

## 1. Abstract

Most research in interpreting studies has been carried out in experimental frameworks, which have allowed for the cognitive processes involved in interpreting to be more clearly specified.

Unfortunately, experiments often present small sample sizes and lack ecological validity. Given these shortcomings, Shlesinger called for more corpus-based research, arguing that corpora reflect the interpreting activity as a socially situated activity in a way experimental data cannot.

With this aim in mind, the present study analyses the Ear-Voice Span (EVS, time lag between the speaker and the interpreter) in a large corpus, including a predictor that has received little attention, i.e. the interpreters' sex.

While results show that sex is not a significant predictor, the naturalistic approach of the study has allowed to confirm and refute findings from previous experimental studies. The methodology developed to build the corpus and to analyze the results is replicable and shows that **corpus-based studies are a useful addition to experimental studies.**

## 2. Hypothesis

Women appear to perform better than men for several cognitive abilities involved in interpreting. The length of the EVS is thought to be positively influenced by the intensity of the cognitive processes.

If we assume that women need to dedicate fewer cognitive resources to the interpreting task, **we can expect women to have a shorter EVS.**



Image 1. A. Merkel listening to interpreters

We also expect **15 additional predictors** to influence the EVS: source and target language, silent and filled pauses, lengthenings, false starts, length of segments between pauses, delivery rate and type (impromptu or read) and source speaker's/interpreter's speech ratio.

## 3. Corpus

Corpora offer several advantages:

- large sample size
- ecological validity
- authentic speeches and predictors
- easy replication and reuse

The corpus used for this study is the **European Parliament Interpreting Corpus Ghent (EPICG)**: a time-aligned and annotated corpus in EXMARaLDApartitur.

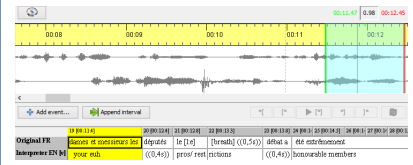


Image 2. Screenshot of an EPICG transcription

It comprises 180 interpretations in 6 language combinations (from and into English, French and Dutch), which amounts to more than 100 000 words and 14 hours of interpretation. EPICG is user friendly, offers flexible annotation and various output formats.

## 4. Methodology

The transcription process follows an adapted version of the Valibel instructions. Source and target texts are acoustically aligned on the basis of silent pauses. Interpreters in the corpus are anonymous. As a consequence, the sex of each interpreter was determined by humans and a speaker diarization software (LIUM\_SpkDiarization) on the basis of the recorded voices.

The EVS is measured with pairs of tags linking up lexical equivalents in source and target text. Time tags are manually and randomly added every 10 items uttered by the interpreter. The EVS is measured in centiseconds from the onset of the source item to the onset of the target item.

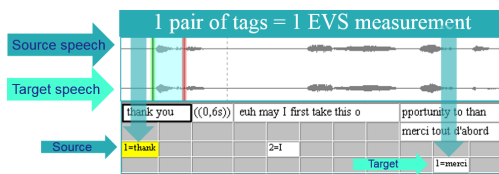


Image 3. Screenshot of time tags in EPICG

The values for EVS and other continuous predictors are automatically measured by a tailor-made computer program (ProcessEXB). Given that most predictors and the EVS can vary highly throughout a speech, each transcription has been split in 10-second segments, for which the average values of EVS and other predictors are measured.

## 5. Results

A Mann-Whitney U-test shows the sex is not a significant predictor of EVS. Average EVS for women = 3.01 seconds Average EVS for men = 3.05 seconds

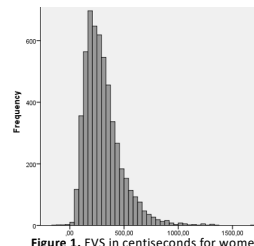


Figure 1. EVS in centiseconds for women

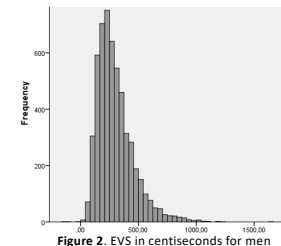


Figure 2. EVS in centiseconds for men

A generalized linear mixed model shows that the EVS increases when

- Dutch is the source language
- The input delivery rate increases
- The number of interpreter's disfluencies increases
- The original speaker/interpreter speaking time ratio increases

Average values of relevant predictors of EVS:

- Input delivery rate: 156 w/m ( compared to 142 w/m for the interpreter)
- Input delivery rate: 156 w/m
- Interpreter's disfluencies/min: 6.4 hums / 3.4 lengthenings / 1.5 false starts
- Original speaker/interpreter speaking time ratio: 1.04

## 6. Conclusions

These results allow us to

- draw new conclusions:
  - there is no difference in EVS between men and women
  - the EVS increases with the number of interpreter's disfluencies
- confirm previous findings:
  - the EVS is longer from an SOV language
  - the EVS increases with the input rate
- refute previous findings:
  - the EVS is not influenced by the length of segments between pauses, interpreter's delivery rate and the type of source delivery.
- better understand the interpreter's working conditions:
  - the input and output rates are very high

## 7. Future steps

In the near future, we intend to

- render the corpus publicly available online
- create a user-friendly version of the tailor-made program
- add new predictors (syntactic complexity and lexical density)
- add new languages (German)

## 8. Contact

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For more details on the compilation, transcription and annotation process, see Bernardini, S., Ferraresi, A., Russo, M., Collard, C. & Defrancq, B. 2018. Building Interpreting and Intermodal Corpora: A How to for a Formidable Task. in: *Making Way in Corpus-based Interpreting Studies*, Singapore, Springer, 21-42.