Sandrini, Peter (2017): Translation 4.0 -- A shift in perspective. In: Zybatow, Lew; Petrova, Alena;
Stauder Andy; Ustaszewski Michael (ed.): Translating and interpreting: job profiles,
fields of work, training. Insights and outlooks into a changing professional field of the future.
Frankfurt: Peter Lang.
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Translation 4.0 – A shift in perspective

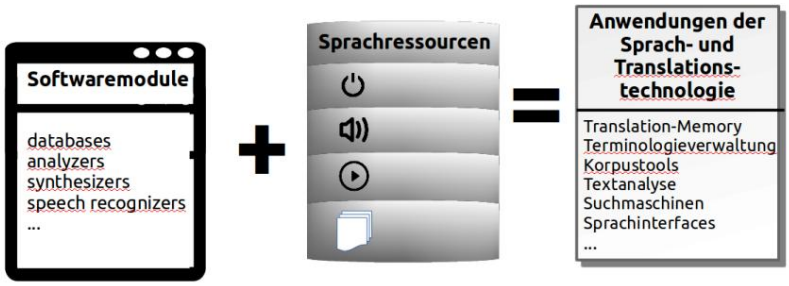
Abstract: The paper deals with the new developments and changes on the translation market where translation technology and translation data have evolved into a fundamentally important factor with a decisive impact on quality, efficiency and costs of translation in a professional context. This leads to a new understanding of competencies as well as a revised distinction between lay and professional translators.

1. Dynamic production parameters

The term Industry 4.0 describes the application of new information and communication technology in industrial production, with Internet technologies in particular being used for communication between people, machines and products. Due to the importance of data, digitalization is becoming a cross-sectional technology for every type of production and a competitive advantage in the new working world 4.0: “Digital data is the most important raw material of the future. Digitalization is increasingly becoming a driving force that penetrates society in all areas of innovation” (Research Union 2013: 7).

Digitalization and the indispensable use of machines for cost and efficiency reasons are also changing the human translation process. This results not only in the need to acquire the associated skills through appropriate qualification offers in lifelong learning, but also in a change in the decision-making processes of the translator himself, which results from the way translation technology works. This refers to the entirety of methods, applications and standardized formats provided by ICT for the translation of texts, whereby any type of language and translation technology can essentially be broken down into two basic components: On the one hand, the specific application program consisting of algorithms and logical command sequences such as: B. a translation memory system or a terminology management system, on the other hand the data used such as the translations saved in a translation memory, your own terminology collection or a compiled text corpus.

Figure 1: typical components of translation technology



The increasing importance of data of all kinds led to the media buzzword Big Data, which does not just mean large amounts of data, but rather its immediate availability from different sources in large quantities, expressed as “3V: volume, variety, velocity”.

The effects of this “datafication” have led to worries and concerns in everyday life when it comes to the mass recording and quantification of every form of human and machine activity in many areas of everyday life.
In the field of science, however, this opens up new possibilities for researching human behavior. New perspectives and challenges also arise for translation.

While before digitalization and before the ubiquitous use of translation technology, translation was based exclusively on the personal and individual communicative and, above all, linguistic competence of the translator, two further aspects are now added: firstly, the individual competence to be able to deal with translation data, and beyond that Competence in translating using the available data or incorporating the data into the translation process.

The former concerns the storage, management and organization of the resulting data sets, the latter the integration or context-related evaluation, selection and editing of the data in order to be able to derive potential translation solutions from them.

Pym (2013) refers to this when he blames the effects of data use on the translation process for an increasing transition from the production of possible translation solutions to a selection process from existing or offered solutions and their adaptation to the specific context: “much of the translator's skill-set and effort was previously invested in identifying possible solutions to translation
problems (ie, 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 (ie the selective side of the cognitive processes)" (Pym 2013: 493).

In this sense, we can speak of a "datafication of translation" or a datafication of translation: Translation no longer just represents the production of a target text based on the individual linguistic competence of the translator, but rather presents itself as a creative redesign of a text based on an input consisting of source text, data, job specification and translation context with a corresponding output consisting of target text and new translation data (translation memory, terminology data). Following this consideration, the translation process aims at a variation of the source text, which is achieved through justified and context-specific selection, recombination and adaptation of existing translation solutions from available data.

The ability to select thus comes to the fore and requires greater consideration in training, in the sense of imparting criteria for selecting and evaluating translation data: "una imprescindible formación en criterios para elegir" (Diaz–Fouces, 2011: 14).

In addition to viable selection criteria, case-specific and context-sensitive processing and application of translation data is required, which in turn can only be done on the basis of an action-driven and service-oriented translation concept. Quality is therefore the fulfillment of the order specification requested by the customer so that the target text can optimally fulfill its function; the DIN EN 15038 standard calls this "fitness for purpose".

For professional translation, this means that the important parameters of quality, efficiency and costs depend crucially on the translation data available in each individual case. This is obvious for all translation technology applications that work with data sets: statistical machine translation systems, translation memory systems, terminology databases, corpus analysis tools can only be as good as the quality of the data sets they access. The quality, efficiency and costs of a translation are therefore a function of the translation data available to the translator during the translation process.

The changes in the translation process are less obvious and require further investigation, especially because of their impact on the entire translation industry as well as on translation didactics and the teaching of the necessary skills.

2. Professional vs. Amateur

In addition to changing production conditions, a constant expansion of the translation market has been observed over the last two decades due to global networking and the increase in global communication. The increased demand for translation services led to increasing specialization, so that translation is now divided into different, highly specialized areas. For the sake of clarity, at a more abstract level and in summary of all these specialization tendencies, three basic types of translation can be distinguished:

1) A philological-academic field whose subject is the translation of literature, philosophical and scientific texts.
This area is characterized by the fact that very high demands are placed on language and cultural (general) knowledge, but employment with this is possible almost exclusively in niche areas (academic world, publishing). This type of translation is characterized by low economic pressure, little to no technical requirements and hardly any process documentation.

2) A cooperative area of open or free translation based on collaboration and voluntary contributions and carried out by user or fan communities. Translation by users of certain products or services, the so-called crowd sourcing, is known in business as the concept of vertical cooperation: “The 'value creation partner on the demand side', as it is called in economist jargon, i.e. the user, becomes a 'co-producer' “Free participation is something that is practically spreading like an epidemic throughout the entire service-providing and knowledge-intensive industry” (Grasmuck 2004: 332).

This particularly affects commercial products and services, such as the cases of Facebook and Twitter with the translation of the User interface illustrated by the users themselves. Another example of open and free translation can be seen in the area of freely available goods and products, whereby the voluntary translation of open source applications or the software localization of free applications plays a major role and is also supported by a good technical infrastructure (Gettext , PO) is supported.

Finally, this also includes the voluntary subtitling of television or cinema films by fans or the translation of comics by fan communities on the Internet.

3) A commercial area of translation, whereby corresponding services are offered and demanded on the market. Trained, professional translators who make their living through translation work in this area. Efficiency, cost minimization and “established procedures or documented processes” (Risku 2004: 29) are of central importance here, as the international standards for translation services (DIN EN 15038, ISO 17100) show, among others.

What constitutes translation and what prerequisites are necessary for it are closely related to the social idea and general understanding of translation: “Thus, translation competence is connected with the perceived nature of translation and translation quality” (Melby/Koby 2013: 177). Therefore, the distinction between a professional and an amateur is not always clear and is subject to different parameters. A possible differentiation between an amateur translator and a professional translator derives from the economic nature of his activity: If he makes his living by translating, he could be viewed as a professional translator; everyone else would therefore be amateur translators. Regardless of this, secondly, training could be used as a criterion for differentiation: academic translation training has now become widely accepted and has been integrated into the canon of university subjects. An academically trained translator distinguishes himself from other, uneducated translators through his specific preparation. Thirdly, related to this, a professional translator could be distinguished from a layperson by his or her specific competence profile, regardless of economic status or training (Zou 2015). If translation is seen as a natural part of language skills, no training is required: “Translation is not a learned skill, such as learning a foreign language in school, but, rather, it is a skill which is developed from a natural and existing base” (Malakoff/Hakuta 1991: 144). This view is viewed critically by translation studies, or at least relativized by a distinction between natural translation and justified, rational translation. Pym (2003) contrasts the innate natural translation competence with professional translation competence by reducing it to two functional competences:

– The ability to generate a series of more than one viable target text (TT1 , TT2 ... TTn) for a pertinent source text (ST);
– The ability to select only one viable TT from this series, quickly and with justified confidence (Pym 2003: 489)

A professional translator is able to generate several possible target language variants of the source text and, in addition, has the ability to quickly and, above all, justify these possible variants based on various criteria (context, order specification, target audience, etc.). to select the only one that suits each individual case. This distinguishes him from the amateur translator, who usually translates intuitively and without rational justification, and for whom his language skills are the only requirement. Language training, no matter how good it is, cannot be the focus of academic translation training - this is a given and is part of the basic framework - but it alone is not enough for professional practice and must be supplemented by the teaching of specific translation skills and additional skills. For a translator who wants to be successful and make a living through translation, the future lies in knowing and being able to implement the processes of multilingualism, the requirements of paying customers (= companies) and the technology necessary for this. This know-how represents its core competence and the training must concentrate on training such experts for the implementation and application of multilingualism. This means that the focus is no longer on the actual translation of a text - Google Translate already does this free of charge with a quality that is astonishing compared to previous attempts at machine translation - but rather on planning and carrying out the entire translation process, using appropriate technology, recruiting language service providers and more the quality assurance.

> Technology plays an essential role in this, because how a translator behaves when dealing with a translation job and what paths he takes to find solutions to problems depends not only on his 'competence per se', but also on his working conditions, his working environment and the situation away. Strictly speaking, there is no such thing as a 'competence in itself', because our cognitive processes and thus also our competence are determined by our working conditions and our working environment (Göpferich 2008: 13).

In agreement with this and with reference to recent findings in cognitive science, Krüger (2016) also emphasizes the importance of the environment in which translation services are accessed and carried out, i.e. the ecosystem in which translation is embedded: The translational competence is just as important

> as the translator's knowledge framework is not isolated within the person, but is in constant interaction with the environmental factors of the translational ecosystem.
>
> (Krüger 2016: 296).

The use of suitable technology and thus the creation of an efficient working environment or the best possible translational ecosystem can thus become a further differentiation criterion between
Become professionals and amateurs.

However, the area of amateur translation does not necessarily correspond to non-commercial translation, as many trained translators also provide translation services on a voluntary basis. The best example of this is the recruitment of professional translators and laypeople by NGO networks such as Translators without Borders, The Rosetta Foundation, etc., who usually take on the task of project management and providing the necessary technical infrastructure, thereby enabling a professional service. Using the web as a platform, translation work can be distributed globally, translators can be provided with the appropriate resources and the entire workflow can be structured.

This means that appropriate technology is also made available to voluntary translators and, in the course of digitalization, commercial translation is increasingly becoming blurred with open and free translation, at least in this respect.

3. Areas of responsibility and competencies

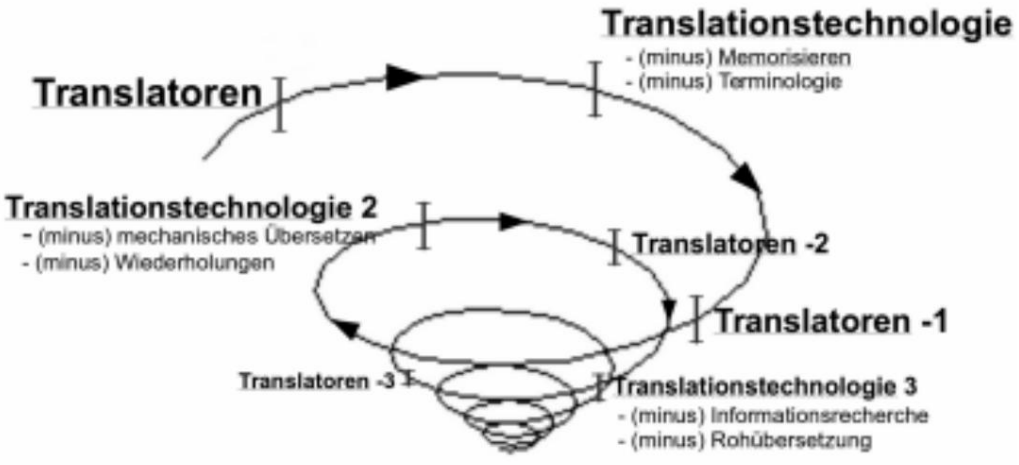
Traditionally, amateur translation is usually characterized by the extensive lack of relevant translation technology competencies: translation management systems, translation memory, quality checking tools, localization tools, machine translation, terminology management systems or project management software were and are mostly the professional ones Area reserved. In many cases, additional services can be provided from these translation technology competencies: The translation service standards DIN EN 15038 and ISO 17100 speak of value-added services and include, among other things: localization, internationalization, globalization, creation and management of a terminology database, terminology consistency checking , alignment for translation memory, pre- and post-editing, subtitling, voice-over, transcription, transliteration, DTP, graphic and website design, consideration of national legislation, adaptation, rewriting or rewriting, updates, print templates, technical editing, language and cultural advice, technical review and/or proofreading of third-party translations, back translation.

Adams offers an even broader list of additional services
(2013), who distinguish between linguistic and non-linguistic diversification of the

services offered differs, with the linguistic ones
Additional services more or less correspond to those of the DIN EN and ISO standards, but the rest are new business strategies and income from new products and special services for other translators include.

Even if new areas of responsibility arise through translation technology arise, their development steps have historically led to that the human translator receives individual subtasks from the machine were removed. The machine has put people in a positive way freed from monotonous tasks and annoying work steps: memorization of Specialist terminology through terminology databases, searching and finding Equivalents in extensive text corpora through terminology extraction, Finding and reusing repetitions through translation memory applications, spelling checkers, parallel texts, etc. All of this Search from can now be done very easily by the machine and with less susceptibility to errors. It was formulated negatively
Machine replaces people in some areas and becomes superfluous for them made. As technical developments progressed, these became
Areas or partial aspects of the translation process taken over by the machine are becoming more and more common, so in this context we are talking about one Translator obsolescence cycle (from Latin obsolescere, to wear out, old become, go out of fashion, lose reputation, lose value).
which can be represented graphically as follows:

Figure 2: the translator obsolescence cycle



In the spiraling obsolescence cycle, there are always technological changes or developments that take over individual areas of responsibility from the translator and thereby make his work easier or replace him for this area. These developments are followed by a relief or reduction of his competencies, shown in the graphic by the minus sign after translators: Translators -1 therefore means one less competency that was taken over by the machine. So the cycle progresses towards ever new developments in translation technology, whereby a parallel coexistence of machines and humans would of course also be possible, but this was not expressed in the graphic for the sake of clarity. In the commercial sector, however, automation will gain predominance in the long term due to the high pressure for efficiency. A loss of skills also results in a loss of social relevance or status.

This cycle of obsolescence, which takes up the negative formulation mentioned above, is based on the premise that the human translator does not develop further and is limited to pure translation. The thesis presented is: In view of translation technological developments, retreating to pure translation without looking left or right means a loss of tasks combined with a loss of meaning, income and status. However, it is also based on the assumption that the translator will never be completely replaced by the machine: theoretically, the obsolescence cycle continues to rotate, with pure translation becoming less and less important and tending to become a small black spot at the bottom of the spiral. The reputation of the translator in general and the localization industry's view of translation (LISA 2003) as well as the development steps that have taken place underline this assumption: the pure translator always finds himself at the end of the value chain and has hardly any earning potential and therefore a low social status, while the To take on tasks in highly specialized areas as well as in so-called “translation support” or in the conception and planning of the use of translation technology. The labor market will increasingly be divided into a large mass of freelance translators who are moved from project to project and have little earning and advancement opportunities, and highly specialized multilingual and localization managers with better job opportunities and much higher incomes. The income of translators also depends on factors such as membership in professional associations, professional experience, gender differences, additional training, etc

Offering interpreting services, language combinations and the
Use of translation technology (see EC DGT 2012).

Breaking out of the obsolescence cycle and its fatal consequences is only possible if translators adopt the new developments and thereby open up new areas of responsibility. Instead of withdrawing and limiting yourself to pure translation, translators can to tackle the area of translation technology aggressively Participate in developments, plan and organize deployment, provide user advice and training, etc., without the field technicians or To be left to computer scientists with no understanding of translation. The training objectives have diverged in line with this development, whereby in practice there is less and less space left for general translators and specialists successfully cover specific segments of the market. The The training content hardly overlaps anymore: web localization, Software localization, terminology planning and management, subtitling, Legal translation, video game localization, technical translation, project management, multilingual technical documentation, literary translation, etc. all require specific skills profiles that neither can be covered by a hypothetical general translator nor by foreign language correspondents.

Figure 3: Specialization as a driver of the future

The translator obsolescence cycle can only be overcome acquiring additional skills or specializations and offering value-added services is possible, shown in this figure

through concentric circles around pure translation, which is not increasingly reduced here, as the loss of tasks caused by new developments in translation technology is offset by specialization and additional services and, in the best case, even expanded.

The tendency towards ever narrower specialization with ever more specific skills has meant that pure translation, or the innermost circle of this image, hardly exists as an independent service anymore: either it languishes at the end of the value chain with low status and even lower income - the recourse of many translation agencies to countless part-time, often untrained translators is typical of this - or pure translation becomes a necessary part of more comprehensive services and remains only as an often insignificant - or at least viewed as insignificant - part of other more highly respected services , e.g. B. embedded in web or software localization, in voice-over, subtitling, etc

4. Translation management

If translation is to be carried out as a professional task as efficiently as possible, it requires the right environment and targeted planning in order to be able to access the necessary resources. Apart from the individual planning of each order, what is required above all is the planning and organization of the translation technology, or in other words: to optimally design the translation in a specific environment, be it an organization, a company, an institution or even a multilingual region There is a sensible translation policy, which to a large extent also consists of a translation technology policy.

According to Spolsky (2009), language policy includes three essential areas: ideas and ideology, planning and management, and lived practice. In this sense, by a translation policy we mean the entire set of beliefs, habits, policies and actions that exist in a specific society for translation. The term translation policy does not only include translation culture in Prunÿ's sense

> Set of socially established, controlled or controllable norms, Conventions, expectations, values and habitualized ones behavior patterns of everyone in the respective culture, current or potential partners involved in translation processes (Prunÿ 2007: 331),

but also the concrete design, planning and organization of translation in a social context.

This brings us back to the distinction between professionals and amateurs mentioned at the beginning and defines professional translation, among other things, through a dedicated and long-term translation policy that ensures the most efficient use of translation technology.

This includes, for example, a broad-based use of translation memory systems, orderly terminology work with accessible terminology databases, a considered use of machine translation and the storage and accessibility of translation data in order to enable the new, efficient production conditions of Translation 4.0 mentioned above.

Summary New working

conditions can be identified for translation in line with the general development of the industry due to increasing digitalization and thus the growing importance of digital data. Technology is increasingly determining everyday working life, whereby translators not only have to be pure users and consumers of corresponding technology products, but can also be involved in the development process and, above all, in the planning and organization of the use of technology. Dealing with ever new technology and the associated digital data such as terminology entries, translation memory units, MT dictionaries, etc. require constant maintenance and careful management. The new skills required for this lead to a changed job profile, but also require lifelong learning and adapting one's own training to the new conditions. This revolution, referred to in this article as Translation 4.0, is leading to a shift in perspective both in terms of the definition of translation and the distinction between professionals and amateurs, as well as in terms of the tasks and training of professional translators. Such a shift in focus is by no means optional, but rather a necessity for modern translation.

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