Predictive processes in sight translation

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DGfS Summer School

Form-meaning mismatches

University of Göttingen

August 2024

Background

Transitional Probability Bigram probability based on adjacency. (*)

Backward TP Shorter fixations on *last* when followed by *year* than *picture*.

Sight translation Task used in training interpreters that involves oral translation of a written sentence.

- Previous studies suggest professional interpreters are better at using predictive cues.

Eye-tracking

Early vs. Late Processing Measures

1. Skipping Rate (binary)
2. First Fixation Duration
3. Single Fixation Duration (if single on first pass)
4. Gaze Duration (total, first pass)
5. Probability of Regression Out
6. Regression Path Duration (sum, enter to leave)
7. Total Duration (sum of all fixations)
8. Re-reading Duration

- Facilitatory effect expected by high TP

  However, production might reverse expectations!

  → Difference in linear word order (SVO vs. SOV)
- German sentence repetition task ("shadowing") shows TP effects.
- Previous research in simultaneous interpreting shows no TP effects with German (SOV) to English (SVO), yet surfacing when German examples are SVO.
- Potential effects of difference in modality

Methodology

Participants 40 participants with L2 English (L1 Turkish)
20 professional interpreters from Conference Interpreters Association of Turkey,
20 interpreting students from Boğaziçi University and Okan University

Materials 24 experimental items each in 4 lists, following 2x2 design + 48 filler items

High or Low TP between verb and noun in English (*)

Strict adjacency of the verb and noun pair (true/false)

Adjacency	TP	Item
True	High	According to the news, very bright students collected donations from different groups.
True	Low	According to the news, very bright students recorded donations from different groups.
False	High	According to the news, students collected very large donations from different groups.
False	Low	According to the news, students recorded very large donations from different groups.

Haberler-e göre, öğrenciler farklı grup-lar-dan bağış topla-dı-lar.
news-DAT according student-PL different group-PL-ABL donation collect-PST-3PL

Procedure Sight translation task (self-paced spoken translation of visually presented English sentences) carried out with Experiment Builder 2.4.193 (SR Research, Ontario, Canada)

Data Audio recording of interpreting output, and eye movements were recorded, the latter at 1000Hz using a desktop mounted EyeLink 1000 Plus (SR Research, Ontario, Canada)

Data analysis Number of gaze fixations and fixation duration on the interest areas cleaned and exported through Data Viewer 4.3.210 (SR Research, Ontario, Canada). Linear mixed effects models to be fitted with lme4 on RStudio.

- Psycholinguistics experiment with a particularly challenging comprehension task.

QR Code for poster

Questions and hypotheses under discussion

Initial vs. regressive, more prominent effects expected in students in later measures.

- **Verbs** Backwards-TP effect, shorter durations in adjacent condition in both groups.
- **Nouns** Forward-TP effect, shorter durations in adjacent condition in both groups.
- Higher skipping percent expected in professionals than students.
- No facilitatory effects of TP expected in non-adjacent conditions in students.
- Inherent assumption: statistical learning vs. familiarity with "flipping" syntax?

Inter-participant differences

Backwards TP effect found in previous research mainly targets phonology.

Further tasks

- Combined analysis of fixations on verb, noun & spillover regions
- Qualitative analysis and transcription of translation audio files using ELAN.

  → Does prediction affect interpreting quality?
- Further exploration of syntactic differences on top of linear order effects.

  Non-adjacent context still has the NP adjacent to the verb.
- Recruitment of bilingual participants with no interpreting experience

  → Are the findings about prediction generalizable to L1 Turkish - L2 English populations?
- Ongoing joint research at Ghent University and University of Mons with similar tasks for future work into prediction in sight translation. (English - Dutch, English - French)

Acknowledgement

This research is supported by Boğaziçi University Scientific Research Fund (BAP) project number 19962 "Predictive processes during sight translation".

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