TECHNOLOGIZED LEGAL TRANSLATION AND INTERPRETING: RESOURCE POTENTIAL, AVAILABILITY, AND APPLICATIONS

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Abstract

This introduction presents an overview of the special issue of *Revista Llengua i Dret / Journal of Language and Law* on legal translation and interpreting (TI) in the technologized world. Although legal translation technologies are widely available and accepted in many specialized domains, their use in legal contexts has historically been limited by financial, institutional, and textual resources. The lack of availability hampers the development of high-quality technological applications that can support TI professionals working in legal settings. The contributions to this special issue address the availability and use of resources from different perspectives. Several articles investigate the development of NMT systems by leveraging high-quality resources from under-resourced or related languages, while others assess MT systems as potential resources for translation productivity and quality. Contributions also examine the allocation of institutional resources to train translators and interpreters for work in legal settings.

Keywords: legal translation; translation technologies; machine translation; MT system evaluation; resource allocation; under-resourced languages.

ÚS DE LA TECNOLOGIA EN LA TRADUCCIÓ I LA INTERPRETACIÓ JURÍDIQUES: POTENCIAL, DISPONIBILITAT I APLICACIONS DELS RECURSOS

Resum

En aquesta introducció es presenta un resum del número especial que la Revista de Llengua i Dret, Journal of Language and Law *dedica a la traducció i la interpretació (TI) jurídiques en el món de les tecnologies. Tot i que les tecnologies de la traducció són àmpliament accessibles i acceptades en molts dominis especialitzats, el seu ús en contextos jurídics ha estat històricament limitat pels recursos financers, institucionals i textuals. La manca de disponibilitat dificulta el desenvolupament d'aplicacions tecnològiques de qualitat que poden ajudar qui treballa professionalment en la TI en contextos jurídics. Les contribucions d'aquest número especial tracten la disponibilitat i l'ús dels recursos des de diferents perspectives. Diversos articles investiguen el desenvolupament de sistemes de traducció automàtica neuronal (TAN) aprofitant els recursos de qualitat de llengües relacionades o amb pocs recursos, mentre que en d'altres s'analitzen els sistemes de traducció automàtica (TA) com a possibles recursos per a la productivitat i la qualitat en traducció. En les col·laboracions també s'estudia l'assignació de recursos institucionals a la formació en traducció i interpretació per treballar en contextos jurídics.*

Paraules clau: traducció jurídica; tecnologies de la traducció; traducció automàtica; avaluació de sistemes de TA; assignació de recursos; llengües amb pocs recursos.

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Because language is the cornerstone of law, the practice of translation and interpreting (TI) has historically been a critical element in politics, diplomacy, and the administration of laws both on a global and local scale (Cao, 2007; Šarčević, 1997). Legal TI professionals perpetually strive to overcome conceptual and cultural divides as individuals and institutions interact with different legal systems, and multinational and cross-border business is transacted (Cheng et al., 2014; Engberg, 2020). Practitioners cannot simply bow to systemic and cultural differences or asymmetries as "a deterministic cause of impossibility" in legal TI (Prieto Ramos, 2014, p. 124). Rather, legal TI professionals must be resourceful, drawing on a range of relevant information sources including textual and extratextual context to make effective translation decisions according to situational needs (Scott, 2019). Legal TI requires a careful consideration of potential cultural and systemic differences, whether stark or nuanced. Navigating these differences is often complex, and the textual objects themselves often necessitate a fine-grained approach to textual stylistics and genre expectations (e.g., Pontrandolfo, 2019; Velykodska, 2018). This complexity, at first glance, might seem at odds with the increasingly technologized world, in which TI practices are constantly changing. The contributors to this special issue take stock of resource potential and availability, as well as technological applications in legal TI professional and training contexts. The included articles shed light on challenges that arise when creating or implementing various technologies in legal TI contexts.

Given recent technological advances and the evolving nature of TI, few other professions typically associated with the humanities have as close a relationship with digital technologies (Gonzalo Claros, 2009, p. 1). As O'Hagan (2013, 2019) notes, nearly all translation is now computer-assisted to a certain extent. Digital translation workstations regularly integrate resources such as translation memories, machine translation, and terminology management software alongside digital authoring and revision software. The underlying assumption is that translation tasks can be completed in less time at higher quality and consistency levels while reducing costs. Similarly, interpreters work in increasingly technologized environments that enable remote multilingual communication, and they rely on tools to provide high-quality language services during interpreter-mediated communication, such as tablet computers, digital pens, and automated speech recognition (Fantinuoli, 2017, 2018; Drechsel, 2019; Hamidi & Pöchhacker, 2007). Investigation of such assumptions and claims over the past two decades has further revealed the complexities faced by translators and interpreters working in technologized and digital spaces. As technologies and trends evolve, so too does the discipline and practice of TI.

Notwithstanding the necessity of technological progress, questions remain as to the use and integration of technologies in legal contexts, as well as to the effect of such tools on both the communicative environment in which they are employed and the translation processes and products to which they are applied. As such, the means by which technologies are evaluated within legal and regulatory areas require critical reflection and study regarding both majoritarian languages and less-resourced languages and the appropriate role of language policy and planning in such discussions. With respect to less-resourced and minority languages, additional insights on MT performance could benefit tool development. These languages are often counted among those within the long-tail of localization and have been secondary to development efforts, while simultaneously representing an area of increasing need to facilitate language access. Contributions to this issue approach these discussions from three discrete angles: machine translation (MT) development, MT tests, and technology in the legal TI curriculum. Concerns about viability and availability of technological resources are interwoven throughout the contributions. Tool reliability is investigated alongside resource availability in different legal TI contexts, whether as part of specific technological applications or training programs.

As a result of groundbreaking developments in data-driven approaches beginning in the 2000s, MT is a tool that continues to garner substantial interest. In data-driven MT there are two primary approaches: statistical MT (Koehn, 2010) and neural MT (Koehn, 2020). Unlike rule-based MT, which was the predominant architecture of MT systems prior to the widespread adoption of a data-driven approach to natural language processing, SMT and NMT architectures rely on corpora instead of grammar and dictionary input as primary data sources. By drawing on sufficiently voluminous sets of corpora, MT output is a product of statistical probabilities instead of deterministic, pre-programmed input.

However, SMT and NMT systems determine these probabilities in substantially different ways (Forcada, 2017, p. 292), with the former favoring a more paradigmatic approach to source text analysis and the latter

a more syntagmatic approach. What might be expected from MT in terms of quality and potential increases to productivity as a resource for legal translators will likely vary according to task, language pair, and legal text type. Since technologies such as MT can increasingly be leveraged, continue to develop, and become more commonplace in legal TI, training programs must reflect on how resources are addressed and allocated throughout the curriculum (e.g., Biel, 2011, 2017; Kenny & Doherty, 2014; Prieto Ramos, 2011; Way, 2016). A domain-specific focus on technologies moves them out of standalone technologies courses or modules in a pedagogically productive way (Mellinger, 2017) so that they are addressed repeatedly in other parts of the curriculum and in context-dependent ways. This domain focus relates to context-based approaches to understanding and teaching translation tools (Killman, 2015, 2018) as a means to develop conceptual control over the technology from a translator's perspective (Biau Gil & Pym, 2006).

Researchers in the field of legal translation studies (LTS) have increasingly focused their attention on MT. Primarily, LTS contributions have addressed MT in its current data-driven paradigm, focusing on aspects related to quality (Killman, 2014; Heiss & Soffritti, 2018; Mileto, 2019; Wiesmann, 2019; Dik, 2020; Roiss, 2021). Data-driven MT has also been addressed from the MT developer perspective (Gotti et al., 2008; Koehn & Knowles, 2017). Meanwhile, post-editing studies have been conducted by developers, institutional translators, and translation studies scholars with domain-specific, data-driven systems trained in specific legal contexts (Farzindar & Lapalme, 2009; Vardaro et al., 2019; Arnejšek & Unk, 2020; Macken et al., 2020; Stefaniak, 2020; Desmet, 2021) or have included legal source texts among other text types in their experimental settings (García, 2010, 2011; Şahin & Dungan, 2014). In the past few years, these post-editing studies have focused on eTranslation, the European Commission's most recent in-house system used by the Directorate General for Translation (DGT). MT systems have been developed for the European Commission since the mid-1970s (Hutchins, 2014); thus, MT has consistently been provided as an option DGT translators can choose to employ in their translation memory workbench (Cadwell et al., 2016; Lesznyák, 2019; Rossi & Chevrot, 2019). Recent advances in technology and institutional implementations have contributed to stabilizing MT's place in workflows and have added pressure on academic institutions to prepare graduates to work in increasingly technologized environments.

The contributions to this special issue speak to the issue of resources in various ways in the context of the technologized world in which legal translation and interpreting is conducted. As noted above, technology development is often driven by the availability of language resources that can be leveraged to develop MT systems. Building these systems is resource-intensive, which ultimately poses challenges to the development of NMT systems for languages in under-resourced language combinations. Bago et al. (2022) present findings from an EU-funded project, PRINCIPLE, which sought to reconcile the limited volume of resources for languages of limited diffusion using high-quality resources. There is inherent tension between data volume and quality when developing MT systems, and this project reports on the use of high-quality language resources in the legal domain for Croatian, Irish, Norwegian, and Icelandic to build state-of-the-art bespoke NMT engines. By describing the development cycle of these systems from resource aggregation through system evaluation, Bago et al. (2022) illustrate how tool developers might be able to create systems for limited or under-resourced language combinations by focusing on high-quality inputs.

The availability of high-quality language resources is a primary concern when considering NMT system development in the case of under-resourced languages. Pichel Campos et al. (2022) address limited resource availability for another under-resourced European language, Galician, and suggests that closely-related languages or variants may provide system developers with resources that can be leveraged. This type of work can be complex, insofar as it requires explicit recognition of its situatedness within a broader sociopolitical and sociolinguistic context. Various legal frameworks and language policies may facilitate or exacerbate language resource development, particularly with respect to resource allocation within language hierarchies (Monzó-Nebot & Mellinger, 2022). In the case of the contribution by Pichel Campos et al. (2022), the development of an NMT system for Galician–Portuguese is facilitated as a result of the Paz-Andrade law, thereby challenging systems developers to consider the potentially controversial perspective that closely-related languages or variants may benefit from leveraging these types of resources.

Once resources are appropriately allotted to MT system development, these systems ought to be evaluated against human translation in various forms—not only in terms of their output but also as part of translation

workflows and within the multilingual context in which these tools are used. Killman and Rodríguez-Castro's (2022) study adopts a process and product-oriented perspective on MT evaluation, presenting a quasi-experimental study involving 26 participants to compare post-editing (PE) and translation of legal texts in terms of quality and time. Of particular note is the use of SMT output as the text to be post-edited. The results from the study indicate general consensus among the participants that using MT output can be constructive, specifically in relation to terminological and phraseological proposals that the MT system could provide. The differences between the MT and human translation (HT) tasks with respect to time were not statistically significant, further challenging the notion that either HT or PE is superior with respect to throughput. Though there is currently considerable hype surrounding NMT, the results of the study that show an improvement in quality and the participants' favorable impression of the SMT output suggest that advances in data-driven MT extend back even further in the case of legal translation.

Two contributions to the issue focus on the applicability of MT when working with specific text types or genres. Vigier-Moreno and Pérez Macías (2022) examine the use of a selection of NMT systems to support the translation of court documents. Many documents filed in court proceedings are integral to the fundamental due process protections afforded to criminal defendants. In this particular study, the authors focus on a remand order, which is the document that addresses pre-trial detention of defendants. Vigier-Moreno and Pérez Macías test the quality of MT outputs in English in this context to determine the extent that NMT would help produce a translation that individuals appearing before the Spanish legal system could rely upon for informational purposes. By using three different assessment metrics, the authors demonstrate the potential value in a technologically-supported translation process when working with these specialized texts.

Whereas the study by Vigier-Moreno and Pérez Macías focuses on two highly-resourced languages, namely English and Spanish, Sosoni et al. (2022) focus on two languages with significant disparity in terms of how they are resourced: Greek and English. This disparity poses challenges for NMT systems developers, which is further exacerbated when working with the specific case of law related to Greek real property transactions such as planning legislation and sales agreements. Of particular interest in this study is the custom-built system that was trained using specialized language resources, which provided the means for a couple of experienced professionals to work with the output from this MT system. As in the case of Bago et al.'s (2022) contribution, the question of input quality comes to the fore when working with under-resourced language combinations, and their detailed analysis illustrates how this type of technological support requires careful consideration when implementing it into translation workflows.

A third, and equally important, aspect of resource allocation and technological implementation is related to translator and interpreter training. Two pedagogical articles in this special issue address several different constraints related to technology in teaching contexts. Sánchez Ramos (2022) describes a SWOT analysis of a master's level program in an effort to describe how technology might best be integrated into a public service translation and interpreting program. This questionnaire-based study recognizes the evolving nature of the work done by translators and interpreters and the importance of their ability to work with technology. One logical extension of this research-based approach to curricular development would be to question what resources will be allocated to the teaching of technologies and how students will develop an awareness of resource management with respect to tool use. As noted above, integration of technology beyond tech-only modules illustrates how a domain-specific approach to technology promotes sustained practical application of tools in contextually relevant ways, which will contribute to students' critical understanding of how tools can be implemented and to their ability to use these tools in real situations.

The final contribution to the special issue by Córdova Hernández et al. (2022) presents a research-informed pedagogical approach to training translators and interpreters of indigenous languages in Mexico despite limited educational and financial resources. The use of technology in legal TI training settings for indigenous languages is limited, and scholarly reflection on these topics is equally scarce. This contribution addresses important aspects of technology that are often overlooked by researchers working with more established TI traditions, including possible technological workarounds for systems that do not account for these languages as part of their configurations. All technology is built on assumptions, with many of the languages and features addressing those in the developer's immediate proximity or those that are considered potentially advantageous. Consequently, indigenous languages have not been prioritized during tool development, thereby

requiring trainers of future legal TI professionals in these languages to identify ways to resourcefully integrate technology into their students' coursework to prepare them for these challenges.

With this special issue, the contributions provide avenues for future exploration and reflection on the multifaceted and expanding nature of research on TI technologies in legal contexts. Each contribution draws out different strands of scholarship, highlighting the degree to which resource allocation and availability affect technological development and implementation in legal TI across languages in different geographical contexts. These articles draw on a range of disciplinary and professional perspectives, from tool developers and users to trainers of legal TI professionals. The technological realities of translation and interpreting in the legal domain continue to require further investigation, and we are confident that these articles will provide points of departure for studies to come.

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