Can you summarise the aims and objectives of the Health in Old Age: a Study on the Interplay of Economic and Individual Influences (H-OLD) project?

With increasing life expectancy and ageing of societies, it is important to ensure that people are living actively in old age. This goal can only be achieved by delaying health and cognitive impairments for as long as possible. A promising research direction here is a social and life-course perspective, since health and cognition are to a large extent dependent on education and early socioeconomic influences. In order to understand how to delay impairments and what determines socioeconomic health inequalities, it is necessary to investigate later-life health from a life-course perspective, combining current knowledge on later-life health from a life-span developmental and social epidemiological view.

H-OLD began a little over a year ago. Can you offer an overview of the project?

The H-OLD project aims at identifying factors that contribute to later-life cognitive function and health. Earlier research has shown that health is influenced by individual factors such as childhood socioeconomic conditions, as well as macro-level indicators such as the type of welfare regime. However, there are few studies that have explicitly investigated possible interactions between individual and macro level. Thus, a major aim of the project is to combine the individual and macro-level perspective on health in order to arrive at a better understanding of how health is shaped throughout the life course. As H-OLD aims at identifying influences on different health outcomes, we have to think about different pathways that might link life-course factors to later-life health or cognitive function, respectively.

What is your current focus?

We are very interested in the investigation of life-course economic fluctuations and their influence on later-life health outcomes. Together with Dr Mauricio Avendano and researchers from the London School of Economics, we are working on analyses on how life-course economic expansions and recessions are associated with later-life cognitive function. Another focus I am pursuing with Professor Johan Mackenbach and other researchers of the Erasmus Medical Center is on later-life socioeconomic health inequalities in Europe, and how childhood socioeconomic conditions and childhood health could help to explain these inequalities.

As part of the Future Leaders in Ageing Research (FLARE) network, how does H-OLD foster research mobility and cross-disciplinary collaboration? What is the significance of this?

My host institution is the INSIDE Research Unit at the University of Luxembourg, and H-OLD involved a one-year stay at the Department of Public Health, Erasmus Medical Center in Rotterdam. There I had the chance to deepen my understanding of social epidemiology with the generous support of the National Research Fund Luxembourg. The cross-disciplinary view, combining my ‘home discipline’ life-span developmental psychology with social epidemiology, has been invaluable for my research.

Can you elaborate on how this research mobility has benefited your studies?

Aside from the fruitful collaborations that helped me to broaden my understanding of later-life health, I benefited a lot from the fact that I could take graduate courses and attend research seminars at the Erasmus Medical Center, where I acquired new theoretical and methodological knowledge. The achievements in the project would certainly not have been possible without the newly established collaborations. Additional benefits come from the fact that researchers in Rotterdam introduced me to colleagues in their network who shared their knowledge with me and brought forward my understanding even further.

Underpinned by strong collaboration, Dr Anja Leist’s research is ensuring society’s growing elderly population is able to live autonomously.
Cognition in old age

Emerging from the universities of Rotterdam and Luxembourg, the Health in Old Age project investigates the causes of health inequality in older adults.

Over the last two decades Europe’s population has experienced the greying effect. Increased longevity due to a rise in the standard of living and improved medical care has meant that, since 1990, the proportion of the population aged 65 or over has increased among the EU27 by 3.7 per cent. This contrasts to an increase in the working age population of only 0.3 per cent, according to the EC.

Policy makers are concerned that the ongoing decline in the European fertility rate, combined with the retirement of the inflated baby-boomer generation, will create a perfect demographic storm: the declining young population will be burdened with having to pay for the retirement and health needs of an ever-growing population of elderly people.

The Eurostat set of population projections has been collated to measure the impact of the ageing population on European society. It shows that by 2060 people in old age will make up 29.5 per cent of the population as compared to just 17.4 per cent in 2010. In the most challenging scenario, by 2060, only one European of working age will be around to support two elderly people.

**Grey Society**

It is hoped that this ageing can be managed effectively by ensuring healthcare providers have the tools to meet the challenge of rising life expectancy, without compromising the quality of life for those aged over 65. For the past 14 months, Dr Anja Leist of the University of Luxembourg has been conducting the project, Health in Old Age: A Study of the Interplay of Economic and Individual Influences (H-OLD). Leist works in the field of social epidemiology, which seeks to explain health differences by taking into account social and socioeconomic factors.

Over the course of her work, Leist has investigated the causes of large health inequalities that are dependent on educational level or socioeconomic status, even in nations with modern welfare regimes. Having been trained in psychology, she explains how her interest in life-course influences and cognitive function developed: “Since later-life health and cognition can only be understood when taking into account socioeconomic differences, it seemed quite natural to combine the life-span developmental view with the perspective of social epidemiology to explain later-life health and cognition”.

The challenge of maximising the ability of an increasing number of older people to function in the workplace is realised in the concept of cognitive reserve. This field of study has received empirical support, and with the possibility to investigate work histories in repositories such as the Survey of Health, Ageing, and Retirement in Europe (SHARE) and its associated SHARELIFE data, H-OLD has been able to apply the concept of cognitive reserve to employment gaps. SHARELIFE is dedicated to sampling the life histories of respondents, which allows detailed retrospective data collection on childhood, partnership and work histories.

Here, the activity of individuals outside of the labour market is monitored, although the consideration of labour market involvement and its potential to increase or decrease cognitive reserve has not been seriously attempted before: “We are currently extending this idea with regard to work-related cognitive reserve and are developing a framework on how labour market characteristics during expansions and recessions can be translated into individual work characteristics, with potential to increase or decrease cognitive reserve,” Leist explains. In particular, the project aims to determine the link between work characteristics that accumulate or decrease cognitive reserve – such as job changes, training or upward social mobility – and the effect of early-life experiences on later-life cognitive function.

**Cognitive Decline**

The first step for the research has been to study cognitive function and the relative decline of mental ability as humans become older. The project builds upon evidence that cognitive function is influenced over the life course by a stimulating work environment, social participation or an active lifestyle. In its first year, H-OLD has resolved the potential for further life-course factors to influence cognitive reserve: “In particular, we have differentiated working age employment gaps according to their potential to increase or decrease cognitive reserve, and related them to later cognitive function and decline,” Leist.
H-OLD

HEALTH IN OLD AGE: A STUDY ON THE INTERPLAY OF ECONOMIC AND INDIVIDUAL INFLUENCES

OBJECTIVES

The H-OLD project aims at combining the individual and macro-level perspective to identify influences on later-life health and cognitive function in cross-national datasets. In particular, the life-course perspectives will be applied, and interactions between individual and macroeconomic factors will be considered in order to explain later-life health and cognition.

KEY COLLABORATORS

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ANJA LEIST specialises in lifespan psychology, gerontology and social epidemiology, focusing on later-life health and cognition. Having completed her PhD studies in Psychology at the University of Trier, Germany, she works as postdoctoral research fellow at the University of Luxembourg and the Erasmus Medical Center in Rotterdam, The Netherlands.

As well as considering the potential of life-course factors to explain health and cognitive function, H-OLD has explored the impact of macro-level variables on health in old age.

notes. In this context, H-OLD is examining how periods of labour market inactivity during working ages influence old-age cognitive function: "We hypothesised that employment gaps due to unemployment or illness may hinder the accumulation of cognitive reserve, whereas employment gaps due to training or child care may improve cognitive function," she reveals.

WORKING FOR WELLBEING

The researchers identified different activities during working age employment gaps in SHARELIFE and analysed the relationship between the occurrence of these gaps and the risk of relative cognitive impairment and cognitive decline in a sample of 50-73 year olds. The strongest evidence was for the benefits of maternity leave and training periods, both of which predicted a slower rate of age-related cognitive decline.

As well as considering the potential of life-course factors to explain health and cognitive function, H-OLD has explored the impact of macro-level variables on health in old age. These society-wide influences on health have been investigated from a cross-national perspective by exploring how changes in systems over time affect the individual’s health, as Leist highlights: "There is a great deal of evidence to show that the core characteristics of welfare systems such as healthcare expenditures, labour force and distribution of income all contribute to differences in later-life health and mortality".

MACRO-VARIABLES

While it is highly plausible that macro-level factors influence health differently depending on individual factors such as educational level, personal resources or health behaviours, it is important to note that earlier research focusing on cross-national differences in health and mortality often used datasets with limited information on individual variables. Meanwhile, national in-depth surveys investigating the influence of individual variables to explain health inequalities could often not be linked to surveys carried out in other countries, as Leist states: "This fact made it impossible to conduct cross-national comparative analyses. But with large comparative surveys such as SHARE, there is now a way to investigate health inequalities from an individual and macro-level perspective simultaneously".

The researchers have identified the need to find out more about longitudinal changes in cognitive function, and with further waves of SHARE, they will be able to investigate cognitive decline in more detail: “Another important step to advance the understanding of health inequalities from a macro-level perspective is to link the SHARE data with harmonised datasets like the English Longitudinal Study on Ageing and the US Health and Retirement Study,” Leist explains.

H-OLD is not alone in investigating individual and macro-influences on health in old age, and Leist is keen to highlight FLARE, the postdoctoral fellowship programme realised under Professor Alan Walker and his ERA-AGE team: “Within this network and with a truly interdisciplinary view on ageing, several very fruitful collaborative projects have been developed. I have valued immensely the opportunity to be part of such a European network,” she reflects.