Can Interpreters Predict the Future?
A study on prediction in simultaneous interpreting

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Abstract

People make comprehension easier by predicting upcoming language. We might therefore expect prediction to occur during the extremely difficult task of simultaneous interpreting (and many theorists do).

However, in 50 years of research into simultaneous interpreting, no study has employed a truly empirical measure to investigate predictive comprehension during simultaneous interpreting.

We designed an eye-tracking study, which used the visual-world paradigm to investigate the time-course of prediction during a simultaneous interpreting task.

Introduction

Listeners regularly predict what they are about to hear. By prediction, we mean the pre-activation of any aspect of a word – its semantics, its syntax and its phonology. Language comprehension is not dependent on prediction, but the extensive evidence that we have of prediction suggests that it is a central part of comprehension.

Equally, prediction has long been seen as an advantage in simultaneous interpreting. This is hardly surprising, given that simultaneous interpreting is a complex, difficult task, and that prediction can speed up comprehension, potentially freeing other resources.

But does prediction routinely take place in simultaneous interpreting?

How does this prediction take place?

And do interpreters predict more than other populations?

We set out to answer these questions in an eye-tracking study that used the visual-world paradigm.

Participants

24 French L1 professional conference interpreters and 24 French L1 professional translators working in Geneva were recruited to participate in the study.

References

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Methods and Materials

Based on Ito et al. (2018), participants listened to, and simultaneously interpreted, a highly predictable sentence. Starting from 1000ms before the onset of the highly predictable word, they viewed a visual scene containing four objects, one of which was an image of either the target word, an English phonological competitor, a French phonological competitor, or an unrelated item. Their eye movements were tracked throughout.
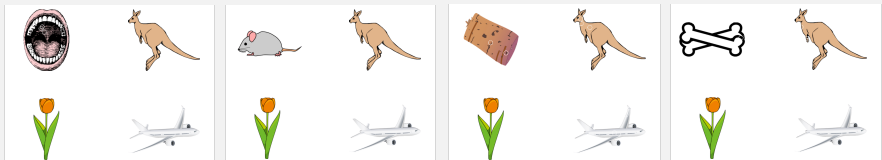

Illustration 1. Example visual scene showing the four conditions (from left to right: Target, English competitor, French competitor, Unrelated) for the sentence: "The dentist asked the man to open his **mouth** a little wider."

Results

The results of the linear mixed model show that both interpreters and translators predict during a simultaneous interpreting task. Interpreters start predicting earlier than translators, at 600ms before onset of the target word, compared to 400ms for translators. Interpreters' predictive eye movements are more sustained. There is no significant effect for either of the phonological competitors.
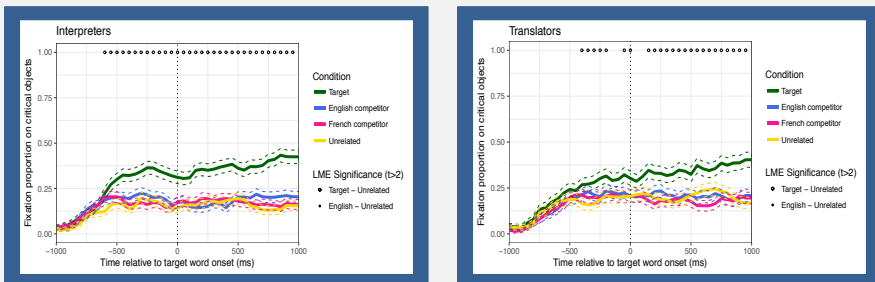

Figure 1. Linear mixed models for the Interpreter and Translator groups showing fixation proportions on critical objects from 1000ms before word onset until 1000ms after word onset. Word onset is shown at time 0.

A growth curve analysis investigated the differences between the groups. The analysis confirms that there is a significant difference between the target and the unrelated conditions. In addition, the by-participant analysis shows an interaction between profession and condition, indicating that there is a significant difference between groups with regards the proportion of fixations on the target object.
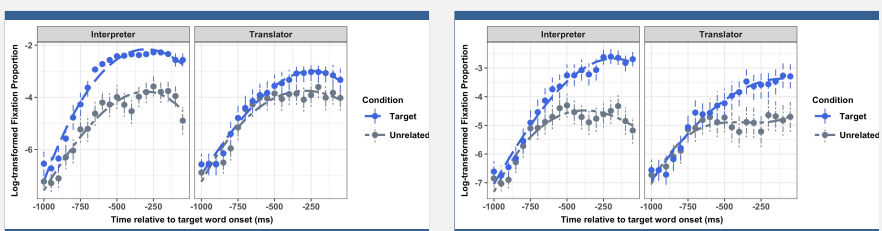

Figure 2. Growth curve analysis by participant (left) and by item (right)

Conclusions

We have confirmation that prediction takes place during simultaneous interpreting, even among a group who are not trained, and in a language pair which is syntactically matched.

This confirms the interpreting theories by which prediction is an important part of the process.

Discussion

Interpreters look earlier to the predictable object, and their predictive eye movements are stronger and more sustained. Further research could investigate whether this is due to training.

This provides evidence of prediction in a syntactically matched language pair. Does prediction increase in a mismatched pair?

100 years of conference interpreting

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