

## ENHANCING MOBILITY IN LATER LIFE

Personal Coping, Environmental Resources  
and Technical Support.

The Out-of-Home Mobility of  
Older Adults in Urban and  
Rural Regions of Five European  
Countries.

### Editors

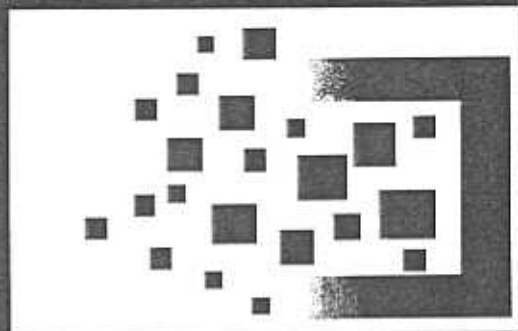
**Heidrun Mollenkopf**

**Fiorella Marcellini**

**Isto Ruoppila**

**Zsuzsa Széman**

**Mart Tacken**



# Enhancing Mobility in Later Life

Personal Coping, Environmental Resources and Technical Support. The Out-of-Home Mobility of Older Adults in Urban and Rural Regions of Five European Countries

Edited by

Heidrun Mollenkopf

*German Centre for Research on Ageing at the University of Heidelberg (DZFA), Heidelberg, Germany*

Fiorella Marcellini

*INRCA, Istituto Nazionale Riposo e Cura Anziani, Dipartimento Ricerche Gerontologiche, Ancona, Italy*

Isto Ruoppila

*Department of Psychology, University of Jyväskylä, Jyväskylä, Finland*

Zsuzsa Széman

*Institute of Sociology, Hungarian Academy of Sciences HAS, Welfare Mix Team, Budapest, Hungary*

and

Mart Tacken

*Faculty of Architecture, Delft University of Technology, Delft, The Netherlands*

**IOS**  
Press

Amsterdam • Berlin • Oxford • Tokyo • Washington, DC

© 2005 The authors.

All rights reserved. No part of this book may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, without prior written permission from the publisher.

ISBN 1-58603-564-9

Library of Congress Control Number: 2005933296

Publisher  
IOS Press  
Nieuwe Herrweg 6B  
1013 BG Amsterdam  
The Netherlands  
fax: +31 20 687 0019  
e-mail: [order@iospress.nl](mailto:order@iospress.nl)

Distributor in the UK and Ireland  
IOS Press/Lavis Marketing  
73 Lime Walk  
Headington  
Oxford OX3 7AD  
England  
fax: +44 1865 750079

Distributor in the USA and Canada  
IOS Press, Inc.  
4502 Rachael Manor Drive  
Fairfax, VA 22032  
USA  
fax: +1 703 323 3668  
e-mail: [iosbooks@iospress.com](mailto:iosbooks@iospress.com)

#### LEGAL NOTICE

The publisher is not responsible for the use which might be made of the following information.

PRINTED IN THE NETHERLANDS

## Contents

Preface		xi
Chapter 1.	The Significance of Out-of-Home Mobility in Modern Society <i>Heidrun Mollenkopf</i>	1
1.1	Mobility as a component of life quality in older adults	1
1.2	Background and goals of the MOBILATE Project	2
1.3	Towards a comprehensive understanding of mobility	5
Chapter 2.	Background Conditions for Outdoor Mobility in Finland, Germany, Hungary, Italy, and the Netherlands <i>Cristina Gagliardi, Nina Hirsiaho, Csaba Kucsera, Fiorella Marcellini, Heidrun Mollenkopf, Isto Ruoppila, Zsuzsa Széman and Mart Tackén</i>	11
2.1	Welfare regimes and mobility	11
2.1.1	Changes in the welfare regimes	12
2.1.2	Connection between the welfare regimes and mobility of elderly people	14
2.2	Demographic trends in the MOBILATE countries	17
2.2.1	Demographic changes	18
2.2.2	Social ageing	19
2.3	Traffic and transportation systems	20
2.3.1	Mobility and transportation systems	22
2.4	Traffic characteristics of the participating countries	23
2.4.1	Finland	23
2.4.1.1	Driver licences regulation	24
2.4.1.2	Traffic accidents	24
2.4.2	Germany	26
2.4.2.1	Driver licences regulation	26
2.4.2.2	Elderly persons and the traffic system	26
2.4.2.3	Traffic accidents	27
2.4.3	Hungary	28
2.4.3.1	Driver licences regulation	29
2.4.3.2	Traffic accidents	29
2.4.4	Italy	31
2.4.4.1	Driver licences regulation	32
2.4.4.2	Traffic accidents	32
2.4.4.3	Improvements in public transport	33
2.4.5	The Netherlands	34
2.4.5.1	Driver licences regulation	34
2.4.5.2	Elderly persons and the traffic system	34
2.4.5.3	Problems and impairments	35
2.5	Conclusions	36

Chapter 3.	Methodology	43
	<i>Stephan Baas, Fiorella Marcellini, Heidrun Mollenkopf, Frank Oswald, Isto Ruoppila, Zsuzsa Széman, Mari Tacken and Hans-Werner Wahl</i>	
3.1	Methods and research instruments	43
3.1.1	The MOBILATE Survey Questionnaire	43
3.1.2	The MOBILATE Diary of out-of-home mobility	45
3.2	The research areas	45
3.2.1	Finland	46
3.2.1.1	Urban area: Jyväskylä	46
3.2.1.2	Rural area: Karstula, Kivijärvi and Nilsia	47
3.2.2	Germany	48
3.2.2.1	Urban areas: Chemnitz (eastern Germany) and Mannheim (western Germany)	48
3.2.2.2	Rural areas: District of Jerichow and District of Vogelsberg	50
3.2.3	Hungary	51
3.2.3.1	Urban area: Pécs	51
3.2.3.2	Rural area: Jászladány	52
3.2.4	Italy	52
3.2.4.1	Urban area: Ancona	52
3.2.4.2	Rural areas: Municipalities of Mondavio, Montefelcino and Orciano	53
3.2.5	The Netherlands	54
3.2.5.1	Urban area: Maastricht	54
3.2.5.2	Rural (non-urban) area: Margraten	55
3.3	Fieldwork and sample	55
3.3.1	Fieldwork	56
3.3.2	Drop-out	59
3.3.3	Weighting the data	60
3.4	Basic description of the samples	62
3.4.1	Mean age	62
3.4.2	Marital status	64
3.4.3	Education	64
3.4.4	Occupation and status of employment	66
3.4.5	Financial situation	70
3.4.6	Health status	72
3.5	Summary	73
Chapter 4.	Physical Health and Mobility	77
	<i>Nina Hirsiaho and Isto Ruoppila</i>	
4.1	Introduction	77
4.2	Health and mobility in the MOBILATE study	82
4.2.1	Research question and hypotheses	82
4.2.2	Methods	82
4.2.3	Statistical analyses	85
4.3	The relation between health and outdoor mobility	86
4.3.1	The relation between health and single outdoor mobility variables	86
4.3.2	The relations between health and outdoor mobility indicators	90
4.4	Regression analyses of health variables explaining outdoor mobility indicators	94
4.4.1	Regression analyses of transport modes used	94

4.4.2	Regression analyses of outdoor activities subjects take part in	95
4.4.3	Regression analyses of means of trips from the trip-diary	96
4.5	Discussion	97
4.6	Conclusions	98
Chapter 5.	Transport Behaviour and Realised Journeys and Trips	105
	<i>Mart Tacken and Ellemieke van Lamoen</i>	
5.1	Mobility and behaviour	105
5.1.1	Introduction	105
5.1.2	Satisfaction with mobility	106
5.1.3	Availability and use of a car as driver and passenger	107
5.1.4	Not driving a car	111
5.1.5	The use of a bicycle	112
5.1.6	Elderly people as pedestrians	113
5.1.7	The role of public transport	114
5.1.8	Relative importance of transport modes	115
5.1.9	Accidents	116
5.1.9.1	Experience with traffic today	117
5.2	Journeys in the MOBILATE diary	118
5.2.1	General information on journeys	118
5.2.1.1	Chaining of trips in journeys	119
5.2.1.2	Motives	119
5.2.1.3	Choice of mode	120
5.2.2	Temporal aspects of the mobility behaviour of older people	121
5.2.3	Distribution of mobility over a day	122
5.2.4	Comfort of journeys	127
5.3	Trips made by elderly people	128
5.3.1	Trips in the diary	128
5.3.2	Means of transport for trips	129
5.3.3	Motives for the trip	130
5.4	Spatial aspects of out-of-home behaviour	132
5.5	Possible solutions for experienced mobility problems	133
5.5.1	Improvements in the transport system in general	133
5.5.2	Flexible demand responsive (public) transport	134
5.5.3	The use of new technology	135
5.6	Conclusions	136
Chapter 6.	Health and Leisure Activities	141
	<i>Isto Ruoppila, Mart Tacken and Nina Hirsiaho</i>	
6.1	Introduction	141
6.2	Health and leisure activities in the MOBILATE study	147
6.2.1	Research questions and hypotheses	147
6.2.2	Methods	148
6.3	Leisure activities: description and explanation	150
6.3.1	Satisfaction with leisure and sport activities	150
6.3.2	Participation in leisure activities	151
6.3.3	Variety in indoor and outdoor activities	153

6.3.4	Comparison of the variety in outdoor activities in survey and in diary	157
6.3.5	Changing leisure behaviour	158
6.3.6	Travel and satisfaction with this activity	159
6.4	The relationship between health and leisure time activities	161
6.4.1	Health and satisfaction with possibility to participate in leisure activities	161
6.4.2	Health and indoor leisure activities	162
6.4.3	Health and outdoor leisure activities	163
6.4.4	Health and holiday trips lasting at least one week during the last year	165
6.5	Discussion	166
6.6	Conclusions	167
Chapter 7.	Psychological Aspects of Outdoor Mobility in Later Life <i>Frank Oswald, Hans-Werner Wahl and Roman Kaspar</i>	173
7.1	Introduction	173
7.2	In-depth description of psychological measures, psychometric analyses, and basic intercorrelations	177
7.2.1	Description of measures and their psychometric properties	177
7.2.2	Intercorrelations of psychological constructs, age, and gender	180
7.3	Psychological constructs and outdoor mobility: bivariate relations across geographical locations	181
7.3.1	Psychological constructs as predictors of outdoor mobility	182
7.3.1.1	Psychological constructs as mediators of outdoor mobility	184
7.3.1.2	Psychological constructs as outcomes of mobility	189
7.4	Psychological constructs and outdoor mobility: multivariate relations across countries	190
7.5	Summary and conclusions	191
Chapter 8.	Social Relations and Mobility <i>Stephan Baas, Csaba Kucsera, Heidrun Mollenkopf and Zsuzsa Széman</i>	195
8.1	Introduction	195
8.2	Characteristics of the household	197
8.2.1	Average household size	197
8.2.2	Composition of household	197
8.3	Number of children	200
8.4	Social relations outside the household	201
8.4.1	Overview about the important persons outside the household	202
8.5	Further aspects about older persons' social networks outside the household	205
8.6	Living distance to the most important persons	208
8.7	Intensity of contact and used means of transportation	210
8.7.1	Used means of transportation	212
8.7.2	What does the frequency of personal contact depend on?	212
8.8	Difficulties in meeting important persons	214
8.9	Summary and conclusions	216

Chapter 9.	Mobility and the Built-Up Environment	221
	<i>Fiorella Marcellini, Heidrun Mollenkopf, Zsuzsa Széman, Sabina Ciarrocchi, Csaba Kucsera, Andréa Principi and Liana Spazzafumo</i>	
9.1	Introduction	221
9.2	Housing conditions in urban and rural areas	222
9.2.1	Duration of residence	222
9.2.2	Type of home and ownership	223
9.3	Neighbourhood conditions in urban and rural areas	225
9.3.1	The use of services	226
9.3.2	Feelings of security	237
9.3.3	Environmental features	238
9.4	Summary and conclusions	239
Chapter 10.	Main Issues of Older People's Out-of-Home Mobility	243
	<i>Mart Tacken and Heidrun Mollenkopf</i>	
10.1	Introduction	243
10.2	Older people's actual mobility	243
10.3	The mobility needs of older people	246
10.3.1	Barriers and hindrances in the mobility of people of old age	247
10.3.1.1	Hindrances in the spatial environment	248
10.3.1.2	Hindrances in the social context	249
10.3.1.3	Hindrances in the transport system	250
10.3.2	Coping behaviour of elderly people	251
10.4	Improvement of the mobility conditions	254
Chapter 11.	A New Concept of Out-of-Home Mobility	257
	<i>Heidrun Mollenkopf, Stephan Baas, Fiorella Marcellini, Frank Oswald, Isto Ruoppila, Zsuzsa Széman, Mart Tacken and Hans-Werner Wahl</i>	
11.1	Introduction	257
11.2	Mobility indicators	258
11.2.1	The options of transport modes	258
11.2.2	Options of outdoor activities	259
11.2.3	Extent of realised mobility	261
11.3	Explaining out-of-home mobility	262
11.3.1	Transport options	263
11.3.2	Options of outdoor activities	268
11.3.3	Number of trips/realised mobility	273
11.4	Summary and conclusions	277
Chapter 12.	Mobility and the Quality of Life	279
	<i>Heidrun Mollenkopf, Stephan Baas, Fiorella Marcellini, Frank Oswald, Isto Ruoppila, Zsuzsa Széman, Mart Tacken and Hans-Werner Wahl</i>	
12.1	Introduction	279
12.2	The conceptual MOBILATE-model: extension to quality of life	280

12.2.1	Results of structural equation modelling	283
12.2.1.1	Overall model fit evaluation	283
12.2.1.2	In-depth consideration of measurement models	285
12.2.1.3	In-depth evaluation of the structural model	286
12.3	Summary and Conclusions	287
Chapter 13. The Mobility Rich and Mobility Poor		289
<i>Heidrun Mollenkopf, Roman Kaspar and Hans-Werner Wahl</i>		
13.1	Introduction	289
13.2	Identifying the 'Mobility rich' and 'Mobility poor'	289
Chapter 14. Summary and Conclusions		295
<i>Heidrun Mollenkopf, Fiorella Marcellini, Isto Ruoppila, Zsuzsa Széman and Mart Tacken</i>		
14.1	Overview on the main MOBILATE findings	295
14.1.1	The basic goals and background of the MOBILATE project	295
14.1.2	The mobility patterns of older men and women in urban and rural areas	298
14.1.3	The prerequisites and problems of older men's and women's out-of-home mobility	302
14.2	Methodological challenges of a cross-cultural project	305
14.3	Conclusions and Outlook	309
Annex		317
	The MOBILATE Consortium	319
	Europe (Map)	320
	The MOBILATE Diary	321
	Addresses	324
Author Index		325