomy – how much control you have over your own life is central. In particular he claims 'the opportunities for full social engagement and participation are crucial for health' and 'It is inequality in these that plays a big part in producing the social gradient in health': what he calls the 'status syndrome' (2004: 2).

It does appear that if gerontology is to serve us for our future, its health researchers need to lead the paradigm shift. The established models of disease treatment and social amelioration are only likely to compound the problems and allow them to accumulate into a mountain of disability-induced depression and its inevitable neglect through inadequate resources. A shift to a human investment model is perhaps the new phase of what we have hitherto called 'health promotion'.

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First must be the three Associate Editors. The task of knowing gerontology is beyond any one person. So, without the vast knowledge, experience and generosity of spirit provided by Vern Bengtson, Peter Coleman and Tom Kirkwood, this ambitious enterprise could not have been brought to fruition. Vern and Peter have been valued friends and colleagues for most of my adult life. They are both people of enormous integrity as well as scholars of the first rank internationally. They have long had my admiration. It is a privilege to have their friendship. Their active collaboration on this book has been vital for its reach across the social and behavioural sciences. Their intellectual judgement, personal support and advice have been vital to the project.

Tom dwells in another land: that of the biological sciences. Our paths first crossed through endeavours to stimulate interdisciplinary research, long ago. Then he was the rising star of British biomedical research. Today he is pre-eminent, not only in the UK but internationally – a position confirmed by his selection as the BBC's Reith Lecturer in 2001. He was the obvious choice to ensure there was an accessible and authoritative link across the worlds of knowledge that relate to age. That he agreed to be involved in the *Handbook* was a wonderful assurance that the wider vision could be achieved. My profound thanks to him.

The second, rather large group, are the authors who agreed to write and actually delivered, re-wrote and revised their chapters – more than a hundred of them. From sixteen countries and representing all five continents, these scholars of considerable note number amongst them the best in the world, and some who surely will be in the future. They include friends, colleagues and fellow academics I know only through their published work. To all of them, my genuine gratitude.

Cambridge University Press is not only one of the world's leading (and oldest) academic publishers; it continues to enhance its reputation by employing editors and technical staff of the highest calibre and intelligence. Sarah Caro (Senior Editor, Social

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Sciences) supplied a highly professional combination of advice, encouragement and practical guidance. Her readiness to share good humour and personal concerns, alongside the tasks of book production, has been a real pleasure. Once the manuscripts began to appear Juliet Davis-Berry became an indispensable collaborator. Her mapping of progress, promptings to 'encourage' dilatory authors and the almost daily exchanges provided a framework of agreeable collegueship, which was of considerable value. Leigh Mueller provided truly expert and constructive copy-editing of the whole text and Fiona Barr produced an excellent index.

Finally, the most special thanks of all, to Christine, who has shared our life and part of our house with this book over several years. She and our now-adult children, Dominic, Cressida and Simeon, have taken a real and encouraging interest in the whole venture. To Christine I dedicate this book.

MALCOLM JOHNSON
 Bristol, 2005

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