Speech Technologies for Translation and Revision

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Which Speech Technologies?

ASR: Automatic Speech Recognition (a.k.a. **STT**: Speech-to-Text)

and

TTS: Text-to-Speech

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JIAMCATT 2019

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International Annual Meeting on Computer-Assisted Translation and Terminology

European Commission, Directorate-General for Translation, Luxembourg

13-15 May 2019

The Shape of Things to Come: How technology and innovation are transforming the language professions

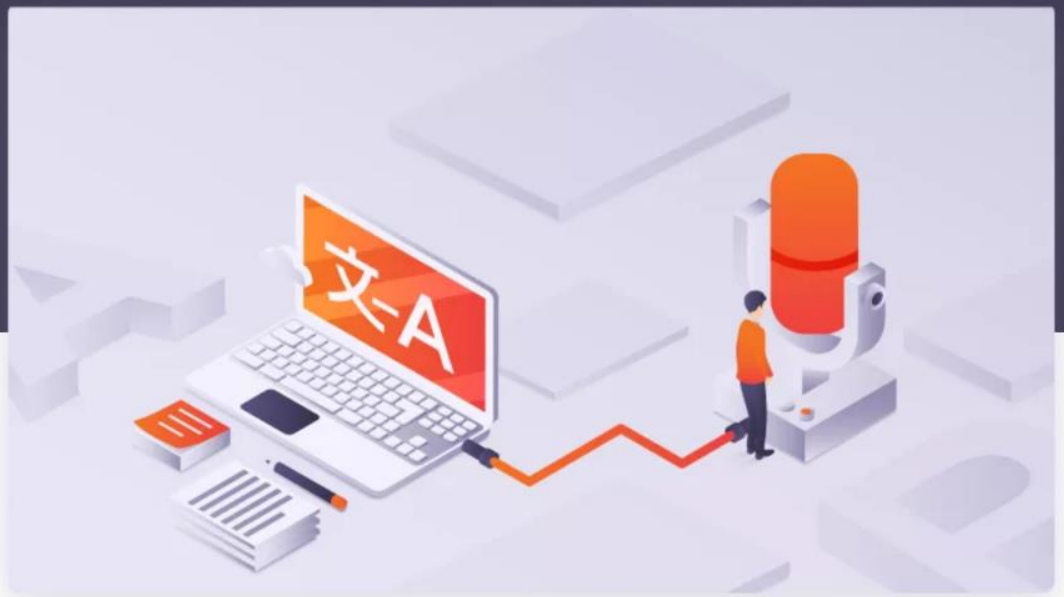
AGENDA

Tuesday 14 May 2019	
9.00-10.45 *Room C*	• **Widening the scope of the European Commission's eTranslation Service**, Andreas Eisele, European Commission (DGT) • **WIPO speech-to-text (& WIPO Translate)**, Michal Ziemski, World Intellectual Property Organization • **Speech recognition: the challenges and reshapes that lie ahead**, Ayten Dersan, Translation Centre for the Bodies of the EU

https://trends2019.memoq.com/voice-recognition-technology-translation/

Home

Moving beyond the keyboard



TransTech2017_ASR_test | microsoft AI speech reco | TN A New Real-Time AI Platf | Microsoft researchers ac

Secure | https://www.microsoft.com/en-us/research/blog/microsoft-researchers-achieve-new-conversational-speech-recognition-milest...

Microsoft researchers achieve new conversational speech recognition milestone

August 20, 2017 | Posted by Microsoft Research Blog

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By Xuedong Huang, Technical Fellow, Microsoft

Last year, Microsoft's speech and dialog research group announced a milestone in reaching human parity on the Switchboard conversational speech recognition task, meaning we had created technology that recognized words in a conversation as well as professional human transcribers.

After our transcription system reached the 5.9 percent word error rate that we had measured for humans, other researchers conducted their own study, employing a more involved multi-transcriber process, which yielded a 5.1 human parity word error rate. This was consistent with prior research that showed that humans achieve higher levels of agreement on the precise words spoken as they expend more care and effort. Today, I'm excited to announce that our research team reached that 5.1 percent error rate with our speech recognition system, a new industry milestone, substantially surpassing the accuracy we achieved last year. A technical report published this weekend documents the details of our system.

Chat

"Hey Cortana, tell me a joke."

Related Items

Research Areas

Human language technologies

Speech and Dialog Research Group

Research in speech recognition, language modeling, language understanding, spoken language systems and dialog systems. Overview Our goal is to fundamentally advance the state-of-the-art in speech and dialog technology. To achieve this, we are working in all aspects of machine learning, neural network modeling, signal processing, and dialog modeling. Recently, to support our work, we have developed the Microsoft Cognitive Toolkit (CNTK, formerly Computational Network Toolkit), which makes it easy to define complex neural network structures,...

The Microsoft 2017 Conversational Speech Recognition System

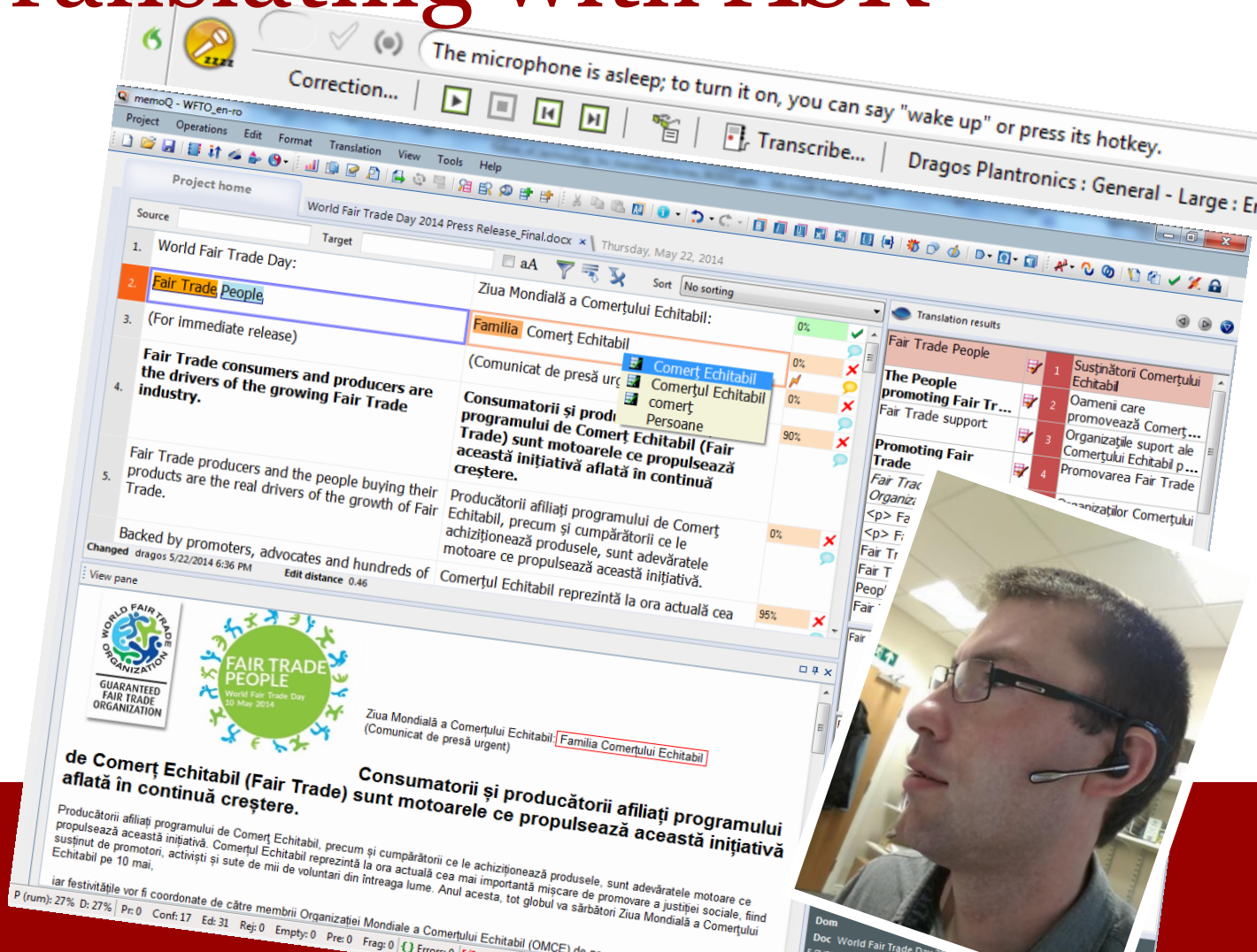
Wayne Xiong, Lingfeng Wu, Fil Alleva, Jasha Droppo, Xuedong Huang, Andreas Stolcke

August 2017

NOT BAD FOR A BOT

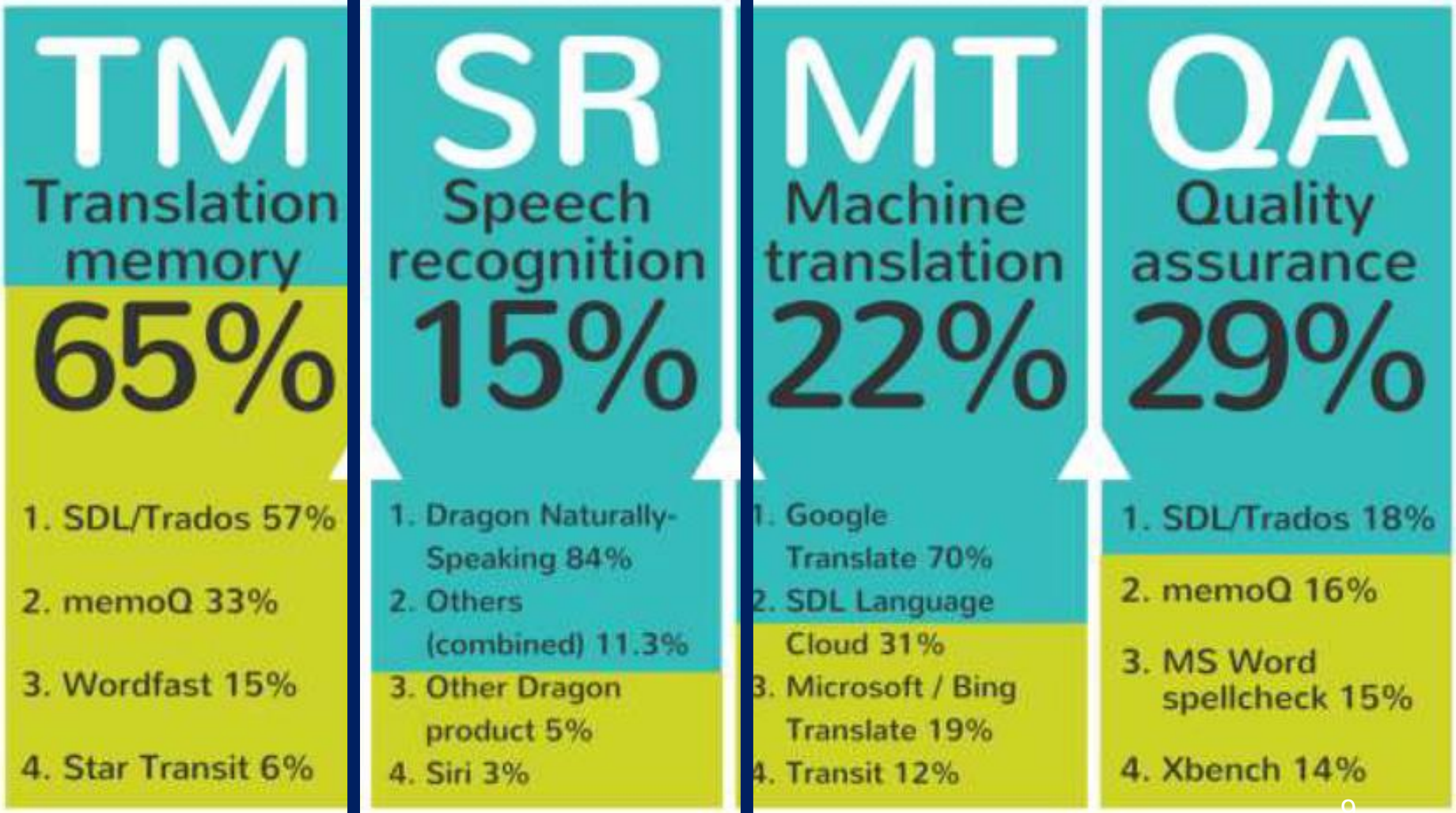
Google's voice-generating AI is now indistinguishable from humans

Translating with ASR



588 respondents

% of respondents who use different translation technologies + most commonly used tools



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Of Dragons and Speech Recognition Wizards and Apprentices

Dragoș Ciobanu
Lecturer in Translation Studies
University of Leeds
Centre for Translation Studies

ABSTRACT

Despite being used by a minority of professiona
Recognition (ASR) systems have a lot of potential for e
workflows. A recent survey designed in the Universit
Studies and conducted among professional translator
findings regarding, among others, the perception of tra
the influence of ASR on the quality of their translate
fine-tuning of workflows in order to account for the
adopting ASR. The survey showed that the advantag
and that the majority of professional translators are mis
technologies more.

Keywords: Professional Translation, Automatic Speech
Assisted Translation tools, CAT, translator productivity,

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Automatic Speech Recognition in the professional translation process

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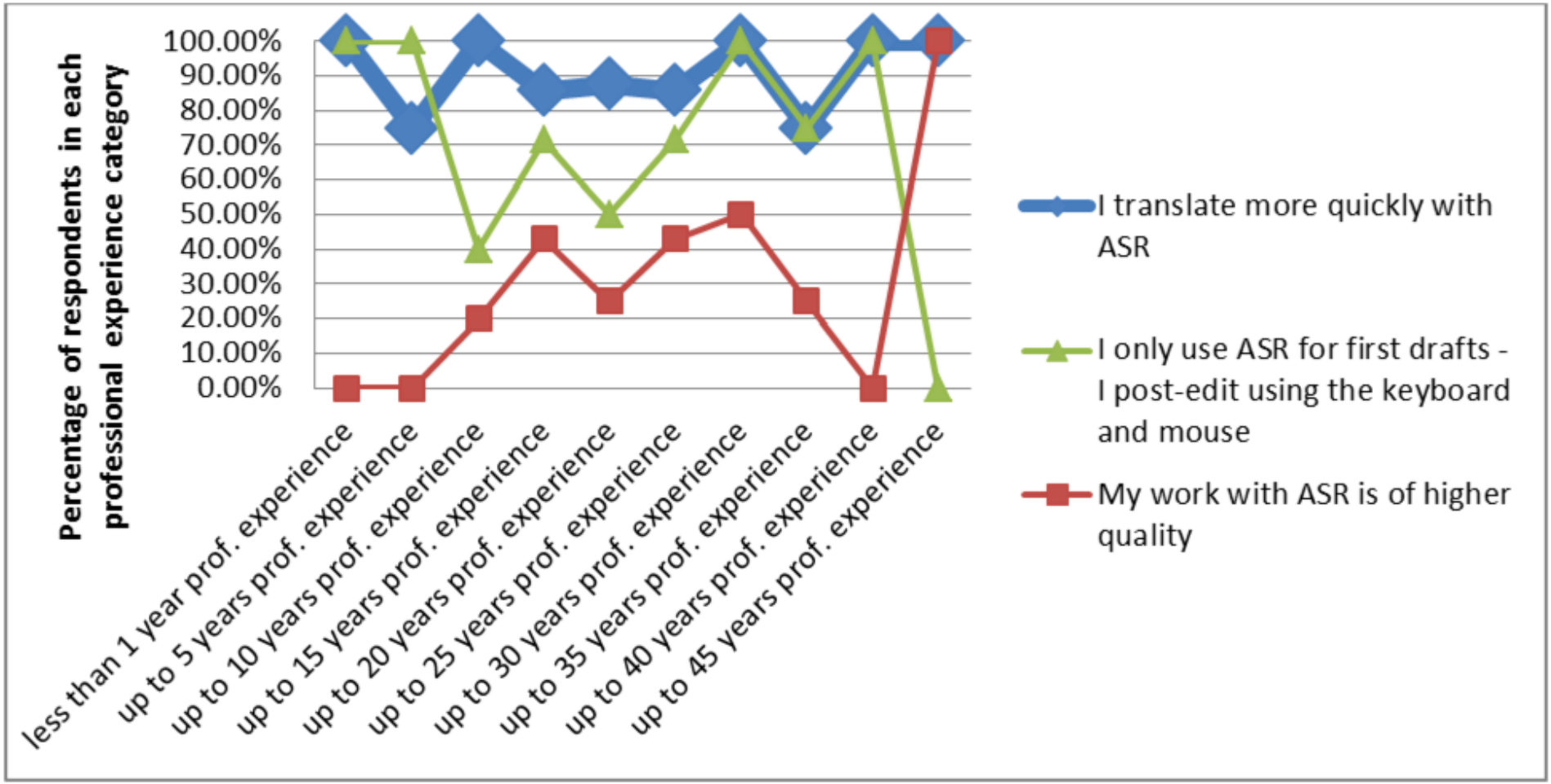

Figure 7: Impact of ASR on speed, quality and translation workflows

Who said that? 41 translators

Figure 1: ASR users' professional experience

Ergonomics + Productivity + Quality

- Improved ergonomics
- Strong potential for productivity increase
- For some linguists, dictation helps them generate a more appropriate TT register

OF INTEREST:

- New errors: *Typos* replaced by *Speakos*
- ASR still mostly used for dictation

Why use TTS?

Attention

informatics

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Speech Synthesis in the Translation Revision Process: Evidence from Error Analysis, Questionnaire, and Eye-Tracking

by Dragoş Ciobanu [1,*], Valentina Ragni [2] and Alina Secară [1]

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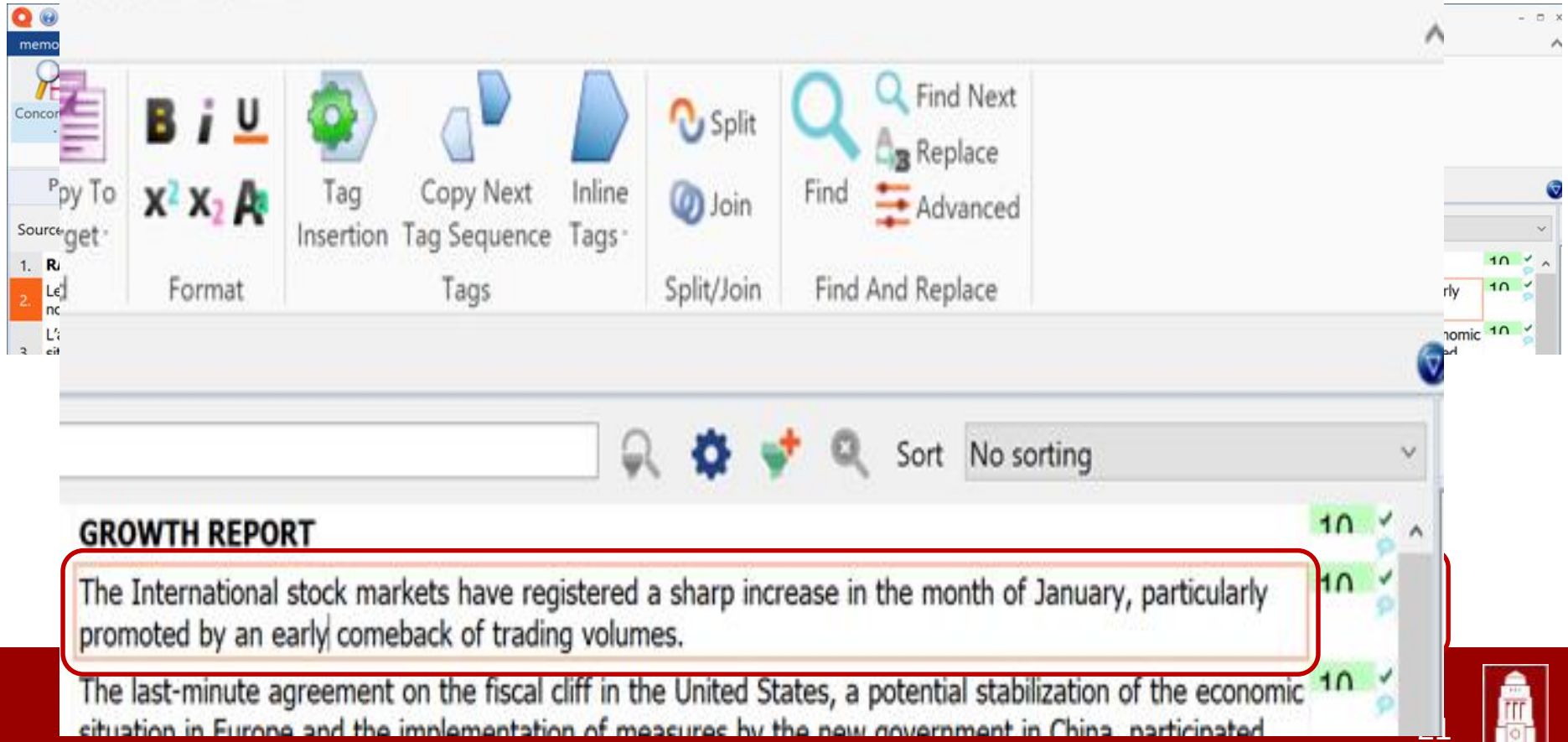
What is revision?

"bilingual examination of target language content against source language content for its suitability for the agreed purpose"

ISO 17100:2015

Name of group	Professionals	Trainees	T0 (training text)	T1 (financial report)
G1_1 (n=6)	3	3	Source sound (SS)	No sound (NoSS)
G1_2 (n=5)	2	3	Source sound (SS)	Source sound (SS)

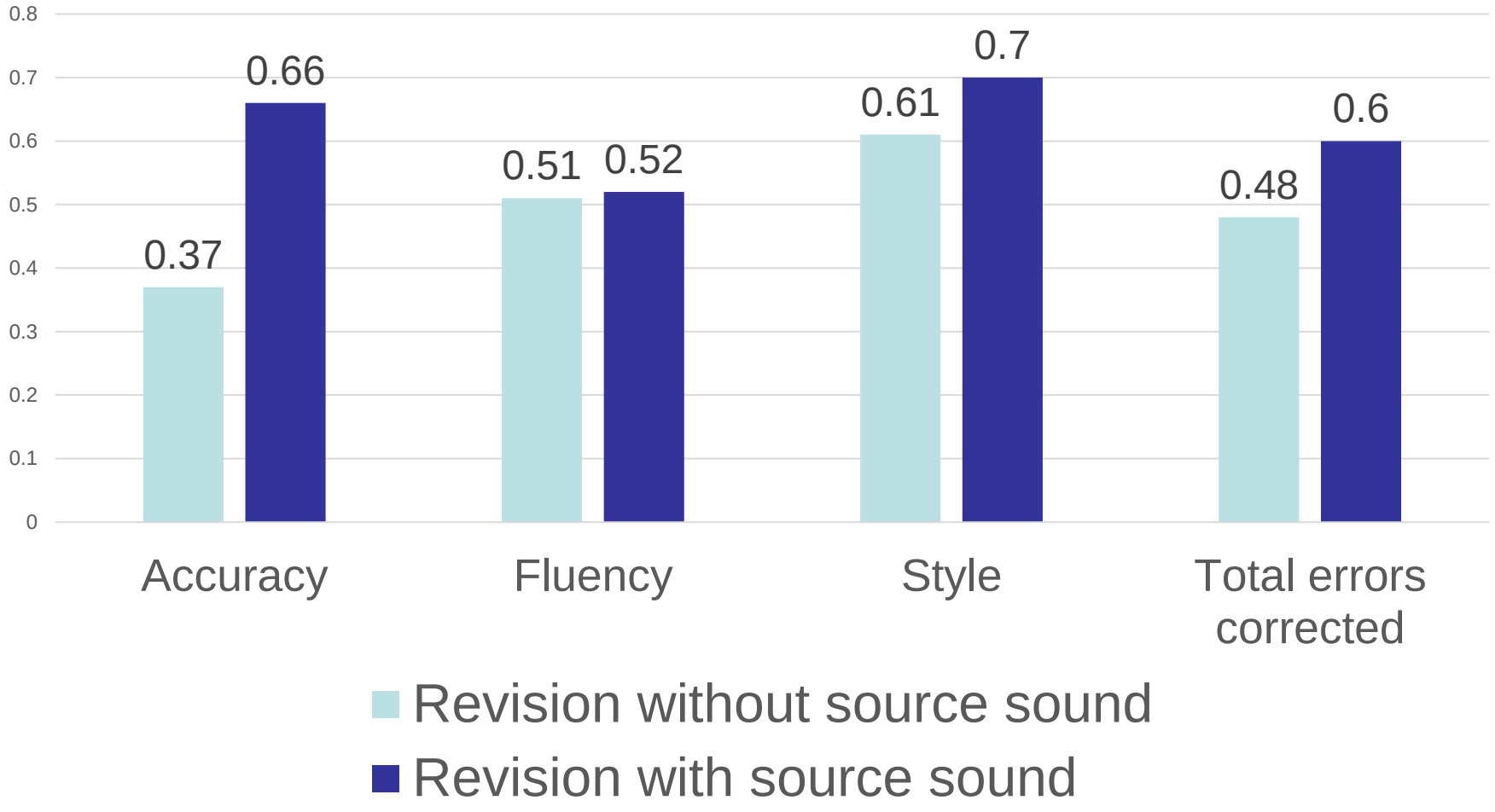
memoQ + FR (& EN) TTS



Research Questions

RQ1: Which of the two conditions (with source sound [SS] vs. without source sound [NoSS]) is conducive to spotting and correcting more translation errors in the revision process?

- Method: Error counts
- Type of Analysis: Error correction analysis (based on the TAUS DQF-MQM error typology)


0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
0.37
0.66
0.51
0.52
0.61
0.7
0.48
0.6
Accuracy
Fluency
Style
Total errors corrected
Revision without source sound
Revision with source sound

Research Questions

RQ2: What are the participants' views on the integration of text-to-speech in the revision process?

- Method: Questionnaire
- Type of Analysis: Qualitative and quantitative analysis of participant responses

With SS	Concentration	Productivity	Quality
+	3	4	3
-	4	4	0
Neutral	4	3	8

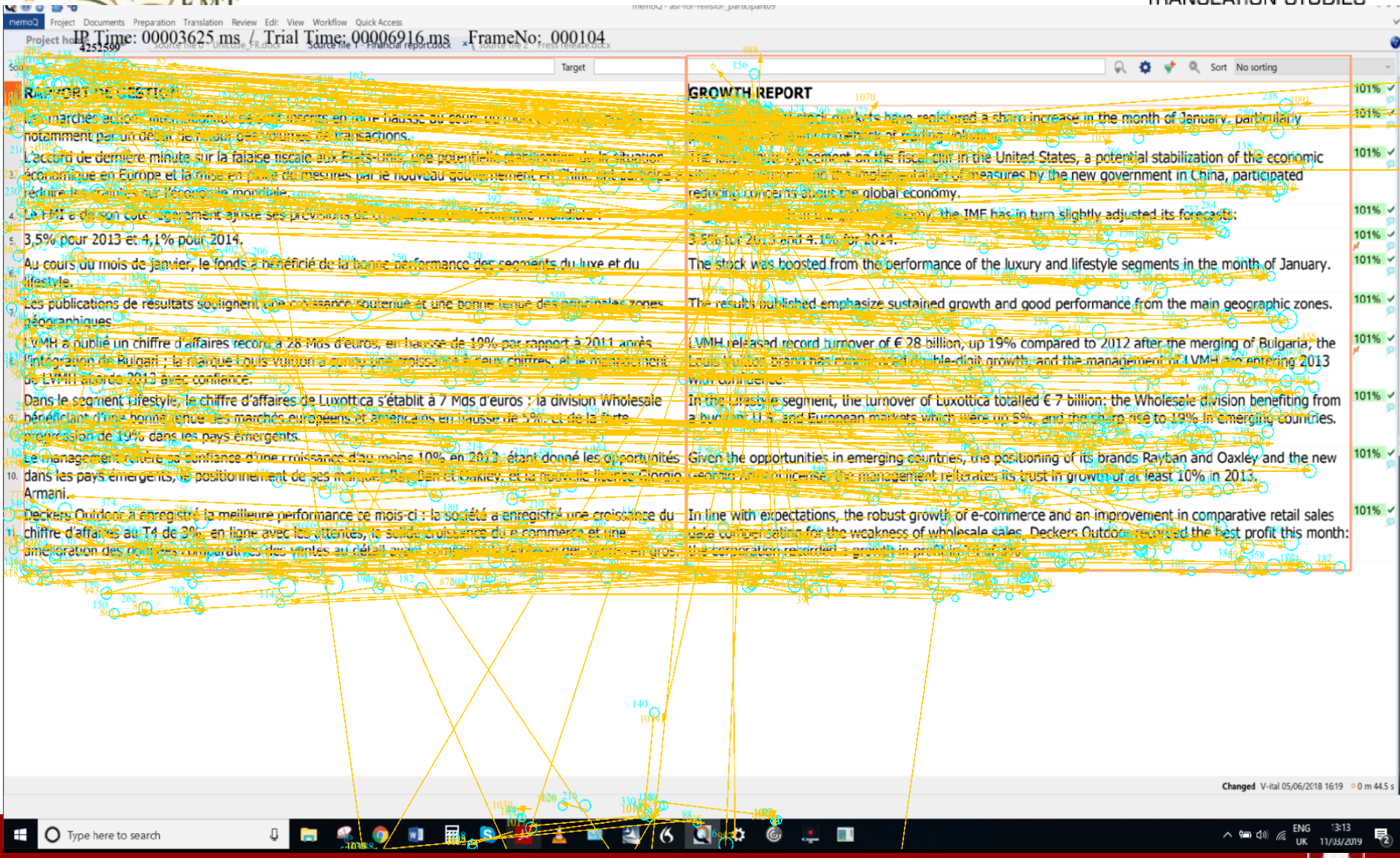
- "having the source text read to me ensured I was more focused on it"; "speech technology made me focus back on the ST";
- "it allowed me to check that all of the info (and the same logic) was to be found in the target text";
- "I noticed errors in the translation as a result of hearing the source, it was useful to have these "jump out" at me in this way";
- "it was very useful for picking up subtle content errors";
- "checking for typos, proof-listening, if you like";

- "it was an additional thing to do and slightly disrupted my usual way of approaching a revision".

Research Questions

RQ3: Is viewing behaviour while revising affected by the presence of source sound [SS]?

- Method: Eye-tracking
- Type of Analysis: Eye movement analysis - fixation counts, dwell time, Mean Fixation Duration (MFD), External Resources (ER) examined


IP Time: 00003625 ms / Trial Time: 00006916 ms FrameNo: 000104
GROWTH REPORT
3,5% pour 2013 et 4,1% pour 2014.
Au cours du mois de janvier, le fonds a bénéficié de la bonne performance des segments du luxe et du lifestyle.
Les publications de résultats soulignent une croissance soutenue et une bonne tenue des principales zones géographiques.
LVMH a publié un chiffre d'affaires record, à 28 Mds d'euros, en hausse de 19% par rapport à 2011 après l'intégration de Bulgari ; la marque Louis Vuitton a connu une croissance à deux chiffres, et le management de LVMH aborde 2013 avec confiance.
Dans le segment lifestyle, le chiffre d'affaires de Luxottica s'établit à 7 Mds d'euros ; la division Wholesale bénéficiant d'une bonne tenue des marchés européens et américains en hausse de 5%, et de la forte progression de 19% dans les pays émergents.
Le management affiche sa confiance d'une croissance d'au moins 10% en 2013, étant donné les opportunités dans les pays émergents, le positionnement de ses marques Ray-Ban et Oakley, et la nouvelle licence Giorgio Armani.
Deckers Outdoor a enregistré la meilleure performance ce mois-ci : la société a enregistré une croissance du chiffre d'affaires au T4 de 39%, en ligne avec les attentes, la solide croissance du e-commerce et une amélioration des ventes au détail
GROWTH REPORT
3.5% for 2013 and 4.1% for 2014.
The stock was boosted from the performance of the luxury and lifestyle segments in the month of January.
The results published emphasize sustained growth and good performance from the main geographic zones.
LVMH released record turnover of € 28 billion, up 19% compared to 2012 after the merging of Bulgaria, the Louis Vuitton brand has [illegible] double-digit growth, and the management of LVMH is entering 2013 with confidence.
In the lifestyle segment, the turnover of Luxottica totalled € 7 billion; the Wholesale division benefiting from a buoyant U.S. and European markets which were up 5%, and the sharp rise to 19% in emerging countries.
Given the opportunities in emerging countries, the positioning of its brands Ray-Ban and Oakley and the new [illegible] licence, the management reiterates its trust in growth of at least 10% in 2013.
In line with expectations, the robust growth of e-commerce and an improvement in comparative retail sales [illegible] for the weakness of wholesale sales. Deckers Outdoor recorded the best profit this month: the corporation recorded a growth in profitability of 39%

Thank you!

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