IJoC Translations

Translators as Adaptive Experts in a Flat World:
From Globalization 1.0 to Globalization 4.0?

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Professional translators are highly multitasking agents whose job requires advanced language skills, advanced information literacy, and great technological and instrumental competence. Today they operate in and for an ever more technologized society, within a complex, competitive system of client and user expectations, tools, and new forms of organization and work conditions. This article explores the main industry-level, technological and social developments that have forced many translators to further resituate their practice as co-constructors of knowledge and co-communicators in today's media landscape. It argues that despite the challenges of powerful automatic implementation and the upsurge of volunteer crowdsourcers, professional translators will continue to adapt to evolving work conditions and emerging phenomena, moving the traditional boundaries of the practice and discipline of translation.

Keywords: *professional translation, crowdsourcing, volunteer translation, electronic tools, translation automation technologies, statistical machine translation, knowledge economy, cloud marketplaces, global social media*

Although the practice and history of translation are long established, the profession of translation emerged only recently, in the mid-20th century. Since then, professional translators have come to be regarded as highly multitasking agents whose work requires advanced language skills, advanced information literacy, and considerable technological and instrumental competence, among other attributes. Operating in and for today's ever more technologized and globalized society, they face a complex system of client and user expectations, tools, information (re)sources, and new forms of organization and work conditions.

This article explores the main developments in industry, technology, and society that have led to the creation of new translation spaces and niches, thus forcing many translators to resituate their practice in 21st-century translation. It begins with an overview of the 1980s, a decade characterized by the translation of software and hardware products, before surveying the 1990s, when the translation of digital content developed in parallel with the rise of the Information Age. This diachronic overview is written with a specific audience in mind, above all, experts in communication and media studies. The article then

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moves on to describe recent advances in translation automation technologies (above all in machine translation) and the shift toward translation as a utility service in the age of global social media. This section may also be of particular interest to scholars working in various fields of Translation Studies. The article concludes by arguing that despite the challenges posed by powerful accessibility, automatic implementation, and global users' propensity to translate social media, professional translators will continue to adapt to evolving work environments, practices, and phenomena that seem to be driving a new turn in translation (studies).

Translating in a Flat World:
The Rise of the Global Village and the Information Age

Ever since the emergence of the global village as a single community connected by easy travel, mass media, and electronic communications, translation scholars and the translation industry alike have been resituating the practice and discipline of translation within evolving notions of globalization (e.g., Austermühl, 2001; Cronin, 2003; O'Hagan & Ashworth, 2002; Pym, 2004). In "It's a Flat World, After All," the *New York Times* foreign affairs columnist and three-time Pulitzer Prize winner Thomas L. Friedman (2005) described the historical development of globalization as an ongoing flattening of the world since 1492, "when Columbus set sail, opening trade between the Old World and the New World" (n.p.). Columbus' "discovery" launched the first of three stages of globalization. Applying discourse conventions from the software industry, Friedman labeled these phases Globalization 1.0, 2.0, and 3.0, respectively, each characterized by different geographical dimensions, objectives, and drivers:

> Globalization 1.0 (1492 to 1800) shrank the world from a size large to a size medium, and the dynamic force in that era was countries globalizing for resources and imperial conquest. Globalization 2.0 (1800 to 2000) shrank the world from a size medium to a size small, and it was spearheaded by companies globalizing for markets and labor. Globalization 3.0 (which started around 2000) is shrinking the world from a size small to a size tiny and flattening the playing field at the same time. (2005, n.p.)

Friedman's description of the historical evolution of globalization not only challenges Columbus' report about the world being round, but also partly explains how the intertwining of technology and geo-economics has fundamentally reshaped people's lives:

> And while the dynamic force in Globalization 1.0 was countries globalizing and the dynamic force in Globalization 2.0 was companies globalizing, the dynamic force in Globalization 3.0—the thing that gives it its unique character—is individuals and small groups globalizing. . . . But Globalization 3.0 not only differs from the previous eras in how it is shrinking and flattening the world and how it is *empowering individuals* [italics added]. . . . Globalization 3.0 is not only going to be driven more by individuals but also by a much more diverse—non-Western, non-white—group of individuals. (n.p.)

Friedman's notion of Globalization 3.0 is doubly important for the discipline and profession of translation. First, it stresses the role of individuals or small groups as primary agents in a globalized marketplace,

reflecting the main working conditions of modern professional translators. Second, it attributes developments in the third phase of globalization to what Friedman calls "flatteners." These relate mostly to technological developments, above all the emergence of the Internet and new work-flow solutions, and their strong influence on global communication and hence translation patterns. The global and technological era that has evolved swiftly since the 1980s and is still characterized by the ever-increasing use of multilingual Internet services and global electronic commerce (e-commerce) has entirely revolutionized working and business environments, thus providing a new context for communication across borders and cultures in the 21st century.

Nevertheless, despite advances in ICT and the dominance of English as the global lingua franca, language and culture continue to be principal obstacles to full globalization and full participation in "genuine knowledge societies" (UNESCO World Report, 2005, p. 19). This article briefly discusses some factors that have contributed to the continuous challenge posed to two traditional forms of language and cultural support—translation and interpretation—by (a) the new contexts technology affords for human communication and interactions; (b) the inexorable growth of the translation market, originally driven by the multibillion-dollar business known as the GILT industry (i.e., *g*lobalization, *i*nternationalization, *l*ocalization, *t*ranslation); and more recently (c) the global diffusion of social media, which has led to increased consumption of multilingual content, creating a demand that traditional professional translation alone cannot satisfy.

Globalization 2.0: The GILT Industry and the Global Translation Market

Technology, language, and cultural exchanges have been central to the development of the GILT industry over time. Although globalization is not a recent phenomenon, its progress has been fueled by the emergence of the relatively new localization industry, which in the United States appeared in the 1980s as the slowing domestic market pushed industries to revive the growth the U.S. economy had experienced in previous decades by increasing their international commercial presence.

Most of the literature prior to the year 2000 (e.g., Esselink, 1998; Schäler, 1999) traces the origins of localization to the early and mid-1980s, when the North American computer industry and other big IT manufacturers began to take advantage of the enormous potential offered by international markets. Key players in the localization industry were mainly U.S. software developers (Microsoft, Apple, IBM, Oracle, etc.) and U.S. hardware manufacturers (Compaq, IBM, Hewlett-Packard, etc.) that had to adapt their original U.S.-targeted products to the requirements of local users. Hence, the early stages of localization are associated almost exclusively with software and hardware products.

According to the main localization business model at the time, most development of software and hardware products was done in-house, whereas translation and desktop publishing services were outsourced to a service industry that mushroomed to meet the demand for translation and localization services. Outsourcing policies continued to play an important role in the GILT industry during the following decades (and still do today), in turn expanding the demand for translation services. Responding to the translation needs of the computer industry, localization service providers (LSPs) emerged as a parallel key market player. Initially, LSPs took the form of national single-language vendors specializing in the

language of the target country. However, as globalization took hold during the mid-1980s, this distribution model changed to meet the increasing need to localize more products in more languages on a truly global scale, with ever-diminishing product life cycles, budgets, and deadlines. As a result, multilingual vendors appeared, offering a wider range of localization services and turnkey solutions in multiple languages (engineering tasks, linguistic and cultural consultancy, translation and marketing services, etc.), either on their own or together with single-language vendors. Last in this global supply chain, freelancers and subcontractors—especially in the area of translation—represented the larger sector for subcontracted services (Cross, McKenna, & Smith, 2001; Pinto & Draheim, 2004; Schellekens, 2004). This period also witnessed the emergence of tool developers supplying both clients and service providers with language technology, automation, and work-flow management tools. In most language technology at the time, emphasis was (and still is) placed on both machine-aided human translation and human-aided machine translation, commonly referred to as computer-assisted or computer-aided translation (CAT). CAT tools for translators usually include terminology management systems; translation memory (TM) systems, in which bilingual databases allow for the parallel storage and retrieval of previously translated text segments; and machine translation (MT) systems, that is, software systems for automatic translation that convert source language input units are converted into target language output units (see Austermühl, 2001; Enríquez Raído & Austermühl, 2003 for an overview of tool types). As Figure 1 shows, the gradual increase in the automation of the translation process is achieved by increasing use of translation tools and decreasing the level of human involvement.
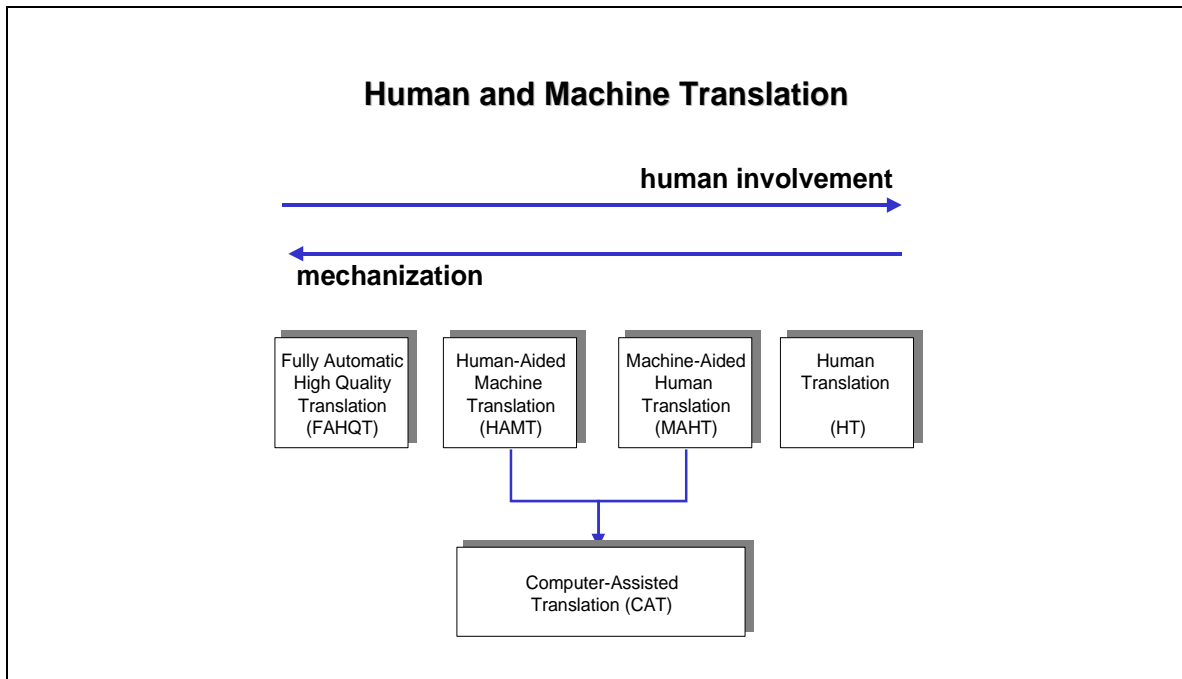

**Figure 1. Hutchins and Somers' (1992) dimensions of translation
automation (Austermühl, 2001, p. 10; reproduced with the author's permission).**

Nevertheless, as the GILT market fragmented into specialized areas and production–distribution chains, software publishers realized that localization was both costly and time-consuming. More often than not, hardware and software products had to be redesigned from scratch to meet the new or modified cultural, linguistic, functional, social, economic, and political norms of the target locale. To reduce costs and improve turnaround times, the computer industry started to adapt its products to the requirements of international standards and conventions, that is, to internationalize these products at earlier stages of the localization process. Overall, internationalization allowed the same source code to be used for all localized software applications, reducing production times and costs. It also increased the capacity to synchronize the rollout of a software product in multiple geographically spread and culturally and linguistically diverse markets.

The GILT industry continued to expand and consolidate in Europe during the mid-1990s, where protection of a rich linguistic and cultural heritage is both a prerequisite for participation in the multicultural and multilingual information society, and an opportunity for business in the global marketplace. Ireland, as a case in point, adopted various economic and political measures and incentives to support small publishers localizing their products and targeting markets outside their language community. Although there were (and still are) several localization service providers and localization centers in Europe, Ireland became the European center of the localization industry and a focal point for research in localization.

The mid-1990s were also marked by the adoption of standardized business practices and models. These developments were partly a corollary of the client-outsourcing policies and industry fragmentation mentioned above. The factors contributing to the adoption of streamlined business procedures included the growing numbers of products being localized and platforms or languages being supported, and the need to reduce product life cycles and budgets while improving quality and turnaround times (see Arevalillo Doval, 2005 for a discussion on quality standards in translation). Also during the mid-1990s, a new group of companies and industries outside the IT sector (including the telecommunications, automotive, media, banking, finance, and pharmaceutical industries) joined the relatively new GILT industry. As the Internet matured into a truly global World Wide Web, another new group of smaller IT and Internet companies started to go global and become users or providers of additional services, such as localization and translation services.

With the advent and development of the Internet, localization was no longer associated with software and hardware products alone but also with websites, multimedia, and any kind of digital content. Thus the scope and boundaries of the localization industry had to be redefined in a process driven mainly by ICT-related developments and synergies between the IT sector and other sectors. The industry therefore began to apply localization techniques used in software applications to the localization of multimedia, digital or Web-based content, and e-commerce applications. The redefined localization industry quickly became "the catalyst for electronic multilingual production and publishing" (Schäler, 1999, p. 26).

This new face of the localization industry resulted from the convergence of technologies and industries such as computing (software, hardware, and services), communications (wireless, telephony,

cable, satellite), and content (publishing, entertainment, education, advertising, broadcasting, music, film and video production, etc.). This convergence paved the way for the "technological turn" (Cronin, 2010, p. 1) in translation (studies), contributing in turn to explosive demand for translation and localization services worldwide, and to the ever-changing nature of professional translation and translators.

Shifting Concepts and Values in Professional Translation

Economic globalization, market internationalization, and technology innovation have indeed had manifold consequences for translation and translators, which many translation scholars have thoroughly discussed (e.g., Austermühl, 2001; Cronin, 2003; O'Hagan & Ashworth, 2002; Pym, 2004; Schmitt, 2000). Globalization 2.0's most immediate consequences for translation and translators can be summarized as follows:

- fragmentation of the market;
- progressive division and professionalization of labor;
- restructuring and reorganization of the translator's profession;
- increased adoption of new skill sets and competences;
- more automation and delocalization of translation work;
- increased impact of translation technology on translation and translators.

Shreve (2000) identified several "motive forces deriving from the socio-cultural context in which translation is embedded" (p. 220) that changed the nature of translation:

- an increasing volume of translation;
- increasing differentiation of types of texts and documents;
- an explosion of specialized terminology and linguistic usages;
- explosive diversification of distribution media;
- increasing digitization of information.

Other motive forces include the convergence between media, telecommunications, and ICT that "keeps increasing the multimedial, or polysemiotic, nature of electronic communication" (Gambier & Gottlieb, 2001, p. iii); the shift toward an audiovisual and multimedia context (ibid., passim); the shift from a one-to-one communication model to a one-to-many communication model; and in general the contradictory but complementary effects of globalization as a force both heterogeneous and homogeneous.

The new sociocultural context of the global, technological, and informational revolution has effected changes of paramount importance to translators and translation (as both a discipline and a business), as is perhaps best demonstrated by the great diversity of expectations placed on translators as well as on the very concept of translation. Different labels arose to refer to new professional fields such as localization, technical writing, coauthoring, multilingual text creation and design, language and cultural adaptation, language-service provision, and more recently, transediting and translanguaging. This diversity of labels for newly created jobs stemmed directly from the ever-increasing fragmentation of the specialized translation market and language industry.

At the same time, traditional translation concepts such as "source text," "target text," "fidelity," "originality," and "authorship" had to be redefined in light of the new sociocultural context of the global and information (or postindustrial) age. Within the context of software localization, for example, Pym (2004) introduced the notion of the "unstable text," a text that is constantly being modified and updated. In a similar line of reasoning, although in a completely different context (that of European institutions), Schäffner (1997) questioned the notion of the source text with regard to multilingual texts that "are created as a result of multinational and multilingual negotiations" (p. 193), arguing that the various languages used to draft such texts mutually influence each other, affecting the creation (translation) of new texts.

In the context of electronic communication in multimedia environments, the very concept of "text" also acquired a new dynamic and multimodal dimension. The distinction between textual and nontextual elements is no longer useful, since both types of elements form what are often termed "information objects" or "message containers," in line with what Justa Holz-Mänttäri (1984) called *Botschaftsträger* (message transmitters). Furthermore, dissecting the source text and restructuring it into intermediate texts produced by different groups of language professionals subsequently led to redefinition of the notions of "originality" and "authorship." In fact, in the new digital medium, where hypermedia challenges those notions, one could argue that translators gradually became co-original authors within a framework of integrated or shared (co)authorship (i.e., produced by groups of experts sharing the same or different fields of knowledge). This coauthorship framework implied and fostered collaborative and team work as well as individual and collective responsibility. It also highlights how translation can proceed not just in a static, sequential manner (i.e., translate-edit-publish) but also concurrently, with processes of content authoring, translating, and editing taking place almost simultaneously.

Technological innovation has had undeniable, continuing effects on translation and translators. In *The Moving Text*, Anthony Pym (2004) takes a whole chapter to analyze how technologization decontextualizes the source, dehumanizes technical discourse, and breaks discursive linearity. Hypertextuality alone represents different ways and habits of creating and reading screen texts that no longer match the discursive linearity of most printed material. Furthermore, hypertextuality and the multidimensional nature of electronic communication have drifted away from the linear progression underlying Western thought and philosophy. Similarly, albeit in the context of crowdsourced translation, Cronin (2013) argued that "post-print translation literacy" (p. 100) is one of three (see below) main characteristics of present crowdsourcing practices "with implications for thinking about translation" (p. 101). Here, Cronin pointed out, "the more important point is that as literacy expectations evolve, so too will translation practices" (p. 101; cf. Cronin, 2010, p. 4). Nevertheless, understanding and accepting alternative ways to classify, organize, and relate the elements of one's own reality should not imply rejection of the invaluable heuristic and pedagogical values underlying conventional textual forms such as discursive linearity, discourse and rhetoric strategies, or narrative description, which will continue to be modes of thinking and powerful means to structure reality (Pym, 2004).

With regard to the dehumanizing aspect of machine–human interaction in translation, Frank Austermühl (2007), like Pym, argued that technology innovation has caused translators to be marginalized, that is, isolated from what are typically considered the most interesting parts of the

localization and translation processes, such as cultural consulting and decision making (cf. Austermühl & Mirwald, 2010). Along these lines, Cronin (2013) admitted that "a tendency in localization discourse has been to accentuate the role of automation in translation activity and to minimize the intervention of the human agent," (p. 101) thus reinforcing the notion of translation as fundamentally dehumanizing. As further explained below, however, the development of Globalization 3.0 and its emphasis on cloud computing and empowerment of the digital crowd reveal an opposing trend in current translation discourses: "a reinvestment of translation technology by the human, a strategic use of technical resources to further human concerns or agendas" (Cronin, 2013, p. 102).

Translating in the Cloud:
The Rise of Global Social Media and the Knowledge Economy

Recent advances in translation automation technologies, especially in statistical machine translation (SMT), are shaking up the translator's world yet again. As mentioned at the beginning of this article, new types of translators and job markets are emerging, and the translation industry as a whole is experiencing another paradigmatic shift in which translation is increasingly seen as a utility service (embedded in every device, application, etc.) and less as a luxury, professional service.

Two decades ago translation customers "had a somewhat restricted choice" of translation services, but nowadays cloud computing has made MT universally available, and "what were once resorts against shortfalls of professional translation are emerging as valid options in their own right: *raw* [i.e., real-time] MT, by far the cheapest and fastest; and crowdsourcing among bilinguals, conveniently situated between MT and expert human output in terms of speed and cost" (García, 2015, p. 18). These new phenomena have in turn induced changes in the balance between supply and demand. In the LSP environment described above, translations would be typically carried out by single-language vendors—or, for larger-scale projects in multiple languages, multilingual vendors—employing professional translators "working with some kind of computer-assisted translation (CAT) tool" (p. 18). This was "essentially, and in greatly simplified terms . . . how the translation industry operated in the late 20th and early 21st centuries" (p. 19).

At the time of writing, and in a situation of mass use of social media and the modern emphasis on amateur involvement and collective volunteer action, the translation industry has adopted a new business model based on software as a service and is operating in emerging cloud marketplaces. The industry now coexists with new users willing to perform unpaid translation in a widespread peer and crowd environment. This activity, generally called *crowdsourced* translation, is "the translation of user- and community-generated content" (Austermühl, 2011, p. 15).[1] The proliferation of crowdsourced translation coupled with ubiquitous MT has added two further implications—alongside Cronin's post-print translation literacy—for new ways of thinking about translation. On the one hand, implicit in all traditional models of

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[1] Other designations for this phenomenon include collaborative translation, fan translation, user-based translation, participative translation, social volunteer translation, and CT3 (community, crowdsourced, and collaborative translation), to name but a few. For an attempt to make sense of this terminological amalgamation, see Gambier (2014, pp. 4–5).

translation "is the notion of an agent who produces a translation for consumption by an audience. It is a production-oriented model of externality" (Cronin, 2013, p. 100). Crowdsourcing practices, however, have transformed the traditional perception of consumers from passive agents to active producers, or "'prosumers' who contribute in developing products they like or promoting ideas they believe in" (European Commission, 2012, p. 44). In the context of crowdsourced translation, this involves a "consumer-oriented model of internality," where it is "the potential audience for the translation that does the translation" (Cronin, 2013, p. 100). This phenomenon has led to the paradigmatic change, briefly mentioned above, of translation being increasingly seen more as a utility service than a highly specialized activity. As Cronin (2013) stated, "such a shift makes problematic traditional distinctions which generally presuppose active translation agents and passive or unknowable translation recipients" (p. 100; cf. Cronin, 2010, pp. 4–5).

On the other hand, also implicit in crowdsourcing translation practices is the notion of "translation and pluri-subjectivity," or "the move away from the monadic subject of traditional translation agency—Saint Jerome alone in the desert—to a pluri-subjectivity of interaction" (Cronin, 2013, p. 102). This "new" representation of translation implies the "reinvestment of translation technology by the human" mentioned above, with translation technology now seen "as a tool of conviviality and an instrument of human political intervention" (p. 102).

Various scholars (Cronin, 2013; Enríquez Raído, 2013; Shannon, 2010) have examined these profound changes in translation and the reshaping of the current translation technology landscape and identified their main driving forces as ubiquity, mobility, connectivity, and immediacy. The ubiquity of digital content and information technology in what Greenfield (2006, cited in Shannon, 2010, p. 2) has referred to as the "Dawning Age of Ubiquitous Computing" relates to the "ever more pervasive, ever harder to perceive computing [that] has leaped off the desktop and insinuated itself into everyday life." For Shannon (2010), ubiquity implies that "digital content will continue to grow exponentially, as 'good-enough' methods of generating, delivering and translating content spread" (p. 2). Furthermore, the translation industry is "struggling to develop high-quality materials at low cost and high volume," and connecting the "next four billion users will necessitate more than 1,000 languages"; thus, current translation quality practices such as translate-edit-proofread "will not scale to such linguistic demands" (p. 6).

In addition, Choudhury and McConnell (2013) claimed, with more and more users "shifting to laptop, tablet and mobile devices, most translation technology vendors have to develop a mobile strategy to remain competitive" (p. 52). In their Translation Technology Landscape Report, these authors emphasize that

> companies that develop an intuitive mobile interface will have a distinct advantage in the marketplace compared to platforms that only work with conventional computers. This is particularly true for systems that enable crowd translation, since crowd translation often involves large numbers of people doing individually small amounts of work, a perfect use case for casual translation via a mobile device. (p. 52)

Closely related to notions of ubiquity and mobility, in a context where information technology is "everyware" and worldwide users are mobile, is the notion of immediacy, or "the desire to consume information as quickly as possible" (Shannon, 2010, p. 11). To satisfy this desire, real-time technology and multilingual communication have been brought within easy reach, a trend that has in turn contributed to further convergence of technologies through the deployment of MT and its integration in TM systems as well as in other, more general applications and platforms used by the public at large. Google's *Translate this page* function, for example, instantly localizes any Web page at a single click.

The translation industry has responded to issues of ubiquity, mobility, and immediacy mainly by developing cloud-based software as a service "coupled with real-time, multilingual communication engines" (Shannon, 2010, p. 2). Compared to first-generation (i.e., client–server) CAT tools, those of the second generation (i.e., software as a service) offer numerous advantages, such as accessibility across a wide range of devices and operating systems, including mobile devices; a subscription-based model versus the high costs associated with paying for permanent licenses; improved software release cycles and upgrades; improved user interfaces; high-capacity storage (of very large translation memories); and more.

Another significant driver of translation technology advances in Globalization 3.0 is the growing use of large quantities of data, or what Choudhury and McConnell (2013, p. 52) called "big data." Not only are linguistic data (e.g., speech and text corpora, glossaries, lexicons, and grammars) the main driver for language and translation technologies, but they are also used "to train and enhance the quality of the output generated by such technologies" (p. 52). Recent years have witnessed a shift of focus from TMs stored on local hard disks to massive quantities of translation data stored in the cloud, mainly in the form of parallel-text corpora. Publicly accessible TMs include those made available by the European Commission's Directorate-General for Translation, the Translation Automation User Society (TAUS), MyMemory, Linguee, and Glosbee, among others. The more these data are shared and openly accessible, the more they will be used by a wide range of users, and (in principle; see below) the more accurately data-driven translation systems will perform.

From the perspective of professional translation, having to deal with large quantities of data available in various forms (parallel-text corpora, terminology databases, dictionaries, glossaries, etc.) has highlighted the shift in focus from data generation to data selection. As Pym (2012) remarked,

> whereas much of the translator's skill set and effort was previously invested in identifying possible solutions to translation problems (i.e. the "generative" side of the cognitive process), the vast majority of those skills and efforts are now invested in selecting between available solutions, and then adapting the selected solution to target, side purposes (i.e. the "selective" side of the cognitive processes). (n.p.)

Progressing in parallel with the impact of the Internet and the emergence of crowdsourcing for either profit or nonprofit (i.e., humanitarian) purposes, these very simple yet profound shifts have confronted professional translators "with [ever-increasing] computerization and an influx of amateurs" (Gambier, 2014, p. 1). Nevertheless, as Ignacio García (2015) observed, there seems to be a new trend

among cloud marketplaces that allows translators to be paid in crowdsourcing environments as a new way of doing business.

Globalization 3.0:
Professional Translation, Crowdsourced Translation, and a "Third Way"

At the outset of Globalization 3.0, translation processes and professional translators are being profoundly impacted by two main catalysts for change: improvements in the quality of SMT, and the emergence of wiki technologies that provide companies with the platforms needed to reach users and enable them to translate for free.

The first question to arise regarding the use of free real-time SMT involves the notion of quality: "Why has Machine Translation become so much better?" (Austermühl, 2011, p. 4). For Austermühl, "the short and simple answer is that [MT] has become so much better because our expectations as users of MT systems have become so much lower" (p. 4). He went on to observe that Hutchins and Somers' (1992) notion of fully automatic high-quality translation (see Figure 2) "has now been replaced by yet another [process], FAUT, or *fully automatic usable translation*, which represents a more realistic view of the abilities of machine translation from the perspectives of both developers and users" (Austermühl, 2011, p. 4).
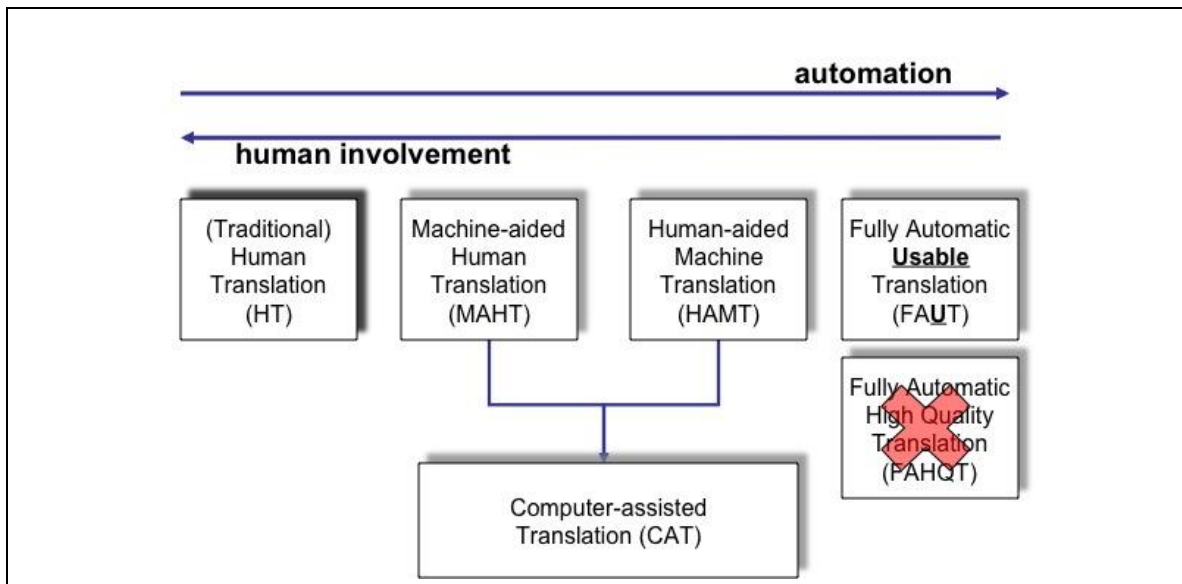

Figure 2. From FAHQT to FAUT (Austermühl, 2011, p. 4, adapted from
Hutchins & Somers, 1992, p. 148 and reproduced with the author's permission).

Users' lower expectations, however, "are only one answer to our initial question, and represent instead only part of a larger, more comprehensive answer" (Austermühl, 2011, p. 4). The "somehow ironic answer" (p. 12) to the question of why SMT has become so much better is that it has become so much more human. This paradox is attributable to the SMT systems' text corpora, which are based on

> compilations of texts produced by human writers and translators. [MT], very much like [TM] systems, thus depends on and owns its current success to high-quality human input. Way and Hearne stress this human basis of SMT by stating: "[T]he role of the translators in SMT is a crucial one: they provide all the knowledge upon which our models are based" (Way & Herne, 2011, p. 238). (Austermühl, 2011, p. 14)

Obviously, the best sources for accumulating translation data continue to be "good quality human translations from trusted sources, such as government bodies and institutions, companies large and small, from professional translators and consumers themselves" (Choudhury & McConnell, 2013, p. 52). Another way to aggregate sizable amounts of data is to crawl the Web, but with this method the risk of obtaining low-quality data is considerably greater than it is in gathering data from more trusted sources like those mentioned above. Regardless of the method of data aggregation, when free MT/TM technologies become ubiquitous, the risk of "recycling errors that are fed back into the very databases on which" these technologies operate can be significant enough to cause problems with translation quality (Pym, 2012, n.p.). From a technical perspective, quality management issues can be handled variously, for instance by automatically cleaning and improving the quality of source and target texts or by customizing MT engines (Choudhury & McConnell, 2013). This implies that what is needed to improve the quality of STM is to better understand and represent "through annotation the decisional patterns in human translators" (Austermühl, 2011, p. 14).

Depending on the level of quality needed by the end client, MT output is revised by professional human translators (a process called postediting) or monolingual language experts, or a combination of these and other semiprofessionals, bilinguals, and volunteers. Here, crowdsourced translation, as the second catalyst causing market disorder (via the notion of translation as a utility) as well as an initial panic felt by professional translators and LSPs alike, inevitably adds "further financial pressure to an already deflated job" (Austermühl, 2011, p. 14). New Web-based CAT systems, translation management systems, and wiki engines and tools have undeniably harnessed the power of the crowd to translate in the cloud. Yet despite the initial enthusiasm and hype that came with the rise of both SMT and crowdsourcing, these phenomena's impact on professional translation and translators does not seem as "dramatic as expected" (García, 2015, p. 23).

Regarding MT, critical voices from the professional community of translators have questioned the promise of increased levels of quality and productivity at reduced costs.[2] Although it is difficult to gauge MT's real impact on the everyday lives of individual professional translators, blogs and professional forums feature much heated debate about the actual benefits of adopting MT for quality translation services. In a

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[2] For studies on translators' attitudes and perceptions of MT and postediting, see Aranberri, Labaka, Díaz de Ilarraza, and Sarasola (2014), Guerberof Arenas (2013), and Specia and Torres (2012).

blog entry titled "Humpty Dumpty and the TAUS Quality Concept" and posted on the TAUS website, Victor Dewsbery (2013), a Berlin-based German–English translator, criticized TAUS for producing a Dynamic Quality Evaluation Framework Report based

> on a very limited sample, i.e. major international organisations with an extremely high volume of multilingual text requirements, most of which service a limited range of subject areas . . . I would suggest, however, that the translation industry is much broader than the demographic group represented by TAUS. (n.p.)

Sánchez Torrón's (2015) brief survey of online translation forums like ProZ and TranslatorCafe revealed certain professional translators' relative dissatisfaction and negative view of the use of MT and postediting. Overall, professional translators tended to perceive MT as useful only under certain working conditions (e.g., the use of controlled languages and the customization of MT systems to produce acceptable MT output) and with certain language pairs and text types.

Similarly, in the context of crowdsourcing and its effects on the translation industry, García (2015) stated that it was soon realized that this modality

> would suit only "certain specific purposes and in very narrowly defined contexts" (Kelly et al., 2011, p. 92). Unsurprisingly, unpaid collaborators would invariably go for the visual, exciting things and skip uninteresting content – and not only in commercial projects, but also in highly altruistic ones. Thus, even with translations for NGOs, it was not uncommon for community impetus to stall at about 70 or 80 per cent of completion (Roland, 2014, p. 21). (p. 23)

Nevertheless, as cloud-based as well as translation automation and management technologies have proved highly efficient for communities of users translating for free, they seem to be making way for a new business model based on paid crowdsourcing (García, 2015, p. 23). For García, paid crowdsourcing "represents a *third way* [emphasis added] of handling Web-based translation, filling the gap" (p. 26) between MT, free crowdsourcers, and conventional LSPs. In his survey of twelve global cloud marketplaces enabling paid crowdsourcing, he hypothesized that this new paid modality would "outperform its unpaid cousin, offering higher speed (no faltering before the finish line) and quality (no shirking the difficult bits)." Meanwhile, traditional LSPs "would offer higher quality and more guarantees of completion than either crowd option, but on a significantly longer deadline" (p. 26). García's findings reveal that "well-differentiated extremes aside, an identifiable middle ground seems to place cloud marketplaces and conventional LSPs on a continuum rather than either side of a sharply delineated boundary" (p. 27).

Other key scholars in the field have already advocated this new modality, claiming that processes of crowd translation would ideally involve volunteers working alongside professional translators, "presumably in different phases of the workflow" (Pym, 2011, n.p.; cf. Choudhury & McConnell, 2013, p. 51; Désilets, 2010). This solution would enable massive-scale, low-cost translation while still maintaining quality standards (see Carson-Berndsem, Somers, Vogel, & Way, 2009, p. 60 for a possible work flow

integrating volunteer translators). Yet as Yves Gambier (2014) pointed out, in his own quest for any convergence between the

> hyper-specialized professional bound with an international network, and the occasional working amateur . . . there is still a tangible missing economic link, discussed on other occasions by Pym (Pym et al., 2006, p. 12), that is to say, the real questions of costs, investments, modes of payment, etc. (p. 8)

Although García's (2015) survey clearly attempts to compare modes and rates of payments among professional translators working for global marketplaces offering paid crowdsourced translation, "the territory and range are wide open for including research on the economic and financial dimensions of translation and interpreting" (Gambier, 2014, p. 8). Here, the kinds of economic microstudies that Gambier proposes to bridge the gap between translation studies and business studies—which "has hardly been faced up to the present time, despite its urgency" (p. 10)—could indeed pave the way for a much-needed "economic turn" in the practice and discipline of translation.

Such an economic turn would most likely impose a new hierarchy on translators, requiring some professional translators "to become more specialised and focus on the areas where specialisation, confidentiality and accountability are required—and which will therefore always remain the exclusive sphere of competent human professional translators" (European Commission, 2012, p. 46). In other cases, trained translators would continue to be involved in management of projects (including crowdsourcing ones), human resources, and technical resources that must "adhere to explicit standards and procedures of quality control, even if the work is outsourced and sub-contracted" (Gambier, 2014, p. 8) to a multitude of translation prosumers. In yet other cases, professional translators "will have to turn into post-editors of texts translated by machines or the crowd" or "abandon certain areas where comprehension is the main objective and the level of accuracy allowed for by alternative methods like machine translation and crowdsourcing is satisfactory enough" (European Commission, 2012, p. 46).

Besides returning hierarchy to many segments of the translation market, this much-desired economic turn in translation—coupled with Pym, Orrego-Carmona, and Torres-Simón's (2014) recommendation to pay greater attention to new signaling mechanisms that may enable translators' status to be gauged in the context of electronic media—would most likely also allow a degree of market equilibrium to be restored. Although Pym, Orrego-Carmona, and Torres-Simón warn that this may be little "comfort to those who seek a status like that of the liberal professions (doctors, lawyers, engineers and the like)," new forms of signaling translators' professional status "are being developed, and some of them are coming precisely from sectors that have been seen as the greatest threats to market equilibrium" (2014, p. 14).

Conclusion

Although the rise of MT and crowdsourced translation threaten the professional livelihood of expert translators around the world, these phenomena represent less a revolution than an evolution of the business of translation (Austermühl, 2011). Many business models in translation nowadays combine three

distinctive ways of providing translation services that match different levels of quality: MT, (paid) crowd translation, and traditional, that is, paid professional translation (cf. Austermühl, 2011, p. 17; García, 2015, p. 20; Sánchez Zampaulo, 2011, p. 26).

Although many professional translators fear that SMT has reduced translation to a process of editing and revising, this work scenario is not new to those professionals who have long been revising entire translated texts as well as chunks of texts and/or individual segments produced by MT or pretranslated by TM systems, or both. Regarding the social media revolution and the ongoing tendency to procure less expensive service providers, it should not be ignored that crowdsourcing has offered translations entirely free of charge, inspiring the notion of translation as a utility. Once inconceivable, these new practices and phenomena are now commonplace, providing users with digital content automatically translated at a "good enough" level of language quality, and [anyone translating on the Web](#) "can be a fan, an expert, an activist, either with experience and/or a formal background in translation, or without it" (Gambier, 2014, p. 5). Meanwhile, although the job-threatening nature of crowdsourced translation may indeed affect professional translators without a paid role in this invisible industry, the reality is that the demand for translation "clearly surpasses the total work capacities of professionals who have received appropriate training in the field" (Gambier, 2014, p. 11).

New industry practices that might disqualify or further deprofessionalize expert translators can be turned into additional opportunities for these experts to bring their impressive skill sets to bear. As a recent study of global social media by Singh, Lehnert, and Bostick (2012, p. 695) reported: "Eighty-five percent of people surveyed use social medial for business use. Almost 40% of worldwide social media users prefer content in languages other than English, but only 23% are actually translating their social media content." MT remains another option available for immediate social media translation, but its quality is often very poor, rendering translations "unintelligible and unreliable" (p. 695). After all, the usefulness of MT is still constrained by language combinations, text types, and subject areas, among other limitations, leading in turn to an upsurge in human posteditors.

Furthermore, as García (2015) noted, "an unidentifiable middle ground seems to place cloud marketplaces and conventional LSPs [and their subcontracted professional translators] on a continuum rather than either side of a sharply delineated boundary" (p. 27). This same continuum offers professional translators the benefits of access to wiki resources created through massive online collaboration. Additionally, crowdsourcing projects as well as MT evaluation and development represent areas in which the project management skills and insights of well-trained, critical translators will continue to be in demand.

This is not to say that the far-reaching transformations in the world of professional translators (and society at large) discussed in this article will not involve any casualties,

> but it is necessary to stimulate reflection and develop strategies to reduce such causalities to the minimum, [and] protect competent and skilled professionals, who risk being thrown out of the market if they cannot stand the competition of the crowd. (European Commission, 2012, p. 46)

Paradoxically, the changes in communication and media technologies "that led to initial market disorder, [are] the same technologies [that] have enabled new hierarchies [of translators] to develop and certain degrees of trustworthiness to be signalled" (Pym et al., 2014, p. 14).

Perhaps the most important conclusion here is that history has proved that in evolving conditions, professional translators are highly adaptable "specimens." Like other expert knowledge workers such as copy writers and journalists, who are also experiencing the consequences of the social media revolution (e.g., citizen journalism), professional translators are increasingly becoming co-constructors of expert knowledge in a crowded world and creatively finding ways to overcome the omnipresence of both the crowd and technology, as well as the "totalizing phantoms of all-powerful accessibility and automatic implementation" (Gambier, 2014, p. 11).

Who knows? Perhaps adjustment to new signaling 'e-mechanisms' that may in turn allow for the reprofessionalization of translators, combined with a focus on the long-neglected economic and financial aspects of the profession, may bring about the very beginnings of Globalization 4.0 in the not-too-distant future.

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