European ageing research in the social, behavioural and health areas: a multidimensional account

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Abstract At the 10th anniversary of the European Journal of Ageing in 2013, this article makes an attempt towards a comprehensive overview of European ageing research (EAR) from the three perspectives of this Journal: the social, behavioural and health related domains. First, we provide some general observations on the state of EAR, noting the difficulties of defining this field. Second, we provide a description of EAR and its current trends and characteristics in terms of research themes and theoretical directions. Towards this end, we use the 10 volumes of the European Journal of Ageing as well as other available information. Third, we address the infrastructure of EAR as reflected in major studies, looking at data availability, language, education and training. Given this background, we derive a set of six recommendations to further consolidate and expand EAR.

Keywords European ageing research · Trends · Characteristics · High impact themes · Infrastructure of research · Recommendations

Introduction

A comprehensive overview of European ageing research (EAR) is hard to achieve. Steps towards this goal require a *multi-dimensional* strategy, which relies on various modes of observation, description and interpretation. On the occasion of the European Journal of Ageing's (EJA) 10th volume in the year 2013, we as editors of the journal thought to take the challenge and make an attempt towards just such an enquiry. Another argument to provide an overview now is the critical period that Europe is currently facing. Despite considerable expansion since the 1990, EAR may well be affected by the recent economic crisis and national funds for ageing research, which may become increasingly scarce (see also Börsch-Supan et al. 2013). In addition, the already existing gap between the 'have' and 'have not' countries—in terms of funding of ageing research—may increase.

Thus, the role of Europe in funding research on ageing becomes more prominent, so that an overview of existing research in this part of the world is indispensable. We have chosen to focus the paper on social, behavioural and health related ageing research (i.e. excluding the areas of biogerontology, geriatric medicine and the humanities of ageing), because this is also the scope of the EJA and a realm that is, in itself, quite broad. When we describe EAR, therefore, we relate exclusively to these three areas. Our account proceeds as follows. First, we provide some general observations on EAR, noting the difficulties of defining this field. Second, we identify recent characteristics and trends in EAR and also use the ten volumes of the EJA as a resource to treat this issue. Third, we address the infrastructure of EAR as reflected in major ageing studies conducted in Europe, looking at issues of data availability, training and language. In the final section, we conclude our

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multi-dimensional account of EAR with a set of six recommendations.

European ageing research: challenges and pitfalls

EAR seems to be on the rise. Soft indicators for such an observation can be traced from various sources. First, the conferences of the European section of the International Association of Gerontology and Geriatrics, since the 1990s (IAGG; 1991: Madrid; 1995: Amsterdam; 1999: Berlin; 2003: Barcelona; 2007: St. Petersburg; 2011: Bologna) represented an increasingly rich picture of the range of EAR. Second, starting with the 5th Framework Programme of the European Commission, the theme of ageing has entered the European funding landscape, leading to a substantial increase in the volume of research on ageing. (This theme was less prominent in the 6th and 7th Framework Programmes, however, compared to the 5th Programme). Third, EAR is increasingly highlighted in ‘world-wide contexts’, particularly in North American gerontology. For example, over the last 15–20 years, symposia and other papers prepared by ageing scholars from Europe have increased at the Annual Scientific Meetings of the Gerontological Society of America (GSA), a premier conference occasion for the presentation of first-rate gerontological research. In addition, cooperation between ageing researchers in Europe and scholars in other countries has markedly and sustainably increased in regard to important areas and approaches. Fourth, proof of an increasing critical mass of EAR comes from the launch of new European-based journals, such as the EJA (now in its 10th volume), the *European Review of Ageing and Physical Activity* (now also in its 10th volume), the open-access *International Journal of Ageing and Later Life* (now in its 8th volume), the *Journal of Population Ageing* (now in its 6th volume) and the *Longitudinal and Life Course Studies* (now in its 4th volume), to name a few. Also, *Ageing and Society*, now in its 33th volume, obviously continues to serve ageing research in Europe very substantially. Last but not least, there has been substantial effort to foster awareness of future ageing research needs in Europe, such as the FUTURAGE project and the resulting Roadmap for EAR (<http://futurage.group.shef.ac.uk/untitled-resource1.html>) presented in October 2011 to the European Commission.

Although these (and other) observations are encouraging, it is nevertheless difficult to gain an overview of EAR. This is because the ageing research landscape remains diverse and hard to summarise. Describing EAR also depends on the geographic point of view from which it is done. Most detailed knowledge and active interchange currently seem to exist among Northern and Western

Europe countries, reinforcing the respective North/South and East/West divides.

One might wish for a detailed action scheme to help describe, coordinate and evaluate ongoing ageing research across Europe and to provide insights into the strengths and weaknesses of ageing research at a country specific as well as at an international level. However, we are not aware of any such scheme, not to speak of respective findings. This article, then, may serve as a first step towards this wider aim.

Making attempts to evaluate EAR, beyond just describing it, is also challenging, because there are no clear criteria or thresholds to identify or assign quality. On the one hand, absolute standards such as publication output, impact or citation scores have different scales across disciplines of ageing research. On the other hand, the search for relative standards and references is also a difficult enterprise, because a comparison is most likely to end up with U.S. ageing research as the reference point. As long as ageing researchers in Europe aspire to publish their best research in North American based ageing journals, as many do, a U.S.-based frame of reference is possibly confounded with the highest quality of ageing research in Europe—a true dilemma. In sum, the ambition of gaining a comprehensive and qualified picture of ageing research in Europe seems difficult to achieve. Nevertheless, an increasingly cohesive Europe may be in need of such an integrated view, which goes beyond national research interests, traditions and achievements.

Trends and characteristics of European ageing research

Unique themes and approaches of EAR

To address the themes and approaches of EAR, we follow two directions: (1) Research by individuals or groups with a ‘universal’ impact beyond Europe and (2) European-framed cross-national research leading to unique insights likely to be applicable beyond Europe.

Speaking to the first direction, the *Social Science of Ageing* in Europe has offered numerous concepts and outcomes which are now widely acknowledged as relevant for social gerontology at large. Generally, sociological and political scientists such as, in historical order, Max Weber and Jürgen Habermas (Frankfurt School), have fundamentally inspired social gerontology and the emergence of critical gerontology (e.g. Naegele, Walker). Life course perspectives as a key meta-idea in sociology and social gerontology have been strongly nurtured by scholars from Europe such as Hagestad with a particular focus on the family (e.g. Hagestad 1990) and Kohli with a particular focus on work and retirement (e.g. Kohli 2007). Core social

gerontology issues such as the role and complexity of family systems, social relations and isolation, as well as intergenerational interchange, have found strong roots in ageing research in Europe (e.g. Attias-Donfut, Hagestad, Wenger) and have thus created a solid basis for future research in these areas. Regarding the understanding of successful ageing, Tornstam's (2005) theory of gerotranscendence has found a secure place in ageing research, as has Baars' (2009) treatment of time and age. In addition, social gerontological perspectives stemming from critical gerontology (Biggs 2005), those that elaborate on the implications of globalisation for ageing (Phillipson 2010), the concept of active ageing (e.g. Foster and Walker 2013), study of home environments for aging well (Scharf et al. 2005; Wahl et al. 2012) and research on loneliness in old age (e.g. Dykstra 2009; Tilburg et al. 2004; Yang and Victor 2011) continue to inform social gerontology worldwide.

Work related to the *psychology of ageing* has offered acknowledged models of successful ageing and adaptive self-regulation in old age. Two frequently cited models stem from German scholars, i.e. the model of selective optimization with compensation (Baltes and Baltes 1990) and the model of the interplay of assimilation and accommodation (Brandstädter and Renner 1990). In addition, a third widely used model in this area, i.e. the lifespan theory of control (Heckhausen and Schulz 1995; Heckhausen et al. 2010), also has major roots in German motivational psychology (Heckhausen and Heckhausen 2010). Gero-psychology scholars from Europe such as Thomae, Lehr and Baltes have also significantly inspired the multidisciplinary study of lifespan developmental research and have helped to make this view a key foundation of ageing research at large.

Health and Ageing Research conducted in Europe has also come with unique and innovative characteristics. Indeed, epidemiology of ageing in Europe with its strong intersection between health and social science traditions may be highlighted as a major strength. For example, now classic research on socio-economic status and health outcomes comes from England (Marmot et al. 1991) and was applied to older ages amongst others in the cross-European project Socio-Economic Determinants of Healthy Ageing (SEDHA, Huisman et al. 2003). The study of healthy life expectancy and its differentials and trends received its major impetus from France and a range of other European countries (e.g. Robine et al. 2013; Jagger et al. 2008; Oyen et al. 2013). Innovative research on self-rated health (Jylhä 2009; Galenkamp et al. 2012) and quality of life (Bowling and Gabriel 2004) may also be regarded as quite unique worldwide. Furthermore, amongst others based on the seminal work of Barker (1998) on the foetal origins hypothesis, Kuh and colleagues in the United Kingdom were among the first to study late-life health in a life course perspective (e.g. Kuh and Hardy 2003). In a number of countries, local cohorts

were established to study the health of the oldest-old, the earliest ones in Sweden, Denmark and the Netherlands (Femia et al. 1997; Goebeler et al. 2003; Izaks et al. 1995; Jeune et al. 2006; Ahacic et al. 2007). Mental health, in particular depression and anxiety, was a relatively understudied aspect in ageing populations up to the 1990s, and the multidisciplinary LASA study was among the first to shed light on this problem (Beekman et al. 1998; Beekman et al. 1999), also showing its strong link with physical health (Penninx et al. 2001). Research taking advantage of the geographic diversity in Europe has brought important insights regarding health lifestyles (e.g. Knuops et al. 2004 on the Mediterranean diet), and the diversity in health and long-term care systems is starting to be exploited to improve insight into the effectiveness of care services (Jusot et al. 2012; Geerts and Bosch 2012).

The second direction, the explicitly 'European' framed research programs, refers to similarities and differences between European countries at various levels (e.g. political system features and welfare state regulations, political transformational dynamics, regional structure, migration dynamics and research traditions) and therefore has a strong country comparative component. For example, the interplay of care arrangements in old age, as examined in the OASIS project in Europe and in Israel (Lowenstein and Daatland 2006), has added to the understanding of the interaction between micro care constellations (in terms of informal and professional support) and welfare regime (individualistic versus collectivistic). The ENABLE-AGE project in five European countries—including Hungary and Latvia—assessed the role of home environments in advanced old age in the context of different socio-structural country characteristics (Iwarsson et al. 2007). Other areas in this context concern the SHARE-based inquiries of regulations in effect in different European states regarding retirement and related outcomes (Hank and Korbmayer 2012) and intergenerational material transfer dynamics (Attias-Donfut et al. 2005).

In terms of approaches to the study of ageing, Europe has a fairly strong profile in terms of longitudinal studies. In Schaie and Hofer (2001) compilation of mostly interdisciplinary longitudinal ageing studies worldwide, 14 of the 37 studies took place in Europe (cited after Pinquart 2007). In Seematter-Bagnoud and Santos-Eggimann (2006) analysis of world-wide community-based longitudinal studies featuring health, the majority (29) came from European countries. Among the studies in Europe, five included three or more countries.

Trends and characteristics as seen in the *European Journal of Ageing*

In order to describe current themes and trends of EAR in recent years, we first limit ourselves to research published

in the EJA. Although established only in 2004, an advantage of the EJA for providing ‘data’ for such an analysis is that it has no country linkage (as for example, Ageing and Society with the UK) and can thus provide more country-neutral material. Moreover, 83 % of all articles published in the EJA are from European-based authors and about 80 % of these papers came from North/West Europe (Deeg and Wahl 2010). On the other hand, the EJA is still a rather young journal, now in its 10th volume, and obviously has its limits to fully represent EAR. That said, the following attempt to extract major themes and issues in social, behavioural and health related ageing research is based on a database of all the articles published in the EJA between December 2004 and July 2012, along with their keywords.

Social Ageing Research shows great diversity in the selected time period, with key topics on cross-national comparison and intergenerational relations. Starting with the very first issue in 2004, the EJA has striven to publish *Cross-National Comparative Research*. On the topic of *Intergenerational Relations*, a special section (EJA, 2005, volume 2, issue 3) reported on financial and time transfers, solidarity in relation to the welfare system, and the role of new communication technology. Several single papers reported on family support, for example the role of siblings, and other social ties. Another special section was devoted to social engagement and health outcomes (EJA, 2005, volume 2, issue 1). The theme of *Social Participation* or *Social Productivity* has shown increasing interest, as has the topic of *loneliness*. A further social theme is *Social Inequality*, which addresses socio-economic or gender differences in ageing.

Central concepts in the *Behavioural Ageing Research* domain are personality and cognitive functioning. A special section devoted to change and stability in midlife development focussed on exactly these concepts (EJA, 2010, volume 7, issue 3). *Cognitive functioning* is often specified in terms of various memory functions, but subjective views of older people on their cognitive functioning were also addressed. *Personality* included traits such as dispositional optimism and self-efficacy. *Mood*, including negative (depression) and positive affect, and *self-esteem* were the focus of several articles. The behavioural domain also features older people’s perceptions of, for example, the *home environment*, *income adequacy* and *future time*. Other themes are *resources*, e.g. in relation to self-management or resilience, and *adaptation*, e.g. in terms of coping strategies or emotion regulation. Behaviour in relation to *Daily Stress and Critical Life* events is another topic reported on. The articles published in the behavioural domain often make use of advanced statistical modelling, such as multilevel models or mixture regression to examine intra-individual change.

Health Related Ageing Research describes a variety of topics, of which the most frequently addressed are *Functional Limitations*, *Mobility*, *Disability* and *Activities of*

Daily Living. These concepts are recognised as the main indicators of health in an ageing population. Related concepts are *healthy life expectancy* and *disability-free life expectancy*, which were the topics of two special sections contributed by members of the REVES International Network on Health Expectancy (EJA, 2008, volume 5, issue 4; EJA, 2010, volume 7, issue 4). Other articles addressed *complex health problems*, particularly in the oldest-old, such as multimorbidity and frailty. Health indicators are used for the study of trends over time, for international comparisons, or for the study of differences according to gender or socio-economic status. Further *determinants of health* included living arrangements and life style such as physical activity or obesity, consequences of impaired health including informal and formal care, admission to care institutions and mortality. Several articles focused on less well-studied determinants such as tiredness, toothlessness or the outdoor environment.

The most frequently studied topics in *interdisciplinary* articles cross-cutting social, behavioural and health related ageing research are *quality of life*, *life satisfaction*, *well-being* and *successful ageing*. Indeed, these important outcomes in ageing research are recognised as multi-faceted. A special section was devoted to quality of life (EJA, 2009, volume 6, issue 2), and other special sections focused on quality of life in relation to retirement (EJA, 2012, volume 9, issue 3) and in rural and urban environments (EJA, 2005, volume 2, issue 2). Single articles studied economic factors such as income, work or retirement or focused on housing and neighbourhood, and others again addressed social resources and stressors or personal characteristics including self-management ability. In this interdisciplinary area, another important focus was on *health care and social services*. Special sections were devoted to preventive home visits (EJA, 2007, volume 4, issue 3) and to shifting boundaries of elder care (EJA, 2012, volume 9, issue 2). Also the *quality of home care*, *day care* and the *transition to institutional care* were reported on, in a few cases focusing on the *end of life*. *Unmet needs* constituted a further care-related topic. Several articles examined well-being in a cross-national or a life course perspective. In addition, one key *conceptual* contribution emphasised the badly needed theoretical underpinnings of cross-country comparative research in Europe, in particular the explicit linking of micro-, meso-, and macro-factors in building an argument for expected cross-country differences and similarities (Tesch-Römer and Kondratowitz 2006).

High impact themes as observed in the *European Journal of Ageing*

Finally, in order to get a sense of the relative impact of specific themes, we used bibliometric statistics provided by

the Harzing Publish or Perish Index (HPOP) and the Institute for Scientific Information's Web of Science (WoS), and applied these to material taken from the EJA. The HPOP is based upon the citations listed in Google Scholar—a source that is especially efficacious for following trends in the social sciences. The WoS is generally used in bibliometric analyses of academic performance and scientific output. A useful comparative measure in the HPOP is the relative number of citations per year, which neutralises the possible cumulative effect of articles that were published much earlier.

A look at the most cited articles per year, since the initiation of EJA reveals several observations: The most cited article, by Attias-Donfut et al. (2005), is in the realm of social sciences, dealing with the transfer of resources—time and money—across generations in Europe, using SHARE data. The second most cited article, by Börsch-Supan et al. (2005), also highlights SHARE and the research opportunities that it offers in terms of work, volunteering and health, for example. The third most cited article, by Daatland and Lowenstein (2005) draws upon OASIS data to analyse the family–welfare state balance in five countries. All three of these articles reflect the important aim of identifying uniquely European aspects of the aging experience and all have in common the use of large datasets. The next most widely cited article by HPOP deals critically with the issue of loneliness in older age (Dykstra 2009). A relatively highly cited social research article is the study by Buber and Engelhardt (2008), which looks at children's impact on older parental mental health, once again using SHARE data.

The most cited article having a public health focus is the one by Zijlstra and Aminian (2007) on mobility assessment. This is followed in terms of relative impact by the piece on participation and survival (Maier and Klumb 2005). Third in line of citations per year in the health area is the article by Bath and Deeg (2005) on the association between social engagement and health outcomes. All three of these inquiries are related, in one way or another, to the theme of active ageing.

Although coverage of EJA in WoS began a few years after the initiation of the journal, the most cumulatively cited EJA articles that appear in this bibliometric data base largely reflect those that were identified through Google Scholar, as noted earlier, namely Attias-Donfut et al. (2005), Zijlstra and Aminian (2007), Bath and Deeg (2005) and Dykstra (2009). However, two additional highly cited articles were published in EJA's premier edition and cover intergenerational contacts and social support for older people across European welfare states (Tomassini et al. 2004; Glaser et al. 2004).

In conclusion, bibliometric data seem to suggest that intergenerational relations, especially exchange between

older parents and adult children, and their effect on health are key areas of contemporary interest in EAR. Equally important are matters of functionality and their implications for individual autonomy in late life.

The infrastructure of European ageing research: data availability, education, training and language

A condition for producing first-rate research is the nature, scope and quality of the data that are used in the analyses. In this section, we concentrate on this particular aspect of the EAR infrastructure, because data are a key platform for ageing research and its potential impact. Towards this end, we suggest a scheme for classifying studies in terms of their EAR status. We illustrate the scheme by prototypical examples. Following this, we address issues related to education and training in ageing research and to language.

Research infrastructure in terms of ageing studies conducted in Europe

In this section, we describe available data according to a classification scheme that we constructed, based upon three dimensions or axes, each of which may be delineated at three respective levels. This way, we feel that we can present an overview of uniquely EAR in an optimally compact manner. We concentrate here on quantitative studies, but acknowledge that qualitative research designs and mixed methods approaches are also expanding in EAR. The first such axis is the geographic scope of the study reflecting (1) city or regional, (2) country or (3) cross-country/multi-country levels. The second axis reflects the temporal orientation of the inquiry and may be classified as (1) cross-sectional, (2) continuous cross-sectional (i.e. periodic repeated measurement of different samples) or (3) longitudinal (follow-up of the same respondents over time). The third and final axis concerns the nature of the study sample and the gerontological focus of the survey, and may be ranked according to three levels: (1) general population/general focus, (2) general population/ageing focus or (3) age-defined population/ageing focus.

Thus, for example, local efforts that are longitudinal and age focused, such as the Berlin Ageing Study (BASE), the Kungsholmen Project in Stockholm, the PAQUID study in Bordeaux, the Nottingham Longitudinal Study of Ageing and Activity in the UK and 'Aging in Leganés' (AL) in Spain have yielded rich results and publications. But, the question remains as to how applicable such findings are for the understanding of EAR in the larger sense, because they lack the country wide as well as the wider European comparative dimension.

In turn, country level studies, and especially the longitudinal and age-defined ones among them, provide a national context for the examination of ageing-related dynamics. Examples include the Longitudinal Aging Study Amsterdam (LASA), the German Aging Study (DEAS), the Italian Longitudinal Study of Aging (ILSA), the Swedish National Ageing and Care (SNAC) longitudinal study and the Norwegian Life Course, Ageing and Generations Study (NorLAG). These efforts do not allow comparative cross-country analysis without post-harmonising their measurement instruments (Bath et al. 2010; Schaap et al. 2011). The English Longitudinal Study of Ageing (ELSA) is unique, in this regard, in that its questionnaire is pre-harmonised with the U.S. Health and Retirement Study (HRS). However, these studies still miss the full European dimension.

Several multi-country initiatives worthy of note have recently emerged. Reflective of the cross-sectional general population/ageing focus is the Eurobarometer survey of 2011, which examined the attitudes towards older people among European citizens (Special Eurobarometer 2012). Such studies have a European potential. In its 4th wave in 2008, the European Social Survey introduced an 'Age Attitudes and Experiences of Ageism module'. Although its questions can be repeated in future waves, this survey still lacks a truly longitudinal element.

Time-limited, age-defined multi-country ventures are exemplified by such studies as 'Old age and autonomy: the role of service systems and intergenerational solidarity' (OASIS), Collaborative research on ageing in Europe (COURAGE) and the European project on osteoarthritis (EPOSA). Studies of this nature (so far) miss the longitudinal component.

The highest levels of the classification typology are represented by studies such as SHARE (Survey of health, retirement and ageing in Europe), which follows respondents aged 50 and older from representative national samples in some 20 countries. As a pre-harmonised multilingual data collection effort, SHARE constitutes a valuable means for the analysis of the contexts and the concomitants of ageing in Europe.

Going further, global comparisons, fostered by data harmonisation of major international surveys, will enable analysts to distinguish uniquely European aspects of the ageing experience from its more universal manifestations. For example, the ELSA and SHARE projects, with their connections to the Health and retirement study in the US as well as linkages with Chinese (CHARLS), Korean (KLoSA), Japanese (JSTAR) and Indian (LASI) survey data, provide a promising platform from which to embark upon such global comparisons. The COURAGE project allows comparison with selected developing countries worldwide.

Education in gerontology and research training

A strong need for more investment into early stage researchers and high quality interdisciplinary research at the Master's and PhD level is clearly needed, including stronger methodological expertise as well as improvement in language expertise (particularly in new member states in Eastern Europe). Education in ageing research (B.Sc., Master's and PhD level, post-graduate programs) continues in any case to show pronounced heterogeneity (Meyer 2003; Pinquart 2007). Some initiatives such as the European Master's program in gerontology seemed promising initially (Meyer 2003), but have been discontinued for a variety of reasons, such as difficulty of securing funded places for students. Advanced training in gerontology may be available locally, but is mostly lacking at the European level. A variety of initiatives for short-term summer schools on ageing research shows the need for training.

Notably, there are some recent gerontology books with a European orientation, such as 'Ageing in Society' by Bond et al. (2007), Fernández-Ballesteros' (2007) 'Geropsychology' (with the subtitle 'European Perspectives for an Aging World'), Phellas' (2013) 'Ageing in European societies', and Komp and Aartsen's (2013) 'Old Age in Europe'. The two waves of the Future Leaders in Ageing Research in Europe (FLARE) program of the European Commission seem a particularly important initiative to foster exchange and cooperation for early stage researchers, while there has been to our knowledge no successful initiative so far regarding an ageing research oriented Marie Curie *Initial Training Network* (ITN) funded by the European Commission.

Language

Finally, a major barrier counteracting the flourishing of EAR continues to be that of language. While the Scandinavian countries and the Netherlands have been traditionally close to the Anglo-American scientific communication modality, most Central and Southern European countries have not been English proficient to the same degree, and Eastern Europe ageing research has yet to achieve the level of English that is necessary to play a significant role in international ageing journals. Furthermore, the need for 'going English' in European cross-comparative ageing research comes with drawbacks. An example of this might be when not a single participating country in a given study has a proficient level of English, resulting in a situation that may be best described as 'lost in translation' (Nes et al. 2010). At the same time, researchers in Europe in non-English speaking countries continue to publish in their own language. These publications are not usually counted in ISI, PubMed or other such systems. However, it is likely

that these publications are much more influential at the local/national policy level. Thus, to equate the visibility and impact of EAR solely with the increase of English manuscript writing is certainly a too limited perspective. In conclusion, more sensitivity to language barriers is needed to foster sharing of knowledge from ageing research accumulated across Europe.

The ‘face’ of ageing research in Europe: strengths, barriers and ways to go

Although ageing research worldwide is currently strongly infused by North American, and increasingly also by Chinese and Australian studies and/or researchers, Europe can be seen as providing significant intellectual contributions to this research field. In terms of major themes, the most recent ageing research in Europe seems to mostly follow international trends and paradigms, as our analysis of 10 volumes of EJA and other sources has revealed. Surely, EAR shows impressive breadth and clear innovativeness in international comparison.

Furthermore, there are significant characteristics which make EAR rather unique. For example, acknowledging the political, economic and cultural differences between European countries and relating them to ageing-related topics (e.g. care, retirement and home environments) offer new insights into the classical micro–macro theoretical challenges of ageing research at large (Marshall and Clarke 2010). The analysis of such differences underlines that research findings on ageing and their interpretation and use depend on country and regional variation. This insight may also stimulate contextual, if not political, views on theories, models, methods and findings used elsewhere in ageing research. In addition, EAR finds positive reception and resonance worldwide, and some critical research topics (e.g. life span development and healthy life expectancy) may even be characterised as strongly driven and furthered by ageing research conducted in Europe.

Going further, the infrastructure of EAR, particularly in terms of empirical datasets, has reached a remarkable quality and impact. Here, we have an important platform on which to build the future and this platform increasingly fulfils high methodological standards, while enabling the treatment of innovative research avenues.

At the same time, EAR seems to be highly heterogeneous, with strong and weak approaches/study designs variously observed. One observation is that authors from the new member states still have a way to go, at this moment lacking much needed infrastructure, although research output of high quality from this origin is slowly on the rise. Furthermore, although the challenge of doing cross-country (and cross-cultural) research seems

fundamental to EAR, it is not always treated with the needed depth of reflection and methodological rigour (Tesch-Römer and Kondratowitz 2006). In addition, education and high level training in ageing research remain highly diverse and have yet to achieve a common high scientific standard, particularly comparing more recent member states with the rest of Europe.

Based on our overview, we propose six recommendations which we regard as key to moving ageing research in Europe forward:

1. Place ageing research high on the agenda and invest more in the integration and harmonisation of available and possible ageing research;
2. Establish a tradition of systematic evaluation of EAR;
3. Invest much more in the promotion of early stage researchers in ageing, particularly among the more recent member states;
4. Improve the theory and methodology of cross-country comparative ageing research;
5. Take language barriers seriously as a major challenge for EAR and
6. Put a strong emphasis on the end-user of ageing research and foster the implementation of research findings.

First, ever greater effort is needed to *place ageing research higher on the agenda of all 28 member states of the EU* and to *invest more in the integration and harmonisation of available and possible ageing research* in the EU at large. Note, that in-depth local studies and experimental studies using innovative designs should not be ignored. The establishment of a European-wide ageing research institute can further the aim of integration. While there has been talk about forming such an institution on and off for some time, little has happened thus far. The pros of such an institution (which could function efficiently as a virtual coordinating centre) include the overcoming of national/local resources and bureaucracy as well as the unfolding of a catalyst function all over Europe; the cons may be a loss of vitality and creativity of ageing research at the national level. Forthcoming framework programmes of the European Commission are also very important to further the better integration of EAR. Wider competition for such funding is critical to further raise the quality of EAR. However, it must also be kept in mind that too much of an ambition towards a more coherent and coordinated ageing research field in Europe will set unnecessary limits and obstacles to the further unfolding of ageing research in European countries. Thus, there is a need to specify convincing boundaries of ‘coordinated’ EAR and what it may accomplish, and give room to ‘unregulated’ and pluralistic scientific productivity without any direct European referral, with its own contribution in terms of ageing research

outcomes. In conclusion, if the aim is to better understand ageing in Europe, policymakers must be encouraged to better promote high level research infrastructures. Also, promotion of data harmonisation across the major international surveys can further the identification of the uniquely European facets of the ageing experience.

Second, a tradition of *systematic evaluation* of ageing research in Europe needs to be established. Efforts such as the FUTURAGE project and the joint programming initiative more years better lives (www.jp-demographic.eu) are also quite important for synthesising what is available in terms of EAR and suggesting critical future research directions. Providing rigorous evaluations of EAR continuously over 3–5 year intervals is a clear task ahead. This must include the systematic evaluation of the short and long-term outcomes of European Commission funded projects. We regard this current lack of auditing as a shortcoming, because later ‘calls’ are not really informed by the outcome of previous ‘calls’. Again, an EAR institute may play an important role here.

Third, EAR *must invest much more in its early stage researcher generation*, particularly in Eastern and to some extent also in South European member states. Significant initiatives such as the Future Leaders in Ageing Research (FLARE) seem to come with some success, but the efforts overall are currently insufficiently meeting the needs and deserve much expansion. In particular, training in research methodology is a necessary precondition that must be firmly incorporated into doctoral, post-doc and other programme initiatives. We can also visualise fruitful cooperation here with IAGG and its focused efforts to serve the development of EAR (through the IAGG-European Region).

Fourth, the important component of comparative cross-country ageing research in Europe, a major strength, requires *greater investment at the methodological and theoretical levels* (see again Tesch-Römer and Kondratowitz 2006). For example, although some textbooks come with the aspiration of being ‘European’, we believe that treating this complex issue requires greater depth and rigour. Such increased systematization would also encourage wider implementation of findings of EAR at both the practical and the political levels. In addition to ongoing, pre-harmonised data collection such as in SHARE, more effort towards post-harmonisation of measures, as was done in the CLESA project, is also essential for successful comparative European analysis. Meanwhile, as no (harmonised) dataset is perfect, several studies should be maintained in parallel.

Fifth, the comparative research issue is closely connected to the *challenge of language*. Communicating in a range of quality levels of English in such a highly sophisticated area as (ageing) science may come with

limited success of moving EAR forward. This dilemma deserves much more fundamental reflection, and a critical analysis of the past few decades of ageing research and respective communication and translation issues. We recommend to the European Commission to create a high level research committee including language and linguistic scientists in order to provide a comprehensive analysis of the issue and to come up with guidelines for the future.

Sixth, we note the strong emphasis in many ageing research endeavours in Europe on the role of the *older end-user* of the results (see also the FUTURAGE project). It must not be overlooked or forgotten that the ultimate outcome of ageing research is to serve the older population. This requires greater efforts in the realm of dissemination and implementation science (e.g. Rabin et al. 2008). In particular, ethnic minorities and elders living in transnational families all over Europe seem to be light years away from making use of available ageing research in their own day-to-day life and such a situation will become increasingly unacceptable.

In conclusion, the potential of high quality EAR is there, it is used to some extent and may even be increasing (at least, we see no indications for a decrease). Nevertheless, we note six levels at which substantial investments are needed to maximise this potential. Such efforts all serve a much more integrated EAR, which goes beyond national research interests, traditions and achievements.

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