

## **Technologies and the Future of Translation: two perspectives**

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### **Introduction**

Translation's long history is also a history of technology. Translation is inconceivable without the technologies of writing, and the writing technologies of the day – from stylus and clay tablet to chatbot and screen – have always created the conditions in which translation takes place. And even if translation's spoken counterpart was traditionally conducted in ways that appeared to rely solely on unaugmented human capacities, the interpreter's world has also become increasingly technologized, with the wired transmission of speech at the Nuremberg Trials in the mid-1940s marking a watershed, and various types of technological assistance commonly used nowadays in the booth and elsewhere. The activities conventionally described by the umbrella terms 'audiovisual translation' and 'localization' take already heavily mediated artefacts and repurpose them for new audiences with the help of technologies that act on both spoken and written language, as well as other aural and visual modes. The ways in which technologies have historically underpinned and indeed become constitutive of translation practices have been treated by Cronin (2003) and Littau (2011, 2016a, 2016b). Sources such as Bowker (2022), Díaz Cintas and Massidda (2020), Braun (2020) and Fantinuoli (2022), explain how contemporary technologies are used in translation and interpreting, providing useful ontologies and identifying emerging trends. This chapter does not seek to go back over ground already covered by these authors. Rather I wish to reflect on technological and related developments that are impacting at the time of writing on the practice and study of translation. These developments are connected to the rise of generative artificial intelligence.

It is generally held that 2023 was the 'breakout' year for generative AI (McKinsey 2023). Following OpenAI's controversial release of ChatGPT in November 2022, governments, corporations and educational establishments scrambled to formulate policies to promote the safe and ethical use of the technology, and while much print space was devoted to how businesses might take advantage of the new opportunities it afforded,

concern about job degradation and loss was also rife. Such concern contributed most notably to the Writers Guild of America strike in mid-2023 (Wilkinson 2023). It also prompted translators' associations around the world to issue manifestos demanding fair treatment in a fast-changing sociotechnical landscape. In what follows, I track some of these developments, asking what they tell us about the current status of AI technologies in translation and adjacent fields, and, more fundamentally, what they tell us about how translation itself is understood. I home in on two areas, one in which translation is ancillary to the core business, the other in which translation is core not just to the business of those involved, but also to their very identity. These two fields – news production and literary translation – are clearly not the only ones affected by the rise of generative AI, but they stand out as areas in which spokespersons have taken recent emphatic positions on the use of AI in general, and generative AI in particular. Readers interested in the impact of AI, and especially machine translation (MT), on other important sectors of society and the economy are referred to treatments in Brynjolfsson et al. (2018), Nurminen and Koponen (2020), Vieira et al. (2021), and Zappatore and Ruggieri (2024), among others. My discussion starts with some preliminary remarks about the technologies that will be in focus for the rest of this chapter: neural machine translation and large language models.

### **Neural machine translation and large language models**

As the introduction to this chapter suggests, translation and interpreting rely on a whole host of technologies, but the ones that are of most interest to us here are neural machine translation (NMT) and large language models (LLMs). NMT is the technology currently used in familiar free on-line MT systems such as Google Translate, Microsoft Translator and DeepL, as well as bespoke MT systems used in industry, international organizations and elsewhere. It uses what are known as 'deep learning' techniques to learn a model of translation usually from a carefully curated parallel (i.e. bilingual) corpus in which source texts are aligned with their translations at sentence level. NMT became state of the art in automatic translation around 2016. LLMs, meanwhile, came to prominence in late 2022, when OpenAI gave the general public access to the LLM known as GPT3 through the ChatGPT interface. LLMs also use deep learning and have the same basic 'transformer' (Vaswani et al., 2017) architecture as NMT systems, but their initial focus

was on learning a model of a single language from predominantly monolingual text. The main difference between NMT and LLMs is, however, that NMT models are designed to be task-specific (i.e. they do automatic translation in a given language pair) whereas LLMs are general-purpose models that can be applied to a wide variety of tasks, for example, text summarization, copywriting and even writing computer code (having learned from data scraped from the web, including open-access repositories of computer programs).

As LLMs have the capacity to generate new content (often on the basis of prompts given to them by human users), they are considered to be a type of *generative* AI. NMT, on the other hand, is not considered to have generative capacity and so can be thought of as an instance of 'traditional' AI (McKinsey 2023). Things get complicated, however, when we acknowledge that translation also features among the many tasks that LLMs can do. LLMs get this ability from what Briakou et al. (2023) call the 'incidental bilingualism' of much training data scraped from the web. Alongside the 180 billion words of English on which GPT3 was trained, for example, there were also more than 3.5 billion words of French, more than 2.8 billion words of German, and varying quantities of text in 115 other languages (github 2020). Briakou et al. (2023) likewise report uncovering "over 30 million translation pairs across at least 44 languages" in Google's PaLM language model (used in Google's Bard chatbot). Google's newer PaLM 2 and Gemini Pro models (Ghahramani 2023; Krawczyk 2024) are even more multilingual, by design. But the continued dominance of English-language text in the data used to train many familiar LLMs makes them 'English-centric'. English-centricity explains why these LLMs are usually better at translating into English than into other languages. It is also generally the case that LLMs, like NMT, handle translation into and out of 'high-resource' languages better than translation into and out of 'low-resource' languages (see, e.g., Hendry et al. 2023; Komci et al. 2023: 2; Sariisik Tokalac 2023). The problem is likely due not just to the limited availability of data in low-resource languages, but also to the poor quality of the data in those languages, much of which is machine translated web content to start with (Thompson et al. 2024). Other problems associated with both NMT and LLMs include: their propensity to 'hallucinate', that is, to generate outputs that have no basis in reality or in the source text they have been asked to translate (Guerreiro et

al. 2023); their tendency to amplify biases already present in training data (Vanmassenhove 2024); and the risks they pose to individuals whose reputations or safety might be compromised by misleading or inaccurate translations (Canfora and Ottmann 2020). Given such problems, and the fact that both technologies can still make basic old-fashioned lexical and syntactic errors in translation, it is still wise, in sensitive or high-stakes settings, to have bilingual humans check and, if necessary, edit output from both NMT and LLMs.

Finally, training NMT engines was already resource-intensive, due to the amount of data and energy required, but the LLMs that have become known as 'foundation models' are even more resource-hungry, especially given their increasing size. While this initially made LLMs the preserve of the only biggest technology companies, things may be changing (see Lareo 2023) and LLMs are likely to feature more prominently in the language industry over the coming years. At the time of writing, Language Service Providers are conducting experiments to compare the translation performance of LLMs with that of 'conventional' NMT (e.g. Lionbridge 2023; welocalize 2023), many sources are asking whether LLMs will replace NMT (e.g. Lommel 2023), and yet others envisage translation workflows in which LLMs will be deployed alongside NMT (Zeng et al. 2023). The wider question of whether AI-assisted translation, whether the assistance comes from NMT or LLMs, will replace human translators is also being asked, but human translation is just one of many professions that are characterized as 'exposed' with the rise of generative AI (see, e.g. Ball 2023; Eloundou et al. 2023).

### **Machine Translation in the Newsroom**

News production is an interesting field in which to observe the uptake and perception of automated translation, whether using NMT or LLMs, given the historical reluctance to acknowledge the translation and translation-adjacent work that journalists do day to day (Bielsa and Bassnett 2009; Davier 2019), on the one hand, and the spotlight that is now being put on the use of AI (including MT) in newsrooms, on the other. What merits particular attention is the way in which broadcasters and print journalists alike have integrated MT into the 'run of the mill', distinguishing between already well-established practices and the new offerings of generative AI. Statements made by broadcasters,

news agencies and newspaper editors in the face of the AI-induced anxiety experienced in 2023 are telling in this regard. The Canadian Broadcasting Corporation (CBC), for example, presents translation tools alongside suggested text, auto-complete, recommendation engines and voice assistants as one of the “many forms of AI [that] are already baked into much of our daily work and tools” (CBC News 2023). Reuters editor in chief Alessandra Galloni and ethics editor Alix Freedman, for their part, see MT as one of the “AI capabilities [that] have been tried and tested over the past decade or more, with relatively well-understood outcomes” (cited in Roush 2023a). They describe how their local language teams “routinely use machine-assisted AI to provide first-pass translations” on one of their platforms and share plans to pilot “entirely automated machine-translated stories” on another (ibid.). The National Association of Broadcasters in the United States also views translation as a familiar and welcome application of AI in journalism, with President and CEO Curtis LeGeyt testifying to a U.S. Senate subcommittee in early 2024 that “broadcasters are using AI to translate their stories into other languages to better serve diverse audiences. When AI can help these local journalists – real people – perform their jobs in their communities, we welcome it” (NAB 2024). Similar positive attitudes are expressed by the European Broadcasting Union (EBU), whose ‘A European Perspective’ digital news service uses “automated translation software and AI-driven recommendation tools to better serve audiences who are increasingly turning to trustworthy information from national broadcasters” (EBU 2023). MT is seen by the EBU as promoting mutual understanding in Europe, against the background of Brexit and Russia’s invasion of Ukraine, thus “helping to overcome language and cultural barriers, making an important contribution to society and democracy” (ibid.).

The view of MT as a trusted technology that increases accessibility and promotes understanding contrasts with that taken of *generative* AI in many of these sources. As CBC News (ibid.) puts it: “What has made headlines and raised many questions in our newsrooms lately has been “generative AI,” a version of the technology that uses machine learning on vast amounts of data to produce high-quality original text,

graphics, images and videos".<sup>1</sup> Generative AI is implicated, for example, in the unauthorized reuse of news content, the manipulation and misappropriation of likenesses and voices of trusted broadcasters, and the creation of deepfakes (NAB 2024). It also presents journalists with considerable ethical challenges regarding the tools they use and the level of transparency they must ensure in the course of their work. Such concerns have led major media outlets to commit publicly to trust and transparency in their use of AI (e.g., CBC News 2023; Roush 2023a, 2023b). Some of these commitments mention MT explicitly, with spokespersons pledging to always indicate when automatic translation has been used in the creation of a story (e.g. Roush 2023a). On other occasions, the pledge is to be transparent about the use of AI in general (e.g. CBC News 2023), and most outlets commit to never publishing or broadcasting a story without human vetting and oversight.

The above-mentioned uses of MT in news production often refer to the automatic translation of already complete news stories so those stories can be consumed by new audiences. They refer, in other words, to translation for external consumption. Other sources give insights into how translation, automatic or human, is used internally in the newsroom, in the process of creating an original story. An interesting twist in deliberations on AI, for example, comes in the form of journalists using MT as a tool to help halt the spread of fake news created using other forms of AI. Al Jazeera Media Institute contributors thus describe how Google Translate can be used to help verify social media stories (Ghazayel 2017), and how translation through a pivot language (English) can be used to overcome the problem of mutual unintelligibility of certain varieties of Arabic (El Gody 2021: 41). Ghazayel (2017: 78), however, sounds a warning about the reliability of MT, which he concedes "is rarely 100 percent accurate." Sariisik Tokalac (2023) mentions other uses for MT in the newsroom: it can assist with media monitoring and can be used as an enabler for further automatic processing. Both of these scenarios merely require MT output to be sufficiently accurate or 'adequate' (ibid.) "with the caveat that, as with any source material in journalism, it needs rigorous checking and scrutiny," unlike the creation of content that is intended to reach external

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<sup>1</sup> One of the defining features of problematic generative AI is thus its ability to produce *original* text, an ability not associated with traditional AI, which remains reassuringly derivative.

audiences, which requires “revising and correcting machine output through human post-editing and editorial approval processes.” Like Ghazayel (2017), Sariisik Tokalac stresses the need for caution. “I dare not suggest that journalists might **trust** the output as provided. (Since when does journalism involve trusting anything at face value?)” (Sariisik Tokalac 2023; emphasis in the original).

Such caution contrasts with the confidence other media spokespersons appear to have in MT. To be fair, this confidence often seems well placed. Machine translated stories published by members of the EBU under the ‘A European Perspective’ banner, for example, are generally impressive in their accuracy and fluency, despite the very odd error. That said, they carry the disclaimer “Artificial Intelligence has been used to assist the translation of this article” and always contain a link back to the article in its original language,<sup>2</sup> two strategies that help mitigate reputational risk in the use of MT.

On occasion, however, confidence in MT may have more to do with the commentator’s understanding of translation itself, rather than the quality of the output of any AI system. The Reuters editors cited above, for example, see translation as a simple change of format, putting MT into the category of tools that “convert the same set of content from one format to another (English to Chinese, or audio to text)” (Roush 2023a). The association of translation with transcription is not uncommon, although the overarching category into which both are placed in some cases is ‘tools used to increase accessibility’ (e.g. Alison Gow, former senior executive at the publisher Reach plc, cited in Ball 2023). Automatic transcription and translation can occur back-to-back in newsroom workflows (EBU 2023; Sariisik Tokalac 2023), and transcribed and translated text may be presented side-by-side to audiences.<sup>3</sup> It is not surprising that such contiguity leads to the conceptual association of these two processes.

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<sup>2</sup> Translated stories posted under the ‘A European Perspective’ banner in English were viewed through the website of Irish public service broadcaster RTÉ at <https://www.rte.ie/news/>.

<sup>3</sup> This is the case for news items issued by ‘A European Perspective’: video reports may be transcribed into the speaker’s language and then translated into a second language. The video is then shared with both source language transcript and target language translation. The original voice track can be played in the background

As the discussion so far has suggested, although commentators closer to the coalface advise caution when using MT, it is frequently seen at higher levels in media outlets as a tried and trusted technology, the use of which is unproblematic. For some commentators, MT is akin to a simple change of format. It is generally viewed positively and lauded for its role in promoting accessibility and mutual understanding, values that most translation studies scholars would presumably share. The received wisdom in translation studies is, further, that newsroom translation is strongly domesticating, a feature consistent with its general invisibility (Bielsa and Bassnett 2009). There is ample evidence to suggest that domestication (in the form of substantial adaptation for new audiences) and the downplaying of translation activity continue to be features of the contemporary newsroom, even in highly multilingual environments such as that of the BBC World Service. Sariisik Tokalac (2023) deftly sums up the situation there as follows:

BBC World Service (WS) journalists work across multiple media platforms and their news sources are often in English, as well as their respective output languages. A lot of news content is transferred across languages through degrees of reversioning, localisation or rewriting. The journalists' goals and relationship with their source and target material are distinct from that of a translator. A singular translator job function does not exist, and many WS journalists or teams will say they 'do not do translations'. (Sariisik Tokalac 2023)

In other cases, reliance on translation without adaptation is associated with systemic weakness. Science journalist Rehab Abdalmohsen, for example, remarks that

The overall weakness of Arab science media has been made clear by coverage of the coronavirus epidemic, which has relied on translations of foreign studies and the advice published by international organizations

without making any effort to connect or edit. (Abdalmohsen in Shehab 2020: 19)

AI-assisted news translation can break the mould however, as it is often neither domesticating nor invisible. Translations from contemporary AI-assisted services frequently announce themselves as such through the use of disclaimers of the type used by the EBU and provision of a link to the original text (for online media).<sup>4</sup> These highly visible translations generally adhere to the distribution of material in the source text: *matricial norms*, to use Toury's (2012) term, tend to be those imposed by the source text.<sup>5</sup> What is more, the 'very odd' error referred to above in the discussion of AI-assisted translations at the EBU can create distinctly foreignizing effects.<sup>6</sup> It is likely, however, that much MT goes unflagged in the media, although it can be detected by alert readers. This seems true of translingual quoting (Haapanen and Perrin 2019), as noted in particular for sports reporting (Phelan 2023).

## Machine Translation and Literature

Literary translation is another interesting environment in which to observe the impact of AI, given the former's association with "sophisticated, conceptually dense" theorization (Cronin 2013: 2) and its perceived status as "the flagship of the creative" in translation studies (*ibid.*: 5). Another reason is the relative recency of the encroachment of AI into the field. For decades, it was widely held that MT had no role to play in literary translation, given the challenges literary texts posed. Research into 'literary MT' ramped

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<sup>4</sup> Other disclaimers found in the LexisNexis news database (2023 holdings) include Nordic Daily's "Note: This is an automated translated version of the story which may have translation errors. Please always refer to the original story" and Axel Springer's "Disclaimer: Translation automatically generated. Axel Springer is not liable for any automatically generated translation of written text, audio tracks or other translatable media items. Legally binding is exclusively the original German text or spoken word."

<sup>5</sup> "So-called *matricial norms* may govern the very existence of TL material intended as a replacement of corresponding SL material (and hence the degree of *fullness* of translation), its location in the text (or the way linguistic material is actually *distributed* throughout it), as well as the text's *segmentation* into chapters, stanzas, passages and suchlike. (Toury 2012: 82-83; emphasis in the original).

<sup>6</sup> For example, in an otherwise highly readable translation of an article describing how a French right-wing political party put up posters in French-speaking Belgium, the anglophone reader is told that "the *collage* took place on a Sunday" (my emphasis), making an attempt at political influence seem like an arts and crafts fair (<https://www.rte.ie/news/> A European Perspective; accessed 02 Feb 2024). The original text is at <https://www.rtf.be/article/des-affiches-de-marine-le-pen-a-couvin-cest-la-premiere-phase-de-la-strategie-de-lextreme-droite-pour-les-elections-11317584> and reads "le collage a eu lieu un dimanche."

up after the rise of NMT around 2016, however, and a number of commercial publishers have since started using MT to create first-pass translations of literary texts, to the consternation of human translators: in Kenny (forthcoming), I provide an overview of relevant research and reflect on the potential consequences of increased automation in literary translation; translation industry sources such as slator.com (2024) and ATLF (2023), meanwhile, report on literary publishing houses' (mis)use of MT. In what follows, I focus mostly on in literary translators' (i.e., practitioners') contributions to ongoing debates about AI in general and MT in particular.

Literary translators are, likewise, especially interesting commentators on AI as they have strong self-concepts, defined by Ehrensberger-Dow and Massey (2013: 106) as "the awareness of the multiple responsibilities and loyalties imposed by both the act and the event of translation." These self-concepts have been articulated forcefully in recent manifestos published by high-profile writers' and translators' organisations (see, e.g., ATLAS and ATLF 2023; CEATL 2023; European Writers' Council 2023; PEN America 2023).<sup>7</sup> These sources provide an 'emic' or insider perspective and serve as a useful counterpoint to the more 'etic' or outsider statements emanating from the world of news production. The manifestos were issued, as already noted, in the wake of the controversy surrounding the popularization of LLMs in late 2022. In some ways, literary translators, whose work was already exposed to an earlier instantiation of AI in the form of NMT, used the sudden focus on generative AI to draw attention to existing grievances: falling rates, unreasonable deadlines and precarious employment (as enumerated by ATLAS and ATLF 2023) were already problems for literary translators before NMT was introduced. The imposition of NMT threatened to exacerbate the situation, however, as it had already done in neighbouring fields, including 'pragmatic' translation and subtitling (ATLAS and ATLF 2023: 7-8). Literary translators' manifestos also call out the ways in which AI organizations misappropriate translators' and other writers' data, and the harms the technologies can do to texts, cultures, and readers.

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<sup>7</sup> PEN America (2023) is not concerned with AI as such, although its characterization of translation as a creative, interpretive activity that relies on the translator's aesthetic and ethical sensibilities, its acknowledgement of translators' responsibilities, and its support for translation as a sustainable livelihood, very much frame literary translation as a human activity. For a discussion of the impact of generative AI on creative fields published by PEN America see Lopez (2023).

They call for transparency in the use of AI, mitigation of harms, and protection of translators' intellectual property, especially given changing legal frameworks governing such issues as text and data mining (see, especially, European Writers' Council 2023). In this respect, these manifestos are not unlike the statements made on AI by media outlets, even if media sources tend to focus on harms to democracy and society rather than culture.

There are notable differences, however. For one, while media outlets generally distinguish between 'traditional' and 'generative' AI, and 'good' and 'bad' uses of AI, for literary translators' associations there seems to be no such thing as 'good' MT, and little reason to differentiate between MT and other forms of AI.<sup>8</sup> Not only is MT unwelcome; it does not even qualify as translation. The French literary translation associations ATLAS and ATLF, for example, insist on the *exclusively* human nature of literary translation (ATLAS and ATLF 2023), rejecting the idea that machines can 'translate' – even in the non-literary sphere. ATLAS and ATLF (2023) are thus scathing of media who claim to have 'translated' articles when what they have done is used an AI tool to 'transcode' a text, at best having someone check the machine output (ibid.: 16). CEATL (2023) takes a similar approach claiming that "Machines are not translators but 'translatoids'. They do not translate; they generate textual material."

CEATL is also emphatic that "Literary translation is not transcription" (ibid.) – a statement that seems to be stating the obvious, but one that is less surprising in the light of associations made in fields such as journalism (see above). The CEATL statement also asserts the cultural, social and historical embeddedness of literary translation, which would put such translation beyond the reach of contemporary technologies acting without human intervention:

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<sup>8</sup> This is by no means a universal position in literary translation. Rothwell (2024), for example, sees value in integrating MT (using DeepL) into his translation environment when re-translating Proust's *La Prisonnière* into English. In non-literary translation, the American Translators Association (2023) acknowledges some good uses of AI, as well as listing potential harms.

Literary translators translate texts embedded in their cultural, social, and historical context for readers who are also embedded in their own specific contexts. Translation requires an understanding of these contexts and skill at creative writing. No machine can do this without a significant human effort. (CEATL 2023)

Such embeddedness presumably means that literary translators must 'connect' and 'edit' in ways that are not dissimilar to what good journalism does (Abdalmohsen in Shehab 2020: 19; cited above). The difference is that a journalist would not call such work 'translation'.

The literary translators' manifestos are also notable in their rejection of proposed use cases for MT. CEATL (2023) thus dismisses the idea that some literary genres are more amenable to "generative AI processing" than others, or that minoritized languages stand to gain from the use of MT, an idea that has circulated in the research literature, but about which there is growing scepticism (Kenny forthcoming; Thompson et al. 2024). ATLAS and ATLF (2023) present arguments from the research literature to debunk the argument that post-editing is faster than translation 'from scratch' in literary translation and the German group known as Kollektive Intelligenz (2023) conducts a series of experiments using NMT in different conditions (e.g., with and without access to the source text) to come to its own conclusions about its usefulness. The verdict is negative: like other sources, Kollektive Intelligenz contributors tend to find that they are slower and less creative when working with NMT (see also Guerberof and Toral 2022). They also report disruption of normal cognitive processing and lingering malaise about the possible continued presence of errors in target texts, even after careful post-editing (Kollektive Intelligenz 2023).

The positions adopted by these literary translators' associations and collectives are thus well-informed and the pushback against AI is in step with that of other – higher profile – commentators, such as the American Writers' Guild and major publishing organizations (Anderson 2023). The discursive positioning of MT as outside of translation, however, while understandable as a strategic move, is at odds with much of contemporary

translation studies where a broadening of the definition of translation is on the agenda (e.g., Bassnett and Johnston 2019). It also flies in the face of lay understandings of translation, however naïve these may be. And even if MT, like other forms of traditional and generative AI, is highly problematic, it would seem unwise to cast it off as an object of inquiry in translation studies, one possible consequence of its exclusion from the 'translation' fold.

## **Conclusion**

In this chapter I have scrutinized reactions to the breakthrough of generative AI in multilingual news production and literary translation in an attempt not to predict how state-of-the-art translation technologies will develop, but to get a snapshot of how these technologies are being received in two very different areas that are nonetheless subject to similar existential threats. The reaction in news production has been to place MT in the category of apparently innocuous AI technologies that allow journalists to repurpose existing content for new audiences. It is not seen as producing new, or 'original' content, in the broad sense of the term. Generative AI, on the other hand, is seen as potentially dangerous and in need of monitoring and regulation. Meanwhile, for literary translators, there is no irenic position that can be taken vis-à-vis MT, no use case in which MT offers an appropriate solution. This reaction is not surprising given the bad faith shown by some literary publishing houses in their uses of MT (see ATLF 2023), but the complete exclusion of MT from what is considered translation potentially sets literary translators on a course that will see them increasingly at odds with theoretical translation studies. This may matter less to literary translators than how their campaign for fair treatment lands with the legislators now moving to regulate the use of AI. Ultimately it is not the technology alone that shapes the future; rather it is the way in which it is accommodated by the socio-cultural, legal and economic context, itself shifting in line with technological change, that will have the greatest bearing on the lives of journalists and literary translators alike.

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