Language service provision in the 21st century: challenges, opportunities and educational perspectives for translation studies

Bernardini, Silvia; Bouillon, Pierrette; Ciobanu, Dragos; van Genabith, Josef; Hansen-Schirra, Silvia; O'Brien, Sharon; Steiner, Erich; Teich, Elke

Language service provision in the 21st century: challenges, opportunities and educational perspectives for translation studies

Silvia Bernardini[a], Pierrette Bouillon[b], Dragos Ciobanu[c], Josef van Genabith[d], Silvia Hansen-Schirra[e], Sharon O'Brien[f], Erich Steiner[d], Elke Teich[d]

[a]University of Bologna, Italy; [b]Université de Genève, Switzerland; [c]University of Leeds, UK; [d]Universität des Saarlandes, Germany; [e]Johannes Gutenberg-Universität Mainz, Germany; [f]Dublin City University, Ireland
Corresponding author: silvia.bernardini@unibo.it

Abstract: *Translators have contributed significantly to the evolution of culture and to ever-increasing globalization. With advances in AI, notably in Machine Translation, new opportunities and challenges have emerged. Increased recognition of language as a human right and not-for-profit translation have added to opportunities and challenges within the global translation sector. This in turn creates opportunities and challenges for training of translators in the higher education sector. Translation Studies as an academic discipline has sought to agree on competence models that guide teaching practice. However, with the speed of change in AI especially, the discipline needs to assess how competence requirements will change and what the translator of the future will need to do. We propose to expand the types of skills currently taught and to do this through collaborative programs across EU universities.*

Keywords: *Artificial Intelligence; Higher Education; Language Service Provision; Machine Translation; Translation Competence.*

1. Language service provision: bleak or rosy prospects?[1]

Throughout history, translators have played a crucial role in the evolution of culture. Not only have they brought the masterpieces of human literary genius to a wider audience, they have also helped to lower the language barriers impeding the free flow of ideas and knowledge. Thanks to their talents and expertise, advances in science and technology have been made accessible beyond the boundaries of the cultures that produced them.

Since the first translation and interpreting schools came into being, between the two World Wars, there has been a flourishing of Bachelor's and Master's degrees everywhere in the world that educate language service providers, i.e. language mediators, translators and interpreters. Europe is leading the way in this area: a quick web search returns more than 200 Master's degrees in translation throughout Europe, over 80 of which are part

[1] The ideas presented in this contribution were first discussed at a colloquium organized by Erich Steiner at the Dept. of Language Science and Technology of Saarland University (February 2019); they evolved into their final shape following discussion after Silvia Bernardini's presentation at the Bologna Process Anniversary Conference (25 June 2019).

of a network of excellence unique in the world, the European Master's in Translation (EMT) Network.[2] Europe's leading role in the field of translator education is no coincidence. As Umberto Eco memorably claimed, 'the language of Europe is translation'.[3] European institutions, European economy, European culture, can only exist in translation, if we are to preserve its diversity of languages, and the cultural heritage and social values they convey.

Nowadays, there are both opportunities and challenges for language professionals, that have to do with advances in technology (particularly artificial intelligence, AI) and societal changes (such as the widespread availability of multilingual digital content and of individuals who are willing to provide translation services for reasons other than economic profit). These changes are in themselves positive and welcome, but raise important issues for higher education that should be addressed in a timely and effective manner.

In the remainder of this contribution we will first briefly describe the current scenario of language service provision, arguing that the need for translation is growing steadily, even as some tasks are taken over by artificial intelligence applications, and others are taken care of by unpaid volunteers. Against this background, we will make suggestions as to the changing roles of professional translators, and on this basis try to sketch some of the ways in which higher education can meet the challenges and bring translator education to the next stage.

While we believe that the language professions are at a turning point, we would also like to suggest that they are not unique in this, particularly as concerns the role of human beings in an AI-enhanced work scenario. Indeed, according to the *One Hundred Year Study on Artificial Intelligence* [1], "AI will gradually invade almost all employment sectors", from transportation, to elder care and even education itself. Reflecting on the ways in which higher education can cope with these changes seems therefore a priority for everyone in academia.

2. Language services in the 21st century: what the future may have in store

Availability of content in one's own preferred language and even *locale*, a combination of language and regional characteristics, has become an almost indispensable selling point. The digital entertainment industry, software applications, social media and global marketing all rely on translation to allow consumers to read and share content in their own language. In a Common Sense Advisory (CSA) 2014 survey of more than 3,000 Internet users across 10 countries, published under the title *Can't Read, Won't Buy:*

[2] EMT: https://ec.europa.eu/info/resources-partners/european-masters-translation-emt_en; a similar, smaller network exists for Conference Interpreting Master's degrees: https://www.emcinterpreting.org (both visited 5 August 2019).

[3] Lecture at the *Assises de la Traduction littéraire*, Arles, 14 November 1993.

2014, 75% reported that they prefer to buy products in their native language, and 60% said that they rarely or never buy from English-only websites.[4] Based on CSA research, GALA, the Globalization and Localization Association, estimates that the language services industry will continue to grow, and that the market will increase to over 56 billion US dollars by 2021.[5]

Beyond business opportunities, the protection of linguistic human rights relies increasingly on the availability of language mediation in various forms. This applies to the right of speakers of any language community, including minority and regional languages, to use their language in administrative, cultural, educational, legal, medical and socio-economic spheres [2]. In addition to *inter*lingual communication, *intra*lingual communication initiatives have also been designed to impact positively on literacy rates, immersive theatre experiences for deaf and hard-of-hearing audiences, increased online discoverability of multimedia content, and general access to information for disabled citizens [3]. Moreover, re-writing content for different audiences, including non-specialists, has improved access to vital medical information in the original language, as well as helped the localization of that information into minority languages.

If demand for language services is growing and diversifying, what is happening to supply? Two main trends worth mentioning are new technology-driven working scenarios and not-for-profit translation.

Recent advances in AI and machine learning have revolutionized how computers perceive and interact with data, the world and humans, even outperforming us in certain narrow tasks. In machine translation, the turning point happened in 2016, when neural machine translation (NMT) for the first time comprehensively outperformed the previous state-of-the-art, statistical machine translation. Because of its "holistic" approach, the quality of NMT output is often "human"-like: smooth, elegant and fluent, even in cases when it contains translation errors. The new flavors of NMT systems can incorporate visual information and translate entire texts taking contextual meanings into account. Even translation between language pairs for which not much training data exists and direct speech-to-speech interpreting are constantly improving. As a consequence, roles are changing: professional translators often handle MT suggestions in their Translation Memory (TM) tools: when a useful TM match is unavailable, MT will be offered, assessed, edited or rejected (and retranslation then occurs). Human translators are still the ultimate arbiters of what is a good translation, what is not, what needs to be changed, and what, given the MT output, needs to be translated from scratch. In this way, human translators move much further into what has traditionally been regarded as quality assurance, editing all the way up to guaranteeing, approving and vouchsafing the correctness of translations, working in partnership with and supervising support-

[4] https://csa-research.com/More/Media/Press-Releases/ArticleID/31/Survey-of-3-000-Online-Shoppers-Across-10-Countries-Finds-that-60-Rarely-or-Never-Buy-from-English-only-Websites (visited 5 August 2019).

[5] https://www.gala-global.org/industry/industry-facts-and-data (visited 5 August 2019).

ing technologies. In addition, trans-*lation*, or better trans-*creation*, i.e. the rendering of creative source material (advertising, marketing, etc.) in another language and culture is currently mostly beyond machines. All of the activities sketched above come with substantial societal recognition and prestige. They require excellent, cultured and tech-savvy translators.

Secondly, changes linked to more widespread multilingualism and ease of access to digital content have favored the emergence of not-for-profit translation and interpreting on an unprecedented scale. In the media field, for instance, bi- and multilingual individuals without formal (academic) training nowadays perform translation tasks for fansubbing, citizen journalism, the localization of social networks and open source software, or translation into easy-to-read text variants. The standards and procedures regulating these experiences often approach those expected in professional settings. Not-for-profit translation can give more visibility to translation and its role in society, particularly as concerns the online presence of minority languages. Yet there is also a clear risk that "the status of translators as trained professionals may be compromised, causing devaluation of the profession overall" [4].

3. Taking the future into our hands: how does this outlook impact higher education?

As an academic discipline, translation studies have interfaces with neighbors such as computer science and computational linguistics on one side, and linguistics on the other. Rather than trying to compete with such well-established neighbors on "their turf", it is important that the discipline develop a unique set of competences and areas of knowledge for its guiding applications (transcreation, multilingual communication, interlingual and intralingual translation and interpreting, including all forms of human-computer interaction in these areas) – not only for the profession, but also for research. In translation studies, research on discipline-specific competences has made great progress in recent years, and has led to a range of competence models, which nowadays acknowledge the importance of employability and the market readiness of the trained translator [5, 6]. These include technological, interpersonal and service provision competences.

However, more needs to be done for competence in areas of research. No matter where translation and interpreting graduates work, the ability to carry out research is essential and this competence should be nurtured and strengthened in university programs. Under research skills we include formal skills (i.e. the ability to carry out academic research and produce appropriate output), but also skills that allow students to collect data, analyze and synthesize it for different purposes and audiences. At the same time, the previously under-estimated importance of generic cognitive competences requires more attention. Generic digital competencies of a translator include knowledge and skills related to: information and data processing, storage,

management and evaluation; the ability to find, critically evaluate and communicate information, to share digital content using appropriate tools, and to use digital communication and collaboration practices, as well as social media; awareness of data security and risk management issues.

Traditional teacher-centered, individual and group-based translation activities may not be fully adequate for the acquisition of such competences. Adopting situated or socio-constructivist methods and resorting to holistic immersion experiences, in which students work as part of collaborative student projects or simulated translation bureaus, may be especially rewarding. The current rigid module structure of university degrees is not favorable to presenting students with the complex picture of language technology applications in a coherent manner [7]. We need to build redundancy, repetition, reinforcement and the opportunity to adapt and contextualize new knowledge and experiences into university programs. Strong collaborative international university networks such as the EMT, EMCI, CIUTI[6] or WITTA[7] function productively alongside strong national and regional groups, all collaborating with industry partners to update training programs, raise awareness about the importance of language specialists, and identify areas where humans can still add value and work in ergonomic settings for meaningful purposes. The potential for educators to create engaging, meaningful and up-to-date translator education courses (be they face-to-face, online or blended) has never been greater.

4. Summing up and looking ahead: future-proofing language service provision

Demand for interlingual and intralingual translation and related forms of multilingual and multi-modal communication has been on the increase and will continue to be so. However, some of that demand may be met with the help of engineering solutions in areas such as machine translation or AI-based dialogue systems. With their help, even non-specialists may be able to satisfy some of that increasing demand. We are living in an age of continuous and fast development of new technologies, where "technology" includes entire workflow architectures. This means that the role of the language professional of the future will have to be different from what it was before: we expect that s/he becomes an advocate for multilingualism as a globalization tool, and possesses the know-how to manage large-scale commercial, as well as not-for-profit, global initiatives that require translation and transcreation. In the new era of AI, it is the advances in machine translation that impact on the tasks of translators most, but it would be

[6] Conférence internationale permanente d'instituts universitaires de traducteurs et interprètes, https://www.ciuti.org/ (visited 23 August 2019).

[7] The World Interpreter and Translator Training Association, http://www.witta.org.cn/col.jsp?id=130 (visited 5 August 2019).

short-sighted to see the new role of the translator at the end of the production pipeline only, e.g. in post-editing or evaluation. Instead, translators should be trained to bring their trained "linguistic eyes" to interdisciplinary teams of developers or service providers to design and adapt AI systems to the needs of new text types, registers, styles and languages. New roles involve the appreciation, understanding and critical assessment of AI technologies and the ability to post-edit, approve and vouchsafe the correctness of translations, all firmly rooted in human expertise in languages, cultures and the science of translation.

In constantly evolving and changing environments of the kind sketched in this contribution, responding to change with more and more specific technological know-how alone is futile. Instead, general skills and knowledge domains need to be identified which provide a basis for continuous developments throughout a lifetime. Only such pathways of personal development have a chance of leading to personally satisfying and healthy work. We therefore propose to identify such skills and domains to safeguard today's students against a futile race behind the constant flow of new technologies. We have already referred to the *European Master's in Translation* competence framework as one useful point of reference – even though it needs a strengthened focus on research skills as complementary to the professional skills highlighted in its current version. In a wider context across professions and disciplines, *The Future Skills Report*[8] identifies three dimensions of skills of crucial importance for future learning and future higher education: subject-development related skills, object-related (instrumental) skills, and social world/organization-related skills. To concentrate exclusively on the second of these, as has often been the case in higher education in recent decades, would be a doomed attempt. Hence we propose to invest in the identification of subject-development related skills and social world/organization-related skills much more than has been the case hitherto. What are these skills and how can they be taught, learned and evaluated?

One way of starting from existing resources to work towards the proposals made in the previous two sections would be a strengthening of international collaboration between EU universities, leading to double/joint degrees, networks like the EMT and also networks with public and state employers. This would allow the pooling of otherwise scarce resources of expertise, creativity and finance, as well as tools and infrastructure. We propose to set up programs implementing such forms of collaboration and to create the financial resources necessary to put them into practice. Another way of developing creative responses to challenging developments in the area of intra- and inter-linguistic and multi-modal translation/transcreation can be seen in continuing education and lifelong learning. Both forms of education and learning must continue throughout a person's professional life and cannot end with formal graduation. We propose that existing institutions develop programs towards these ends and that interfaces between institutions and between programs become much more interconnected and permeable than they currently are.

[8] https://nextskills.org/future-skills-report-2019/ (visited 5 August 2019).

References

1. Stone P., Brooks R., Brynjolfsson E., Calo R., Etzioni O., Hager G., Hirschberg J., Kalyanakrishnan S., Kamar E., Kraus S., Leyton-Brown K., Parkes D., Press W., Saxenian A., Shah J. Tambe M., Teller A., 2016. *"Artificial Intelligence and Life in 2030." One Hundred Year Study on Artificial Intelligence: Report of the 2015-2016 Study Panel*. Stanford (CA): Stanford University. Available at: http://ai100.stanford.edu/2016-report. Accessed on 5 August 2019.
2. UNESCO, 1996. *World Conference on Linguistic Rights: Barcelona Declaration*. Available at: https://unesdoc.unesco.org/ark:/48223/pf0000104267. Accessed on 5 August 2019.
3. The European Commission, 2015. European Accessibility Act - Employment, Social Affairs & Inclusion - European Commission. Available at: http://ec.europa.eu/social/main.jsp?catId=1202. Accessed on 5 August 2019.
4. O'Hagan M., 2011. Community Translation: Translation as a social activity and its possible consequences in the advent of Web 2.0 and beyond. *Linguistica Antverpiensia*, 10: 11-23.
5. EMT Expert Group, 2017. *EMT Competence Framework 2017*. Retrieved from https://ec.europa.eu/info/sites/info/files/emt_competence_fwk_2017_ en_web.pdf.
6. Schwieter J.W., Ferreira A. (eds.), 2017. *The Handbook of Translation and Cognition*. Hoboken N.J.: Wiley.
7. Bowker L., 2014. Computer-aided translation: translator training. In: Chen S.-W. (ed.), *Routledge Encyclopedia of Translation Technology* (1st ed.). London: Routledge, 88-104.