Corpora for Language and Aging Research 4
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Book of Abstracts

For the organization committee

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Keynotes

1   Changes across linguistic levels and across life stages: In search of a pattern

Frans Gregersen (University of Copenhagen)

This paper aims at providing a corpus linguistic counterpart to the current hypotheses about the effects of ageing on the various subsystems of language. The LANCHART Corpus is a corpus composed of more than 1000 hours of audio material, where we have studied language change in real time by recording informants at two different points in time almost twenty years apart and observed micro-diachronic changes within the same generation. The data as well as related studies are used to exemplify changes in the phonological, morphological subsystems as well as in pragmatics, interaction, and discourse.

The approach is a socio-historical one, analyzing the interaction between how ageing is perceived in various communities and evidence from conducted linguistic studies.

2   How can Machine Learning and Natural Language Processing help researchers to study communication behaviors in later age?

Sylvie Ratté (École de Technologie Supérieure, Montreal)

The Cécilia research program aims to automatically characterize and monitor changes in Alzheimer's disease (AD). As a follow-up to CLARe 2017 (Ratté et al. 2017), the main objective of this talk is two-fold. First, we will present the results obtained by the Cécilia team during the past two years on automatic annotations and feature learning in video/sound-recorded conversations in various settings. Secondly, we want to propose an interdisciplinary collaboration program that will diminish the cost of manual annotations and instigate a back-and-forth dialog between computer sciences (and in particular the ML and NLP communities) and researchers in the CLARe network.

The Cécilia research program focuses on proposing a computer-based analysis of verbal and non-verbal behaviors in multiple modalities: speech, discourse, and facial and corporal expressions. More specifically, we are pursuing three objectives: 1. Distinguish between AD patients and ailing patients using properties automatically extracted from transcriptions and audio sources of conversations with older subjects (analysis of verbal behaviors). 2. Distinguish between AD patients and ailing patients using properties extracted from video recordings of conversations with older subjects (analysis of non-verbal behaviors). 3. Construct a ML/NLP system that will use every property obtained in (1) and (2) to identify various stages of AD.

To accomplish these tasks, we are using (among others) three recognized datasets: the DementiaBank Pitt Corpus (DB, Becker et al. 1994), the Carolina Conversations Collection (CCC, Pope & Davis, 2011), and the CorpAGEst corpus (Bolly & Boutet, 2018). The first one contains conversations conducted during the application of cognitive tests to patients. The last two contain spontaneous conversations. The languages covered include Spanish, English, and French.

In the first experiment (Hernández-Domínguez et al. 2018), we analyzed transcripts of the DB corpus. We automatically combined and extracted linguistic metrics (rhythm, part of speech,

vocabulary richness, idea density, syntactic complexity) and phonetic metrics which previous literature correlated to early stage AD with a new measure based on asymmetry of information coverage. This new measure implies the construction of a referent by merging the conversations of a subset of healthy patients. Once the referent is constructed, the rest of the population (healthy or not) is compared to it. We trained two learners to distinguish Healthy Control (HC) from cognitively impaired individuals. Our measures significantly (P <.001) correlated with the severity of the cognitive impairment and the Mini-Mental State Examination score. The classification sensitivity was 81% and 85% between HCs and AD and between HCs and AD and mildly cognitively impaired, respectively.

The second experiment takes videos as a source (CorpAGEst and CCC). Our goal was two-fold: first, to illustrate how automatized techniques could be used to annotate videos according to a standard; second, to let the algorithm identify features. The results suggest two avenues for further explorations. First, it is possible to automatically annotate non-verbal behaviors in videos; second, ML algorithms have the capacity to identify features that are not totally in sync with what humans are used to. This characteristic clearly opens a new dialog between artificial intelligence and researchers in the CLARe network in terms of interpretation of results and features to consider in videos.

The impacts of the Cécilia program are two-fold. First, it contributes to building stronger facial and gesture recognition techniques adapted to the aging population. Second, it contributes to developing automated tools to monitor AD and other types of dementia (e.g., the effects of medications on language abilities), giving tools to the community of researchers to explore specificities in an automatic fashion. The results of this proposal are not meant to diagnose or to replace specialists (e.g., clinicians, doctors, geriatricians); they are aimed at assisting these professionals in innovative and non-invasive ways, helping them to understand the disease and its progression in a more efficient way.

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3 Communication involving people with dementia

Christina Samuelsson (Linköping University)

Dementia comprises a number of symptoms that may be due to various diseases and injuries. While dementia is often primarily associated with memory deficits, communication and participation in social activities have been reported as areas where persons with dementia experience challenges (Johansson, Marcusson & Wressle 2015). As a dementia disease progresses, abilities to initiate and maintain interactions tend to gradually decline, resulting in

diminishing social relations and increased social isolation (Örulv & Nikku 2007). Loneliness and social isolation are therefore significant problems for people living with dementia (Alzheimer's Society, 2013). In addition, as the person's communicative abilities decline, it becomes increasingly difficult to ensure that the person's views are heard (Österholm & Hydén 2016).

In this presentation I will report from several projects on interaction involving persons with dementia demonstrating problematic areas, but also sequences where persons with dementia display their competence as interactants. We have shown that persons with dementia e.g. are able to initiate and perform repair work, albeit in a somewhat different pattern than the typical three turn format. I will also focus on how participants deal with instances of reality disjunctions in interaction involving persons with dementia. It is demonstrated that both the healthy participants as well as the person with dementia together skilfully avoid the face threats posed by reality disjunctive contributions by not pursuing argumentative lines that in the end might jeopardize both the collaborative and the personal relations.

When it comes to older people with dementia there exists very little rehabilitating intervention, and a common conception is that active intervention is not effective for people with progressive neurodegenerative diseases. Specific intervention for persons with dementia focusing on communication has been tried to some extent from an international perspective, and both the American Speech and Hearing Association (ASHA), and the Royal College of Speech Language Therapists (RCSLT) conclude that language intervention should be available for persons with dementia (RCSLT, 2014; ASHA, 2018). In a recent project, digital communication support in the form of two applications for tablet computers has been tried in interaction with persons with dementia. In this presentation, results on initiatives, topical management, pitfalls and possibilities when using digital communication support will be presented. It is shown that the conversations are longer with than without the digital communications support, that the communication support seems to engage the persons with dementia in conversation, and that it may be beneficial for eliciting personal stories. There are also positive results on using digital conversation support in group sessions for persons with dementia.

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Papers

4   Defounding the effects of competition and attrition on dialect across the lifespan

Karen V. Beaman (Queen Mary University of London), Harald Baayen & Michael Ramscar (Department of Linguistics, University of Tübingen)

Keywords: dialect, language change, spoken language, later life

Under constant attack by the standard language, linguists generally conclude that individuals 'lose' their native dialects 'observationally' in lieu of the standard language; yet this supposition makes a highly questionable assumption: that the sound patterns and morphology of a dialect (or language) exist independently of the lexical knowledge of speakers. This assumption is particularly relevant to the study of dialect usages across the lifespan because the distributional properties of natural languages guarantee that the lexical knowledge of individuals increases continuously throughout their life and that the overwhelming majority of lexical types any individual knows have low token frequencies. The distributional properties of low frequency forms require that their morphological forms and phonetic realizations be continually inferred in context (i.e., the lower the frequency a form, the less likely all possible inflectional variants are attested in a speaker's experience), a process that depends crucially upon the entire lexicon.

These statistical considerations in turn offer an alternative account of the apparent change in individual speech patterns. Rather than lose dialect, speakers gain a vast amount of new lexical knowledge that is not dialect, and this new knowledge exerts a cumulative (and competitive) influence on patterns of morphological and phonetic generalization. This alternative account also makes clear predictions as to how frequency and context influence the degree to which speakers' later speech reflect their roots: rather than experiencing general attrition, the morphological and phonetic forms speakers use typically reflect more dialect when form frequencies are high or where the context makes early experiences most relevant, and less dialect when form frequencies are low and where context makes life experiences more relevant.

This paper examines these hypotheses by analyzing the speech of 20 panel speakers of the Swabian dialect of southwestern Germany, recorded in 1982 and again in 2017. The panel study approach demonstrates a comparative research method for investigating how the speech patterns of individuals change across their lifespans as a result of differing life events and trajectories. Through the evaluation of factors such as lexical frequency, linguistic context, and life experiences, the findings shed new light on the principles involved in language change as individuals age.

5   Age-related decline in sentence processing: deriving corpus-linguistic hypotheses from psycholinguistic data

Caroline Beese (MPI Human Cognitive and Brain Sciences, Leipzig), Markus Werkle-Bergner, Ulman Lindenberger (MPI Human Development, Berlin), Angela D. Friederici, & Lars Meyer (MPI Human Cognitive and Brain Sciences, Leipzig)

Keywords: syntactic structure, language processing, psycholinguistics, semantic content

Healthy aging is associated with language changes. We here advocate the position that a strong determinant of such changes may be alterations in the underlying processing systems. Age-related processing differences of language information such as syntactic structure or semantic content might entail changes observed in corpus research. That is specifically because information on, for example, syntactic structure and semantic content can facilitate language processing (Bonhage et al. 2014) and thereby determine language use as observed in corpora. It has previously been suggested that older adults' syntactic but not semantic information processing may be compromised (Radvansky & Dijkstra 2007). Therefore, our research has examined whether the abilities to process syntactic structure and semantic content undergo differential changes during healthy aging. We expected a decreased benefit of information on syntactic structure but an enhanced benefit of semantic content on language processing in older compared to younger adults. To this end, in an experimental setting, we manipulated the availability of syntactic structure and semantic content (Table 1). That is, syntactic information was only available in sentences but not in word lists whereas semantic content was only available in real word sentences or real word lists but not in pseudoword sentences or pseudoword lists. Participants had to remember sentences or lists for a subsequent comprehension task. In total, 53 healthy, younger (mean age: 26 years; *SD*: 3 years) and 53 healthy, older adults (mean age: 65 years; *SD*: 3 years) participated in this study. No participant suffered from any neurological disorders according to self-report. The age groups were matched upon their level of education (i.e., minimum of 13 years). We assessed whether the availability of syntactic structure or semantic content would differentially facilitate younger compared to older adults' language comprehension. The results showed that the availability of syntactic structure was less beneficial for older than younger adults. In contrast, the benefit of semantic content was comparable across age groups. In sum, this means that healthy aging compromises the processing of syntactic structure, but spares the processing of semantic content. Our findings may thus suggest that semantic information processing may become relatively more important for successful language processing with advancing adult age, possibly inducing a syntactic-to-semantic-processing strategy shift. These clear-cut psycholinguistic changes in language processing generate strong hypotheses for corpus-linguistic research: Older adults' disadvantage in the processing of syntactic information may decrease the complexity of their sentence production, while semantic processing and production remain unchanged. We propose to test these hypotheses by an interdisciplinary approach combining methodology from natural language processing and psycholinguistics.

Tab. 1   Table 1: Example of stimulus material

SEMANTIC CONTENT	SYNTACTIC STRUCTURE	
	sentences	lists
real words	der Opa verdarb die Suppe mit dem Salz	der dem Suppe mit Opa Salz die verdarb
	the granddad ruined the soup with the salt	*the the soup with granddad salt the ruin*
pseudo-words	der Apo verworb die Junne mit dem Sohr	der dem Junne mit Apo Sohr die verworb
	the Apo verworb the Junne with the Sohr	*the the Junne with Apo Sohr the verworb*

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6 Post-vernacular variation amidst a changing vernacular: The case of back vowel fronting in Utah

David Bowie (Department of English, University of Alaska)

Keywords: North America, language change, phonetic production, community

The Western Vowel System, attested mainly in northern and western North America, involves the movement of several of the vowels of English (see Eckert 2004 for an overview). Among these changes is the fronting of the non-low back vowels (i.e., BOOT, BOOK, BOAT, and BUT), which were in a state of change in progress in Utah from its first effective settlement of English in 1847 through at least the next century (Bowie 2017).

Of course, these community changes were the result of individuals participating in the change. It remains an open question, however, how much of a community's linguistic changes can be attributed to "generational change" (following Labov 1994:83) or age-grading by (some) individuals. Further, it is unclear the extent to which speakers who change their linguistic behavior during adulthood do so in the direction of changes occurring in the larger community (as suggested by Sankoff & Blondeau 2007) or in a more random distribution (as suggested by Bowie 2015). This has become quite important for sociolinguistics, given the importance of such evidences for current debates on the reliability of the Apparent Time Construct—arguably the most widely used methodological construct in quantitative sociolinguistics—with some arguing that it is flawed and needs to be reconsidered (e.g., Bowie 2011), while others argue it is still useful at the level of the community (e.g., Bailey et al. 2016).

To shed more light on these issues, an archive not originally created for linguistic analysis was used to simulate a panel study over real time: A collection of religious sermons publicly broadcast from Salt Lake City (the population center of Utah). A large number of individuals appear repeatedly in the archive, so even setting conservative limits by including only lifelong locals appearing over at least twenty years who experienced no disorders or traumas affecting speech production, ten speakers (with years of birth ranging from 1876 to 1928) could be analyzed.

Each speaker's production of the non-low back vowels was collected at five-year intervals, and subjected to acoustic analysis. As expected, given other studies tracking individuals' linguistic production across adulthood (see Bowie & Yaeger-Dror 2015 for examples), statistical analyses of each speakers' production showed much intraindividual variation—some showed stability, while others exhibited significant change year to year. However, among those who showed changes, two generalizations can be drawn: First, speakers who shift generally shift in the direction of the changes occurring in the community (as found, for different communities and variables, by Nahkola & Saanilahti 2004; Sankoff & Blondeau 2007), and second, there appears to be a tendency for speakers to vary more later in adulthood than earlier, leading to the possibility that speakers' envelopes of variation increase with age. This requires us to strike

a middle path with regard to the Apparent Time Construct: It may give a good idea of the direction of changes in progress, but is unreliable with regard to the rate of change.

7   Age grading across 42 years of panel data from the North East of England

Isabelle Buchstaller & Johanna Mechler (Department of Anglophone Studies, University of Duisburg-Essen)

Keywords: age grading, panel study, longitudinal, sociophonetics, intra-speaker malleability

We report on the linguistic choices of six speakers who were first interviewed when they were in their 20s and 30s in 1971 and who had reached retirement age by their second interview in 2013. Our analysis focuses on the variable realisation of (ing), the paradigm case for a stable variable. While sociolinguistic theory makes clear and testable predictions regarding the use of stable vernacular features across the life-span of the individual (Downes 1998, Labov 2001), we lack real time evidence on the age-graded nature of stable variability. Only two panel studies have explored the use of (ing): Van Hofwegen and Wolfram (2018) focused on speakers' sociolectal adjustment during primary and secondary school and Wagner (2012) explored the juncture between high school and university. Little is known about speakers' malleability in the realisation of the alveolar/velar nasal across their later life.

Also the conditioned nature of age-graded phenomena across the life-span of the individual has not been subject to sophisticated statistical examination. The few panel studies that operationalise regression modelling for the exploration of intra-speaker (in)stability have focused on changes in progress (Petré and van de Velde under review, Buchstaller et al. 2017 inter alia). Consequently, while decades of variationist work exploring (ing) across social and geographical space have reported consistent patterns according to gender, socio-demographic standing and speaking style (Hazen 2006) and more recently intralinguistic factors, such as the phonological context or priming effects (Meyerhoff and Schleef 2012), this work has not found its way into statistical models which map language use across the life-span.

Our talk expands on previous panel research on (ing) in two ways:

(i) We focus on the linguistic trajectory from early adulthood to older age. Our analysis thus moves forward the age bracket of Wagner's (2012) and Van Hofwegen and Wolfram's (2018) studies, which consider speakers aged 4-20.

(ii) Following recent trends in panel research, we explore changes in the constraint system that governs (ing) across the life-span. Using mixed-effects logistic regression analyses allows us to investigate the longitudinal (in)stability in the grammar of the individual speaker (see Buchstaller et al. 2017).

Our analysis reveals that while the stable variable (ing) broadly behaves in accordance with age grading predictions (Downes 1989), models that capture the trajectory of the individual speaker need to be more sensitive to a range of individual factors, including, notably, the interaction between marketplace pressures and socio-demographic mobility (Sankoff and Laberge 1978, Buchstaller 2016) as well as the complex set of social and linguistic factors which govern (ing) across the life-span.

By modelling the constraint system that conditions the use of a stable variable across the life of the individual speaker, our paper follows Sankoff and Blondeau's (2007) call to comparatively explore speakers' malleability in the use of different types of variables. In sum, we hope that our research can provide one more piece in the overall objective to map the

factors that influence the (in)stability of the grammar of the individual across the post-adolescent life-span (Bowie and Yaeger-Dror 2015).

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8   Terms of address in peer interactions of older women

Anna Charalambidou (Media Department, Middlesex University)

Keywords: terms of address, peer group, age, ageing, categorisation

This presentation falls under the conference theme 'interaction' and explores conversational patterns of community-residing, older women in Cyprus. More specifically, it analyses terms of address (ToA) in everyday, naturally-occurring conversations of a long-standing friendship group of Greek Cypriot women, and their acquaintances, all aged 62 to 78 years old. Data include eighteen hours of self-audiorecorded conversation, supplemented by ethnographic interviews and extensive participant observations. Quantitative and micro-analytic perspectives, especially membership categorisation analysis (Sacks 1995), as well as some insights from politeness theory (Terkourafi 2002; Brown & Gilman 2003), are combined in the analysis of ToA, with the aim of investigating explicit and implicit references to age and other categories.

The analysis focuses on various address terms, including first name, title plus first name and the form 'κόρη'/*kori* (a very informal, high-solidarity term of the Cypriot Greek dialect, typically used to address same-age or younger female interlocutors). It looks at how these ToA are

employed in a number of interactions, including impromptu meetings with one or two close friends, planned meetings of larger groups of friends and conversations with acquaintances. The choice of terms is in the first instance explained in terms of solidarity and age differences, with more distant acquaintances and members with larger age gap, using more formal ToA, such as 'Mrs plus first name'. Chronological age is an important but insufficient predictor for the use of more reverential or distancing ToA. The interactional history of the participants also plays a significant role in deciding between different ToA (and lack thereof), as well as older participants' strategies of rejecting receiving distancing ToA. Finally, young-age categories (e.g. 'girls') functioning as ToA are analysed. These terms appear mostly in formulaic greetings or in directives with the function of redressing dispreferredness of directive. Rather than invoking membership to young-age categorisations, these young-age ToA function in this context as an in-group markers.

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9   Perplexity as a sensitive indicator of cognitive deterioration in spoken language. Results of the Interdisciplinary Longitudinal Study on Adult Development and Aging

Claudia Frankenberg, Christina Degen, Johannes Schröder (Section of Geriatric Psychiatry, Heidelberg University, Germany), Jochen Weiner, Tanja Schultz (Cognitive Systems Lab, Bremen University, Germany)

Keywords: spoken language, speech processing, perplexity, Alzheimer's disease, dementia

Introduction: Progredient deteriorations of speech and language are among the main symptoms at the onset of Alzheimer's dementia (AD) and in mild cognitive impairment (MCI; Schröder and Pantel 2011; DosSantos 2011; Barth et al. 2005; Lukatela 1998). Propositional density e.g., seems to change years before the diagnosis of AD/MCI (Wendelstein 2016). Automatic speech recognition and processing (ASRP) allow for the automatic transcription of spontaneous speech and even provide additional information from it. Therefore, ASRP might be a useful tool for the early diagnosis of cognitive deterioration in the future. The present work is on perplexity which is a measure of predictability of spoken language in ASRP (Weiner et al. 2017) and its association with neuropsychological parameters.

Methods: The Interdisciplinary Longitudinal Study on Adult Development and Aging is a population-based follow-up study (Sattler et al. 2015), that comprises four examination waves with an observation interval of more than 20 years. Each examination wave included thorough geriatric, psychiatric and psychological assessments and semi-standardized biographical interviews. Data of persons (n = 20) in their early sixties that develop MCI/AD approximately 10-12 years after the first examination and data of persons that remain cognitively healthy (n = 48) have been analyzed with regard to the association between perplexity scores from ASRP based on biographical voice recordings and selected neuropsychological test parameters: Mini-mental State Examination (Folstein et al. 1975) as a dementia screening instrument and the Trail making test (Reitan 1992) for evaluating information processing speed. Perplexity scores quantify how well a model predicts a sample, respectively how well an utterance spoken by an ILSE participant can be predicted by a language model gained from the participant's previous utterances.

Results: Preliminary results show significant associations of perplexity with the results of a dementia screening (r = .58, p <.05) and with information processing speed (r = -.55, p <.05) in persons that develop MCI/AD 10-12 years later. For persons that remain cognitively healthy no significant correlations have been found regarding these parameters and perplexity.

Discussion: Results indicate early alterations might be detectable in speech years before the onset of MCI/AD even with economical tools like ASRP. Tools for ASRP might be useful to complement diagnostics. Further analyses on speech even long before the onset of AD might contribute to our understanding of the disease.

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10 Disfluencies in older age – a longitudinal study on individuals

Juliane Gall (University of Leipzig)

Keywords: disfluency, longitudinal, pauses, interviews

So far, investigation of disfluencies includes various areas of research as well as different languages and speech styles. Whenever older age has been involved in research, the results showed an increase of disfluencies with increasing age. But especially the findings of (neuro-)psychological studies relating to disfluencies in older age are the result of comparisons between members of different age-groups in unnatural speech-settings, such as picture-naming-tests. In the past ten years a lot of linguistic examinations have been carried out with focus on individuals and their language development over life-span – but none of them focused on disfluencies (in older age). Therefore, it is important to investigate if disfluencies increase in the speech of individuals as they are aging.

The methodological approach to disfluencies in older age is revealed by accessing the language data of the Interdisciplinary Longitudinal Study of Adult Development and Aging (ILSE). This enabled a longitudinal analysis of a small number of speakers focusing on the individuals.

For this purpose, five male subjects from the research centre Leipzig and the cohort 1930-32 were selected. They had no neurological or psychiatric disorders and were already retired at the time of the first survey.

The guided interviews with these subjects from two measurement times (MZP 1: 1993/1994, MZP 3: 2005/06) first were analyzed quantitatively with regard to the occurrence of the following types of disfluency: truncations, unfilled pauses, fillers, repetitions, self-repairs and combinations.

On the one hand, past research could be confirmed by the increase of disfluencies with increasing age. On the other hand, the overall result could not be confirmed for all types of disfluencies. There were also differences within the types, so that a uniform increase of disfluencies with older age does not exist.

In the subsequent individualized analysis, disfluencies per subject were evaluated and associated with external factors of the subjects.

In summary, the use of disfluencies highly varies. And so does the increase in the eleven-year period, which shows strong variation, both interindividually and intraindividually with respect to each disfluency type.

Social life situation, family status, physical impairments and personality of the subjects could be extracted as influencing extralinguistic parameters.

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11 Dementia and triadic cognitive testing interactions: on adult companions talking during the Mini-Mental State Exam

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Keywords: dementia, triadic interaction, cognitive testing, knowledge, face

Multidisciplinary efforts have highlighted connections between cognitive changes that accompany dementia and an individual's sense of self (Schrauf and Müller 2014). These changes have been studied within physicians' offices where research on triadic healthcare visits has shown the involvement of older patients' companions to be significant and widespread (Schmidt et al. 2009, Karnielli-Miller et al. 2012); no qualitative study, however,

has yet investigated the linguistic shape of such companion involvement during the high stakes cognitive testing phase of such visits. In this interactional sociolinguistic study, we examined the discourse of 17 physician-patient-companion triads as the Mini-Mental State Examination (Folstein et al. 1975) was conducted. We were intrigued by the frequent contributions by spouses and adult children during the test; of special note was the way in which these companions introduced patients' lived experiences into the standardized exam discourse. We argue that this practice illustrates an important form of resemiotization (Iedema 2003) that takes two shapes in our interactions: (1) *giving clues to patients*: companions revoice and breathe life into physicians' abstract questions for the patients by incorporating experiences where these patients have epistemic primacy, (2) *giving accounts to physicians*: companions conduct face work by recontextualizing patients' in-the-moment performances against the broader backdrop of their more general cognitive and behavioral capacities and practices outside the four walls of physicians' offices. This study illuminates the relationship between face and knowledge within high pressure situations of cognitive testing and contributes to a more nuanced understanding of shared cognition and social action within institutional discourse.

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12 "It's the only time you can have a good laugh": investigating interaction and wellbeing in older women's hair-salon talk

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Keywords: Naturally-occurring interactions; conversation analysis; identity; wellbeing; hair-salon talk

This paper examines the way wellbeing may be fostered in the talk between older clients and their stylists in a hair-salon; it thereby contributes to our understandings of everyday interaction among community-living older people, and thus to the 'interactions' theme of the CLARe 4 conference. In addition, in comparing naturally-occurring hair-salon data with interview data, it contributes to debates around methodological approaches to researching later life.

There is extensive literature exploring older people's wellbeing, with factors such as health and financial security among those said to be significant contributing factors. A considerable body of research also highlights the value of relationships for the wellbeing of older people, with the quality of interaction in those relationships seen as central (Rawlins, 2004). Nevertheless, despite this acknowledgement of the importance of interaction, the role of discourse in wellbeing has received minimal attention (see e.g., Coupland, 2004; Grainger, 2004). In this

paper, by contrast, and building on Coupland's (2004) argument for the links between identity and wellbeing, I propose that matters of discourse, in the sense of both language use and practice and the wider ideological environment, are of central importance to wellbeing.

As a lens through which to examine this issue, I focus on instances of shared laughter, which I argue can be an aspect of quality-in-interaction. The data on which the paper draws derive from a wider interactional sociolinguistic study into older women's identity construction in their interactions in the everyday setting of a hair-salon. This study combined audio-recordings of naturally-occurring talk between clients and their stylists with insights derived from participant observation and interviews. For this paper, I draw on conversation analytic-informed analysis of exchanges in which the older clients and their stylist are caught up in moments of hilarity in the salon; and examine what is being achieved both in such moments and in participants' sometimes seemingly inconsistent talk about laughter in this setting. I show how such moments can construct affiliation in the encounter and also, both through the moments themselves and through talk about them, afford counter-stereotypical older identities for the clients that are claimed beyond the immediacy of the exchange.

I draw two conclusions from the analysis. First, and most substantially, I argue that wellbeing is at least partly an interactional achievement between parties in an encounter, through both the characteristics of particular exchanges and the positive identities recurrently afforded through 'quality' interactions. Secondly, linking into a substantial body of literature critiquing interviews as a research method (e.g., De Fina, 2011; Roulston, 2014), I show that the apparent contradictions in the data clearly reveal the challenges of relying solely upon interview data when researching states like wellbeing. These conclusions have implications for both the directions that wellbeing research could usefully take, and how it is researched among older people – and indeed more generally.

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13   Negotiating (life) time identity in cross-generational interaction

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Keywords: identity, interaction, narrative interviews, intergenerational communication

Based on the assumption that human identity is dynamic and constantly emerging, created in interaction through reflexive and discursive activities (Giddens 1991), we specifically look at

generational identity and its discursive formulations. By referring to time, people form their (life) time identity, indirectly related to their chronological age (Lyons and Schweitzer 2017). It emerges in the context of personal experience and social culture, and – thus – interactively. It is the general aim of this presentation to reflect upon life span identity as an interactional achievement (see relational view of identity, Goffman 1959, Mead 1932) in communication across generations. We believe that an in-depth analysis of discourse gives an insight into how people partition (life) time, how they treat their own identities as flexible, adaptable, etc. and assume their own generational identities (and align with or reject those of others).

The aims of the reported project may in the following way be presented as relevant to linguistic and social theory, methodology and age studies respectively:

Linguistic theory

- to inform theories of communication
- to deconstruct mechanisms of meaning making in interaction
- in the context of cross-generational communication: to show the process of negotiating meaning in order to put across information as well to construct identities and relate to the (age- and generational-) other (Coupland and Nussbaum 1993)

Social theory

- to study (life) time identity in the context of intergroup relations
- to apply the concept of 'generational intelligence' (Biggs and Lowenstein 2011) to the analysis and interpretation of cross-generational communication
- to represent interaction as a collaborative effort to improve the quality of life of self and other

Method-wise

- to recommend the narrative interview, with its open format, open questions, co-participation of the interviewer
- to apply discourse analysis with a view to identifying themes and strategies that construct identities across time and social groups

Age- and generation-wise

- to demonstrate how speakers of different generations use symbolic cultural and discursive resources (indexing collective generational memories, values, and norms, etc.) to position themselves in (life) time and vis-à-vis the generational other (see Gerstenberg 2009)
- to highlight the role of generational experience in social change

Data and methodology

Thirty six intergenerational narrative interviews on the life course were conducted in Poland by young(er) interviewers with old(er) interviewee's. The transcripts have been analysed for themes (e.g. w*hen I was younger…*) and strategies (e.g. lexical crossing, temporal reference, intertextuality) used by participants to construct identities in (life)time and negotiate them. Specifically, it is shown how participants discursively position themselves as others (and vice versa), presumably drawing on their generational intelligence.

Conclusions and implications

As identity is a temporal process (Mead 1932), humans arrive at a sense of connectivity between (their own) past, present and future. In intergenerational communication, people (of any life stage) relate to (generational) others to achieve continuity and integrity. All are able to strategically orient themselves in time. We show the usefulness of the discursive-narrative approach for demonstrating how these ends are accomplished in interaction.

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14 Real-life language use across different interlocutors: two naturalistic observation studies of adults varying in age

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Keywords: Ambulatory assessment, cognitive aging, social context, vocabulary richness, grammatical complexity

We contribute to the CLARe methods session by presenting two studies that used a naturalistic observation method to investigate age effects on real-life language use in combination with effects of interlocutors. Although laboratory evidence has shown that vocabulary richness increased, while grammatical complexity declined with age, the generalizability of the laboratory results has been criticized (Gahl, Cibelli, Hall, & Sprouse, 2014). Trying to improve ecological validity, recent studies have examined telephone conversations and found that age effects remained in unique words, but not in uncommon words or counts of embedding clauses (Horton, Spieler, & Shriberg, 2010). The disparities between in-lab and real-life observations, however, have not been explained. Additionally, studies have found that interlocutors affected language use in telephone conversations (Cohen Priva, Edelist, & Gleason, 2017). In sum, evidence of real-life language use is scant. We aimed to observe vocabulary richness and grammatical complexity in real life and investigate the joint effects of age and interlocutors.

In these two studies, we used the Electronically Activated Recorder (EAR; Mehl, Pennebaker, Crow, Dabbs, & Price, 2001), a portable audio recorder that periodically records snippets of ambient sounds, to observe real-life language use and social contexts. With high compliance and low obtrusiveness, the EAR has been widely used to observe real-life language use, but no EAR studies have examined age effects in language use (Mehl, 2017). Sound snippets that included participant speech were transcribed and coded for different interlocutors (e.g., talking with spouse, friend, or "at least two types of people"). Vocabulary richness (i.e., unique words, uncommon words) and grammatical complexity (i.e., clauses per sentence) were calculated with Python based on the transcripts.

Study 1 collected about 18,000 sound snippets (50 seconds long) over a weekend from 53 American couples coping with breast cancer (aged 24 to 94 years) in their natural living environments. The dyadic data were analyzed with actor-partner interdependence models in R. Results revealed that older adults used more unique words than young adults when talking

with the spouse, but fewer unique words when talking with "at least two types of people". Moreover, older adults used simpler sentences than young adults when talking with strangers, but no age differences were observed in other contexts. Furthermore, no age differences were found in uncommon words across interlocutors. Additionally, compared to talking with the spouse, participants increased unique words for friends; decreased clauses per sentence for family members; and increased unique words and uncommon words, and decreased clauses per sentence for "at least two types of people". Collectively, these findings indicate that participants accommodated their language use for interlocutors and that age effects in real-life language use was affected by interlocutors.

In Study 2, we collected about 22,200 snippets (30 seconds long) from 61 young and 48 healthy older adults in Switzerland across four days. Data analyses with multilevel modeling are ongoing and we expect to find similar results. These two studies are the first to use a naturalistic observation method to investigate joint effects of age and interlocutors on real-life language use.

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15 Effects of age and interlocutors on language use: conflict conversations of couples varying in age

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Keywords: Cognitive aging, linguistic accommodation, vocabulary richness, grammatical complexity, fluency

This study contributes to the CLARe thematic session of interaction by examining effects of age and interlocutor on language use (i.e., vocabulary richness, grammatical complexity, fluency) in face-to-face conversations of couples varying in age. Past studies have shown that older adults, due to increased crystalized intelligence and declined fluid intelligence, used richer vocabulary, produced simpler grammatical structures, and spoke more slowly and less fluently than young adults (Horton, Spieler, & Shriberg, 2010; Bortfeld, Leon, Bloom, Schober, & Brennan, 2001). Most past studies, however, had samples younger than age 70 and described age-related changes as linear trajectories, which may not capture the true changes of language use over the life span, especially in very old age (Moscoso del Prado Martín, 2017). Furthermore, studies have found that interlocutors affected speakers' language use, which was interpreted as linguistic accommodation (Cohen Priva, Edelist, & Gleason, 2017). However, a few studies have examined the joint effects of aging and interlocutors on language use (Meylan & Gahl, 2014). Taken together, language use in aging should be better

understood by simultaneously inspecting effects of age (linear and non-linear) and interlocutor's language use.

This study invited 364 heterosexual Swiss couples, aged 19 to 82 (*M* = 48.24, *SD* = 18.33) to engage in an interaction task in the laboratory, where they discussed a topic that caused marital conflict. Couples were left alone to discuss a topic that they chose for eight minutes. The conversations were videotaped and transcribed by a team of trained research assistants. Based on the transcripts, vocabulary richness (i.e., unique words, uncommon words), grammatical complexity (i.e., clause length, counts of embedding clauses), and fluency (i.e., speech rate, disfluencies) of each participant were calculated using Python.

The dyadic data were analyzed with actor-partner interdependence models (Bolger & Laurenceau, 2013) in R (R Core Team, 2008). We controlled for gender and education. Results revealed that unique words and uncommon words increased throughout the life span; that clause length, counts of embedding clauses, and speech rate increased until age 48 and then declined in old age; and that disfluencies increased until age 75 and slightly decreased in very old age. Additionally, speech rate of the two interlocutors in a couple's conversation were negatively related to each other, so were grammatical complexity of the interlocutors. Conversely, uncommon words of the two interlocutors in a couple's conversation were positively associated, so were disfluencies of the interlocutors.

According to past studies, increased vocabulary richness can be attributed to increased vocabulary knowledge with age, while the general declining trend of grammatical complexity and fluency in old age can be associated with accelerating decline of working memory and processing speed (Moscoso del Prado Martín, 2017; Verhaeghen & Salthouse, 1997). Furthermore, we found that interlocutors' language use had effects on speakers' language use, in line with past studies on linguistic accommodation to interlocutors (Horton & Gerrig, 2002; Cohen Priva, at al., 2017). Collectively, these findings provided additional evidence for age effects on conversational language use and highlighted the effects of interlocutors' language use.

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16 Internalized ageism in interaction

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Keywords: ageism, nursing homes, elderspeak

In aging discourses, older people are often approached as a homogenous group. The same holds for perspectives on where and how people should age. Its suggested that one way of where and how to grow older is the best way for all older people.

In The Netherlands, there is a strong emphasis and expectation for older people to age in place (Ranada & Hagberg 2014, Rijksoverheid). In the discourse on where and how people should age aging in place is related to independency, agency and postponing decline (Vasara 2015). In contrast, aging in a nursing home is perceived as a deviation of the norm where both nursing homes and its residents are related to dependence, non-agentic behavior and decline. Whereas aging in place is (more) related to successful aging, residents of a nursing home are often perceived as unsuccessfully aged.

Due to the existing discourses on aging and nursing homes, nursing home residents are often stereotyped as declined, frail, passive, dependent and incompetent. These stereotypes result in assumptions on language skills and speech of residents. Consequently, interlocutors of older people modify their language practices in order to reflect these same stereotypes. Studies in nursing homes have shown that nursing staff often reinforces representations on aging through adjusted language practices towards nursing home residents, such as elderspeak and patronizing talk (De Bot & Makoni 2005, Lagacé et al. 2012). Data of this research project show that the nursing staff rather makes the same adjustments in language practices (elevated volume, slower speaking rate, simple grammar, repetition, diminutives) to all residents than to the individual resident. According to the perspectives of the nursing staff these adjustments in language practices (using elderspeak) are necessary for all residents. While older people are both in discourses on aging and nursing homes and by the nursing staff often perceived as a homogenous group, first results of my ongoing research show that residents actively differentiate themselves from other residents through their language practices. This paper explores how residents give meaning to and (re)negotiate discourses on nursing homes and successful aging during everyday interaction. Moreover, it illustrates how residents differentiate themselves from others through their own language practices and evaluation off elderspeak. By analyzing the data this paper illustrates how residents perform internalized ageism, and make a strong distinction between physical and cognitive decline for their negotiation.

The data for this paper have been collected in a nursing home in Maastricht through ethnographic fieldwork complimented with methods such as participant observation, informal interviews and audio recording.

17 Good-enough sentence processing in younger and older adults under normal and visual-noise processing conditions

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Keywords: sentence comprehension, good-enough processing, visual noise

Healthy aging affects the speed and accuracy of sentence processing, particularly for grammatically complex sentences (Stine-Morrow et al., 2000; Caplan & Waters, 2005). This quantitative difference between younger and older adults is well established, but it remains to be further specified which *qualitative* age-related changes in the mechanisms of sentence processing it is driven by. One hypothesis is that older adults show greater reliance on good-enough processing (Ferreira et al., 2002): they are more prone to form incomplete or imprecise sentence representations based on superficial lexico-semantic cues, rather than to perform full algorithmic syntactic analysis. This hypothesis has been tested in only few previous studies (Christianson et al., 2006; Kemper et al., 2004; Malyutina & Den Ouden, 2016). Besides, it has never been investigated whether older adults' reliance on good-enough processing is further increased under challenging perceptual conditions, which generally have a greater negative effect on language comprehension in older than younger adults (Tun & Wingfield, 1999; Pichora-Fuller and Souza, 2003).

The goal of our study is to compare younger versus older adults' reliance on good-enough processing when reading sentences under normal processing conditions versus in the presence of visual noise. The task is self-paced reading with comprehension questions. In half of the experiment, stimuli are accompanied by visual noise (short fixed phrases presented for 300-400 ms in random positions on the screen). The stimuli are Russian sentences with a complex noun phrase and a participle that is syntactically attached either to the semantically plausible (1,2) or to the semantically implausible noun (3,4):

(1) *Rimma dressed the* <u>*child*</u>$_{Acc,fem}$ *of the writer*$_{Gen,fem}$*, who* <u>*was babbling*</u>$_{Acc,fem}$ *incomprehensible words.* [The child was babbling - Plausible]

(2) *Rimma dressed the child*$_{Acc,fem}$ *of the* <u>*writer*</u>$_{Gen,fem}$*, who* <u>*published*</u>$_{Gen,fem}$ *an interesting novel.* [The writer published a novel - Plausible]

(3) *Rimma dressed the* <u>*child*</u>$_{Acc,fem}$ *of the writer*$_{Gen,fem}$*, who* <u>*published*</u>$_{Acc,fem}$ *an interesting novel.* [The child published a novel - Implausible]

(4) *Rimma dressed the child*$_{Acc,fem}$ *of the* <u>*writer*</u>$_{Gen,fem}$*, who* <u>*was babbling*</u>$_{Gen,fem}$ *incomprehensible words*. [The writer was babbling - Implausible]

The relative increase in incorrect responses to semantically implausible compared to semantically plausible sentences indicates an increased reliance on good-enough processing.

Up until now, 20 younger (mean age 23, range 18-30 y.o.; 16 females) and 20 older (mean age 76, range 55-91 y.o.; 15 females) adults have participated. In the current sample, older adults show slower reading speed, lower comprehension accuracy and slower question response times than younger adults. However, there are no significant interactions with age: older adults do not show increased reliance on good-enough processing, or its greater increase under visual noise conditions. By the time of presentation, data from 40 individuals per age group will be available. The conclusions about whether aging is associated with increased reliance on good-enough processing under normal and/or noisy processing conditions will have important implications for efficient communication with older adults. Specifically, this evidence will suggest whether daily interactions with older adults should attempt to convey the

meaning using only lexico-semantic cues or whether certain reliance on syntactic parsing is still appropriate.

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18   Looking through the glasses of Lee, a woman with Alzheimer's

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Keywords: Alzheimer's, interaction, communication competences

An award-winning documentary film "You're looking at me like I live here and I don't" (Kirschenbaum 2012) features the daily life of Lee Gorewitz, a woman who lives in a care unit for patients with Alzheimer's and other dementia in a residential facility in California. Lee has worked, raised a family, has grandchildren and suffers from middle-stage Alzheimer's disease. The camera starts from the time she wakes up in her room and follows her as she wanders around the unit, interacting with care workers and with residents who are at various stages of dementia, having meals, and joining group activities. She also responds to several short questions (e.g. what is your favorite color? What is love?) that the filmmaker asks off-screen. There is no narration by the filmmaker and no remarks by care workers to the filmmaker. Although this is a produced film focusing only on one person in one facility, what we see and hear provides us with naturalistic documentation over months of the experience of one person with dementia and the daily interaction of people who live and work there. The evidence from the film, as presented in the study, supports and adds further dimensions to the claims in Hamilton (1994), which presented a detailed study of conversations with an Alzheimer's patient and advocated the importance of interaction in the investigation of language and aging. The observations in the present study illustrate that interactions anchored in familiar quotidian experience and its associated affect seem to maintain functionality in communication through stages of dementia, which underlines the importance of encouraging opportunities for such interactions.

Among many noteworthy points in the film, what is most striking is that much interactional communication is happening among the residents and with the care workers despite the common and justifiable perception that there is a serious communication breakdown among people with dementia. It is indeed shown in the film that the relevance of patients' responses to the questions are often not clear from the point of view of people (such as viewers) without dementia and the responses are therefore judged as not felicitous in the specific context, even while they are correct in terms of syntax and semantics. However, there are at least three additional points to consider. First, the fact that one understands that a previous utterance by another requires a response indicates sophisticated communicative competence (Grice 1975); second, when a conversation is not about an abstract thought and/or factual information unconnected to the immediate context, such as "what is your favorite color?", the Alzheimer's patient can successfully participate in conversations on familiar matters with humor and expressions of gratitude; and third, the residents with varied degrees of dementia produce communicative responses whether they are sharing their life stories or exchanging affective verbal or nonverbal comments. While an exchange of factual information is often assumed to be the purpose of human communication (e.g. Grice's cooperative principle) in linguistic studies, interactions in the film highlight the significance of affective communication grounded in quotidian experience.

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19   Dementia, Intercorporeality and cooperative practice

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Keywords: dementia, conversation analysis, interaction, caregivers

Verbal interaction between people with and without dementia is often experienced as problematic and difficult (cf. Hamilton 1994). Often, however, forms of embodied interaction can be conducted easily even in a later stage of dementia (cf. Kontos 2006). On a daily basis, (professional) caregivers and persons with dementia routinely initiate forms of embodied interaction to get the care work practically done (cf. Plejert et al. 2017; Majlesi/Ekström 2016; Lindholm 2016; Martin et al. 2013). As sociologists with an interest in ethnomethodology and conversation analysis we focus on the question how persons with progressive dementia and their interactional partners produce such a cooperative practice together. We analyze videotaped interactions of caregiving situations in the morning when people with dementia are washed, dressed, and fed by their caregivers. The audiovisual material was generated during ethnographic research in several nursing homes for older people in Germany. This material of institutional caregiving situations renders possible the identification of the sequential organization of those practices of cooperation that are based on embodied activity and not on the exchange of meaning (cf. Meyer/Meier zu Verl 2017).

From the perspective of social theory, it is interesting that cooperative bodily practice appears to be possible without an implicitly shared common ground and without verbal (propositional) interaction. So we are interested in bodily conditions of social order which are discounted or undervalued in contemporary social theory. We assume that a possible answer lays in the concept of intercorporeality (cf. Meyer et al. 2017) which makes a basal form of interactional

cooperation possible. To demonstrate our argument, we focus on problematical and instructional situations of caregiving where aspects of intercorporeality are explicitly recognizable for us and the participants themselves because they are either made relevant as missing or are reflexively discussed as important embodied technique of caregiving between training supervisor and trainee.

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20   Cognitive and linguistic indicators of Alzheimer's: an eye-tracking approach

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Keywords: Alzheimer's dementia, eye-tracking, language production, spatial perception

The language skills of patients with Alzheimer's disease have already been studied (AD) across different languages (Papagno 2001; Ortis & Bertolucci 2005; Forbes-McKay & Venneri 2005; Schecker 2010,). These studies revealed that the language use of AD-patients strikingly differs from that of healthy, age-matched controls. The peculiarities in AD-speech concern e.g., reduction of syntactic complexity and lexical richness; increased use of linguistic chunks; disruptions of speech at the sentence/word level and/or distorted pronunciation. Most studies dealing with AD-speech have focused on spoken language and used mainly behavioral methods such as elicitation or naming tasks. There is no systematic research concerning the interaction of oral and written production in combination with spatial perception skills in AD-research. Further, only very few of these studies have employed experimental methods (Brandão et al. 2014; Fernández et al. 2014, 2015; Fraser et al. 2017).

In a first study, we explored the verbal behavior and spatial perception of AD-patients using eye-tracking. The participants were 9 AD-patients and 5 age-matched healthy controls. Participants were shown a pair of drawings depicting two Christmas scenes that could be connected to form a short story. The task was to write a story based on these pictures. Because of difficulties with writing only six AD-patients completed the written task. In a second task, spoken language production was elicited in a guided interview in which the participants spoke

"freely" about their Christmas experiences (all participants where able to complete this task). The controls completed both tasks. In the oral production task, the AD-group differed significantly from the control group with respect to: (1) The total number of words and the number of utterances of the AD-group was reduced in comparison with the healthy group; (2) The number of disruptions at the sentence level was increased for the AD-group. A unique pattern of disruptions at the word level was identified for the AD-group. The results from the written task confirmed that the AD-patients perform very differently from the controls: (1) The total number of words and the number of correctly written words was reduced; (2) AD-patients showed several striking patterns such as a telegram style or intra-individual inconsistency in used orthography. Regarding space perception, AD-patients displayed significantly longer dwelling times, deviant scan paths and seemed not to be able to perceive the vanishing point in images with a depth perspective.

Considering the small sample size in both groups, these first results are surprisingly robust. We are presently recording further language and eye-tracking data for additional AD-patients and healthy controls. Further, we are collecting data on spatial acting out tasks, in which participants have to rebuild different block constructions.

Overall, the data has shown so far that there is a link between writing, speaking and looking in people with AD. In this paper, we would like to present the data and discuss them in context of potentials for an early AD-diagnosis as well as the nature of the cognitive and linguistic profile of AD-patients compared to healthy older people.

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21   Supporting residents' autonomy in interaction in residential care homes

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Keywords: autonomy, interaction, multimodal

The paper discusses questions of supporting autonomy in interaction in care for older people. Thus, it contributes to the first theme of the conference, interaction. Supporting residents' autonomy is one basic principle in care for older people, and I will discuss how it is realized in

varying everyday situations and what kind of nuances it has depending on the activity and the ability of the resident to take action.

The data have been collected in a residential care home in Finland and consist of 55 hours of videotaped material, a background interview and ethnographic field notes. The framework of the study is interactional sociolinguistics. In analysis, I will take multimodal resources (e.g. gestures) into account.

The paper will show the multifaceted nature of supporting resident's autonomy both verbally and in embodied action. Caregivers emphasize residents' own activity in eating or choices during meal times and e.g. concerning their clothes. In addition, caregiver might withdraw from physical assisting if the resident is capable of moving her/himself. Instead, the caregiver might use gestures and verbal advice. It seems that carework is balancing between paying attention to a resident and supporting resident to be as independent as possible. Multimodal analysis sheds light on situations in which participants negotiate the goals of the conversation and accomplishing the activity.

22 Cohesive devices in the diaries of a person with Alzheimer's disease

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Keywords: Alzheimer's disease, cohesion, cohesive devices, written language

The most common dementia syndrome in Finland is Alzheimer's disease (AD), which affects not only memory, but other cognitive and linguistic skills as well. Writing is one of the most cognitively challenging tasks, and earlier studies have indicated that it begins to deteriorate early in AD (Harnish & Neils-Strunjas, 2008; Pekkala et al., 2013). The purpose of our study is to investigate what happens to the cohesion in the diary entries written by a person who, during the 40 years of diary-writing, develops AD. Our aim is to examine if the amount of the cohesive devices, the linguistic devices creating cohesion in the diary entries, changes along the progression of AD and if it is possible to point out the onset of the possible changes.

The data set of our study were diaries kept during the years from 1968 to 2012 by a woman who developed AD in her 70's. The diary entries written in the month of June in 1986, 1991, 1996, 2001, 2006, 2008, 2010, and 2012 were selected for further analyzes. The length of the entries varied from one sentence to an ample description of an event. The number of grammatical and lexical cohesive devices, as well as the number of exophoric pronouns and the pronouns referring to extralinguistic situations were calculated from the diary entries. The data were analyzed with IBM Statistics 24 program. A scatter diagram of the number of the cohesive devices was created and a line of best fit was added to the diagram in order to demonstrate the temporal changes. Spearman's rho or Spearman's rank correlation coefficient was used to analyze the correlation between the cohesive devices and the selected years.

Our results indicated that the total number of grammatical cohesive devices and the number of exophora, anaphora and reiteration increased over time, whereas the total number of lexical cohesive devices, collocation (semantically related words) and ellipsis (omission of words) decreased. However, the correlations between the cohesion measures and the selected years were not statistically significant. The data tentatively show that these linguistic changes may have begun in the year 2001, some 10 years before the entries produced for the last diary. The relatively small sample size as well as the writing style of the person, which resembled note taking rather than describing life in details, may have affected the occurrence and number of cohesive devices.

Dysgraphia is an early sign of AD. Examining spontaneously written texts by people with suspected AD provides a way to investigate changes that dementia causes to the linguistic

abilities. Knowing the changes and their course during the progress of the disease is useful when planning intervention methods to maintain the linguistic skills of a person affected by dementia.

In the CLARe 4 conference, this paper contributes to the theme of interaction, as writing a diary is a way of self-expression as well as a communication tool.

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23 Metapragmatic reflections on verbal interactions with Alzheimer's Dementia patients – a social media study

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Keywords: Alzheimer's Dementia, metapragmatics, caregiver-patient interaction, social media

In the past ten years, social media have become an important environment for the negotiation of health-related issues among laypersons and experts, and the computer-mediated practices involved have attracted a range of linguistic studies (cf. e.g. the special issue on language and health online edited by Locher/Thurnherr 2017, Kleinke 2015). As the aging population is increasingly affected by neurocognitive diseases like Alzheimer's Dementia (AD), it is hardly surprising that this has become a much-discussed topic in the social media, too.

Drawing on the rich material of online health practices, this study investigates metapragmatic utterances (cf. Caffi 1998: 581) on AD-caused changes in language behaviour and their interpersonal effects in caregiver-patient interaction. For this purpose, a corpus of language-related comments from the forum of the Facebook support-group "Alzheimer's and Dementia Support" has been compiled. These peer-to-peer fora are characterised by their many-to-many format and their highly interactive nature (cf. Locher/Thurnherr 2017: 5). Combining content analysis and a linguistic approach rooted in interpersonal pragmatics (cf. Locher/Graham 2010, Davis 2010), this study lays open the topics discussed (e.g. language loss, language choice by bilinguals, taboo language, etc) and investigates caregivers' strategies of coping with these issues.

The analysis covers two major levels of metapragmatic commentary: On the one hand, caregivers use the forum to report on their experiences in the immediate caregiver-patient interactions, e.g. in the form of narratives. On the other hand, they also use the in-forum interactions to provide feedback on the ongoing discussions and negotiate their roles as caregivers. Complex relational work is carried out in positioning self and other (cf. Buchholtz/Hall 2005), e.g. as professional expert, lay expert (based on experiential expertise), or non-professional, loving relative. The high degree of continued interactivity and the shared experiences of the users effectively create virtual communities of practice (cf. Eckert 2016), where the participants negotiate strategies (such as humour, religious perspectivizing, objectification) which help them to deal with the challenges of communicating with AD sufferers. Caregiver-patient interaction is thus elucidated from a metapragmatic angle which sheds lights on the conceptualization of caregiver and patient roles in interaction, but also the disease itself.

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24 Managing knowledge claims in dementia care encounters

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Keywords: bilingualism, interaction, nursing homes, narratives

In conversations involving persons with a cognitive impairment, such as dementia, one might face various challenges for communication. Especially the status of knowledge claims may be problematic, as they may be affected by word finding difficulties (Lind et al. in press), confabulations (Lindholm 2015), and memory problems (Ekström 2017). In this paper, we explore an interactional dilemma related to the unclear status of knowledge claims made by PWDs, namely conflicts of factual knowledge between the PWD and their interlocutors. The data are video recordings of authentic conversations between PWDs and care providers and family. The analysis applies a conversation analytic perspective, focusing on how the participants themselves orient to and deal with the communicative challenges that arise. The paper contributes to the topic of the workshop by focusing on interaction as a key site where language is used by older speakers. Contrary to confabulations, which are often obviously false, other factual statements made by PWDs may have a more unclear status as to whether they are true or false. Previous conversation analytic research has documented that speakers orient to the question of rights to knowledge ('epistemics') as a moral issue (Stivers et al. 2011). This paper explores how interlocutors negotiate these rights and manage disagreement when one of the parties has dementia. We explore four episodes from an encounter between a person with dementia of the Alzheimer's type and his primary nurse during a routine home visit. The episodes involve a contestation and discussion of a claim by the PWD that a tube of adhesive for dental prostheses standing on the table in front of them is new. The focus of analysis is how the parties claim epistemic rights for themselves and attribute degrees of epistemic authority to each other in negotiating a solution to this disagreement. Our analysis suggests that how conversational partners treat PWD's knowledge claims reveal their assumptions about, and may have implications for, the construction of PWDs credibility and competence as knowledgeable participants. The analysis shows that asymmetries in epistemic authority do not always reflect actual knowledge states. Consequently, there is a danger that care providers underestimate the knowledge claims made by persons with dementia, and consequently that they explain why they are wrong in paternalistic way rather than exploring the epistemic grounds of the differences in claims and views.

Posters

25 Using a picture naming task to measure the lexical knowledge of Polish-German bilingual Alzheimer's sufferers

Yvonne Behrens (Seminar für Slavistik, University of Bochum)

Keywords: bilingualism, dementia, vocabulary

The relation between multilingualism and existing Alzheimer's disease has been unexplored so far. Yet, the daily routine of German nursing homes proves the relevance of the two interconnected research areas. By participating in the project *UnVergessen[1]*, I have realized that the link between dementia and multilingualism is causing social and linguistic problems for both caregivers and dementia patients. It is often assumed that a patient does not speak the language if there is no production of that same language. However, the production and perception of a multilingual patient with dementia may differ significantly. Observations show that the productive abilities are reduced before the receptive ones. This can lead to fatal misjudgments and false diagnosis.

One symptom of Alzheimer's dementia is the reduction of language skills. This includes word finding disorders, the reduction of the patient's vocabulary, and increasing problems in the resolution of polysemy and mutism (Posenau 2014). Alzheimer's-related language reduction has so far been researched only for monolingual patients. So, the interesting question is: Does multilingualism affect the dementia-related language degradation or not, and if so, to which extent? Meaning, does the language degradation delay, accelerate or remain constant with the linguistic degradation of monolingual dementia sufferers.

I am investigating the vocabulary of Polish-German bilingual Alzheimer's sufferers in its size and diversity by using a picture naming task, both receptive and productive. For this purpose I am preparing a long-term study with an experimental group of 20 Polish-German bilinguals and two control groups consisting of 20 Polish and 20 German monolinguals. In addition to the basic vocabulary, the picture naming task will include the vocabulary of the morning care used in German nursing homes by caregivers, because it is indispensable for the successful completion of the morning care. Currently, I am conducting a preliminary study in which I am recording the morning care routine of Alzheimer's sufferers. First results show a high occurrence of address forms and numerous body parts vocabulary. The collected lexemes will then complement the picture naming task.

The results of my research should not only enable new insights into the issue of multilingualism and dementia, but also serve to inform future caregivers about the communicative skills of multilingual dementia patients.

In my talk *Using a picture naming task to measure the lexical knowledge of Polish-German bilingual Alzheimer's sufferers* I would like to present the methodology of my research. Therefore I will describe the data collection procedure, which is necessary in order to develop the picture naming task.

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[1] staged by Dr. Katrin Karl, Ruhr-University Bochum

26 Older language learner: a comparative corpus study of FL performance and learning materials

Karolina Czopek (Institute of English Studies, University of Warsaw) & Joanna Byszuk (Instiute of Polish Language, Polish Academy of Sciences)

Keywords: older language learners, language acquisition, corpus linguistics, stylometry

As language learners, older adults do not only face problems related to psychophysical changes of their age, but also those concerning adopting a new lifestyle and social status. In linguistically and culturally homogeneous Poland, enrolling on a language course is often their first contact with a foreign language. Even when they have previous language learning experience from school, they have not practised the L2 for decades. However, previous research has already shown that it is not only possible to relearn a language once practised (as most of L2 knowledge - e.g. semantic memory - is retained in the brain for more than 50 years), but also that it is possible to start and successfully learn a second language later in life. At the same time, aspects such as working memory capacity, inhibitory control or reaction time tend to decrease with age, which has an impact on the learning (and teaching) process.

On the basis of these assumptions, our study aims at answering two research questions concerning Older Learners' language learning.

1. What are the learning difficulties of older age learners, as exhibited in utterances from learners' corpora? Are they different from difficulties of other adult learners? How can the corpus data be helpful in determining older learners' language needs?
2. Are senior textbooks different from general English textbooks for adults in terms of structure and content? Do they meet the needs of older learners?

The first step of our research involves analysis of a relatively small (a few dozen short samples) prototype of a corpus of short spoken utterances by learners participating in the courses advertised as designed for older adults. While the corpus size will not allow for generalizations, it is enough to serve as a starting point for examining if the linguistic problems experienced by older adults match those exhibited by the general group of EFL learners. We use PELCRA Learner English Corpus (Pęzik, 2012) for comparison with our corpus and evaluation.

In the second step of our study we will conduct quantitative and qualitative examination of textbooks designed for senior learners and compare them with popular textbooks for adults. The factors we take into consideration are content (topics discussed, the manner of their presentation and attention given to each of them) and adjustment to specific needs of this group of learners – if the textbook address problems that were observed in the analysis of corpus of learners' utterances.

For textbook analysis we use topic modelling LDA algorithm (Blei et al., 2003) to detect topic proportions. For analysis of learners' utterances we use a variety of machine learning methods found useful in stylometry to evaluate differences between two examined learners' corpora (our own vs. PELCRA). We start with network analysis for general classification and exploration of similarities between texts, and then use Craig's Zeta, a method allowing to extract features distinguishing each of the considered datasets, to detect differences between older and general learners' communities.

With this research we aim to identify some of the learning difficulties discussed group may face, and whether they can be appropriately met by either of the textbooks in general use. We also propose the novel scope of application of stylometry, and a concept of Older English Learners' Corpus, which might contribute to better handling of language education of aging people and support in their further cognitive development.

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27   Put your hands up: exploring the interactive functions of Palm-Up in French Belgian and Catalan Sign Language interactions

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Keywords: Gesture, sign language, aging, multimodal corpora, social interaction

When in interaction, participants often raise their forearms in such a way that their palms face upwards (see Figure 1). The Palm-Up (PU) has been attested in many different spoken (SpLs) and sign languages (SLs) (see Gabarró-López 2017 for a literature summary). However, research carried out within conversations of SL data has often examined the PU in isolation from other SLs and SpLs (Cooperrider et al. 2018, p.2). Moreover, SL linguistics has long

focused on the grammatical status of signs, leaving aside interactional components (Cibulka 2016). Similarly, studies in aging rarely include deaf individuals (Gabarró-López et al. subm.).

Figure 1. Palm-Up

This paper aims at addressing these gaps by exploring the interactive functions of PU (Kendon 2004) combined with gaze behavior as used by deaf older signers in different elicited conversational data of French Belgian Sign Language (LSFB) and Catalan Sign Language (LSC), offering therefore a contrastive perspective of PU uses in interaction.

The main underlying questions have a twofold objective: (1) to observe to which extent comparing two SLs can expand the understanding of the multimodal facets of signers' interactions, and (2) to test the reliability of the annotation protocol. Although aging is punctuated by idiosyncratic language uses, it is argued that gaze patterns will combine similarly with interactive PUs across LSFB and LSC; just as other nonmanuals combine similarly with other types of PUs (i.e. shrugs and epistemic PUs) across SpLs and SLs (Cooperrider et al. 2018).

Our samples include a total of roughly 20 minutes of conversational data of two LSFB signers (≥ 66 y. old) (LSFB Corpus, Meurant 2015) and two LSC signers (≥ 60 y. old) (LSC Corpus, IEC forth.). The interactive functions of PUs will be analyzed using a multimodal protocol for the annotation of pragmatic gestures applied to SLs (Bolly & Crible 2015). The LSC sample will be coded by one annotator, whereas the LSFB sample will be coded by two annotators to verify inter-annotator agreement. This approach is almost unprecedented in the literature and has never been adopted using a SL cross-linguistic perspective.

First results suggest that LSFB and LSC participants use PUs to express a wide range of interactive functions, including agreeing, checking for understanding (viz. monitoring), opening, holding, and closing a turn. The distribution of most functions is balanced across both SLs, except for turn closing, which is much more frequent in LSFB than in LSC (25 *vs.* 4) and for monitoring, which is more often used in LSC than in LSFB (11 *vs.* 4). In the two SLs, gaze is always directed towards the addressee for all functions except for turn holding, in which signers look upwards or downwards.

With these results, we hope to contribute (1) theoretically to the idea that the manual channel is not purely linguistic in SLs, and that meaning is not only propositional (Cibulka 2016), and (2) methodologically to data annotation reliability, which can sometimes be challenging to researchers.

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28   Attitudes toward others in the diaries of a person with Alzheimer's disease

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Keywords: Alzheimer's disease, diary, appraisal, attitude, affect

A woman with Alzheimer's disease (AD) had written diaries for over forty years (1968–2012) and was 80 years old when she wrote her last entry. Then she donated her diaries for research purposes. The aim of this study is to investigate linguistic changes related to AD during the writing of the diaries. We focus on the writer's attitudes towards the persons she personally knows to see if her attitudes towards other people change until the very last entries and how the possible changes manifest themselves linguistically.

The data of the study consisted of the total of 281 entries that were written in the summer months (between April and September) during the years from 2003 to 2012. The length of the entries varied from one sentence to an ample description of an event. Appraisal in English, the theory of J. R. Martin and P. R. R. White (2005), was applied to analyze the data, particularly from the perspective of affect and judgement. Judgement was further divided to those dealing with social esteem and those oriented to social sanction. All the occurrences (n=54) that included some emotion and mentioned another person, as well as those in which the writer gave a judgement about someone or described the way they behaved were analyzed. Our results show that in the earlier years, the expressions of the writer were context-sensitive and case-specific, and she explained the expressions for her attitude. She used explicit referencing, litotes, metonymy and irony to soften and to bring multilayerity to her expressions. Furthermore, she described the expressions of her attitude from her own point of view so that the focus was not on the other person's doings but on how she reacted to them. Even though the writer produced fewer and fewer entries towards the end of her diary-writing, she more often expressed her attitude to other people, both in positive and negative terms, than in her earlier entries. Her attitude changed to a more holistic appreciation of another person: instead of expressing her own reactions she made generalizations of a person's behavior using a declarative style and describing the behavior from the point of view of an external observer. This study is a qualitative case study on a topic that has not previously been examined. However, the data are limited, and the changes we discovered may not be caused by AD alone but also by the effects of aging and other health conditions the writer had. The purpose of our further research is to study the same topic using a larger data set that provides information not only about linguistic changes caused by AD, but also about changes in the processes of social thinking. In the CLARe 4 conference, this paper contributes to the theme of interaction, as writing a diary is a way of self-expression as well as a communication tool.

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29 Language, aging and depression: linguistic predictors of Geriatric Depression

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Keywords*: geriatric depression, linguistic functioning, neuropsychological testing, logistic regression*

Linguistic functioning is important to maintain mental health across the lifespan. Impaired linguistic functioning is found associated with heightened risks for depression in childhood and adolescence (Yew & O'Kearney, 2013). Furthermore, linguistic functioning is one of major neurocognitive complaints among depressed older adults (Fischer et al., 2008). However, no study has as yet examined which specific components of linguistic functioning are associated with depressed older adults' linguistic complaints. Therefore, the study aimed to identify which specific linguistic components predict depression among older adults. The study used data collected from the Cognition and Aging in the USA dataset (CogUSA; McArdle, Rodgers, & Willis, 2015) to conduct logistic regression analysis on adults older than 64 years old (n=689). The outcome variable for the logistic regression analysis is binary, using a clinical cutoff score of 16 and above on the Center for Epidemiological Studies Depression Scales (CES-D; Radloff, 1977) to divide older adults into depressed (n=166) and non-depressed (n=523) groups. Predictor variables were older adults' scores on four subtests in Woodcock-Johnson Tests of Cognitive Abilities III (WJ-III; Woodcock, McGrew, & Mather, 2001), including two semantic tasks, Verbal Analogy (measuring oral production of semantic reasoning) and Picture Vocabulary (measuring visual semantic retrieval) subtests, and two phonetic tasks, Incomplete Words (measuring auditory phonetic reasoning ability) and Word Attack (measuring visual phonetic reading ability) subtests. Logistic regression analyses found that depressed older adults were best distinguished from their non-depressed counterparts with linguistic tasks of Verbal Analogy and Incomplete Words. This finding suggests that semantic and phonetic reasoning ability are associated with geriatric depression and linguistic working memory may be a protective factor for geriatric depression.

Table 1
Results for Logistic Regression Analysis of Linguistic Functioning Predicting Depression

Variable	Coefficient	SE	p	Odds Ratio	CI for Odds Ratio
Constant		27.44		<0.001***	
Verbal Analogies	-0.016	0.006	0.009**	0.984	0.972-0.996
Incomplete Words	-0.034	0.011	0.001**	0.967	0.946-0.987
Word Attack	0.002	0.003	0.517	1.002	0.995-1.009
Picture Vocabulary	-0.008	0.005	0.115	0.992	0.981-1.002

Note:***p<0.001,**p<0.01, *p<0.05

Corpus presentations

30 "Varia-Idade" – linguistic and discursive strategies of older people in Rio de Janeiro

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Keywords: Corpus; discursive strategies; conversation; older speakers; Portuguese

The research project "Varia-Idade no Rio de Janeiro - Comunicação e geração: Estratégias linguísticas e discursivas na idade maior" (Varia-Idade in Rio de Janeiro - Communication and Generation: Linguistic and Discursive Strategies of older people) is a binational cooperation between the University of Heidelberg (Germany) and the Rio de Janeiro State University (UERJ, Brazil). The linguistic behavior of the youth generation in Brazil has been well described and analyzed during the last decades, while the language behavior of the seniors has rarely been given much focus or attention. Many existing studies dealing with the linguistic behavior of older adults are based on the assumption that the communication of older speakers is deficient and insufficient.

As part of this project, a corpus of about 125 semi-directive interviews in Portuguese language is being created. The application of an interview guide dealing with aspects of the individual experiences in the city of Rio de Janeiro (such as social life, education, culture, local infrastructure, leisure activity, history of the neighborhood, fashion) will help us to have comparable conversations on a content-related level. The participants in this study are at least 60 years old and have been residing in different parts of the city for more than 40 years. Special attention is given to an appropriate balance of the following parameters:

Social and educational background: Since existing studies focused on educated speakers, we strive to consider different social backgrounds and levels of education.

Spatial diversity: The participants come from different city districts, including pacified favelas.

Furthermore, the participants should lack little or no somatic or cognitive restrictions.

In an environment familiar to the speaker, we have already conducted about 80 interviews, which corresponds to approximately 69 hours of voice recordings; about 15 hours have been transcribed with f4transkript.

Apart from studying the linguistic behavior and the linguistic variation in the speech of the older inhabitants of Rio de Janeiro, the discourse on the perception of changes in daily life and in the urban space will be analyzed. Rio de Janeiro has been suffering as a result of global change for the last 50 years. The change in urban space is often a question of urban fractures that are likewise reflected on a metalinguistic level.

For the analysis of the urban discourse of older speakers, it is imperative to approach with a transdisciplinary perspective that establishes a link between linguistic and analytical-discursive perspective and the perspective of urban geography, sociology, history, urban anthropology and cultural science, which are already, partially, included in the ongoing project.

In order to fit in with the conference's field of methods, our paper will briefly present the project and discuss our methodological approach as well as some salient findings.

Some first analyses show, with regard to content, that many interlocutors think that the quality of life in Rio de Janeiro has decreased during the last decades and they complain about the increase of the violence in the city. Besides, some interlocutors who are not residing in favelas say that they would never go in any of them, even though they are living next-door, except that there are (not always visible) borders which the inhabitants are aware of and that separate a wealthier district from a socially and economically depressed district. In addition, some inhabitants have prejudices against other Brazilians coming from other parts of Brazil, especially from the north-east of the country, as if they were responsible for the problems the

city is confronted with. On a linguistic level, it can be stated that the language used by all interlocutors contains features of orality, regardless of their level of education.

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31 Signing amplitude in older signers of the SignAge Corpus: insights from motion capture

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Keywords: sign language, motion capture systems, interaction

Sign languages corpora of LSFB (Meurant 2015) and LSQ (Parisot & Rinfret 2015; Luna 2015) include data from older signers. Parisot (2017) has given more details about the analysis of verb agreement in the senior LSQ signers suggesting "even if verb agreement is sometimes difficult to perceive in seniors' productions, it seems to be rather a phonetic difference than a morphosyntactic one".

Our SignAge corpus of interactions between older deaf signers in LSF aims to test motion capture systems to complement analysis on the basis of video recordings. Motion capture has the advantage to capture three-dimensional data, including the possibility to change the point of view. It also allows for more abstract movement descriptors to be extracted such as speed or acceleration of the different body parts. Furthermore, it is a step forward to get semi-automatic annotation since manual annotation is time consuming.

We could not use a mocap system with many reflective markers and infrared cameras in a mocap studio so we needed a less invasive mocap setting. Then, we conducted complementary tests with Kinect and Inertial Measurement Unit sensors, which can measure acceleration and relative position differences on xyz axes.

Following some of the steps from the methodological protocol developed in CorpAGEst (http://corpagest.org/), we tried to involve relatives or friends as interviewers; the 13 participants they interviewed are over 65 years old (Table 1) and use LSF as their main language in everyday life. Two deaf 'complices' conducted 6-min interviews on the themes of the evolution of transport, access to care, culture and new technologies (Fig. 1 and our *companion paper* for technical details).

We explore gestural flow with a kinesiological model based on linguistics and we are currently analysing i) the variation of the signing amplitude per each degree of freedom, ii) the global movement quantity and iii) the way it is correlated with the respective articulatory segment, in each of the three age groups in our sample.

One of the hypotheses is that the ranges of motion of degrees of freedom are reduced for older people compared to younger people. Consequently, the transfer of the movement is much more present than for younger people. The same for finger selection: the ratio of the inertial mass between the hand and the forearm is lower for older than for younger people. This fact exerts a motion further on the forearm and a smoother gesture. We also expect two tendencies: the signs which clearly respond to a proximal-distal flow engaging the arm, the forearm and the hand in the movement should show proportionally less movement on the hand than we have for younger people; for the signs which clearly respond to a distal-proximal flow engaging the hand and the forearm, the movement of the forearm should be more developed than the ones of the younger people.

We will present some preliminary results and the contrast between older and younger people (inside the panel) is reinforced in each interaction when the interviewer is the younger signer.

Sign Languages

LSFB : Sign Language of the French-speaking Belgium

LSQ : Sign Language of Quebec

LSF : French Sign Language

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Tables and Figures

Participants	13	
Male	7	
Female	6	
Age		
64-65 y.o	4	2M 2F
72-76	5	2F 3M
79-84	4	2M 2F

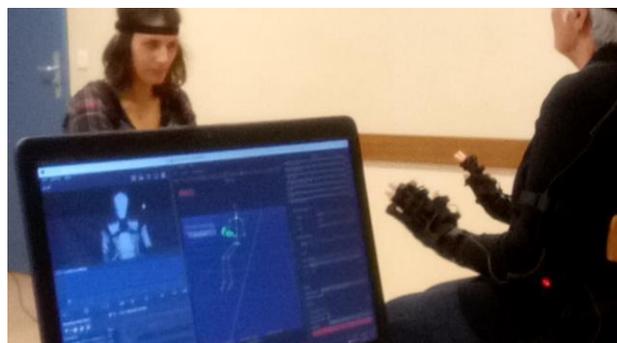Table 1: Age groups and gender

Fig.1 Mocap set up

32 "Can you repeat?"– caregivers' use of repair to achieve mutual understanding with persons with dementia

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Keywords: dementia, communication, repair, conversations analysis

Dementia may cause difficulties in communication. People with dementia are therefore often described as being unable to participate in meaningful conversations (Lindholm 2010). Dementia affects the language in different ways. The responsibility to create understanding in a conversation is shared by all participants. By means of different strategies, participants in conversation can construct understanding through collaboration. One of this strategies to achieve mutual understanding is by repairing. Schegloff et. al (1977) define repair as a strategy addressed to recurrent problems in speaking, hearing and understanding.

This presentation focuses on repair sequences, particularly on how caregivers respond to hearing and comprehension problems expressed by persons with dementia. The following extract provides an example of a repair sequence:

01 GE: träning å mjölk ger starkt skelett **TURN 1**
exercise and milk give strong bone structure
02 (2.1)
03 A: ger va
give what
04 GE: (.h) man får starka ben **TURN 3**
you get strong legs
05 A: aha
oh

The caregiver GE reads *träning å mjölk ger starkt skelett* ('exercise and milk give strong bone structure') directly from the newspaper (l. 1). Anna, who is an older woman with dementia, initiates repair by asking *ger vad* ('give what') (l. 3). Her combination of the verb from the previous utterance and a question word indicates a problem to grasp GE's utterance. In her

response, GE reformulates her contribution by saying *du får starka ben* ('you get strong legs') (line 4).

In my study (Johansson 2018), based on 30 hours of video data recorded at day-care centre for persons with dementia, I analyzed 124 instances of repair conducted by the caregivers. In my data, repair was frequently conducted by repetition of the problem source. In other situations, the caregivers attempted to solve the problem by rephrasing their original utterance (as in the extract above) or providing additional information. Often, the repair turns were produced at a slower pace or were accompanied by a change in the physical position.

The data include both two-party conversations and multi-party conversations. The study indicates that the caregiver use many different practices of repair in multi-party conversations than in two-party conversations.

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33   Older bilingual persons in German nursing homes – a corpus presentation

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Keywords: bilingualism, spoken language, interaction,

An emerging corpus of spoken data is presented, originating from older Russian and Polish bilingual long-term care patients in German-speaking nursing homes. The poster is divided in four main sections.

(1) The linguistic data is being collected in the context of the project UnVergessen (Ruhr-Universität Bochum). One of the aims of the project is the linguistic support of bilingual persons in nursing homes.

(2) The current data comprises recordings of ten bilingual Russian-German and Polish-German speaking persons, with individually different cognitive and physical limitations, living in German-speaking nursing homes. The persons, their sociolinguistic biography and state of health are presented.

(3) The linguistic data itself is described in the third section. Four different types of recordings are included: communication between bilingual patient and mono- and bilingual nursing staff during morning nursing, everyday communication between bilingual patient and a familiar bilingual person, half-controlled narrations of their (linguistic) biography, controlled linguistic data, including a picture-based narration and a semantic fluency task. The language of the recordings varies from exclusively Russian/Polish or German to different kinds of language switching and mixing.

(4) To conclude, an initial set of questions is presented together with first results from the bilingual corpus.

34 A multifaceted corpus for the study of cognitive decline in a Swedish population

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Keywords: cognitive impairment; language tasks; spontaneous speech; Swedish

A potential, early-stage diagnostic marker for neurodegenerative diseases, such as Alzheimer's disease, is the onset of language disturbances which is often characterized by subtle word-finding difficulties, impaired spontaneous speech, slight speech hesitancy, object naming difficulties and phonemic errors. Connected speech provides valuable information in a non-invasive and easy-to-assess way for determining aspects of the severity of language impairment. Data elicitation is an established method of obtaining highly constrained samples of connected speech that allows us to study the intricate interactions between various linguistic levels and cognition (Boschi et al., 2017).

In this paper, we describe the collection and content of a corpus consisting of spontaneous Swedish speech from individuals with Mild Cognitive Impairment (MCI), with Subjective Cognitive Impairment SCI) and healthy, age-matched controls (HC). The subjects were pooled across homogeneous subgroups for age and education, a sub-cohort from the Gothenburg-MCI study (Wallin *et al.,* 2016). The corpus consists of high quality audio recordings (including transcriptions) of several tasks, namely:

1. a picture description task – the Cookie-theft picture (Goodglass *et al.,* 2001), an ecologically valid approximation to spontaneous discourse that has been widely used to elicitate speech from speakers with different types of language and communication disorders;
2. a read aloud task (including registration of eye movements) – where participants read a text from the IREST collection (Trauzettel-Klosinski et al., 2012) twice, both on a computer screen (while eye movements are registered), and the same text on paper;
3. a complex planning task – a subset of executive functioning that tests the ability to identify, organize and carry out (complex) steps and elements that are required to achieve a goal (cf. Fleming, 2014);
4. a map task – a spontaneous speech production/semi-structured conversation in which the participants are encouraged to talk about a predefined, cooperative task-oriented topic (cf. Andersson et al., 1991);
5. a semantic verbal fluency task – category animals: where participants have to produce as many words as possible from a category in a given time (60 seconds). The fluency tests require an elaborate retrieval of words from conceptual (semantic) and lexical (phonetic) memory involving specific areas of the brain in a restricted timeframe (cf. Raoux et al., 2008).

All samples are produced by Swedish speakers after obtaining written consent approved by the local ethics committee. Tasks (i) and (ii) have been collected twice in a diachronically apart period of 18 months between 2016 and 2018.

The corpus represents an approximation to speech in a natural setting: The material for elicitation is controlled in the sense that the speakers are given specific tasks to talk about, and they do so in front of a microphone. The corpus may serve as a basis for many linguistic and/or speech technological investigations and has being already used for various investigations of language features (cf. Fraser et al., 201ba,b; Themistocleous et al., 2018).

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35 The SignAge Corpus: recording older signers with low cost motion capture devices

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Keywords: sign language, motion capture devices, video data

For almost ten years, the marketing of low cost motion capture devices such as the Microsoft Kinect sensor has enabled numerous studies in real-life settings (Mousavi Hondori & Khademi, 2014; Webster & Celik, 2014; Springer & Yogev Seligmann, 2016). Whereas most of this work with older people studies gait and fall risks (see Rougier, Auvinet, Rousseau, Mignotte, & Meunier, 2011 for example), in the present paper we propose to focus on the building of the SignAge corpus dedicated to the study of signing in older deaf participants with low cost motion capture devices.

Up to now, a (preferably multi-)camera setup was considered a basic requirement in sign language studies, sometimes completed with much more intrusive or expensive equipment such as data gloves or optical motion capture systems (Channon, 2015, p. 132–133). But

recent technology advancements allow us to quantify 3D-motions and their time derivatives at a reasonable price. Our newly built SignAge corpus[1] of interactions between older deaf signers in LSF takes advantage of such advancements. The SignAge corpus combines data acquired by:

2 digital video cameras, with a plan on the signing interviewee's upper body and a plan on the whole interaction (similarly to the protocol developed in CorpAGEst, Bolly & Boutet, 2016)

2 Noitom Perception Neuron body straps, each equipped with 25 IMU (Inertial Measurement Units), recorded with Axis Neuron software

1 Kinect for Windows v2 (also known as Kinect for Xbox One) depth sensor centered on the interviewee, recorded with Brekel Pro Body v2.

Thus, for each participant, our 5 timed data flows are: 2 video streams at 25 fps – synchronised, visualised and annotated in the ELAN software (Sloetjes & Seibert, 2016) –, and BioVision Hierarchy (BVH) files (see Meredith & Maddock, 2001). These BVH files are visualised in Motion Inspector, and the following descriptors are computed in Matlab for the three age groups in our sample: the global quantity of motion (Sarasúa & Guaus, 2014) and the variation of the signing amplitude for each joint of the upper limbs, with the attempt to establish a correlation between age and the articulatory segment involved.

For now, after manually post-synchronising our flows thanks to start and end claps realised by both the interviewer and the interviewee during the recording session, we are assessing the quality of our data. Preliminary results show that temporal resolution can be questionable for the Kinect used in conjunction with Brekel, whereas in the Perception Neuron, spatial drift is a problem. Hence, these two devices seem to be complementary: the Kinect gives the absolute movements of the body, whereas the neuron is much precise for relative movements. Furthermore, a post interview feedback with each subject showed a high acceptance of the protocol by older signers (see figure below). As a conclusion, knowing the technical limitations it appears that Kinect and Neuron might still be an interesting choice to get usable additional 3D data in aging studies because of their portability and the ease with which participants get accustomed to wearing the body straps.

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[1] See our *companion paper* "Signing amplitude in elderly signers of the SignAge Corpus: Insights from motion capture" for details on the corpus.

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ELAN: https://tla.mpi.nl/tools/tla-tools/elan/
CorpAGEst: https://corpagest.wordpress.com/
Microsoft Kinect: https://en.wikipedia.org/wiki/Kinect
MATLAB: https://www.mathworks.com/products/matlab.html
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Noitom Perception Neuron: https://neuronmocap.com/products/perception_neuron
OptiTrack Prime 13: http://www.optitrack.com/products/prime-13/

| Equipping the participants with body straps | Calibration | Interview |

36   Exploring the LangAge Corpora with LaBB-CAT

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Keywords: biographical data, database, transcription files

The LangAge Corpora are a collection of biographical interviews of French speakers in Orléans, France, recorded in 2005, 2012 and 2015 (Gerstenberg, 2005). Our interest is to give free access to the LangAge Corpora for exploration and further research in corpus linguistics.

The poster illustrates the ongoing work dealing with the adjustment of a part of the LangAge Corpora to the LaBB-CAT standards. At this stage, it is possible to explore the LangAge Corpora by printing statistics and accessing the data using queries.

Under a General Public License (GPU, GPL), LaBB-CAT is a software that stores Transcriber transcripts with their corresponding Praat text grids and Xwaves. It allows managing corpora via an internet server-user application (Fromont & Hay, 2012). LaBB-CAT functionalities include the administration of user access, text mining, an interface for Praat, etc. Once a corpus is customized, LaBB-CAT shows a statistical report of the composition of the corpus, i.e. the number of tokens, transcripts, turns, utterances, etc.

We will show how metadata, transcripts, and sound files are processed in order to be used by LaBB-CAT (Gerstenberg, Hekkel, & Kairet, 2018). So far, we have followed two steps: First, we defined the structure of the database, so that it would match with the metadata of the audio transcriptions. For this purpose, we used two sources, the xml-data of the transcription files and metadata sheets for the individual participants. With this database structure, we were able to create different versions of the same corpus for specific tasks or aims. The second step aimed at uploading the transcriptions, the audio data, and the participants' metadata. As a result, an anonymized portion of the LangAge corpus is already accessible online. At this stage, it is possible to filter the transcriptions using simple word queries or regular expressions. After the filtering of information, downloads of audio and transcription files are possible. In the upcoming months, we will be implementing a user management strategy that allows users to be assigned with different profiles to different parts of the corpora. This will also imply that some users will have restricted access to certain content.

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37   Text production by older people

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Keywords: written language, text types, private texts

The German research on spoken language and conversational behaviour of older people emerged in the late 1990s and remained fairly prominent until the middle of the noughties (e.g. Fiehler / Thimm 1998, Thimm 2000, Arens 2005, Fiehler 2008, Sachweh 2008). In the last ten years, research activities in this field seem to have been disregarded. In addition to this, studies focusing on written texts that are produced by older people do not seem to have a place in the

German research landscape (apart from Frings 2016). In comparison to Germany, the English speaking research on writing by older people has flourished since the late 1980s (e.g. Kemper 1987, Kemper et al. 1989, Kemper 1990, Kazemek 1997, Kazemek 1999, Hoskyn / Swanson 2003, Alex 2010). My research project wants to close the academic void in Germany by focusing on writing and text production in old(er) age. Therefore, I've been compiling two corpora: the first corpus contains different texts which have been produced by 30 old(er) people aged between 65 and 90 years: e.g. calendars, diaries, memos, poems, (short) stories, biographies/biographic stories, letters and travel reports. For getting into contact with the test persons I placed an advertisement into a local newspaper in Leipzig (Germany). The second corpus contains semi-structured respectively ethnographical interviews with the same test persons talking about their writing biography, their writing behaviour and different aspects on how writing takes place in their everyday lives, e.g. why they write, what they write, what writing means to them. At the conference, I want give an insight in to an ongoing German project on writing of old(er) people. The aim of the project is to collect a great amount of written texts, and to describe and characterize the great variety of text types that are produced by seniors in their private lives. By giving an insight into the written corpus and the interview corpus I want to describe how the test persons write and talk about different topics that are omnipresent in their daily lives, e.g. illnesses, the process of dying or the death of a beloved person.

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