The ENABLE-AGE Project:  
Multi-Dimensional Methodology for European Housing Research

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Abstract

The main aim of the ENABLE-AGE Project was to explore the home environment as a determinant for autonomy, participation, and well-being in very old age within a follow-up perspective. More specifically, the project aimed to explore country specific housing-related societal support as represented in personal situations; to provide an update of housing policies and legislation; to provide methodological guidelines for home assessments; and to provide policy recommendations in housing issues across Europe. The novel scope was to explicitly consider subjective and objective person-environment relationships as determinants for healthy ageing. A macro level update of housing policies (the ENABLE-AGE Update Review) supported the project process, integrated with the knowledge generated by the ENABLE-AGE Survey Study and the ENABLE-AGE In-Depth Study. In the survey a wide range of well-proven measurements was administered at home-visits with very old people, randomly sampled in five European countries. In particular, housing accessibility was assessed in detail, using the Housing Enabler instrument. The design of the ENABLE-AGE Survey Study was longitudinal, comprising two measurement points (T1, T2) with a one-year interval. For the ENABLE-AGE In-depth Studies, qualitative interviews followed by consultation interviews with a sub-sample were conducted. The ENABLE-AGE consortium has experienced a range of challenges successively and successfully overcome by intensive
teamwork, bridging disciplinary, national, and cultural gaps in a constructive way. One result is the multi-dimensional methodology, available in seven European languages. This chapter describes the project and the integrative approaches ensuring that project design is complementary, all data collected has been analysed with respect to coherent objectives, and each analysis is used to consolidate and extend the other. As such, the data collected represents a goldmine for housing research and the synthesis of results from different parts of the project provides a strong basis for policy recommendations and housing guidelines for use across Europe.

**Keywords:** Accessibility, healthy ageing, home assessment, survey study, qualitative approach

**Keywords highlighted in the text:** accessibility, assessment, docility, ecological model, gerontology, grounded theory, GDS, healthy ageing, Housing Enabler, longitudinal, meaning of home, observation, occupational therapy, PANAS, person-environment, usability, qualitative, quantitative
Introduction

Recent research has indicated that the home environment is central to healthy ageing and well-being in old age (EVANS, et al, 2002; SHIPP & BRANCH, 1999; STEINFEILD & DANFORD, 1999; WAHL, 2001). Health care reforms are sweeping across Europe, and the current accelerating trend is the shift from institutional to community services, with the consequence of locating many more older people in their homes despite declines in physical and mental health. This, together with the fact that the population of very old people is rapidly increasing across Europe (MATHERS et al, 2001; UNITED NATIONS, 2001) poses new challenges to societal planning and housing development. In particular, the home environment has been identified as playing a key role in supporting autonomy, social participation, and well-being amongst older persons (WILLCOCKS et al 1987; HEYWOOD et al 2002; SIXSMITH, 1990). However, housing issues viewed from this wider perspective have not as yet been adequately addressed in research, policy, and practice, and there is a paucity of appropriate theoretical foundations and methodology for this kind of research (GITLIN, 2003). For instance, there are few recent studies based on theory and methodology which take the long-term and multi-dimensional perspective (IWARSSON, 2004) necessary for understanding the processes through which housing and home relate to autonomy, participation, and well-being. The aim of this chapter is to present a novel, multi-dimensional methodological approach to housing research, developed within the three-year ENABLE-AGE project funded by the European Commission (IWARSSON et al, 2003).

Current gerontological research and practice focuses on the person's ability to continue to live a normal life in the familiar environment as long as possible (SCHAIE et al, 2003). Consequences following diseases, injuries, or the normal ageing process affect biological mechanisms, often reducing the physical, psychological, and intellectual capacities of the individual (MAYER & BALTES, 1999). Within the ENABLE-AGE Project, a functional definition of healthy ageing was adopted. According to the World Health Organisation’s International Classification of Disability and Functioning, ICF (WHO, 2001), there are multi-faceted relationships between health condition, body functions and structure, activity and participation, and environmental and personal factors. Disability, i.e. activity limitations and restrictions in participation, in old age is the result of a complex dynamic (VERBRUGGE & JETTE, 1994). According to Lawton’s general ecological model and the docility hypothesis
(LAWTON & NAHEMOW, 1973; LAWTON & SIMON, 1986), underlying much environmental gerontology research (SCHEIDT & NORRIS-BAKER, 2003), individuals with low functional capacity are much more vulnerable to environmental demand than those with high capacity, and environmental details can be crucial for what they can manage in their everyday lives. However, the empirical knowledge base concerning the multi-faceted person-environment interplay among very old adults is limited, especially with respect to a longitudinal process oriented perspective. Due to the notion that person-environment (P-E) interactions underpin significant changes in health status in very old age, a process oriented perspective is imperative in order to increase the understanding of how the home environment impacts on healthy ageing. In integrating the ICF framework with environmental gerontology theories (LAWTON & NAHEMOW, 1973; LAWTON & SIMON, 1986) in a novel way, the ENABLE-AGE Project focused on functional and social aspects of healthy ageing in relation to, and with a particular emphasis on, environmental factors.

Crucial daily activities are performed in the home and its close surroundings, and as people grow older they spend relatively more time in their homes (BALTES et al, 1990; MOSS & LAWTON, 1982). Research suggests that people over 85 years of age tend to spend on average around 80% of their time at home (SCHMITT et al, 1994). Thus, an important goal in health promotion is to create home environments supporting healthy living and subjective well-being. Promoting health requires an understanding and measurement of the individual level alongside strategies for creating environments supportive for health (WHO, 1986), involving the societal level. A good physical and social housing environment can help to alleviate or prevent illness and declining health, yet evidence based on research explicitly and comprehensively considering the socio-physical environment is still lacking. In order to generate valid knowledge in this extensive field, substantial conceptual and methodological development is required. The ENABLE-AGE Project aimed to contribute to filling this void.

The main objective of the ENABLE-AGE Project was to examine the home environment as a determinant for autonomy, participation, and well-being in very old age, taking a longitudinal perspective, and exploring subjective and objective aspects of housing and their impact on health and ageing. The ultimate delivery of the project is guidelines for home assessment, providing methodological recommendations for capturing objective and subjective dimensions of the home environment and of functional health. The guidelines to be developed
based on the ENABLE-AGE Project are intended for use in individual case management, planning of housing for sub-groups at risk, management of housing issues on the societal level in different European countries, and for providing data and research results to underpin consumer as well as social policy decisions (see http://www.enableage.arb.lu.se).

In order to represent different parts of Europe, the ENABLE-AGE Project involved five countries (Sweden, Germany, the United Kingdom, Hungary, and Latvia). The project comprised three major studies:

1. The ENABLE-AGE Survey Study;
2. The ENABLE-AGE In-depth Study;
3. The ENABLE-AGE Update Review (A macro level analysis of housing policies).

An integration of all three methodologies was a main task for the project. Each study is briefly introduced below, while detailed descriptions are given later on.

**The ENABLE-AGE Survey Study:** The survey design was based on a comprehensive questionnaire incorporating a wide range of well-proven self-report scales and observational formats, along with project-specific questions on housing and health. The questionnaire was first (T1) administered during home-visits with randomly sampled very old people living alone in their private urban homes. A follow-up design (T2) was incorporated, whereby a modified version of the questionnaire was administered at a second measurement point with a one-year interval between the two measurements. Based on the fact that the participants were very old at inclusion, one year was considered an observation interval long enough to capture major changes related to housing, home and health.

**The ENABLE-AGE In-depth study:** This qualitative arm of the project involved in-depth semi-structured interviews conducted with a sub-sample of the survey participants in each of the participating countries. The interviews focused on very old peoples understandings of the meaning and experience of home in relation to health, well-being and ageing. Moreover, maintaining independence and community participation were key elements of the interviews. Initial interviews were followed by a small number of consultation interviews to develop complex case studies, deepening understandings of the relationships between housing, home and healthy ageing.
The ENABLE-AGE Update Review: One of the key aims of the project was to develop evidence-based recommendations that were relevant to national and EU level policy formulation to improve the housing situation and quality of life of very old people. This required an investigation of current housing standards and policies in order to:

1. Illustrate problems, needs and opportunities within the housing domain;
2. Empirically explore key policy issues and to provide a;
3. Critical policy analysis to identify weaknesses and gaps in current policy.

The policy update review was a key starting point for the whole project. The first component of this review concerned a detailed documentation of current building norms and guidelines in each country, underfeeding the methodology development for T1 of the ENABLE-AGE Survey Study. For the main component of the ENABLE-AGE Update Review, each country identified key policy topics, which in turn fed into a policy topic list at a cross-national level. This gave a macro-level analysis of current policies and housing trends.

The three elements of the ENABLE-AGE Project were integrated throughout the three-year project (Figure 1), each providing systematic input into conceptual definitions, research design, methodological development, analyses, cross-national comparisons, theory development, and dissemination of results.

Conceptual underpinnings of the ENABLE-AGE Project

It was imperative to begin the project with a clear definition of key concepts for the project; such as meaning of home, place attachment, independence in daily activities, (functional) health, accessibility, and usability. Based on the ICF (WHO, 2001) and Lawton’s general ecological model on ageing (LAWTON & NAHEMOW, 1973), a project-specific conceptual framework suitable for research on housing and health in old age was successively developed (Figure 1). Here, personal and social factors, objective as well as subjective environmental factors, and the structure of society contributing to autonomy, well-being, and participation were identified as interacting in a differentiated manner. Analyses currently in progress are based on the current version of the project-specific conceptual framework, and the empirical results stimulate continuous revisions of it, helping to refine theory development for future housing research. Further, it should be emphasised that throughout the project period the
ENABLE-AGE Conceptual Framework served as a guide for the integration between the three study arms.

An important aspect of the ENABLE-AGE Project methodology already touched upon was the successive, integrative design of the survey instrumentation, the in-depth interviews and the policy review. In this respect, integration of quantitative and qualitative aspects of the project was an important guiding component of the research design. An advantage and necessary prerequisite, but also a challenge, for the ENABLE-AGE consortium is the fact that the research team comprised scholars from a wide range of disciplines, e.g. gerontology, human geography, geriatrics, psychology, occupational therapy, and sociology. Each brought their expertise to the project and shared their knowledge and know-how, working together to bring quantitative and qualitative approaches together in a truly complementary way across the project. This willingness to share has enriched the project substantially.

Typically, research including both quantitative and qualitative methodologies has attended to both in relative isolation. From the very start of the project process, the ENABLE-AGE Project Consortium attempted to integrate both quantitative and qualitative methodologies within several stages: the design stage, the data collection stage, the analytical stage, and the cross-national interpretation stage. The design of the ENABLE-AGE Survey Study and In-depth Study followed a model in which housing and health were conceptualised from a number of different perspectives (Figure 1) including:

- an objective perspective of housing focusing on housing conditions, housing standards, and environmental barriers;
- a subjective perspective of housing focusing on meaning of home, housing-related control beliefs, and housing usability;
- an objective perspective of housing accessibility, operationalising accessibility as an aspect of person-environment fit;
- a medical perspective of health in which participants self-reported their medical problems;
- an embodiment perspective of health characterised by symptoms;
• a functional perspective of health in which functional capacity and activity were objectively assessed as well as captured by self-reports, using different measurement levels;
• a psychological perspective in which coping with health and home, emotional well-being and mental well-being were all included;
• a social and community perspective in which social support and community participation were all seen as important aspects of relevance for the project.

This conceptual understanding underpinned both the ENABLE-AGE Survey Study and the ENABLE-AGE In-depth Study, keeping the three study arms closely related (Figure 1). This meant that conceptually linked questions of measurement and frequency were possible to address through the survey while research questions concerning how and why people behave in the way they do, as well as social constructions of independence, well-being, autonomy, and participation were being elaborated in the qualitative work.

**Methodological developments**

**Sampling Design**

The initial sampling aim was to draw participants at random from official residential registers, in a similar way in all five countries. However, for different cultural, ethical, administrative, and practical reasons, this was not possible in the UK and Latvia. In the UK, since residential registers do not exist, the sampling strategy relied on use of general practitioner’s patient lists. In Latvia, it was also not possible to use official registers, and participants were consequently recruited at social day care centres and through older people’s voluntary organisations. Sweden, Germany, and Hungary all used official registers.

The target sample in each country was 400 participants, stratified for two age groups (“older” and “younger”) and for gender (75% women, 25% men). Based on mean age and life expectancy differences between West/Central and East European countries, in Sweden, Germany, and the UK, the “younger” age groups comprised participants aged 81-84 years, and the “older” 85-89 years. The corresponding age groups in Hungary and Latvia were 75-79 years (“younger”) and 80-85 years (“older”). In order to tightly define the population sampled, only persons living alone in urban households were included. To make systematic and equal sampling in all five countries possible, a sampling definition flowchart (Figure 2)
was developed and agreed upon. For quality assurance of the data collection and data entry procedures, a Standard Operation Procedure (SOP) document was written and distributed to all national project leaders.

FIGURE 2 IN HERE

After quality control and file cleaning procedures, the final sample for the ENABLE-AGE Survey Study at the first measurement point (T1) comprised 1,918 participants (Table 1). In April-May 2004, time measurement point 2 (T2) was completed in all five countries. A sub-sample of 40 participants involved in the survey at T1 were asked to take part in the ENABLE-AGE In-depth Study in each country (N=200). These were followed by consultation interviews undertaken by eight participants in each of the countries (N=40).

TABLE 1 IN HERE

Interviewer Training and Teamwork
An important aspect of methodological rigour is the need for revision of instruments and interviewer training necessary in order to achieve sufficient reliability, validity, and trustworthiness for comprehensive, multi-disciplinary cross-national research. Within the ENABLE-AGE Project, this issue was given very close attention, and from the outset responsible researchers were appointed for each major methodological work-package. Further, in each country interviewer teams were trained and monitored to carry out the quantitative as well as qualitative methodology systematically. In addition, much attention was paid to translation (and back translation) of questionnaires, interviewer’s manuals, interview schedules, and instructions; now available in seven different languages (Swedish, German, English, Welsh, Hungarian, Latvian, Russian).

Prior to the data collection within the ENABLE-AGE Survey Study, major endeavours were made regarding methodological development and interviewer training. The first phase of this process was integrated with the ENABLE-AGE Update Review, as a review of building standards, regulations and norms for environmental design in housing was necessary in order to revise the Housing Enabler (IWARSSON & SLAUG, 2001) for cross-national use. Further, all instruments and questions were translated into the seven different languages involved, followed by iterative piloting in the five countries. Later on in the process, two three-day
interviewer courses were held, focusing on reliable administration of all instruments involved. Next, in each country the national project leader arranged national team courses, instructing and training all interviewers in their own language and context. Finally a small inter-rater reliability study was accomplished, involving critical parts of the survey study instrumentation (IWARSSON, NYGREN & SLAUG, 2004).

In terms of the ENABLE-AGE In-depth Study, a team of four to six researchers in each country conducted the interviews and data analysis. To maintain a consistent approach across the different countries throughout this work, the responsible researcher for this study created systematic and rigorous documentation of the qualitative approach as well as providing training sessions and procedures for data collection, data handling, and analysis. Such procedures ensured that each country approached the work in a similar way despite different disciplinary backgrounds and varying levels of expertise in the domain of qualitative research.

On a regular basis, during the different phases of the ENABLE-AGE Project, national team meetings and cross-national workshops were arranged. Each national project leader regularly arranged team meetings involving all members of his or her national team, highlighting methodological issues of concern. Whenever difficulties arose, the national project leaders contacted the researcher responsible for the methodology in question in their mentoring role, in order to discuss and solve the problems encountered. Such problems were addressed within a cross-national framework within project specific workshops involving partners from the five countries.

This open approach to collaboration and successive methodological development encouraged each national team to share their findings with each other, to discuss issues arising around methodology, and to listen to and evaluate current thinking within the project. Inevitably such discussions drew interpretations from the in-depth interview data together with interpretations of the preliminary analyses of the survey data. This ensured that not only the national teams worked closely together but that the survey and in-depth interview interpretations progressed hand in hand, data from each source informing interpretations of the other.

The ENABLE-AGE Survey Methodology: Combining disciplinary approaches
The ENABLE-AGE Survey Study at T1 was based on a comprehensive, project-specific questionnaire, administered at two home visits with each participant by means of interviews and observational assessments (Figure 3). The survey was designed using expertise in both psychological scaling and the precise measurement of functional and environmental variables within occupational therapy. This meant that objective and subjective assessment were incorporated into the project. Objective aspects of the home environment were assessed in great detail, and several subjective facets of the perceived home environment were also addressed in the survey (e.g., meaning of home, coping styles, housing-related control beliefs). Alongside demographic questions, the questionnaire comprised several standardised instruments measuring different psychological variables such as activity, autonomy, housing accessibility and usability, as well as health and housing measurements. In order to cover health variables The ENABLE-AGE Survey Study Questionnaire included e.g. the Geriatric Depression Scale (GDS) (YESAVAGE & BRINK, 1983; HOYL et al, 1999), the Ryff Well-being scale (RYFF, 1989), and the PANAS scale (WATSON, CLARK & TELLEGEN, 1988). Subjective and objective housing variables were covered by means of e.g. the Meaning of Home Questionnaire (OSWALD & WAHL, 2004), the Housing-related Control Beliefs Questionnaire (OSWALD, WAHL, MARTIN & MOLLENKOPF, 2003), the Usability in My Home Questionnaire (FÄNGE & IWARSSON, 1999; FÄNGE & IWARSSON, 2003), and the Housing Enabler instrument (IWARSSON & SLAUG, 2001) (Figure 3). Furthermore, information on assistive devices, aspects of health and well-being, social participation, and so on, was collected by means of project-specific questions designed by the multi-disciplinary ENABLE-AGE Consortium. A revised and shortened version of the questionnaire was administered in a single home visit at T2.

FIGURE 3 IN HERE

Even though it should be kept in mind that it is the integration of the three study arms and the comprehensiveness of the instrumentation in the ENABLE-AGE Survey Study Questionnaire that represents the uniqueness of the ENABLE-AGE Project, in this context the detailed approach to housing accessibility assessment applied deserves a more detailed description. This approach distinguishes the ENABLE-AGE Project from other projects in housing research where the aspect of accessibility is rarely thoroughly assessed; to the best of our knowledge few if any research projects have used accessibility assessments based on a scientific methodology.
The Housing Enabler instrument is a novel, multi-dimensional assessment tool rendering very detailed assessment of housing accessibility possible (IWARSSON, 1999; IWARSSON & SLAUG, 2001). The Housing Enabler makes a predictive, objective, and norm-based assessment and analysis of accessibility problems in the physical home environment possible, and allows for analysis from individual as well as group/population perspectives. Sufficient results on inter-rater reliability (IWARSSON & ISACSSON, 1996; IWARSSON, NYGREN & SLAUG, 2004), content (IWARSSON & SLAUG, 2001), and construct validity (FÄNGE & IWARSSON, 2003) have been reported.

The Housing Enabler assessment is administered in three steps. In the first and second steps the assessment is conducted according to checklists for functional limitations and dependence on mobility devices as well as for physical environmental barriers. In the third step an analysis of accessibility problems is undertaken, by relating functional limitations and dependence on mobility devices to environmental barriers. The result of this analysis is a quantification of the accessibility problems anticipated in each case, in terms of a total score.

I. Assessment of functional limitations: This first step of the assessment is a combination of interview and observation, in order to dichotomously assess the person’s functional limitations (13 items) and dependence on mobility devices (2 items). Thus, the personal component of accessibility is operationalised primarily in terms of physical functional capacity, while four of the items concern perception or cognition. The result of this step is expressed in terms of profiles of functional limitations, i.e. the significant characteristic of this assessment is that it takes simultaneous occurrence of several different functional limitations into account. In this kind of profile the presence as well as the absence of any of the functional limitations is crucial, since the result of the quantitative analysis (see III below) takes both aspects into account.

II. Assessment of physical environmental barriers: A detailed on-site observation of physical environmental barriers in the home and the immediate outdoor environment (188 items). Thus, the environmental component of accessibility is operationalised in terms of the presence of physical environmental barriers. The housing environment is divided into four sections: outdoor environment (33 items), entrances (49 items), indoor environment (100 items), and communication features (6 items). In the original instrument, just below 70% of the items
were defined according to official Swedish norms or guidelines. The remaining items were defined and assessed based on professional experience, primarily occupational therapy expertise. The 188 items constitute a valid source of information, and they are subsequently entered into the quantitative analysis (see III below).

III. Calculation of accessibility score: This step is a quantitative analysis of accessibility. It comprises a calculation of a total score predicting the demand caused by a particular combination of functional limitations in an individual or a group on the one hand, and physical environmental barriers (environmental design features) on the other, i.e. the degree of objective, norm-based accessibility problems in housing. For each environmental barrier item, the instrument comprises predefined points (1 to 4) quantifying the severity of the problems predicted to arise in the specific case. Based on the rater’s dichotomous assessments in steps I and II of the administration procedure, the predefined points 1–4 already fixed in the instrument format yield a score summing up the degree of accessibility problems anticipated, i.e. predictive physical environmental demand. In cases where no functional limitations or dependence of mobility devices are present in the person, the score always is zero. In cases where the person has functional limitations and/or is dependent on mobility devices, higher scores mean more accessibility problems and higher environmental demand. A computerised tool for more efficient data analyses, on individual as well as group level, is available (SLAUG & IWARSSON, 2001; see http://www.enabler.nu).

The ENABLE-AGE In-depth Study
After being interviewed for the ENABLE-AGE Survey Study, participants were asked if they would like to contribute to the in-depth study. In this way, a sample of 40 participants in each country was identified for in-depth interviews. These participants varied in terms of their health status (poor to good health), participation (outgoing to reclusive) and environmental fit (poor to good) giving the research teams access to a diverse sample for the qualitative work of the project. The qualitative work aimed to provide a deeper understanding of key project themes by revealing the inner perspectives of older peoples’ home lives in relation to healthy ageing. In addition, the work contributed to developing a theoretical framework within which the relationship between home and healthy ageing can be located. As such, the qualitative design was driven by a grounded theory framework (CHARMAZ, 2003) in which the key concepts of health and well-being, autonomy and social/community participation were
explored together and in relation to older persons’ experiences of their quality of life in their home setting.

**Grounded theory** involves a process in which data collection and analysis are conducted in parallel (STRAUSS & CORBIN, 1990). The procedure is both a fluid and an iterative one. Findings from former interviews are built into the interview schedule in later interviews in a feed-forward process. Here, the researcher looks for conceptual saturation (i.e. to understand the universe of content of a concept) rather than identifying comparisons across individuals. As understanding of the concepts progresses, the researcher explores connections between concepts in order to learn about the relationships between various aspects of the phenomenon under investigation in the development of theory. The value of using such an approach allowed the different countries in the ENABLE-AGE project to examine key concepts while developing their analysis in culturally sensitive ways. For instances, issues of finance emerged as critical aspects of the relationship between housing and ageing in some countries (eg. Hungary) but not so crucial in others, while the relevance of war experiences underpinned domestic coping strategies, especially amongst older people in Germany and the UK but not so for the Swedish participants.

**The ENABLE-AGE Up-date Review**

The ENABLE-AGE Up-date Review involved a five-country macro level review of current housing policies and legislation relating to older persons. As mentioned earlier, the first phase of this part of the project was a review of building regulations and norms for environmental design in housing, accomplished by means of a template based on the environmental component of the Housing Enabler (IWARSSON & SLAUG, 2001). In accordance with the template, the country teams searched national data sources and presented relevant information on housing standards, guidelines and regulations. Next, a Swedish architect with extensive experience of accessibility issues and universal design reviewed all data collected. Finally, the collated results were used for developing the ENABLE-AGE Project version of the Housing Enabler (IWARSSON, NYGREN & SLAUG, 2004).

The second and main phase of the ENABLE-AGE Up-date Review targeted housing policies, legislation, relevant types of housing, and typical pathways of housing decisions for older adults as well as general information on aspects of the national welfare systems considered
relevant for the ENABLE-AGE Project, i.e. aspects of importance for very old people’s living situation. This was based on relevant existing information sources available at European and national levels and consultation with experts, e.g. architects and policy makers. A further data collection template was developed and completed by each national team, providing the basis for national reports on policy and cross-national analysis and report. As indicated in Figure 1, the main role of the ENABLE-AGE Up-date Review was to provide information on background variables, viz. macro-level contextual/environmental factors.

Integration of the three study arms in analysis and interpretation
The data collection phase was carefully planned to allow an integration of the different methodologies applied, i.e. to integrate quantitative and qualitative data in the analysis as well as to integrate survey data in analysis and interpretation.

The first data collection occasion of the ENABLE-AGE Survey Study was conducted prior to the ENABLE-AGE In-depth study taking place. This ensured that comments made by survey participants were evaluated with respect to inclusion in the interview schedule. Prior to each in-depth interview, the interviewer had access to the survey data of the participant. The grounded theory approach enabled any issues arising that held potential for elaborating understanding of the relationship between health, well-being, and home to be included in the in-depth interview schedule. In this way, a feed-forward process was adopted from survey to in-depth interviews. For instance, any interesting comments, apparent discontinuities in answering survey questions and recurrent topics of relevance for the participant were noted and these were clarified and explored during the interview. Such information was extremely useful in gaining insights into the older persons’ way of living at home. As an example, one older lady in the UK survey had revealed that she was virtually housebound, with very poor mobility, hearing, and sight. She continued to live alone, yet indicated a high level of community participation. During the interview, this apparent paradox was clarified when the lady described how the community “came to her” in constant visits from family, friends, and neighbours and asked her advice on community matters or simply included her in all the local gossip. She felt that she played an important role in the community in bringing people together, providing “a listening ear and a word of advice”. Later as the cross-national analyses progressed, similar results were found e.g. in Sweden.
Each of the participating country teams conducted between 30 and 40 in-depth interviews with men and women in this very old age group. As the grounded theory framework developed, eight participants in each country have been investigated during consultation interviews in a case study design (YIN, 1989). Each case study involved the initial interviews, follow-up consultation interviews (to clarify issues, elaborate interpretations and extend the data into relevant related areas), together with a consideration of the specific survey data for these eight participants. Here, survey and interview data from particular individuals were brought together in a single analysis. This analysis and resultant interpretations were taken together to the older person for them to comment on, evaluate and contribute to the analytical process (the consultation interviews). Such consultation interviews provided one further opportunity for the integration of the qualitative and quantitative data, analysis and interpretations in a reflexive process with researchers and participants both integrally involved. As the work progressed, it was possible to gain insights from the in-depth interviews to help inform the design of the ENABLE-AGE Survey Study questionnaire at T2. For example, the interviews drew attention to the lack of survey data on social participation. As a result, measurement of social participation was more fully developed in T2.

Taken together this database of 30-40 in-depth interviews and eight case studies per country constitutes an extremely rich qualitative database at the national level. Moreover, the ENABLE-AGE In-depth Study provides a unique opportunity to explore relationships between housing and healthy ageing in-depth and cross-nationally.

It was at the policy, in-depth and survey analytical stage that possibilities for a powerful mechanism for integrating data and analysis arose in the ENABLE-AGE Project, where issues of policy have been used to drive a holistic analysis. As an example of this, the policy analysis identified key policy directions and problems in each country. The in-depth data provided understandings of how and why such policies were operating in the best interests of very old people, or indeed were failing to improve older peoples housing and quality of life. Furthermore, the interview data could identify gaps in policy provision. Finally, wherever appropriate, policy related issues could be explored using relevant data from the survey.

As an example of this analytical process, one key problem for older people identified in the ENABLE-AGE Update Review in the UK concerned transportation and the lack of policy initiatives for older people. In the in-depth interviews, being home focused was important, as
long as participants were able to get out and about in their community. However, transportation was often cited as a huge problem to overcome and a major factor resulting in feelings of social isolation and exclusion from participation in wider society, especially once driving skills had been relinquished. Participants would rarely ask for special equipment such as lifts in cars as this compromised their feelings of independence and placed them as burdensome in relation to relatives and friends. Taxis were considered unreliable and expensive, especially where long distance journeys were anticipated. The results supported previous research from e.g. Sweden (CARLSSON, 2002); public transportation was described as unreliable, inconvenient and poorly designed in relation to the functional capacities of very old people. One lady interviewed described how her shopping trip became a nightmare when she could not manage to negotiate the step up from pavement to bus. The helpful driver bodily lifted her onto the bus. Not an optimal solution for anyone concerned and off-putting for this particular lady who then felt averse to using public transport in the future. Thus, the ENABLE-AGE in-depth interviews indicated the need to address the social and environmental context of transportation. Further, without adequate transportation giving access to community and leisure facilities, very old people can become isolated and this can create the conditions in which mental well-being can be negatively affected. The following hypothesis was posed for examination within ENABLE-AGE survey data: Older people who are home oriented will suffer more from depression that older people who spend time in outdoor activities (YESAVAGE & BRINK, 1983; HOYL et al, 1999). A positive correlation was found between GDS scores and home oriented older people, supporting the hypothesis indicating that the less people go out the more likely they are to suffer depression (UK ENABLE-AGE Survey Study data, unpublished results).

As a consequence of the bringing together of the policy, interview and survey analysis in this way, fundamental recommendations for policy can be made on the basis of the grounded understandings and explanations gained throughout the different parts of the ENABLE-AGE Project. Similar examples are available in the different partner countries. At later stages in the analytical process cross-national comparisons will lend further insights to the different kinds of problems very old people across Europe face in their everyday lives and how policy can be framed to improve housing-related quality of life and support healthy ageing in place.

Ethical Considerations
The ENABLE-AGE Project fulfilled all legal and ethical requirements of the participating countries. That is, in countries requiring formal ethical approval and approval for the storage of electronic data, such procedures were managed under the responsibility of each national project leader. Guidelines for this work were drawn up from the inception of the project and referred to nationally accepted guidelines in each participating country or best practice where such guidelines did not exist nationally. Examples of guidelines to follow were for Sweden the Guidelines of the Swedish Medical Research Council, for Germany the Guidelines of the German Research Foundation and the German Society of Psychology, and for the UK the Standard Guidelines including the British Psychological Society Guidelines.

During the different phases of data collection, a substantial number of very old people were visited in their homes. Here, a positive and proactive ethical approach was adopted. Informed, written consent was gained from all participants and they were assured of their anonymity. All person related data were handled in a strictly anonymous way. Participants were informed that they were allowed to withdraw from the interviews if they wished, including a withdrawal of their data at any stage up to publication of results. Participants were informed that data would be anonymised and that extracts from interviews might be used in reports, for teaching purposes, and in different kinds of publications. The interviews could touch on sensitive issues for the older people, especially where decisions of moving due to ill health or declining functional capacity are involved. During the training courses and national seminars, the interviewers were trained and supported in dealing with sensitive issues and would be able to give advice at the end of the interview session if participants requested this. Furthermore, great attention was paid to ensuring that participation in the research was not too tiring or physically demanding (see BURY & HOLME, 1990, p140-141).

In any research involving very old people, situations may arise calling for social and medical interventions. The data collectors were all well informed on such matters, and many of them were occupational therapists or other health care workers with professional responsibilities. That is, they were instructed to offer participants in such situations the information needed in order to be able to contact local health and social service authorities for advice concerning their personal situation. Finally, safety provision was mainly considered in respect to third party liability and injury and accidents of workers involved in data collection. Health and safety at work acts of the partner countries were complied with and all employees were notified of the respective, country specific provisions of current legislation.
Current project status

In May 2003, T1 of the ENABLE-AGE Survey Study was completed (Table 1). Initial interviews have been completed for the In-depth study and consultation interviews and case studies are well underway. Analysis of Survey as well as In-depth Study data is ongoing, as is analysis of the ENABLE-AGE Policy Update Review data. By May 2004, T2 of the ENABLE-AGE Survey Study will be completed, followed by analyses of changes over time. The synthesis of results from the three ENABLE-AGE studies will provide the basis for policy recommendations and guidelines in housing policies for use across Europe. One final aim of the project concerns the ENABLE-AGE Home Assessment Guidelines. These guidelines will provide straightforward guidance to practitioners in the housing field in respect to key concepts and approaches, policy background, methods of collecting information, and methods of assessment at the case level. Further work is envisaged to develop the preliminary guidelines beyond the scope of the present project; for example the development of an expert system on housing and health in very old age.

Conclusion

The cross-disciplinary, cross-national nature of ENABLE-AGE Project has presented many challenges to the success of the project, not least in terms of:

- Linguistic and cultural sensitivities
- Differences in professional backgrounds and expertise
- Different practical frameworks; e.g. ethical frameworks for research governance
- Different academic interests and priorities

These differences presented challenges in almost every aspect of the project, for example in the use of the Housing Enabler assessment tool, the carrying out of the qualitative research, and the policy assessment. Throughout the three years of the ENABLE-AGE Project, the consortium has engaged in a commitment to scientific rigour and systematic, constructive problem solving, within a framework sensitive to cultural similarities and differences. However, determined efforts to meet and grow through these challenges have resulted in practical guidelines for conducting cross-disciplinary, integrative research:
• Mentoring; key experts within the consortium provide support and guidance across the project as a whole
• Training; targeted training to cover unfamiliar methods and approaches, in order to meet basic reliability and validity criteria
• Effective task management and progress monitoring

By combining qualitative and quantitative strategies in such an integral way within the project, information gained has covered personal, social, and environmental factors from both objective and subjective perspectives. The integrated approach to this work in terms of conceptual understandings, methodological design and forms of analysis as outlined in this chapter is particularly relevant to strengthening the evidence base in the area of housing and ageing. Bringing such information together has presented, and continues to present, exciting opportunities for new insights to emerge of theoretical and practical importance for very old people’s housing, building upon the ENABLE-AGE multi-dimensional methodology for research on housing and health. Major parts of the methodology are now available in seven European languages, and the experiences gained are valuable for implementation of research on housing and health in Europe at large. Forthcoming results have the potential to promote an understanding of the ways in which very old people live their lives at home, taking account of their experiences of health, autonomy, and participation. The data collected during the project period represents a goldmine for housing research, and the ENABLE-AGE Project will render scientific results during several years to come. Strong emphasis is currently being made to disseminate knowledge within scientific as well as practical domains. The ENABLE-AGE Project is due for completion at the end of December 2004.
Acknowledgements

This publication was based on the project Enabling Autonomy, Participation, and Well-Being in Old Age: The Home Environment as a Determinant for Healthy Ageing, ENABLE-AGE (QLRT-2001-00334), funded by the European Commission. We thank all study participants, consortium and national team members, and sub-contractors for their contribution.
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- Background Variables
  - Body Functions and Structure
  - Coping and Control / Personal Factors
  - Social Structure / Personal Factors
  - Contextual / Environmental Factors

- Housing-related Variables
  - Perceived Housing
  - Housing Conditions
    - Environmental Factors

- Outcome Variables
  - “Healthy Ageing”
    - Autonomy / Activities
    - Participation
    - Well-Being
Table 1. Final sample for the ENABLE-AGE Survey Study at the first measurement point (T1), N=1,918.

<table>
<thead>
<tr>
<th>Country</th>
<th>Age groupa</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>75-79 years old</td>
<td>80-84 years old</td>
</tr>
<tr>
<td></td>
<td>Males</td>
<td>Females</td>
</tr>
<tr>
<td>Sweden</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Germany</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Hungary</td>
<td>36</td>
<td>145</td>
</tr>
<tr>
<td>Latvia</td>
<td>21</td>
<td>176</td>
</tr>
</tbody>
</table>

a In order to reflect differences in life expectancy among the five countries involved in the ENABLE-AGE Project, in Sweden, Germany, and the United Kingdom, the “younger” age group consisted of persons 80-84 years old and the “older” of persons aged 85-89 years. In Hungary and Latvia, the “younger” age group consisted of persons 75-79 years old and the “older” of persons aged 80-84 years.
Figure captions

NB: Figure 1 is found in a separate PowerPoint-file!

Figure 1. The ENABLE-AGE Conceptual Framework (June 2003 version). © The ENABLE-AGE Project Consortium.

Figure 2. Sampling definition flowchart for the ENABLE-AGE Survey Study, first measurement occasion (T1).

Figure 3. Contents of the ENABLE-AGE Survey Questionnaire, first measurement occasion (T1, Visit 1 and Visit 2).
The ENABLE-AGE Survey Study T1

Sampling list

Persons not fulfilling the inclusion criteria or impossible to

Persons meeting initial inclusion criteria:
Living alone
Aged 75-84 years (Latvia & Hungary)
Aged 80-89 years (Germany, Sweden, & United Kingdom)

Drop-outs:
Drop-out Questionnaire

Persons not fulfilling additional inclusion criteria:
Necessary housing functions absent in the sheltered housing dwelling unit.

Respondents
ENABLE-AGE Survey Study T1 (Visit 1 Questionnaire)

Exclusion from Visit 2
National team-leader decision based on SOP\(^1\) and interviewer questions.

Respondents
ENABLE-AGE Survey Study T1 (Visit 2 Questionnaire)

\(^1\) Standard Operation Procedure = Document prescribing data collection quality control.
### Visit 1

**Contents**

- General information
- Housing Enabler, descriptive part
- Demographic questions
- Assessment of Housing conditions and Housing adaptations
- Assistive Devices/Technical Aids
- Symptom List
- Positive And Negative Affect Schedule (PANAS)
- Modified Mini-Mental State Examination
- Neighbourhood services and Place attachment
- The Meaning of Home Questionnaire
- Health Services
- Perceived Health, Mobility, Vision, and Hearing
- Geriatric Depression Scale
- Housing Enabler, environmental assessment
- The ADL-Staircase, and ADL performance difficulty items
- Life Satisfaction
- Questions for the interviewer to answer (reliability, quality of data, interview situation)

### Visit 2

**Contents**

- Perceived Functional Independence
- Psychological Well-being Questionnaire
- Visual Acuity
- Housing Enabler, functional limitations and dependence on mobility aids
- Usability In My Home
- Adapted version of HOOP Questionnaire
- Housing-related Control Beliefs Questionnaire (HCQ)
- Leisure time activities
- List of diseases
- Coping Patterns Schedule (CPS)
- Support
- Home-related type of person
- Participation in qualitative study
- Questions for the interviewer to answer (reliability, quality of data, interview situation)

© The Enable-Age Project Consortium. Questionnaire with project specific questions, in combination with standardised instruments/assessments.