

Language and Communication in Multilingual Speakers with Dementia in Norway (MultiLing Dementia)

1 Relevance relative to the call for proposals

World-wide, the number of elderly individuals in society increases, and the ageing population will cause a surge in the number of people with dementia.¹ In the years to come, dementia will pose one of the greatest challenges for the Norwegian health care system. However, the research on language and dementia in general, and in multilinguals in particular, is scarce, not least in a Norwegian context. At the same time this field of research is becoming ever more relevant as the proportion of elderly speakers, including speakers with a multilingual background, increases. By 2040, nearly 50% of the population in Oslo is projected to be of migrant descent.² In Norway, the research on dementia has mainly been conducted within a medical framework, focusing on aspects of etiology, diagnosis and interventions (e.g. Deckers et al., 2015; Johannessen, Bruvik & Hauge, 2015). The pivotal role of language in dementia, however, needs to be further explored; how words are retrieved and processed in the (different) language(s) by speakers with dementia; the ways dementia is managed in (multilingual) communication involving patients, significant others, and caretakers, in particular in a health sector where the caregivers often have another first language than the majority language; and how dementia is projected in public discourse in society at large. Despite the devastating and costly consequences of dementia, it is often possible to build on the strengths and remaining capacities of the speakers with dementia. Hence, there is a need to explore how, through the collaborative efforts of all participants in an interaction, the quality of life could be enhanced for a person with dementia and his or her significant others.

The main goal of the proposed project is to meet these challenges head on and to generate beyond state-of-the art knowledge on 1) language representation and linguistic processing, 2) language use across different contexts in elderly multilingual speakers with and without dementia, and 3) the ways dementia is projected in media discourses and in policy documents, using a combination of psycholinguistic and sociolinguistic methods and theoretical frameworks. The project seeks to strengthen the knowledge base of the linguistic and social impacts of dementia on the individual, the interactional and the societal levels, and thereby complementing the biomedical research with research anchored in the field of humanities.

2 Aspects relating to the research project

2.1 Background and status of knowledge

The unique capability of human beings to communicate through the use of language is a skill which is normally developed in the first few years of life and then refined and maintained throughout the lifespan. In healthy older people, lexical retrieval and sentence comprehension have been argued to be impaired, whereas other areas, such as the use of automatized language, phonology, grammatical production and lexical comprehension appear to be well preserved (Goral, 2013; Fyndanis et al., submitted; Waters & Caplan, 2001). A variety of illnesses commonly associated with advancing age may, however, impact negatively on the individual's language and/or communication skills. Among these are illnesses which may cause dementia, the most common one being Alzheimer's disease (AD).

Dementia refers to a set of symptoms seen in connection with various brain diseases. Dementia causes progressive and persistent deteriorating changes in at least three of the following domains: memory, language, visual-spatial skills and knowledge, personality and general behavior and interaction skills (including executive functions) (Mandell & Green, 2014). Individuals with dementia of the Alzheimer's type often experience word retrieval problems and typically, their speech production is characterized by empty phrases, speech automatisms and contextually wrong words. Maintaining discourse coherence and comprehending complex discourse may also be

¹ <http://www.who.int/entity/ageing/about/facts/en/index.html>.

² http://www.ssb.no/emner/02/03/rapp_201211/

problematic (Goral, 2013; Reilly, Troche & Grossman, 2014). Naturally, these difficulties alongside other cognitive impairments associated with dementia, often lead to difficulties with participation in social interactions, including conversations.

In Norway, an estimated number of 70 000 individuals have a form of dementia (Strand et al., 2014), and the number is expected to increase in the years to come with the general increase of elderly individuals in the population.³ Since language and communication are central to self-perception as well as to social interaction, dementia also affects those close to a person with the impairment. A sub-group of speakers that is especially vulnerable and underrepresented in research is elderly multilingual speakers with dementia.⁴ Multilingualism is the norm rather than the exception world-wide, and in Norway we witness an increased linguistic diversity due to immigration and increased mobility in academia, business and industry. Currently, there is no information on the number of multilingual speakers with an immigrant background with dementia in Norway, but it is reasonable to expect that it is proportional to the general population, and that it is also increasing (Kumar & Spilker, 2014).

Notwithstanding the devastating and costly consequences of dementia for the individual, his/her family and friends as well as for society at large, the research in this field is still scarce (Ardila, 2007). From the studies that exist, it is evident that the same types of deterioration of language abilities are found in multilingual ageing speakers as in monolinguals. Differential effects have also been found, indicating that the second language is affected by age-related deterioration earlier than the first language (Goral, 2013). Studies on ageing multilingual speakers with dementia show mixed results. In some cases the first language is better preserved, in other cases this is the most impaired language, and in yet other cases the impairments are relatively comparable across the languages (cf. e.g. Mendez et al., 1999; Meguro et al., 2003; Gollan et al., 2010). Very few studies have been published on linguistic aspects of speakers with dementia whose native language is Norwegian (Lind, Moen & Simonsen, 2007a; Moen et al., 2004; Simonsen et al., 2004), and none where the participants are multilingual.⁵ We know that verbal interaction with speakers with dementia is challenging, and in many contexts even more so when the speaker with dementia is multilingual and those caring for him/her do not necessarily speak the language(s) that are least impaired for the particular individual (Plejert et al. 2014).

A topic that is highly relevant in current research on multilingualism is the so-called bilingual advantage, which means that knowing and using more than one language on a daily basis is found to enhance the efficiency of some executive processes (Bialystok, Craik & Ryan, 2006). It appears that bilinguals to a larger extent than monolinguals are able to ignore irrelevant information, switch between tasks, and resolve conflicting cognitive alternatives. Furthermore, several studies have found that bilingualism seems to offer some protection against pathological decline, implying that the onset of dementia is delayed (Bialystok, Craik & Freedman, 2007; Freedman et al., 2014). However, there is some controversy regarding this bilingual advantage; for instance, not all studies have succeeded in providing evidence for such an advantage, and it is debatable what it should be attributed to (i.e. domain-general aspects, such as executive functions, and/or domain-specific aspects, such as characteristic features of the languages and the linguistic items being investigated (e.g. Hilchey & Klein, 2011; Ivanova et al., 2014; Klein, 2015)).

Bearing in mind that both language processing and language use depend on context, including cultural context, there is a need to investigate language and communication also in normal ageing. In addition to the relevance of such research for its own sake, studies of language and communication in normal ageing both in monolingual and multilingual speakers are needed as a baseline for studies on dementia and other neurological conditions that affect language.

³ www.regjeringen.no/nb/dokumenter/demensplan-2015-den-gode-dagen/id663429/

⁴ We adopt a broad definition of the term multilingual speaker as an individual who knows two or more languages and uses both (or all) of his/her languages in everyday life, albeit not necessarily to the same extent or for the same purposes (Grosjean, 2013). In the proposal, we use the terms 'bilingual' and 'multilingual' interchangeably.

⁵ However, an MA-thesis comparing past tense inflection in Russian and Norwegian speakers with dementia showed that language structure may influence the nature and degree of language impairment (Dalby, 2007).

Against this background, the proposed project aims at addressing the following questions:

- (1) How is language storage and processing affected by age alone and by the combination of age and dementia in elderly monolingual and multilingual speakers?
- (2) Is there a bilingual advantage in language processing and cognitive abilities in healthy ageing and AD, and if so, is it a general advantage applicable to all linguistic and cognitive domains? Related to this, is it restrained by linguistic and usage-related factors?
- (3) What characterizes conversations with and among neurologically healthy elderly monolingual and multilingual participants compared to similar conversations involving speakers with AD?
- (4) How can cultural ways of understanding terms such as ageing, illness, impairment, communication and dementia impact on the way we treat and talk about speakers with dementia in various discourses, private as well as public, such as media and policy documents?

The overarching vision for the proposed project is to explore how knowledge about the characteristics of language and communication in elderly speakers can help us maintain the dignity and quality of life for the individual and his/her significant others, regardless of cognitive status; and how society can make optimal use of the resources of its elderly population and provide care in a best possible way when needed.

In *MultiLing Dementia* we investigate dementia through the lens of the so-called “total linguistic fact” (Silverstein, 1985) through which we address a) language representation and linguistic processing (Sub-project I), b) linguistic practice (Sub-project II) and language ideology (Sub-project III) with a view to understanding the ways in which dementia affects language storage and processing, and the ways it is managed in conversation and in society at large (policy documents and media discourse).

In 2014-2015 a pilot study on language and communication in monolingual and multilingual speakers with dementia was initiated at the CoE *MultiLing Center for Multilingualism in Society across the Lifespan*, University of Oslo. Experience and preliminary findings from this pilot study (e.g. concerning differential performance across tasks and languages (de Bot et al., 2015)) have contributed to the present project description.

2.2 Approaches, hypotheses and choice of methods

The present project aims to explore language representation, linguistic processing and use of language across different contexts in monolingual and multilingual speakers with and without dementia. A multiple case study approach is taken in which psycholinguistic and sociolinguistic methods and theoretical frameworks are combined in an effort to provide a broad and comprehensive understanding of a complex phenomenon. Often, research on language and language use is conducted either in a psycholinguistic framework or in a sociolinguistic one. The present project is innovative in that it will explicitly seek to “bridge the gap” between these approaches and gain a more holistic understanding of dementia in multilinguals. This implies that various types of data must be collected, and that the data must be analyzed and interpreted in the light of different, but complementary theoretical frameworks. The project comprises, as stated above, three sub-projects; in this application, we are requesting funding only for Sub-project I (PhD) and II (post doc). Sub-project I explores language storage and word retrieval, and II investigates the interactional co-construction of meaning (cf. 2.2.1 and 2.2.2). The sub-projects are anchored primarily in psycholinguistics and sociolinguistics, respectively, and thus take different approaches to the study of language and communication. Yet these sub-projects are complementary in their approaches. The fact that the same cohort of participants are investigated in both of the studies (cf. 2.2.3 below) will not only be time-efficient, but it will also allow for an enlightening comparison and interpretation of results across the studies, and thus also across the linguistic sub-disciplines.

2.2.1 Sub-project I: Lexical access

The main aim of the first sub-project is to investigate how lexical access (word retrieval) is affected by ageing alone and by ageing and dementia in monolingual and multilingual speakers in Norway. This will allow us to isolate the effects of dementia in both populations. Lexical access is a key

component of language processing, both in production and comprehension. All the different words an individual knows are stored in the mental lexicon and accessed from this lexicon during language production (speaking/writing) and language perception and comprehension (listening/reading). Correct (or appropriate) lexical access is a question of finding a word form in the mental lexicon that matches the intended concept in a best possible way in a specific context. Lexical access is often compromised in cases of language impairment, e.g. aphasia and dementia, and as mentioned, it also generally poses a problem in normal ageing, as demonstrated in the seminal work of Loraine Obler (e.g. Bowles, Obler, & Albert, 1987; De Santi, Obler, Sabo-Abramson, & Goldberger 1989). Incorrect or inappropriate lexical access has consequences for functional communication. For instance, problems with producing and/or comprehending discourse (texts in context) observed in some speakers with aphasia and also in speakers with dementia are attributable in part to problems with lexical access.

Research on lexical access can shed light on different, in some cases opposing, theories and models of how language in general is structured and represented in the mind. In modular theories the mental lexicon is assigned a limited role as the assembly of single words in a basic form. Larger constructions, e.g. phrases and sentences, as well as regularly inflected word forms, are not stored in the lexicon, but constructed by applying independently existing grammatical rules to the forms accessed from the lexicon (cf. e.g. Ullman, 2001). In non-modular theories on the other hand, the lexicon is assigned a pivotal role as the assembly of all the linguistic constructions (words, inflected forms, recurring phrases, etc.) that the speaker knows. There is no sharp division between lexicon and grammar, and the grammatical “rules” exist as schemas in the lexicon formed on the basis of experience and generalisation over numerous usage events (cf. e.g. Bybee, 2010). This sub-project will adopt a usage-based theoretical approach, compatible with a non-modular view of language representation. In such a framework, lexical access is assumed to be influenced by linguistic and non-linguistic factors such as word class, word length, frequency of use, imageability (how easily the word evokes a mental/sensory image in the speaker), age of acquisition, phonological and semantic similarity between words, etc. In multilingual speakers, lexical access is also assumedly influenced by language dominance and proficiency (cf. e.g. Costa & Santesteban, 2004)).

Sub-project I will draw on data from three types of contexts: structured language tests (naming of pictures illustrating actions and objects), semi-spontaneous narratives, and word association tests. The target items in the naming tests will be controlled for a number of factors that may influence lexical access. Data on these factors have been established for 1600 Norwegian words (Lind et al., 2015). The accuracy and speed of the participants' responses will be measured. In addition, error types will be analysed. For the semi-spontaneous narratives, the participants will be asked to talk freely in response to a set of pictures depicting a series of events. The lexical choices made by the participants in this task will be analysed quantitatively and qualitatively and their influence on the content and coherence of the narrative will be investigated. In the word association test the participants will receive a cue (a word presented orally and/or in writing), and the task is to respond with the first word that comes to mind. This type of association data is a further source to insights in the organization of the mental lexicon (Schmitt, 2010). The method for collecting, scoring and analyzing the responses will be based on Fitzpatrick et al. (2015). To allow for an analysis of possible deterioration in lexical access over time (longitudinal analysis), the data will be collected from each participant three times with approximately 8 months in between.

2.2.2 Sub-project II: Co-construction of meaning

The main aim of the second sub-project is to investigate how co-construction of meaning is affected by dementia in monolingual and multilingual speakers in Norway. Hamilton (1994; 2008) introduced the topic of dementia to the field of discourse analysis. Since then, a growing body of research has identified specific strategies used by dementia patients and their caregivers in conversations in clinical and non-clinical contexts (e.g. Lindholm, 2014; Schrauf & Müller, 2014). Lately, also questions related to multilingual speakers and cross-cultural communication have been addressed (e.g. Jansson, 2014, Plejert et al., 2014; 2015).

Sub-project II will use data from biographical interviews and naturally occurring conversations between speakers with dementia and their caregivers and relatives. The interviews and the conversations will be recorded on videotape to allow for an analysis of non-verbal aspects of interaction and the interplay of multiple modalities in the sequentially unfolding communication process. The analysis will use conversation analysis, a qualitative methodology aimed at describing the interactional process of negotiating a common understanding (intersubjectivity) (Sidnell & Stivers 2013). In line with this methodology, the interactions will be transcribed in detail, including such phenomena as pauses, overlapping talk, prosodic and non-verbal features of the speech production, allowing for descriptions of fine-tuned processes of coordination and co-construction of meaning.

The analyses of the data will seek to describe how the cognitive and communicative resources of the patients are mobilized in conversation and to identify the specific types of problems with intersubjective understanding arising from the medical condition that occur in natural conversation. The main aim is to describe and evaluate the communicative strategies used by the participants in order to compensate for the problems. This will include the displayed efforts by the speakers with dementia to retrieve words and expressions (word search sequences), their appeals to the interlocutor for help, and strategies for circumventing the problems (e.g. through the use of alternate languages for shorter or longer stretches of the conversation). However, communication is not an achievement by the individual, and we will thus equally investigate the interlocutors' displayed efforts to collaborate and signal understanding, such as suggesting words and expressions (collaborative completions) or preemptively claiming (or displaying) understanding. Also the interlocutors' contributions will be investigated for preemptive strategies, such as simplification, understanding checks and the like (Svennevig 2010). The evaluation of the strategies will be based on a systematic comparison of successful and less successful examples of problem resolution in line with the methodology of Applied Conversation Analysis (Antaki, 2011).

A further aim of the second sub-project is to compare the practices (strategies) unveiled in the analyses of the interactions between the speakers with dementia and their caregivers or relatives to the advice on communication with someone with dementia offered by health authorities and user organisations (generally available online from the websites of the institutions and organizations). Central issues to explore in this part of the sub-project are to what extent guidelines or advice on communication exist for all the relevant groups of multilingual speakers as well as for monolingual speakers, whether the guidelines for multilingual speakers are culturally adapted in an adequate way, what linguistic and cultural ideologies that underlie the advice (e.g. whether and how specific ways of conceptualizing dementia influence the types of advice offered), and to what extent the practices observed are compatible with the advice.

Sub-project III: The projection of dementia in public discourse

In Sub-project III, we address, in close collaboration with Sub-projects I and II, the ways in which dementia is projected in public discourse; in media discourse and in policy documents with a view to understanding how language ideologies influence the ways dementia is managed societally and individually. We are not applying for funding of Sub-project III, as we will apply for that project in a second stage.

2.2.3 Participants in Sub-projects I and II

Sub-projects I and II will analyse data from elderly speakers. Age is both a biological reality and a socially constructed phenomenon, and there is no globally accepted or acceptable definition of when a person is old as opposed to middle-aged or young. In line with the World Health Organization, in this project we define old as above the age of 60.⁶ Data for the two sub-projects will be collected from the following groups of speakers, all speakers above the age of 60:

⁶ www.who.int/healthinfo/survey/ageingdefnolder/en/#.VTnvzCwz4oE.email.

- a) 20 monolingual speakers diagnosed with probable dementia of the Alzheimer type, mild to moderate stage
- b) 20 multilingual speakers diagnosed with probable dementia of the Alzheimer type, mild to moderate stage
- c) 20 monolingual speakers without any known cognitive and/or linguistic impairment
- d) 20 multilingual speakers without any known cognitive and/or linguistic impairment

Data from the speakers with dementia will be collected first, and as far as possible the speakers in the non-clinical groups will be matched to the speakers in the clinical groups on parameters such as age, gender and education, factors which have proven to be relevant (cf. e.g. Mortensen et al., 2006; Nielsen, 2012). The participants will be mainly recruited from day care centers for the elderly as this turned out to be a feasible solution in the pilot study.

In addition to the primary types of data investigated in each of the sub-projects, additional background data on cognitive functioning, including aspects of executive functioning will be collected from all the participants. These data will only be collected once for each participant. As part of the pilot study on dementia carried out at MultiLing (cf. above), a test battery including tests of cognitive functioning that can be used in the proposed project has been established. A short autobiographical interview focusing on the participants' subjective experiences of language use and communication in light of the process of ageing will also be conducted. For the multilingual participants, questions on their individual language history will be included.

3. Project management and cooperation

The project will be hosted by the CoE *MultiLing – Center for Multilingualism in Society across the Lifespan* at the Department of Linguistics and Scandinavian Studies, University of Oslo. It will be managed by Professor Jan Svennevig and include a project team consisting of four senior and three junior researchers. The other senior researchers are also employees at MultiLing, namely Researcher Marianne Lind, Professor Hanne Gram Simonsen, and Professor Bente Ailin Svendsen. The project team represents academic expertise both in the psycholinguistic aspects of the project related to Sub-project I (Simonsen and Lind) and in the sociolinguistic and pragmatic aspects related to Sub-project II (Svennevig and Lind). Svendsen is engaged in Sub-project III. Lind has experience with research on clinical linguistics from psycholinguistic and sociolinguistic perspectives (e.g. Lind, Moen & Simonsen, 2007a, b; Korpijaakko-Huuhka & Lind, 2012). Simonsen conducts research on clinical linguistics from a psycholinguistic perspective, both in monolingual and multilingual contexts (e.g. Simonsen et al., 2004; Lind, Kristoffersen, Moen & Simonsen, 2009; Knoph, Lind & Simonsen, (in press)). Svendsen has experience with research on multilingualism, language in social interaction, language and identity, and the ways in which language is projected in media discourse (e.g. Nortier & Svendsen, 2015; Svendsen & Marzo, 2015). Svennevig's research deals with language and social interaction in multilingual settings (Svennevig 2012, 2013). One of the junior researchers will be postdoctoral fellow Valantis Fyndanis, whose research project focuses on grammatical and cognitive abilities in healthy ageing multilinguals; thus, his research will be closely connected to Sub-project I. The remaining two junior researchers will need to be recruited: one PhD student for project I and one post-doctoral fellow for Sub-project II. A pivotal aim of the project is, as stated above, to go beyond the traditional divisions between psycho- and sociolinguistic approaches, and thus the whole group will engage in interdisciplinary collaboration and co-author articles as a team.

As a MultiLing endeavour, the project will be able to draw on the expertise of the Center's Scientific Advisory Board, including internationally acclaimed researchers in the field such as Loraine Obler, Kees de Bot, Brendan Weekes and Aneta Pavlenko. At the annual meetings of the board, the project participants will have the possibility to discuss methodological, theoretical and empirical dimensions with the members of the Scientific Advisory Board.

The data collection will be carried out in collaboration with the *Norwegian Center for Minority Health Research* (NAKMI), which may help us liaise with relevant contact persons for recruiting dementia patients with minority background. A formal agreement of cooperation has

been established with the center. Day care centers in the Oslo region will be contacted in order to recruit monolingual and multilingual speakers with and without dementia. The PhD fellow will have the main responsibility for administering the cognitive and linguistic tests, whereas the postdoctoral fellow will carry out the biographical interviews and record the conversations with caregivers and family members. A research assistant will be recruited to transcribe the conversations. Another research assistant with native competence in the first language of the participants will be recruited and trained to administer the tests in the participants' first language(s).

In the pilot project (cf. above) we assembled tools and resources for data collection in the form of a cognitive test battery, a linguistic test battery, and interview guides. Furthermore, we have tested the tools on a limited number of participants including monolingual and multilingual (English and Norwegian) speakers with dementia and neurologically healthy speakers. Thus, after some adjustments based on the experiences from the pilot study, the methodological apparatus will be ready to use once the project starts.

The project team has established an academic network with national and international scholars and centers working with multilingualism, ageing and dementia. The national network includes the *Norwegian Center for Minority Health Research* (NAKMI) (contact person: Bernadette Kumar), the *Norwegian National Advisory Unit on Ageing and Health (Aldring og helse)* (contact person: Knut Engedal) and the *Norwegian Health Association (Nasjonalforeningen for folkehelsen)*, a nation-wide association promoting the interests of people with dementia and their caregivers (contact person: Anne Rita Øksengård). International networks have also been established. We have extensive contacts with members of *Center for Dementia Research* (CEDER) in Linköping, and have made concrete plans to collaborate on data collection and analysis in particular in relation to Sub-project II. In the process of developing the test battery, we invited Rune Nielsen at the *Danish Dementia Research Center*, Copenhagen University Hospital, a Danish expert on testing in intercultural settings, and have received useful input from him on our choice of test methods. The *Centre for Language and Communication Research* at Cardiff University, headed by Alison Wray, hosts several large-scale projects on language and dementia, and we plan a close collaboration with them, in particular in relation to Sub-project I (see budget). Finally, we plan collaboration and researcher exchange with Loraine Obler and her research team at CUNY Graduate Center, USA. Loraine Obler is a member of MultiLing's Scientific Advisory Board, and taught a research training course on Communication and Brain in Multilingual Ageing at MultiLing the past academic year. We are members of *Dementia Communications Research Network*, which is an international and interdisciplinary network of researchers and practitioners interested in communication in the field of dementia.

The PhD fellow will be enrolled in the PhD program at the Department and will have ample possibilities for research training. In addition to the courses offered by the Department and the Norwegian Graduate Researcher School in Linguistics and Philology, the candidate will profit from MultiLing's research training, which consists of two annual intensive, week-long courses on various aspects of multilingualism, taught by renowned international scholars in the field. The candidate will be supervised by one of the core team members, in addition to being offered the opportunity of having a co-supervisor at an international university.

4. Key perspectives and compliance with strategic documents

4.1 Compliance with strategic documents

The proposal is in compliance with UiO's strategic priorities for *Life science*⁷ (UiO2020⁸), and further anchored in UiO's strategic priorities as stated in *Quality and Relevance, Academic priorities for research and education at the University of Oslo*: "Language and cultural studies will be further developed in line with increasing globalization and the growth of the multicultural society." Furthermore, Clinical Linguistics is singled out as a promising field of cross-disciplinary

⁷ <http://www.uio.no/forskning/vi-forsker-pa/naturvitenskap-teknologi/lv-strategi.pdf>

⁸ <https://www.uio.no/english/about/strategy/Strategy2020-English.pdf>

research.⁹ The proposal is, moreover, anchored in the University of Oslo (UiO)'s Humanity Faculty's strategic priorities¹⁰ where Multilingualism is singled out as a research area in need of strengthening, and in line with the Department's strategic priorities (ILN2020).¹¹ The proposed project fulfills MultiLing's overarching goals: to investigate multilingualism across the lifespan, to enhance an interdisciplinary approach and to bridge the traditional gap between psycho- and sociolinguistic approaches to multilingualism, as emphasized in the Center's annual report.¹²

4.2 Relevance and benefit to society

Our project has the potential to impact on different academic disciplines as well as stakeholders such as speakers with dementia, their caregivers and significant others by enhancing knowledge on a topic relatively scarce of research, particularly in a national context, but also internationally. The body of new knowledge on language, communication and dementia generated by this project is likely to have an impact on policy and practice. An understanding of how dementia affects language storage and word retrieval, how it is managed in communication and in society at large, and how these factors are interrelated is a premise for implementing the official policy on dementia in which individual agency is emphasized.¹³ The project aims to provide knowledge to central policymakers and stakeholders such as health care institutions and social services, contributing to an increased awareness of the role of language and communication in dementia and thereby aiming at enhancing people's quality of life regardless of cognitive status.

4.3 Environmental impact

There is no particular environmental impact involved in this project.

4.4 Ethical perspectives

The research activity will take heed of ethical aspects in regards to data collection and analysis conforming to the requirements of the *Norwegian Data Inspectorate* and as administered through the *Norwegian Social Sciences Data Services* (NSD), its partner for implementation of the statutory data privacy requirements in the research community, and to the *Regional Committees for Medical and Health Research Ethics* (REK). The pilot project has been approved both by the NSD and REK. Since dementia might affect personality, general behaviour and interaction skills, the ethical issues are pivotal in our work. The patients will be asked and re-asked for consent to participate at each and every point of data collection. Feedback to the participants, health institutions, central policy makers and stakeholders will be a priority, as noted in our dissemination plan.

4.5 Gender issues

MultiLing Dementia will seriously address the issue of equal opportunity and the gender perspective, especially in the recruitment of the doctoral and postdoctoral candidates for Sub-project I and II. The project group consists of two men (Svennevig (PI) and Fyndanis) and three women (Lind, Simonsen and Svendsen). Hence, we will strive for gender balance within the project group as such and in alignment with the strategies for gender balance at *MultiLing Center for Multilingualism in Society across the Lifespan*, as highlighted in the Center's annual report.¹⁴ The gender perspective will, moreover, be addressed in our proposed research such as the extent to which it is possible and plausible to address differences in the ways women and men manage and relate to dementia, as patients, as significant others or as caretakers in health care institutions, a sector dominated by female employees.¹⁵

⁹ <http://www.uio.no/forskning/tverrfak/Kvalitet-og-relevans-kortversjon.pdf>

¹⁰ <http://www.hf.uio.no/om/strategi/>

¹¹ <https://www.hf.uio.no/iln/om/strategi/strategisk-plan-iln-2020-bokmaal.pdf>

¹² www.hf.uio.no/multiling/english/about/strategy/

¹³ www.regjeringen.no/nb/dokumenter/demensplan-2015-den-gode-dagen/id663429/

¹⁴ www.hf.uio.no/multiling/english/about/strategy/

¹⁵ <http://ssb.no/aku>

5. Dissemination and communication of results

We plan to communicate our results at international scientific conferences like the *International Symposium on Bilingualism* (ISB) and *International Clinical Phonetics and Linguistics Association Conference* (ICPLA), as well as in national and international fora directed towards health care personnel and the general public, e.g. ENIEC meetings (*European Network on Intercultural Elderly Care*) and *Demensdagene*, Oslo. Scholarly publication is primarily planned for international journals like *International Journal of Bilingualism*; *Bilingualism: Language and Cognition*; *Clinical Linguistics and Phonetics*; *Brain and Language* and *MultiLingua*. On a national level, to reach a wider audience, journals like *Demens & Alderspsykiatri*, *Norsk Tidsskrift for Logopedi* and *Norsk som Andrespråk* are relevant channels, as well as forskning.no. During the final year, we plan an international symposium with the theme of multilingual dementia, where we can present our own results as well as invite international scholars within this field (see budget).

The Research Group for Clinical Linguistics and Language Acquisition at the Department of Linguistics and Scandinavian Studies has established a website called “Språkvansker”¹⁶ as a collaborative project between researchers, clinicians and different user groups (e.g. children with language impairment and their parents, and people with aphasia and their relatives). We plan to expand this website to include monolingual and multilingual persons with dementia, in dialogue and collaboration with relevant organizations mentioned above, e.g. NAKMI and The National Health Association.

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