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PROCEEDINGS

**Workshop on Empirical
Translation Process Research**

Organizer: Michael Carl

Introduction: Workshop on Empirical Translation Process Research

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1 Empirical Translation Process Research

Empirical Translation Process Research (TPR) investigates human translation and post-editing processes. Starting with introspective methods, i.e., transcribed Think-Aloud Protocols (TAP) and intro/retrospective reports, TPR has since the 1980s evolved in several stages with the increasing availability and usage of new sensor and recording technologies. Keylogging has been used since the mid-1990s to assess translation effort (temporal, technical, cognitive) and translation effects (e.g., translation quality, productivity) and eyetracking technology has been introduced in TPR around 10 years later. Together, keylogging and eyetracking technology have been used to illuminate the relation between the input (gazing patterns) and output (typing behavior) of the translators' black box, sometimes complemented by translators' introspection and self-reports, and to a lesser extent also brain imaging methods (EEG, fMRI, fNIRS). The main aim has been to determine "what goes on in the head of translators", how we can conceptualize and measure the assumed translation processes and how those processes relate to / vary with respect to different textual features (e.g., metaphors, terminology, easy, vs. difficult syntax), different types of text (technical, news, literature, etc.), expertise of translators (e.g., novice vs. experienced translators), different translation purpose (e.g., informative translation, light vs. full post-editing), usage of translation technology (CAT, MT post-editing, external search, etc.), and to what extent different target languages correlate with different translation patterns. Recently, the scope of TPR has also included spoken language production (including translation dictation, sight translation, interpretation, sight interpretation, etc.), subtitling and audio-visual translation, fan-subbing, re-speaking, and other forms of translation production.

2 Ecological Validity in TPR

Ecological Validity — i.e., the importance of TPR for the "real world" context — has sometimes been questioned. While most translators work with commercial translation tools (such as Trados or memoQ), much of TPR has been conducted in more artificial environments, such as Translog-II. However, since recently there is a possibility to convert Trados Studio keylogging data (collected via Quality) into Translog-II format and to add the converted data to the CRITT TPR-DB. The newly devised *Trados-to-Translog* tool synchronizes with the output of various eye-trackers (currently Tobii, Eyelink, and GazePoint). This allows us to investigate user activity data collected during translation sessions in Trados as a combination of eye move-

ment and keyboard logging. It provides thereby the possibility to record translation behavior in an ecologically realistic translation environment. We are now able to explore patterns of reading and typing activities in a widely and professionally used CAT tool, and thus to achieve a better understanding of factors that impact professional translation activity.

3 WeTPR

The Workshop on Empirical Translation Process Research (WeTPR) aims at fostering empirical TPR, to document the current state of the art in TPR, to point to promising research avenues, innovative research questions and research methods, and reporting new measures and findings, to disseminate TPR results and broaden awareness of TPR among the MT community.

We have invited **Karl Friston** to talk about *The graphical brain and deep inference* and we have gathered seven additional contributions that address topics within the field of TPR, including technical, practical, and theoretical papers, conceptual statements and empirical descriptions of experiments and experiences that address TPR from a computational, linguistic, psychological, cognitive, or philosophical point of view. In light of this, WeTPR provides a forum to discuss up-to-date developments in TPR.

4 The Future of TPR

We anticipate that empirical TPR will make two significant contributions. First, empirical TPR will contribute to the improvement of translation practices. Findings from empirical TPR will make predictions about translation difficulty, which leads to possible explanations for more frequently occurred translation errors. TPR findings may also provide insights into translator training. As the value of human translation is often neglected with increased quality of machine translation, TPR can provide evidence for the significance of the translators and their future role in the translation industry. From this perspective, the increasing ecological validity of TPR is a meaningful step forward.

Another contribution of TPR is the demystification of human language and translation. 20th-century linguistics has tried to answer this questions assuming translation is an interlingual process transforming thought across languages into surface word forms. Noam Chomsky, for instance, postulated a *transformational* grammar that is instantiated in our brains, to map deep logical structures into words. In contrast TPR is a bottom-up approach attempting to unravel translation processes based on empirical data. It thereby draws on recent academic disciplines including neuro- and computer science that aim at elucidating mental processes in terms of probabilistic input-output and encoder-decoder based transformation processes. Through this interdisciplinary investigation, empirical TPR strives to demystify human language, translation and multilingualism in general.

5 Program Committee

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- Ricardo Muñoz Martín, University of Bologna, Italy
- Sheila Castilho, Dublin City University, Ireland
- Sanjun Sun, Beijing Foreign Studies University, China
- Yuxiang Wei, Kent State University, USA

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