From telephonic interpreters to talking machines: a critical review of a century of technology adoption in interpreting

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Abstract

Technology has played a pivotal role in shaping interpreting practice, from the advent of simultaneous interpreting technology in the 1920s to the development of telephone interpreting and early experiments with video-mediated interpreting in the 1970s, through to computer-assisted interpreting and the rise of automated speech-to-text and speech-to-speech translation ('machine interpreting'). However, technology adoption in interpreting has never been straightforward. It reflects a complex interplay of social, economic, institutional and individual factors, exposing tensions between the perceived benefits of innovation and the lived experiences of those who (are required to) use it.

For instance, while distance interpreting modalities—such as telephone, video-mediated, remote simultaneous, and video relay service interpreting (Braun, 2024)—have expanded access, they were not always introduced with sufficient input from practitioners. This has led to degraded working conditions, including poor audio, cognitive overload, stress and fatigue, especially on platforms not designed with interpreting in mind (e.g., Braun, 2018; Braun et al., 2018; Buján & Collard, 2022; Licoppe et al., 2018; Mouzourakis, 2006; Singureanu et al., 2023). Thus, while quality differences between distance and onsite interpreting have been less pronounced in conference settings (Moser-Mercer, 2003; Roziner & Shlesinger, 2010) than in legal contexts (Braun, 2013; Braun & Taylor, 2012; Hale et al., 2022), many interpreters across all fields perceive distance interpreting negatively, as driven by cost-cutting and efficiency, rather than as an opportunity to expand their services (e.g., Braun, 2018, 2020; Buján & Collard, 2022; Zhang et al., 2024). What happened to the enthusiasm of Fredo Nestler, who campaigned tirelessly—including staging hunger strikes—for the German postal service to adopt his pioneering Tel-Interpret system in the 1950s (Nestler, 1957)? And does today's reticence towards distance interpreting echo the resistance of interpreters to simultaneous interpreting nearly a century ago, when early practitioners were mocked as mere "téléphonistes" or "telephonic interpreters" (Baigorri-Jalón, 2014), or are different dynamics now at play?

Today, as AI-driven technologies introduce more radical shifts to interpreting workflows, applications that claim to compete with interpreters are gaining more traction than computer-assisted interpreting as a form of human-AI collaboration. 'Machine interpreting' is promoted for its scalability and round-the-clock access to real-time language support, bolstered by oversimplified claims of interpreter shortages that warrant scrutiny. Yet, it raises concerns about quality, nuance, bias, accountability, and the ethics of indiscriminate language processing that lacks contextual understanding and bypasses

human judgement, sensitivity and agency. By contrast, AI applications that have shown promise in supporting interpreters—in terms of quality, reliability or wellbeing (e.g., Defrancq & Fantinuoli, 2021; Pisani & Fantinuoli, 2021; Prandi, 2023; Rodriguez González, 2024; Tan et al., 2025; Tang et al., 2024)—remain underused. What factors have prevented their wider adoption? Is it perceived complexity, insufficient language coverage, or the broader lack of industry support for technologies that are not seen to benefit the market directly (Nimdzi, 2023)?

This presentation critically examines how interpreting technologies have been introduced, adopted, resisted, and—to some extent—normalised over the past century. It traces key moments in the evolution of interpreting technologies, situating them within broader historical and sociotechnical contexts. Drawing on theories of technology adoption and acceptance (e.g., Pinch & Bijker, 1987; Davis, 1989; Rogers, 2003; Venkatesh et al., 2003), I identify patterns that transcend specific technologies—from tensions between access and control to resistance when technology is perceived to compromise quality or interaction. Drawing especially on social constructionist frameworks of technology (Pinch & Bijker, 1987), I show that the uptake or rejection of interpreting technologies is shaped by competing interpretations of their value and meaning, reflecting differing stakeholder priorities and shifting power dynamics. As technology continues to reshape interpreting practice, this prompts a crucial question: on whose terms, for whose benefit, and to what ends?

Given the transformative shifts brought about by language AI, I further argue that it is essential to learn from past patterns of technology adoption—even when new tools appear fundamentally different. Innovations relating to a complex communication activity such as real-time language mediation must be assessed not only on their technical merit, but also on their ethical, social, and environmental implications (Moorkens et al., 2024), as well as their potential to support meaningful human–AI collaboration, ensuring that human expertise remains central and that quality and ethical standards in real-time multilingual communication are upheld.

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Bio

Dr Sabine Braun is a Professor of Translation Studies, the Director of the Centre for Translation Studies at the University of Surrey, UK, and a Co-Director of the Surrey Institute for People-Centred AI. She specialises in human-machine integration in translation and interpreting to improve access to information, digital content and public services. In 2019, the research centre she leads was awarded an 'Expanding Excellence in England' (2019-24) grant by Research England to expand the centre's research in this area. For over a decade, she spearheaded a European-funded research programme investigating video-mediated interpreting in legal proceedings to improve language access in the justice sector (AVIDICUS 1-3; 2008-16), while contributing her expertise in video interpreting to other justice sector projects (e.g. QUALITAS, 2012-14; Understanding Justice, 2013-16; VEJ Evaluation, 2018-20). Subsequently she advised justice sector institutions on the use and risks of video-mediated interpreting, delivered training/CPD on interpreting and technologies, developed European guidelines, and co-authored a DIN standard. She also explored the use of video and virtual reality platforms for training interpreters and users of interpreting services (IVY, 2011-3; EVIVA, 2014-15; SHIFT, 2015-18; EU-WEBPSI, 2021-24) and is currently involved in projects investigating the application of communication technologies and AI-enabled language technologies in different settings (MHealth4All, 2021-24; Interpret-X, 2021-24; EmpASR, 2024-25). Furthermore, she conducts research on audio description and other translation modalities related to accessible communication. In the Horizon 2020 project MeMAD (2018-21), she explored the potential for (semi-)automating audio description to enhance digital media inclusion. In 2024, she launched a Leverhulme Trust-funded Doctoral Training Network on AI-Enabled Digital Accessibility (ADA). Her overarching interest centres on fairness, transparency, and quality in the use of technology in language mediation.