QUAND LA LINGUISTIQUE PARLE DE, AVEC ET POUR LES AÎNÉS

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Jeanne – … *et* anorexique je ne parvenais pas à le retenir / j'ai / *alors* je pense à quelque ch/ je pensais à anus (rires) / *comme* c'est *quand même* le tube digestif *hein* qui est en bas (rires) *et* ça va depuis lors je n'oublie plus (rires) *et encore* l'autre jour aussi un mot / *tiens* je ne sais p/ *tu vois* / si / j'ai / j'oublie certains mots / *'fin* / je retombe dessus après *hein*…
(ID code: ageJM1; Pseudo: Jeanne; Age: 90; Source: Corpage 2012; Task 1 Line life; Time code: 1:13:10)

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Aging today

> "In half a century, the number of nonagenarians and/or centenarians has dramatically increased, particularly due to the increase in life expectancy at old age. However, **successful aging is more important than longevity**. All along their life, people can act to preserve their health, their physical and mental abilities as well as their autonomy."
>
> (Berr *et al.*, 2012: 281)

◎ **Trends in aging research**
  - From the end of the 1980s, focus on the **potential of older people** to encourage their *successful aging* or *aging-well* (vs. decline)
  - **Compensatory strategies** > certain stability, or even adaptive strategies and cognitive gain (Baltes & Baltes, 1990; Greenwood, 2007)

◎ **Language competence in normal aging** resists relatively well to age-related changes (Mathey & Postal, 2008)
  - Deficits mainly affect the access to the **lexicon** (Juncos-Rabadan et al., 2010) and the **syntactic competence** (simplification with age, see Kemper et al., 2001) especially among very old people (>75 years)

Communication and aging

Changes observed in the communication mode by/with elderly people

◎ Accommodation Communication Theory: "when people interact they adjust their speech, their vocal patterns and their gestures, to accommodate to others"

- Overaccommodation: Patronizing talk, Elderspeak, secondary baby talk,…

Pseudo: Irène; Age: 95; Source: CorpAGEst 2013; Task 2 Socio-economic evolution; Time code: 00:00:45

- Speech + Gestures ("avant", "conduire")
- Syntactic oversimplification ("jamais eu le permis")
- Vocalization of silent [ə] ("on vous r<u>e</u>connaît")
- Slow speech delivery
- Repetitions

Inès: …et quels moyens de transport vous utilisez vous / quand **avant**
Irène: moi ?
Inès: oui
Irène: ah !
Inès: vous saviez **conduire** ?
Irène: non
Inès: non jamais eu le permis ?

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- ◎ Off-target verbosity (OTV) or off-target speech
  - ▪ Decrease in coherence together with an increase in amount of speech (loquaciousness) (Arbuckle et al., 2000)

The Pragmatic Change Hypothesis
The age-associated increase in off-target verbosity would be context sensitive: the copious off-topic speech is considered to be an adaptive change in speech style designed to meet age-associated changes in communicative goals and social context
(James *et al.*, 1998)

Pragmatics, corpora and aging research

◎ The pragmatic competence as the ability to use available **language resources** in a **contextually appropriate manner** (Kasper, 1997)

- ▪ Pragmatic language skills have usually been studied in the **Pathology of Aging** (Berrewaerts et al. 2003)
- ▪ Surprisingly, only **very little attention** has been paid to date to the study of pragmatic competence of very old **healthy people** (>75 years) from the angle of language production in **real-world settings** (Hamilton, 2001; Bolly, 2011; Bolly & Sandoz, 2012; Sandoz, 2014)

◎ **Corpus linguistics and the 'technological revolution':** Growing power of computational systems and electronic bodies of text (from 1980's) (Sinclair, 1991; McEnery &Wilson, 1996; Kennedy, 1998)

- ▪ Sampling, representativeness, homogeneity
- ▪ Machine readability: corpus annotation to save time and guarantee replicability

> **Corpus and aging studies…** very few studies (see Hupet et al., 1992)
>
> - ○ Recent initiatives in pathology (Lee, 2012; Davis & Maclagan, 2014 > Carolina Conversations Collection)
> - … and normal aging (Gerstenberg, 2009 > LangAge corpus; CLARE research group, 2014)

The CorpAGEst Project (2013-2015)

CorpAGEst "A corpus-based multimodal approach to the pragmatic competence of the elderly"

Marie Curie Intra-European Fellowship (PIEF-GA-2012-328282)

Aim?

In response to socio-economic concerns in aging, the main objective is to establish a profiling of the verbal and nonverbal pragmatic competence of healthy very old people in their natural environment

- Particular attention paid to the empathic ability, i.e. the ability to be in tune with others, to understand their point of view, and to interact with them

Research questions?

① Can we consider the preferred recourse to gestural rather than to verbal language (or conversely) as an adaptive strategy used by the very old people to compensate for a change in his/her communication behavior?

② What can (inter)subjective discourse markers and gestures, which have an expressive or an interactive function (e.g., *enfin* 'well', *tu vois* 'you see', shrugging the shoulders, addressed gaze), reveal about the empathic ability of the very old people?

'Potential' expressive discourse marker and gesture unit (co-speech)

Multimodal approach

➢ speech, facial displays, gaze, hand/body gestures

▪ The multimodal approach adopted seeks to understand language interaction in its globality, by questioning the way in which the various language and gestural dimensions interact to make sense in real-world settings

▪ Language = socially and temporally situated + embodied phenomena (NOT logocentric) (Mondada, 2006, 2007)

ageMM1: C'est Robert? Je ne sais plus. **Enfin**, ils sont nés là! (rires)
(Age: 85; Source: CorpAGEst 2012; Task 1A: Milestones in aging; Time code: 30:15:20)

Data and tasks

Corpage (audio) [2012] *
2.5 M words / 180 hrs. audio / 212 interviews
106 very old p. (> 75 y.) living at home
Without major cognitive impairment

Each interview has been replicated twice and subdivided into two subtasks:

Task Type	Interview N°1 * (with a familiar person)
Task A Descriptive task with a focus on past events	**Task 1A - Milestones in aging:** 'After having identified them, describe some major steps of aging in your life'
Task B Explicative task with a focus on present-day life	**Task 1B - Self-perception of aging:** 'Explain your self-perception of aging at the present time'

Data and tasks

Corpage (audio) [2012] *
2.5 M words / 180 hrs. audio / 212 interviews
106 very old p. (> 75 y.) living at home
Without major cognitive impairment

CorpAGEst (audio + video) [2013-] **
250.000 words / 16.8 hrs. audiovideo / 18 interv.
9 very old p. (> 75 y.) living at home or in residential home
Without major cognitive impairment

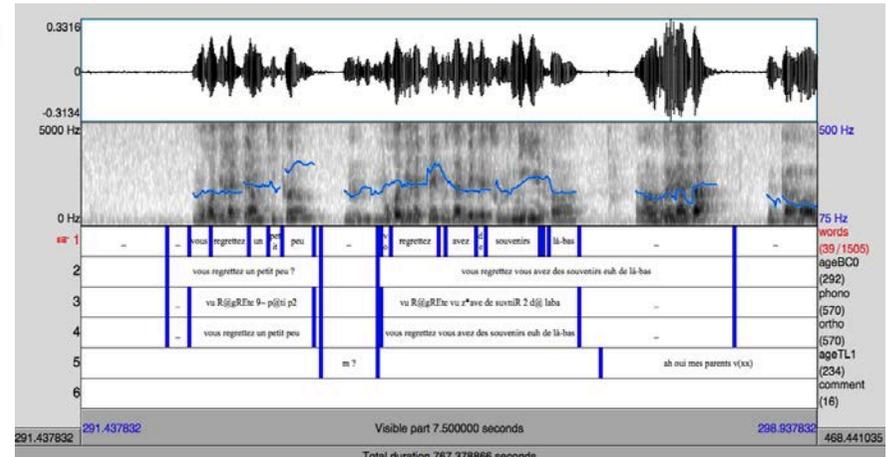Each interview has been replicated twice and subdivided into two subtasks:

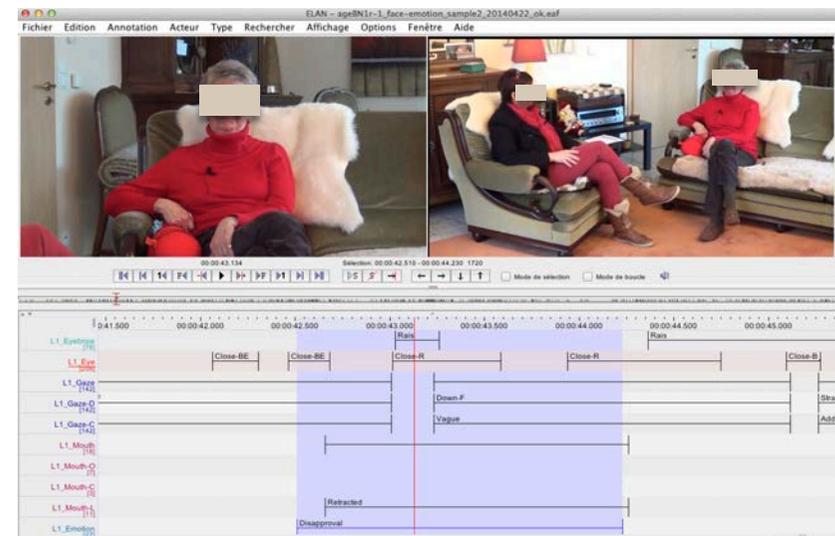| Task Type	Interview N°1 */** (with a familiar person)	Interview N°2 ** (with an unknown person)	Interview N°3 ** (repeated every year)
Task A Descriptive task with a focus on past events	**Task 1A - Milestones in aging:** 'After having identified them, describe some major steps of aging in your life'	**Task 2A - Milestones in progress:** 'Indicate major societal or technological changes that had an impact on the course of your life'	**Task 3A - Reminiscence from object:** 'Observe this familiar object and tell about what it makes you think about (picture, song, toy, food, etc.)'
Task B Explicative task with a focus on present-day life	**Task 1B - Self-perception of aging:** 'Explain your self-perception of aging at the present time'	**Task 2B - Self-perception of environment:** 'Explain how you feel in your everyday environment at the present time'	**Task 3B - Recent experience:** 'Explain one event or experience that recently happened to you'

Annotation principles

Some principles for the **verbal mode**

- Functional analysis + More objective description of DMs => Linguistic and cotextual parameters (MDMA Working Group)
- Transcription standards > Valibel center (Praat)
- Primary oral data semi-automatically aligned on the sound signal (EasyAlign program)
- Annotations (ELAN software)

Some principles for the **nonverbal mode**

- Sampling > 15' per interview (3*5')
- Functional analysis + More objective description of gestures => Physical and physiological parameters (McNeill, 1992; Bressem & Ladewig 2011)
- Parameters' annotation independently from the sound signal to avoid interpretive bias in the semiotics of gesture (Bressem, 2008)

Conclusion

> Annotated data will be especially useful for the social sciences where large corpora are being used more and more to support new insights, in a way which was not imaginable few years ago

◎ This project will open up **new prospects**
  - Developing enriched pragmatic and multimodal annotation systems to study language
  - Enrichment of the discussion of the concrete strategies to be implemented to improve the care for very old people and their so-called 'well-aging'
  - Provision of a reference multimodal corpus of the language in healthy very old people that may serve for further comparative studies (e.g., early detection of dementia)

◎ The knowledge acquired will be **transferable** to other disciplines (our wish!)
  - Psychology > "Does anxiety have an impact on the elderly's pragmatic competence"
  - Sociolinguistics > "To what extent does the everyday environment of older people have an impact on their successful aging?"
  - Computer sciences > "To what extent can pragmatic verbal/gestural phenomena be processed automatically?" (NLP, motion capture, accelerometry, etc.)
  - Health sciences > "What is the impact of medication on the pragmatic competence of very old healthy people?"

Thanks to them all…

http://corpagest.org

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Some links to learn more on the project:

- CorpAGEst blog: http://corpagest.org
- CLARE Corpora for Language and Aging Research: http://wikis.fu-berlin.de/display/clare/HOME (under constr.)
- Web perso of Catherine Bolly: https://www.uclouvain.be/281511.html

How to cite the corpora?

- Bolly, Catherine (2013-). *CorpAGEst. Multimodal corpus for the elderly's language*. F.R.S.-FNRS and Université catholique de Louvain, CNRS & UMR7023 (Structures Formelles du Langage)
- Bolly, Catherine, Masse, Marie & Philippe Meire (2012). *Corpage. Reference corpus for the elderly's language*. Louvain-la-Neuve, Université catholique de Louvain (Valibel - Discours et variation and Psychological Sciences Research Institute)

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Tools: Praat www.praat.org/, EasyAlign http://latlcui.unige.ch/phonetique/easyalign.php, ELAN https://tla.mpi.nl/tools/tla-tools/elan/

Selected communications on the project:

- "What corpora for discourse and aging studies ? From words to gestures (and conversely)". Research Seminar (Org.: A. Gerstenberg), 23 April 2014, Freie Universität de Berlin, Berlin (Germany)
- "Discourse and aging" (Hamilton, 2001) and "Language and (inter)subjectivity in normal aging" (Bolly, 2012). Journal Club de Gérontologie et Gériatrie & Aging Research Group (IRSS) (Org.: B. Boland, I. De Brauwer), 2 April 2014, Université catholique de Louvain, Woluwé-St-Lambert (Belgium)
- "Des gestes et des mots pour dire la vieillesse". Research Seminar of the UMR 7023 Structures Formelles du Langage (Org.: P. Cabredo Hofherr, E. Soare), 24 March2014, Université de Paris 8, Paris (France)
- "Understanding the elderly's everyday language: A mutually enriching dialogue between research and society" (with V. Charlot), Annual VALS/ASLA Conference: *What is the relevance of linguistic research for society? Questioning the notion of "impact"*, 13 May 2013, University of Basel, Basel (Switzerland)
- "Ecological corpora and economy of tools. The multimodal CorpAGEst corpus" (with D. Boutet), International Conference *Corpus Linguistics: How to bind concepts, technique and application?*, 14-15 December 2012, Université Bordeaux 3 - EA TELEM - CLLE-ERSSàB, Bordeaux (France)
- "Language and (inter)subjectivity in normal aging. A corpus-based multimodal approach to the empathic ability of very old people", Poster presented at the *XIIème Colloque International sur le Vieillissement Cognitif (JEV 2012)*, 25-26 June 2012, Tours (France)
- "Vieillissement langagier: Une revue systématique de la littérature scientifique" (with M. Sandoz), Research Seminar at the *Institute for Language & Communication (IL&C)*, 8 May 2012, Université catholique de Louvain, Louvain-la-Neuve (Belgium)