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## The TREC network – Past, present, and future inquiries into translation process research

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In recent years, research on the cognitive processes involved in translation and interpreting has seen significant growth. The locus of investigation in these process studies may vary significantly, yet a recurrent unifying objective held by scholars in this area is to describe the complex, decision-making tasks of translation and interpreting using empirical and experimental research methodologies. In 2011, the PACTE Group, part of the Universitat Autònoma de Barcelona, undertook an initiative to bring together scholars interested in conducting research in this area and established the TREC (Translation, Research, Empiricism, Cognition) network. The aim of this network is to foster collaboration among network members and to expand and strengthen the body of scholarship in this area. More specifically the TREC network (<http://pagines.uab.cat/trec>) endeavors:

1. To promote exchange and transfer of knowledge about empirical and experimental research in translation process, translation competence, translation competence acquisition, and expertise in translation.
2. To foster cooperation among different research groups working under the empirical-experimental paradigm.
3. To optimize the use of methodological resources as well as technological tools to collect data for research.

To meet these aims, the TREC network organized a seminar (the first in what we hope to be a long series) in July 2013 at the Universitat Autònoma de Barcelona. Both senior researchers in the field as well as doctoral students convened over several days to discuss ongoing research projects and exchange ideas on a number of key topics. In particular, senior scholars in the field provided a space for younger researchers to discuss doctoral research projects and to establish connections among network members for future projects. This special issue of *Translation & Interpreting* presents nine peer-reviewed articles from this seminar.

The network itself is introduced in the first contribution by Amparo Hurtado Albir, Fabio Alves, Birgitta Englund Dimitrova, and Isabel Lacruz, who provide an overview of the varied research projects undertaken by member research groups. This introduction reflects the broad scope encompassed by translation process research (TPR) and contextualizes contributing members' research within the greater TPR body of scholarship. Moreover, a brief history of TPR is provided and several future directions are posited. The next generation, i.e., Ph.D. students at the time of the seminar, contribute the remaining articles—these articles are related to their doctoral dissertations and equally reveal the widening scope of inquiry into cognitive process studies.

The articles are grouped in three categories that align with the TREC network research interests: articles that address (1) theoretical and methodological issues; (2) translation competence and its acquisition; and (3) related processes as they relate to human and machine translation.

The theoretical and methodological issues raised in the articles by Amigo Extremera, Kumpulainen, and Mellinger are of particular importance in empirical and experimental studies on translation and interpreting tasks. José Jorge Amigo Extremera (Universidad de Las Palmas de Gran Canaria), for example, grapples with the concept of culture and its integration into TPR studies. Amigo describes culture as a dynamic construct and traces attempts to operationalize this construct in prior studies. This article draws on cognitive approaches to translation research and strives to develop an approach to culture that can be operationalized in empirical research within a cognitive translatology framework.

Similarly, Minna Kumpulainen (University of Eastern Finland) addresses another construct that merits greater scrutiny in process research — the pause. Comparability of results and the interpretation of process data presupposes an understanding of the underlying constructs used as a proxy for specific objects of inquiry. In the case of Kumpulainen's article, she provides an extensive review of the literature that draws on pause data and suggests that pause length must be operationalized within the context of each study. Moreover, this scope of her article highlights the level of care that must be taken when operationalizing constructs to be used in TPR.

Data collection is a methodological issue addressed by Christopher Mellinger (Walsh University). In his article, Mellinger investigates the applicability of Internet-mediated data collection for translation process research. The observation of cognitive behavior of translators and interpreters often requires a controlled environment in which participants can perform specific tasks and therefore the number of participants is limited to those available in a particular geographic region. To generalize results to a larger population, however, a greater number of participants should be included in research studies. Consequently, Mellinger proposes Internet-mediated data collection as a potential solution to increase sample sizes and offers guidance on conducting process research studies via the Internet.

Theoretical and methodological considerations, though, are only part of the TREC network orientation to process research; translation competence and its acquisition are important avenues of investigation undertaken by several TREC research group members. For example, Luis Miguel Castillo's (Universitat Autònoma de Barcelona) Ph.D. project is part of the PACTE Group's large-scale research project into translation competence and translation competence acquisition. In this project, Castillo explores the notion of acceptability awareness in translation students and recent graduates of translation programs. More specifically, the paper describes the evolution of this awareness as a specific population acquires translation competence.

Christian Olalla-Soler (Universitat Autònoma de Barcelona) also bases his work on PACTE's previous research. Olalla's work claims that, despite the importance given to culture and cultural competence in Translation Studies, these concepts have only been developed at a theoretical level thus far. In light of the relative dearth of empirical and experimental research on culture competence, Olalla aims to fill this gap in the literature related to cultural competence and its acquisition, particularly in students enrolled in university translation programs.

The natural extension of translation competence acquisition is the TREC network's third research interest—expertise in translation. Three authors delve into this area of investigation to explore translation and editing behavior exhibited by professional translators. Norma Barbosa de Lima Fonseca (Universidade Federal de Minas Gerais) investigates, for example, editing behavior within the context of translation directionality. More specifically, she addresses the potential effect that translation direction may have on editing behavior. While it is generally assumed that inverse translation (translating into L2) requires more cognitive effort, the results reported in Fonseca's study show, at least within this particular pool of subjects, that this not necessarily the case. Instead, these findings are suggestive that additional research is necessary into the impact that translation directionality may play on translation and editing behavior.

The final two contributions by Arlene Koglin and Kyoko Sekino address a specific type of editing behavior, that of post-editing of machine-translated texts. Koglin (Universidade Federal de Minas Gerais) investigates cognitive effort when participants work with texts that contain metaphors. To do so, Koglin triangulates data using keystroke logging, eye tracking, and retrospective verbalizations. The study identifies differences in the amount of cognitive effort exerted when participants post-edit metaphors that have been generated by machine translation and when metaphors have been translated manually.

Kyoko Sekino (Universidade Federal de Minas Gerais) also looks into cognitive effort in post-editing machine-translated texts and does so with the Japanese-Portuguese language combination. The study relies on relevance-theoretic concepts of conceptual and procedural encodings and interprets their use as evidence of cognitive effort being exerted to understand the author's intended message. Sekino partially replicates a previous study that employs relevance theory, but adds the post-editing task as an additional locus of investigation.

Given the significant scope of research into translation and interpreting processes explored in this special issue, it is clear that empirical and experimental research in these areas will only continue to grow. Lines of inquiry will emerge in a number of areas, as evidenced by the wide range of theoretical and methodological discussions and applications present in these studies. This growth is encouraging, and the results reported in these articles may spur further investigation of the topics presented here. Moreover, this next generation of researchers demonstrates a sustained interest in TPR, exhibits a commitment to pursue a greater understanding of cognitive processes, and is highly likely to contribute to shaping the face of future translation process research.

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strengthened the special issue overall. Many thanks are also given to the authors for sharing their research projects in the seminar and subsequently addressing specific aspects in this special issue. The Ph.D. students deserve special thanks for their patience and willingness in the preparation of what for many was their first article in an international peer-reviewed publication venue—we all learned a lot in the process.

### **Guest editors' bionotes**

Mónica Cecilia Giozza graduated as sworn translator at Universidad Nacional de Córdoba, Argentine Republic. She holds a postgraduate degree on education and another one on education management. At present, she is the Head of the School of Languages that offers an undergraduate Translation Programme. She is a full-time lecturer in Theory and Practice of Translation and researcher at Universidad del Aconcagua, Argentina. She is also member of the TREC net (Translation, Research, Empiricism and Cognition). Her main research interests cover translation competence and Translation Process Research.

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Christopher D. Mellinger is Assistant Professor of Spanish at Walsh University, where he teaches medical translation and interpreting as well as courses on Spanish for healthcare. Mellinger holds a Ph.D. in Translation Studies and a M.A. in Translation (Spanish) from Kent State University. Mellinger is an ex-officio board member of the American Translation and Interpreting Studies Association and the managing editor of the journal *Translation and Interpreting Studies*. His research interests include translation and cognition, translation process research, and translation technology.

Patricia Rodríguez-Inés holds a PhD in Translation Studies, and is a lecturer at the Faculty of Translation and Interpreting of the Universitat Autònoma de Barcelona (UAB). Her research interests include the use of ICT tools to improve translation teaching, the use of corpus methodology in Translation Studies, and empirical and experimental research in translation. She teaches general and specialised translation from English to Spanish and viceversa, translation technologies, and corpus linguistics applied to translation. She is a member of the PACTE research group, which specialises in the study of translation competence and its acquisition.