



INTERNATIONAL HANDBOOK OF URBAN SYSTEMS

**STUDIES OF URBANIZATION
AND MIGRATION
IN ADVANCED AND
DEVELOPING COUNTRIES**

**Edited by
H.S. Geyer**

International Handbook of Urban Systems

Studies of Urbanization and Migration in
Advanced and Developing Countries

Edited by

H. S. Geyer

*Professor of Regional Planning, Department of Urban and
Regional Planning at the University of Potchefstroom*

Edward Elgar

Cheltenham, UK • Northampton, MA, USA

© H. S. Geyer 2002

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical or photocopying, recording, or otherwise without the prior permission of the publisher.

Published by
Edward Elgar Publishing Limited
Glensanda House
Montpellier Parade
Cheltenham
Glos GL50 1UA
UK

Edward Elgar Publishing, Inc.
136 West Street
Suite 202
Northampton
Massachusetts 01060
USA

A catalogue record for this book
is available from the British Library

Library of Congress Cataloguing in Publication Data

International handbook of urban systems : studies of urbanization and migration in advanced and developing countries / edited by H.S. Geyer.

p. cm.

Includes index.

1. Urbanization—Cross-cultural studies. 2. Rural-urban migration—Case studies. Cities and towns—Growth—Cross-cultural studies. I. Geyer, H.S., 1951-

HT151 .I5855 2002
307.76—dc21

2002072190

ISBN 1 84064 900 3

Printed and bound in Great Britain by MPG Books Ltd, Bodmin, Cornwall

Contributors



Aguilar, G.A. Adrian is a Senior Researcher at the Institute of Geography, UNAM. He was head of the Social Geography Department, 1989-97 and Tinker Visiting Professor, University of Texas, Austin. With financial assistance from IDRC-Canada and CONACYT-Mexico, he conducted research on middle-sized cities, metropolitan development and urban systems. He has co-authored three books and has written more than 60 articles and chapters for national and international journals and books. He received a PhD from the University of London, U.K.



Bae, C.C. Chang-Hee (Christine) is an Assistant Professor in the Department of Urban Design and Planning at the University of Washington, Seattle. She holds a Master's in Regional Planning from the State University of New York, Albany, and a Ph.D. in Urban and Regional Planning from the University of Southern California. She has published in leading planning and other journals. Her current research interests include: growth management in the U.S. and abroad, transportation and the environment, environmental justice, and the use of IT in planning education.



Baeninger, R.R. Rosana has obtained her PhD in Social Science from the Campinas State University (UNICAMP). She is professor of Urban Sociology at the Department of Sociology at UNICAMP and has been associated with the Population Studies Center (NEPO) at UNICAMP since 1986. Her research interest revolves around migration and urban development trends. She has published widely on internal migration and its effects on the urban development process, especially in the State of São Paulo.



Baycan-Levent, T. Tuzin received her Ph.D. in the field of Regional Planning from Istanbul Technical University in 1999. She is currently an Assistant Professor of Regional Planning at ITU. Her publications are mainly on Urban and Regional Planning, Sustainable Development, Environmental Issues and Water Basin Development and Management. She is a member of the RSAI, the Turkish National Committee of Regional Science and the Turkish National Committee of Coastal Zone Management.



Bourne, L.S. Larry is Professor of Geography and Planning, and Director of the Graduate Program in Planning, University of Toronto. He holds a PhD, University of Chicago. He has served two terms as Director of the University's Centre for Urban and Community Studies. His research interests span the fields of urban systems analysis, demography and migration, urban form and development, inner city revitalization, housing markets and urban policy, social polarization and inequalities in cities. He has authored or edited several books and published numerous journal articles and reports, and is actively involved in both professional planning and public policy communities.



Champion A.G. Tony is a Professor of Population Geography at the University of Newcastle upon Tyne. His research interests include urban and regional changes in population distribution and their policy implications in developed countries. He is chair of the IUSSP's Working Group on Urbanization and is author or co-author of several books and reports and numerous articles in scientific journals. Over the last three years he has carried out research for the Economic and Social Research Council and other national bodies and government departments.



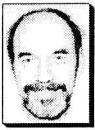
Fielding, A.J. Tony is a professor of Human Geography, School of Social Sciences, University of Sussex. He obtained his PhD from LSE, was appointed to the University of Sussex in 1964 and has remained there ever since except for Visiting Professorships in the US and Japan (1994/5 and 1998 in Ritsumeikan University, Kyoto; 2001/2 Kyoto University). His main research interests: migration in Western Europe and East Asia; the links between social and geographical mobility; internal migration and regional economic development; the geopolitics of international migration; and Japanese culture and society. He is author / co-author of numerous publications.



Frey, W. Bill is a demographer and sociologist in the Population Studies Center, University of Michigan and is also Senior Fellow at the Milken Institute, Santa Monica, CA. He has published widely in the areas of migration, immigration and the demography of metropolitan areas. Research Scholarships include the IIASA, Austria (1980-81), the Andrew W. Mellon Research Scholarship at the Population Reference Bureau in 1988, and the Hewlett Visiting Scholarship at Child Trends (Washington, D.C.) in 1995. He served as a consultant for U.S. government departments and the U.S. Census Bureau.



Gans, P. Paul has been Dean of the Economics Faculty in 1999/2000 and is Professor of Geography at the University of Mannheim. Before moving to Mannheim he taught at the Universities of Kiel (where he obtained his PhD), Hamburg and Erfurt. His main research interests lie in population and urban geography, quantitative methods of geography, and the regions Germany, the European Union, Latin America and India. He has an extensive list of local and international publications.



Geyer, H.S. Manie is Professor of Regional Planning at the Potchefstroom University. He obtained a D.Phil. in regional planning, at PU. After nine years in practice, which he ended as head of Planning of the Soweto metropolitan government, he joined PU. His research interests lie in urban development theory, migration in the First and Third Worlds, urban systems analysis, and globalization. He has been visiting scholar at the University of Utah, is a regional development consultant and has co-ordinated governmental and academic research projects on a provincial, national and international level. He has published widely, nationally and internationally.



Goede, E. Esther is a junior researcher at the Department of Spatial Economics at the Free University, Amsterdam. She specializes in urban and transportation issues and is presently a project advisor for a suburban administration in the Greater Amsterdam area in the Netherlands.



Graizbord, B. Boris obtained his PhD from LSE and is National Program Director for LEAD, Mexico. Since 1979, he has been a research professor at the Center of Demographic Studies and Urban Development in El Colegio de Mexico. His research interests revolve around population studies, industrial pollution, medium-sized cities, metropolitan transport and regional development in Mexico. He has written more than 50 chapters and articles for books and national and international periodicals, magazines and newspapers, and has co-authored four books.



Heikkilä, E. Elli is the Research Director of the Institute of Migration in Finland. Her licentiate thesis (1986) and dissertation (1989) have dealt with migration and regional development. Population aging was the theme of her post-doctorate research. She has taken part in two international research projects, one on differential urbanization and one on migration and the labour market. She lectures at two

universities and has completed 150 scientific and popular publications.



Ioanos, I. Ion is Director General of Education in Romania and Professor of Human Geography at the University of Bucharest. He obtained his PhD from the University of Bucharest. From 1973 until 1997 he worked at the Institute of Geography, Romanian Academy in Bucharest. He has co-ordinated research projects locally and internationally, has been visiting Professor at the University of Angers, and is author / co-author of 24 books, atlases and maps and 123 chapters in volumes and scientific articles in different national and international journals.



Järvinen, T. Taru is a Researcher at the Institute of Migration in Finland. She has a M.Sc. and is currently doing her PhD at the Departement of Geography in University of Turku. The subject of her dissertation is the migration dynamics of dual career families in Finland.



Jażdżewska, I. Iwona was born in 1958 in Cracow, Poland. She graduated at the University of Łódź, 1984 (M.Sc. in mathematics), and gained a D.Sc. degree at the University of Łódź, 1998 (geographical sciences). She works in the Department of Urban Geography and Tourism, University of Łódź. Her scientific interest lies in geographical information systems, urban networks, urban morphology, and sacral space. She is scientific co-ordinator of Konwersatorium Wiedzy o Mieście (Knowledge about the City).



Jun, M. Myung-Jin received his Ph.D. in Urban and Regional Planning, University of Southern California. He is Associate Professor of Urban and Regional Planning at Chung-Ang University, Korea. He has been on the faculty at Chung-Ang University in Korea since 1994. His primary field of interest is land use and transportation. He has recently published papers on the transportation costs of Seoul's Greenbelt and on Seoul's New Towns in journals such as the *International Regional Science Review* and *Cities*.



Kemper, F. J. Franz-Josef Kemper is Professor of Population and Social Geography at the Department of Geography, Humboldt University in Berlin. Previously he taught at the Universities of Trier and Bonn. Among his research interests are population geography, in particular migration research, the metropolis, and research on

quantitative analysis in geography. He is author / co-author of many publications.



Mukherji, S. Shekhar obtained two Ph.D.s, one in Demography from the University of Hawaii and one in Urban Geography and Regional Planning from the University of Calcutta. From 1975 to 1976 he conducted post-doctorate research at the Australian National University. He taught for 42 years and recently retired as Chair of the Department of Migration and Urban Studies, International Institute for Population Sciences, Bombay. Over the years he has published 32 books and over 200 research papers.



Nijkamp, P. Peter, Chair of the Research Council of the Netherlands, is a Professor of Regional and Urban Economics and Economic Geography at the Free University, Amsterdam. His main research interests cover multi-criteria analysis, regional and urban planning, transport systems analysis, mathematical modelling, technological innovation, and resource management. He has expertise in public policy, infrastructure planning / management and environmental protection. He has published many books and numerous articles and has been visiting professor in many universities all over the world. He is past president of the European Regional Science Association and the Regional Science Association International. At present, he is vice-president of the Royal Netherlands Academy of Sciences.



Petsimeris, P. Petros is Professor of Urban Social Geography at the University of Caen and a member of the Centre de Recherche sur les Espaces et les Sociétés, UMR 6590 CNRS. He obtained his Ph.D. from the University of Caen in 1987 and his Habilitation à Diriger des Recherches in 1992. He lectured as a Visiting Professor at the Institut d'Etudes Politiques de Paris and the Universities of Pise, Trento, Naples, Udine and Turin. He has published widely.



Pumain, D. Denise is Professor of Geography at the University of Paris I Panthéon-Sorbonne and Director of *Cybergeog*, European Journal of Geography. She is a former chair of the International Geographical Union's Commission on Urban Development and Urban Life (1992-2000) and founder (1984) and Director (1992-2000) of the research laboratory P.A.R.I.S. (UMR Géographie-cités, CNRS). She specialises in urban modelling and theoretical geography and has written several books on urban systems in France and Europe. She is director of the series 'Villes' published by Anthropos.



Richardson, H.W. Harry is the James Irvine Chair of Urban and Regional Planning in the School of Policy, Planning and Development at the University of Southern California, Los Angeles. He has written more than 20 books and 170 research papers. He has consulted for international agencies such as the World Bank and the United Nations, and also for national and local agencies. His current research interests include urban sprawl, the economic and transportation impacts of natural disasters, metropolitan travel behavior, and international urban development.



Rykiel, Z. Zbigniew received his Ph.D. from the Institute of Geography and Spatial Organisation, Polish Academy of Sciences, Warsaw. He is Head of the Department of Human Geography and Space Economy, Casimir the Great Academy at Bydgoszcz and Professor, College of Finance and Management at Biaystok. His main research interests are urbanization, settlement systems, migration, spatial barriers, regionalization, (regional). social geography, methodology, theory and philosophy of geography, history of Polish geography, political geography, and space economy.



Simmons, J.W. Jim Simmons is Professor Emeritus in the Department of Geography of the University of Toronto, and Senior Research Fellow at the Centre for the Study of Commercial Activity at Ryerson Polytechnic University in Toronto. He was born in Canada, received his PhD from the University of Chicago, and currently lives in Victoria B.C. For more than thirty years he has mapped and analyzed the Canadian urban system. He is the author / co-author of numerous books, chapters and articles.



van der Merwe, I.J. Izak received his D.Phil. in Urban Geography, University of Stellenbosch. After 30 years as Lecturer, Professor and Chair in Geography at Stellenbosch, he became Dean of the Faculty of Arts and Social Sciences in 1997. He received the Stals Price for Geography from the South African Academy of Science and Arts and was awarded a fellowship from the South African Geographical Society, of which he was the President in 1995/1996. He has published 45 scientific articles in local and international accredited journals, and is author/co-author of seven books/atlas and nine research reports.

Acknowledgements

The outcome of a publication of this nature is not the product of one person's labour. First, I want to thank the chapter authors and co-authors for their dedication and hard work, often under difficult circumstances. A special word of thanks is owed to the staff of the Edward Elgar Publishing Company, especially Edward Elgar for believing in the viability of the project and Julie Leppard, Alexandra Minton, Nep Athwal, Caroline McLin and Melanie Waller for their professional management of the publication process.

I am also indebted to Brendan Cahill who was responsible for the computer graphics and lay out of the manuscript, Antonia Hebbert, Riana and Wim Voordewind, and Eleanor Geyer who grammar edited the manuscript, and Philip and Kobie Geyer, Elsje Gelderbloem, Laetitia Oosthuizen and Laurette Coetzee, who assisted with the computer editing of the text.

I want to pay tribute to my friend Cees Gorter and my son Christo Geyer, who passed away while this project was in progress. Cees was a gifted researcher who originally formed part of the Netherlands' team. Christo, whose promising teenage-years barely started when his life was ended, remains a large part of my inspiration.

Acknowledgement is hereby given to the South African National Research Foundation for its financial support of an international colloquium that was held in South Africa and for subsequent editorial control while the case studies were in progress. Views that are expressed in this book are those of the authors and do not necessarily correspond with those of the Foundation.

H. S. Geyer
August, 2002.

Preface

The original idea of an edited volume reflecting urban changes that have occurred in selected countries over the past half century, was inspired by the writings of H.G. Wells. Judging from improvements in communication technology a century ago, and mixing fact with a good measure of common sense and creative thinking, H.G. Wells (1902) anticipated great changes in urban development during the twentieth century. The following collage of quotations from his book, in italics, highlights what he foresaw.

Firstly, he predicted that advances in the technology of the combustion engine, which led to developments such as the private motor car, short and long haul trucking and bus services – all of which were designed to improve the transportation of goods, material and people in and between cities – would ultimately result in the development of *giant cities*. Although George Gissing, the nineteenth century novelist and good friend of Wells, stated that giant cities such as London were little more than attractive, tumultuous whirlpools¹ that ultimately would be ‘spinning down to death’, Wells was much more optimistic. Based on his assessment of the effect new advances in transport technology on land, sea and in the sky would have on urban development, Wells predicted that *these new forces, at present still so potently centripetal in their influence, bring with them, the distinct promise of a centrifugal application that may be finally equal to the complete reduction of all our present congestions.*

The passion for nature, a house in its own garden, the healthful-ness of the country, and the wholesome isolation that is possible from much that irritates in cities, he listed as important centrifugal attractions that would cause cities to expand into giant cities. On the other hand, the *greater convenience* of locations close to schools and shopping facilities, department stores which collectively *establish a sort of monopoly of suburban trade* by providing a variety of products *from some one vast indiscriminate shop or store full of respectable mediocre goods, and the love of the crowd, the dress, and the crush, as well as the hot passion for the promenade* are listed as centripetal attractions.

¹ See George Gissing’s classic book *The Whirlpool*.

Where great cities of the nineteenth century *presented rounded contours that grew like puff-ball swells*, the modern city of his time became *star shaped, thrusting out arms along every available railway line*. They looked like *something that has burst an intolerable envelope and splashed*. Referring to these two forms of urban deconcentration, first pushing out towards the fringes of the city and, later on, also along connecting roads between cities, he said: *To the subsidiary centres will be drawn doctor and school-master, and various dealers in fresh provisions, baker, grocer and butcher. Along the new roads will be way-side restaurants and tea-houses, and motor and cycle stores and repair places. These coming cities will not be, in the old sense, cities at all; they will present a new and entirely different phase of human distribution.*

Each great city, according to Wells, *is sustained by the trade and production of a certain proportion of the world's surface – by the area it commands commercially*. However, he anticipated an end to urban growth. *Even if we allowed for considerable increase in the production of food stuffs in the future, it still remains inevitable that the increase of each city in the world must come at last upon arrest.*

Communication, he suggested, shall remain pivotal in urban development. *The general distribution of population in a country must always be directly dependent on transport facilities.* In fact, the position and the population limit of towns are, according to him, determined by *strategic considerations – in a word, communications.*

Considering the effect people's increasing mobility will have on long-term migration trends in England, he summarized the broad features of the redistribution of people during the nineteenth century, as *an unusual growth of great cities coupled with a tendency to depopulation in the country*. In his vision of the development of vast megalopolitan areas, he did not regard it as far-fetched that *the London citizen of the year 2000 A.D. may have a choice of nearly all England and Wales south of Nottingham and east of Exeter as his suburb, and that the vast stretch of country from Washington to Albany will be all of it 'available' to the active citizen of New York and Philadelphia before that date.*

These were the visions of Wells at the beginning of the twentieth century, and these same issues are fascinating scholars of urban change today, and will continue to do so in the years ahead. Although the urbanization trends described by Wells continued for many decades, and by the 1960s were expected to continue for much longer, very significant changes in the urban environment had occurred by the end of that decade. A turnaround from urbanization to polarization reversal and later to counter-urbanization was observed in the migration trends of a number of Developed Countries by the end of the 1960s and beginning of the 1970s. During the same period signs of concentration forces beginning to yield to deconcentration forces, were also found in certain Advanced Developing Countries. Later on, during the

1980s, the counter-urbanization trends in certain Developed Countries suddenly and unexpectedly started to subside. In certain cases the second turnaround seems to continue, in others it seems to be short-lived and one may, once again, see the return of fully fledged counter-urbanization.

Sufficient time has now passed since the last concerted efforts were made to reflect back on the duration of each of these phases of urban development in the Developed and Developing World. Questions that need to be investigated are: what long-term migration trends are visible in Developed and Developing Countries in different parts of the world; which factors have been playing an important role in these migration trends in the maturation of urban systems over the years; and what are the consequences of these trends for the future? Addressing these issues is the aim of this book.

Specific questions that are being addressed in the book include: first, what are the similarities and differences in the duration of the phases of urban development that have occurred in Developed Countries and second, how do these phases differ from those occurring in Advanced Developing Countries? Of particular interest are the forces that cause these cycles of population concentration and deconcentration in Developed and Advanced Developing Countries and, especially, the role main and under-current migration streams play in these long-term fluctuations.

The book is divided into two parts. The purpose of the first part is threefold. An introductory chapter defines and explains relevant concepts by moving systematically through the basic ideas and general principles in urban systems analysis. The following two chapters give the current status of views on migration theory and urban systems. Although the first of these two chapters focuses more on the Developing World and the latter on issues in the Developed World, the sets of issues are not mutually exclusive. Some of the issues prevalent in the Developed World also apply to the Developing World, and vice versa, especially those regarding migration theory. Finally, insight gained from views expressed by contributors on current and future trends in migration and in urban maturation are brought together in the final chapter of the first part of the book. Where the first three chapters of Part One deal with the past, the last chapter is concerned with what lies ahead.

Because a wide spectrum of topics is relevant in a study of this nature, not all concepts and principles could be explained in detail in Part One of the book nor is the book intended to serve as an introduction to this field. Students at the under-graduate level who are reading the first three chapters are therefore advised to do some additional reading. For this reason the second and third chapters contain an extensive list of references on each topic that is discussed. Those students who follow this advice will be richly rewarded because as they work their way through the references an intricate but fascinating world will unfold.

In Part Two, a number of prominent researchers are given the opportunity to express their views on the evolution of urban development in a selection of

Developed and Advanced Developing Countries. It is hoped that the inclusion of Developed and Developing Countries in the same study will help overcome the problem of compartmentalization that has plagued research in this field for so many years.

In the chapters in Part Two, an evaluation is first given of the history of urban development trends of each country. Chapters in this part of the book refer to functional urban sub-systems. These include the identification of primary cities and the lower order (intermediate- and small-sized) centres that are functionally related to these primary cities. Sequences in the development of different groups of cities over time are depicted by a geographical analysis of migration gains and losses in these urban sub-systems. Collectively, the study results contained in the case studies in the second part of the book give an insight into the possible longer-term consequences main and sub-stream migration hold for future urban development, and this information may open up new areas for further research.

Based on the selection of themes and the way in which the material was handled by the contributors, the audience should include scholars in the fields of geography, planning, regional studies, economics, social science, history, architecture and public administration. The book will be of interest to under- and post-graduate students as well as advanced researchers in these fields.

Manie Geyer

August, 2002.

Contents

<i>List of Tables</i>	vii
<i>List of Figures</i>	xiii
<i>Contributors</i>	xviii
<i>Acknowledgements</i>	xxiv
<i>Preface</i>	xxv

PART ONE: THEORETICAL FUNDAMENTALS

1 The fundamentals of urban space	3
<i>H. S. Geyer</i>	
2 An exploration in migration theory	19
<i>H. S. Geyer</i>	
3 On urban systems evolution	39
<i>H. S. Geyer</i>	
4 The urban future	67
<i>H. S. Geyer</i>	

PART TWO: EMPIRICAL FINDINGS

A. Western European Countries

5 Population change and migration in the British urban system	87
<i>A. G. Champion</i>	
6 The French urban system	121
<i>D. Pumain</i>	
7 Urbanization in Germany before and after unification	147
<i>P. Gans and F. J. Kemper</i>	
8 Urban development in the Netherlands: new perspectives	185
<i>P. Nijkamp and E. Goede</i>	
9 Counter urbanization in Italy	215
<i>P. Petsimeris</i>	

B. Nordic And Central European Countries	
10 Past present and future of urbanization in Finland <i>E. Heikkilä and T. Järvinen</i>	241
11 The maturing of the Polish urban system <i>Z. Rykiel and I. Jażdżewska</i>	271
12 The maturing of the Romanian urban system <i>I. Ianoş</i>	295
13 The demographic transition and urban development in Turkey <i>T. Baycan Levent</i>	329
C. American Countries	
14 A history of recent urban development in the United States <i>W. H. Frey</i>	365
15 The dynamics of the Canadian urban system <i>L. S. Bourne and J. W. Simmons</i>	391
16 Evolution and maturing of the Mexican urban system <i>A. G. Aguilar and B. Graizbord</i>	419
17 Urbanization and the redistribution of population in Brazil: recent changes and trends <i>R. Baeninger</i>	455
D. Asian Countries	
18 Migration and the development of the Japanese urban system, 1950-2000 <i>A. J. Fielding</i>	489
19 Migration and the urban system of South Korea <i>H. W. Richardson, C.C. Bae and M. Jun</i>	503
20 Urbanization and migration in India: a different scene <i>S. Mukherji</i>	525
E. African Countries	
21 Current perspectives on urban change in South Africa <i>H. S. Geyer and I. J. van der Merwe</i>	563
<i>Index</i>	593

Tables

Britain

5.1 Population change 1951-91, for a six-level urban hierarchy for Great Britain, % for period	99
5.2 Stages of differential urbanization, 1951-91, for Great Britain	100
5.3 Stages of differential urbanization, 1951-91, for four regional divisions of Great Britain	102
5.4 Rates of population change 1981-91 (%) and net within-Britain migration, 1990-91 (per 1000 people), by population size of functional region and FR zone type	103
5.5 Population change resulting from within-Britain migration, 1990-91, by district type	106
5.6 Net migration between pairings of 13 district types, 1990-91, Great Britain	107
5.7 Pairings of district types exhibiting down-hierarchy net flows, 1990-91, by selected characteristics, Great Britain	109
5.8 Population change for eight large conurbations and rest of UK, 1991-99 and 1981-91	111
5.9 Components of population change for eight large conurbations and rest of UK , 1991-99, thousands	112

France

6.1 Expansion of urbanization in France according to two different definitions	125
6.2 Change in the concentration index of city size distribution, 1968-99	131
6.3 Growth rates by city size (% per year)	132

Germany

7.1 Origins of the population in large cities of Germany, 1907	154
7.2 Rate of migration balance with reference to type of counties and time period (West Germany or old Länder)	162