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Ethical issues regarding machine(-assisted) translation of literary texts

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ABSTRACT

This article investigates essential ethical issues that should be taken into consideration when adopting or tailoring technological tools for literary translation. The discussion on ethical issues draws on recent studies on translation technology and on the usage of machine (-assisted) translation for literary language. An overview of the consequences of the recent increase in technologization for both non-literary and literary translation is provided and an argument for sustainable development in literary translation is made, based on a holistic understanding of translation guality. The notion of voice is taken as an example of the special challenges related to the translation of literary language, which research on machine (-assisted) translation of literary language has not yet sufficiently taken into account. Lastly, avant-garde aesthetic views and usages of machine translation are presented through the notion of noise.

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1. Introduction

The dream of creating an immaculate machine translation (henceforth MT) system that would master literary translation is very old.¹ Already in the first research-based writings on MT one can see echoes of this aspiration, even though there never was a consensus among the first specialists whether extending mechanical translation to literary texts was feasible or even desirable (see e.g. Weaver, 1955, p. vii). In their introduction to the seminal anthology Machine Translation of Languages, the editors Locke and Booth (1955) write:

It is perhaps not going too far to state that the main lines of the principles on which a mechanical translation depends are now well understood. Still, the question of turning a masterpiece of literature written in a foreign language into a respectable translation is one of great difficulty. The extreme position has been argued that such an operation is not generally possible even for a human expert, and thus even less so for a machine. This view seems to us overpessimistic. (p. 14)

For Lennon (2014), the speculations about machine-translated literary language that were uttered during MT's 'Golden Age' from 1954 to 1960 were mainly meant to feed discussions, probe public opinion and 'perhaps bait campus humanists' (pp. 140-141). As is well known, the golden age was succeeded by a decline and fall characterized by funding

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cuts and pessimism, mainly owing to the report of the Automatic Language Processing Advisory Committee (ALPAC), which was sceptical about the potential of fully automatic MT and suggested more practice-oriented research, such as on translation aids for human translators. Research in the field gradually revived in the 1980s. The last decades have witnessed a new surge and a shift from rule-based MT paradigms to machine-learning methods.² The disciplines of computational linguistics and translation studies also seem to be approaching each other, as similar quantitative research methods are being used in both fields and interest in machine translation has increased within translation studies (Carl, Bangalore, & Schaeffer, 2016, pp. 226, 237–238; Giammaresi & Lapalme, 2016, pp. 213–219; Lennon, 2014, pp. 141–143).

In recent articles on machine-translated literary texts, one can, interestingly, observe similar optimism as in the passage from 1955 quoted above (see e.g. Toral & Way, 2015). And owing to the latest developments in the field we can no longer wave aside conjectures on the future of machine-translated literature as science fiction. There have been advances in statistical MT, thanks to technical improvements (e.g. hybrid solutions applying also some rule-based MT solutions) and thanks to an increasing amount of training data being available on the internet. Lately there has been much discussion on automatic translation based on neural networks, which is based on deep learning. Neural MT is considered promising because unlike in previous MT solutions neural networks incorporate context from the training data, source text and unfolding target text and usually produce words in the right context. However, these systems are still unpredictable and require human review; it is difficult to say at this point whether neural networks are the big MT breakthrough that has been 'just around the corner for quite some time' - at least since 1954, as Moorkens points out (Giammaresi & Lapalme, 2016, pp. 217, 220; Moorkens, 2018). Although fully automated high-quality translation (FAHQT) is still very unlikely in the field of literary translation, it is nevertheless possible that more comprehensive computer-aided translation (CAT) of literary texts will become more common in the future.³

Carl et al. (2016, pp. 228, 238) observe an increased consideration of the 'human condition' in MT and computational linguistics, referring to interest in advanced humancomputer interfaces, interactive MT and machine learning based on human translation process research. In this article I suggest another way of considering the human condition in MT, namely from an ethical standpoint. So far, ethical questions concerning MT and translation technology more generally have been explicitly discussed mainly in relation to non-literary texts (see below). I argue that it is timely to address them anticipatorily also in relation to literary translation. This article is based on my reading of recent studies discussing translation technology and the usage of MT in literary translation, from which I have extracted ethical issues that are found implicitly in them. In what follows I first contextualize the discussion by describing phenomena related to the recent technologization of translation. Then I address issues that I find central to an ethical consideration of WT in literary translation, namely three dimensions of translation quality and the notions of voice and noise in translation.

2. Background: the current technologization of translation

Professional translation is undergoing fundamental changes that have far-reaching repercussions regarding the nature of translators' working methods, livelihood, and textual ownership. Owing to an increased focus on productivity and a tendency to outsource translation services in both the public and private sectors, a growing number of translators are working on a freelance basis. This trend raises new ethical challenges for translators, such as questions of copyright. In recent decades the profession has also become increasingly technology-driven, which has added to the complexity of the translation process (Drugan, 2013, p. 187; Ehrensberger-Dow, 2017, p. 343; Koskinen & Ruokonen, 2017, p. 8; Moorkens, 2017, pp. 464–466; O'Brien, 2012, p. 103).

The technologization of translation has had both positive and negative effects for translators. On the one hand, translators in all fields have benefited from technological tools such as internet search engines and online dictionaries and encyclopaedias. Some translators are also pleased with translation memory software and find that it has made their work more agreeable and effective. CAT tools and editing software can decrease the load on translators' working and long-term memory and release their cognitive resources for complex tasks by relieving them of repetitive and boring tasks (Ehrensberger-Dow, 2017, pp. 337, 340; Koskinen & Ruokonen, 2017, p. 14; O'Brien, 2012, pp. 105, 107). Even though many literary translators spurn translation memory tools, they are not unheard of even in this field. Some professionals willingly use them. According to one such literary translator, who has customized CAT tools for this purpose, project-specific translation memory can help control repetitiveness in the text, in addition to ensuring consistency (N. Mäki-Kihniä, personal communication, March 20, 2018).

On the other hand, translation technology can diminish translators' professional autonomy: the usage of translation memory tools in specialized translation required by many translation agencies, customers and institutions, leads to the recycling of previous translations and in some cases to the likelihood of translating segment by segment instead of treating the whole text as a unit of analysis. It can also negatively influence the quality of translated texts and cause an unnecessary mental load on translators, in case of nonintuitive interfaces (Bowker & Fisher, 2010; Ehrensberger-Dow, 2017, pp. 338, 341; LeBlanc, 2017, pp. 64–65). Translation technology also endangers professional translators' livelihood. Some clients want to pay less when translation memory software is used. Moreover, texts can be divided into microtasks, which makes it easier to replace professionals by cheaper and quicker solutions such as crowd-sourcing. The risk that professional translators are replaced by raw or post-edited MT and non-professionals is especially high for texts with perishable content, such as user-generated forum posts or customer support texts, which have a lower threshold of acceptable quality than texts with a longer lifespan, such as printed texts (Moorkens, 2017, pp. 465, 469–471).⁴

Whereas specialized translators have been struggling with these negative effects in recent decades, technology has been less constraining and threatening for literary translators, the 'last bastion of human translation' (Toral & Way, 2015, p. 123). Such translators, as well as other translators of creative and long-lifespan texts, are less prone to be replaced by machines, which to date cannot reach a tolerable quality for such complex texts (Moorkens, 2017, pp. 469–470; see also Way, 2012, p. 266). However, as noted above, CAT tools are already being used by some literary translators. Furthermore, scientific research on the applicability of MT to literary translation is already under way (for recent work, see e.g. Moorkens, Toral, Castilho, & Way, forthcoming; Toral & Way, 2018).

The increased technologization of literary translation arouses both optimism and concern. On the bright side, CAT tools and interactive MT systems designed especially

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for literary translation might speed up literary translators' work and make it more enjoyable. On the negative side, the use of CAT in this underpaid field of translation might lead to even smaller remunerations and tighter deadlines (for this trend in non-literary translation, see e.g. Bowker & Fisher, 2010). Furthermore, the development of literature-specific MT systems that aim at FAHQT (fully automated high-quality translation) or at HAMT (human-aided machine translation) might lead to other serious consequences. Eventual applications of fully automated MT systems for literary texts, even when offering worse quality than human translators, would be welcomed by mercenary publishers, who are already now selling unedited, poor machine translations to unsuspecting customers.⁵ Such publishers might also hire literary translators – or non-professionals – to post-edit machine translation, which would destroy the trade as a creative profession and severely reduce translation quality. Consequently, there are important ethical aspects to consider in relation to the applicability of CAT and especially of MT in literary translation. Many of the issues below concern non-literary translation as well.

3. Central ethical issues regarding machine(-assisted) translation of literary texts

3.1. Translation quality

General ethics of translation comprises issues such as translators' and interpreters' fidelity, professionalism, collegiality, solidarity, respect for Otherness and their role as mediators between different linguistic communities during peace and war. In addition to translators' and interpreters' duties, their rights can also be considered to fall within a general ethics of translation (Chesterman, 2001, p. 143). The following discussion on comprehensive quality in translation (Abdallah, 2017) concerns mainly translators' rights, even though (product) quality is often examined in the context of translators' professionalism.

Translation quality can be investigated from an ethical perspective in relation to translation as a product, as a process, and as an industry (Abdallah, 2012; Drugan, 2013, pp. 187–190; Ehrensberger-Dow, 2017, p. 332). Abdallah (2012, pp. 36–37, 2017), who has stressed the importance of sustainable development⁶ in the translation industry, points out the interrelatedness of the three areas of translation quality: the quality of a given translation product depends on the quality of the process during which it was brought into being, which in turn depends on social factors involved in the production.⁷ Consequently, even though ethical aspects as they play out within the industry are important per se, they also have concrete effects on product and process quality, which have traditionally gained the most attention in considerations on translation quality both among translation scholars and practitioners (see Drugan, 2013; Gouadec, 2010).

Product quality means adequacy in terms of 'content' and 'form of content' (Gouadec, 2010), which depends on the purpose of the translation. Several kinds of quality can be acceptable in professional translation since there is diversity in text types, clients' needs, and requirements (Drugan, 2013, p. 37; Gouadec, 2010; O'Brien, 2012, p. 113). In literary translation, where form *is* content, the quality scale is narrower, at least in professional literary translation. Literary works are typically expressive, enduring texts, which are also protected by copyright (see e.g. International Confederation of Societies of Authors and Composers, n.d.). Authors' rights are mentioned in the Universal Declaration of

Human Rights: 'Everyone has the right to the protection of the moral and material interests resulting from any scientific, literary or artistic production of which he is the author' (Office of the United Nations High Commissioner for Human Rights, n.d., 27.2). Consequently, lowered quality of literary artefacts, whether caused by human or machine translation, is a breach of authors' moral rights; they can be 'prejudicial to [their] honor or reputation' (World Intellectual Property Organization, 1979, article *6bis*) and may ruin and 'decanonize' their work in the target language (Wang & Domínguez, 2016, p. 301).

Low product quality in literary translation can also harm readers, who have 'the right to suffer no harm through use of a translation, where the [source text] would have caused no harm' (Drugan, 2013, p. 189). As examples of harm in the case of literary translation we could mention obstacles to the intelligibility and enjoyability of translated works (see Office of the United Nations High Commissioner for Human Rights, n.d., 27.2.). Another type of harm is the negative influence caused by ungrammatical or unidiomatic language on readers' linguistic skills in the target language, especially in the case of child readers. Lastly, the low quality of literary translations can prevent the transfer of literary ideas and repertoires from one culture to another (see International Federation of Translators, 1963/1994, Sections 1.1, 1.13–17). Quality is therefore not a relative question in professional literary translation.

However, the articles on the usage of MT in literary translation that I have read for this study attest to a different view of product quality. Either the quality criteria have been defined without consideration of narrative aspects of literary texts (Toral & Way, 2015),⁸ or they arise from avant-garde aesthetic ideals (Lee, 2011, see below 3.2.), or the authors find a wider scale of quality acceptable also for literary texts. The last kind of relativistic view on quality is noticeable in Besacier (2014), which is based on a pilot study on the usability of MT followed by post-editing. The text used in the study, with the author's permission, was Richard Powers's (2008) essay 'The Book of Me', which was machinetranslated and post-edited from English into French, then revised and later tested with the help of an online questionnaire in which nine readers participated. The translation was also assessed by J.-Y. Pellegrin, who usually translates Powers's works into French. According to Besacier (2014, p. 393), most of the test readers found the translation acceptable and quite readable, whereas Pellegrin pointed out mistakes in style and cultural references. Besacier concludes that this method of translating saves time and money but gives worse quality. However, Besacier does not seem to dismiss completely the lower-quality translations achieved through this method, since he writes that both authors and readers could benefit from such translations to a point: authors would get more readers in different languages (at the expense of quality), while readers would gain quicker access to the works of their favourite author (Besacier, 2014, p. 394).

This kind of relativistic attitude seems to be partly based on the idea that content and style could be separated in a literary work, which might partially hold for some genres or texts (Powers's text was well selected for Besacier's study, since it is close to scientific texts as regards terminology and style), but in the majority of cases does not. Moreover, since the narrative structure of a literary text is fabricated from its linguistic make-up, the mechanical translation of these textual signs distorts essential aspects of the literary text (see below, 3.2.). That is why literary translators must be experts of literary language both in the source and target languages. They must also have a knack for re-creating the narrative effects of the source text, which is not a simple task owing to structural and conceptual

differences between languages (see e.g. Coulmas, 1986).⁹ Wang and Domínguez (2016) equate literary translators with original authors in the sense that they are dynamic interpreters and creative representers of the original to 'complete the incomplete task of the author' (p. 301).

This brings me to another aspect of quality in machine-translated literary language: process quality. Owing to the inseparability of form and content in literary language, MT combined with post-editing is actually not suitable at all for literary translation. Since the translation of narrativity requires understanding the source text as a whole and also in relation to other literary works,¹⁰ the segment-by-segment or sentence-by-sentence translation made by the machine cannot but alter the meaning and structure of the source text. In a recent study that tested literary translators' perceptions of post-editing MT of literary text one of the participants, who is a highly experienced professional, called post-editing MT 'translation in the darkness', as it prevents the translator from gaining a global view of the text (Moorkens et al., forthcoming). Furthermore, the postediting of literary texts does not even save time, as the person in charge of the postediting - whether a specialist of literary language or not - would have to carefully compare the raw MT output to the source text and would spend more time on this comparison and on correction of the MT than on translating the passage from scratch (see also J.-Y. Pellegrin's comment in Besacier, 2014, p. 393). Such a workflow would overtax posteditors and lead to cognitive and emotional stress (see Koponen, 2016, p. 28; O'Brien, 2012, p. 111, 116). In this sense, it seems unavoidable that current machine translation and post-editing alternatives have a negative effect on process quality (and hence product quality), when used for literary translation.

Another option, interactive MT 'in which the translator is provided with MT suggestions as he/she types the translation' (Toral & Way, 2015, p. 264), sounds like a better solution (see also Moorkens et al., forthcoming). However, in such systems it is vital that nonhuman elements should be adapted to fit the human and not vice versa. Yet previous experience in the field of non-literary translation has shown that until now translation professionals have not been sufficiently heard in translation tool design or in the introduction of translation technology to the translation workplace (Ehrensberger-Dow, 2017, p. 339; O'Brien, 2012, pp. 109, 115, 117). For O'Brien, this might explain some translators' adversity towards computer aids. Consequently, the success of potentially interactive MT systems for literary translation depends on user-centred design, that is on co-operation with literary translators, who should be engaged in developing these tools and improving them in usage (see O'Brien, 2012, p. 116; Ehrensberger-Dow, 2017, pp. 334, 339). Furthermore, if such systems are successfully developed, their availability and accessibility should be carefully discussed, to ensure literary translators' performance and well-being (Dul et al., 2012, p. 378). Otherwise these tools will prove detrimental for this unregulated profession, where in the most typical situation self-employed individuals work for publishing houses whose task is to make profit for shareholders (N. Mäki-Kihniä, personal communication, March 20, 2018).

My final comments related to quality concern the translation industry. As Drugan (2013, p. 189) observes, the changing translation contexts related to technologization raise issues on the rights of translators, clients, and users. Translators, she writes, have the right to make a living in return for their work and investment in training (see also Chesterman, 2001, p. 143; International Federation of Translators, 1963/1994, Section

3.20, 23; Office of the United Nations High Commissioner for Human Rights, n.d., Article 23.1–3). The recent developments in the translation sector are not promising for translators' rights. As Moorkens (2017, p. 464) notes, the translation profession has been living through austerity even though the language industry itself has been constantly growing. However, not all translators have been on the losing side in the new technologization of translation. In non-literary translation the key to survival seems to be the translator's technological know-how (Moorkens, 2017, pp. 472–473; O'Brien, 2012, p. 110).

As previously mentioned, literary translators have so far had an easier time in regard to translation technology. But that does not mean that their situation is carefree. Their poor fees are an age-old problem: in most countries, literary translators' fees do not ensure a proper living, so their income is dependent on grants and side jobs (Bellos 2011, p. 291; European Council of Literary Translators' Associations, n.d.-b). Furthermore, one can list several interrelated phenomena that are disquieting for literary translation. First, the publishing sector is struggling worldwide, which has put pressure especially on small and middle-sized publishing houses that cannot take as big risks (such as publishing translations that are unlikely to sell) as the bigger and better-financed publishers (Wischenbart, 2018, n.p.; Wischenbart, Bueno, Carrenho, & Fleischhacker, 2017, p. 16). Second, the e-book menaces translators' copyrights because publishers tend to favor long-term or even buy-out agreements, which are taking away translators' e-rights for a trifle (see European Council of Literary Translators' Associations, n.d.-a). Third, literary translation is negatively affected by the difficult situation of copy editors in the publishing sector. Quality control suffers from tighter deadlines and smaller fees, prompting experienced editors to leave the field even in countries such as Norway where cultural activities are supported by government subsidies (Solum, 2017, p. 56; Wischenbart et al., 2017, p. 13).

3.2. Voice and noise in machine translation

3.2.1. Voice in MT

In what follows, I want to deepen the discussion of ethics in regards to translation quality and will do so by means of the notion of voice. I will address the issues of literary multivocality and heteroglossia (see e.g. Tjupa, 2012) as well as textual ownership, which must be carefully considered in literary translation whether done by humans or MT. My understanding of voice comes from Folkart (1996), who has defined it as 'a cluster of textual features that gives the impression of being attributable to a single source of enunciation' (p. 127).¹¹ In other words, voice is brought about by the author and inferred by the reader with the help of recurrent stylistic features that seem to be traceable back to the same individual or collective consciousness (see also Alvstad, Greenall, Jansen, & Taivalkoski-Shilov, 2017, p. 5).

Voice is not only a literary phenomenon but is part of everyday language use. Voices can be detected in non-fictional texts, as well as in fictional texts and their paratexts (Alvstad et al., 2017, p. 7). However, even though any kind of discourse is multi-voiced and refers to earlier discourses (Bakhtin, 1981, p. 293), what makes literary texts special is that they are often characterized by a remarkable, vocal multilayeredness and deliberate ambiguity. They typically contain voices of one or several narrating instance(s) and imbedded voices of characters and other more or less identified enunciators (Taivalkoski-Shilov & Suchet, 2013, pp. 3, 7). It is this multivocality that makes literary

translation particularly challenging, as texts often lend themselves to plural interpretations and the construction of voices in different languages is marked by incommensurability.

The inseparability of the literary text's 'content' and 'form of content' (Gouadec, 2010), already mentioned above, becomes explicit in relation to voice. For narratologists such as Genette (1972), such essential matters as who sees and who speaks depend on the text's voice structure. Furthermore, stylistic effects, for example heteroglossia, often serve important thematic purposes in the novel. Bandia (2012, pp. 423, 425, 428) writes about the usage of heteroglossia in the depiction of child soldiers in African postcolonial literature. The chaotic and broken language used in the construction of their voices transmits their world experience, which has been prematurely hardened by the horrors of war. As Bandia concludes, 'The translation of such hybrid or composite texts needs to be heteroglossic, paying particular attention to language varieties and the power and class inequalities they represent' (p. 430). In Kourouma's novel Allah n'est pas obligé (2000, Allah Is Not Obliged, 2007, F. Wynne, trans.), the child soldier's voice is also used for humoristic purposes through 'accidental' wordplay and puns (Bandia, 2012, p. 429). In such cases the implied author is winking at the implied reader from behind the protagonist's back. This case of textual irony is a good example of how 'understanding human language relies on information which is not present in the words which make up the message,' pointed out in the notorious ALPAC report (Carl et al., 2016, p. 226; see also Giammaresi & Lapalme, 2016, pp. 210, 213).

As we can see, the omnipresence and complexity of voice in literary text creates a great challenge for MT in literary translation. Voice and the way it is partially constructed 'between the lines' illustrates well the insurmountable challenges of fully automated, but at the same time high-quality translation of literary text. Nevertheless, technological translation tools can be helpful in for example detecting stylistic features belonging to a particular voice in the source text. Mäki-Kihniä's positive experience on project-specific translation memories (see chapter 2) indicates that CAT tools such as translation memory software could also help ensure voice consistency in the target text.

My other issue related to voice in literary translation has to do with the translator's presence in the target text – the translator's voice – which can be manifest or non-manifest (Greenall, 2015, p. 47). Whether human or automatic, the translator's voice is an inherent part of a translated text. It is the voice of the translator that creates the narrating instance in the target language, even though readers of a translation do not necessarily notice that their access to the original text is mediated (Alvstad, 2013, n.p.; Schiavi, 1996, p. 3). As any voice, the translator's voice is a cluster of similar features that seem to emanate from the same source. Pekkanen (2013) suggests that the translator's voice is based on choices made during the translation process:

The element of choice is essential in determining the extent to which the translator's voice is heard as separate from the author's voice. The agency of the translator is seen in the shifts the translator has opted for when faced with an opportunity to choose between two or more feasible alternatives. It is in these situations that the translator either takes a step further from the author's choice or decides to follow the author's voice more closely. (p. 66)

Interestingly, the choices made by translators seem to follow a pattern based on their preferences and irrespective of the style of the source text (see Pekkanen, 2010, p. 164, and *passim*). Even though translators must choose a certain style – otherwise their texts would not work as literary works – the translator's licence has its limits: different authors' voices should not be homogenized to sound like one and the same person. The risk with MT and translation memory software is that, if translators are not allowed to use individual, project-specific translation memories, the tendency to heterogenize a single author's style or to homogenize several authors' styles might become more prevalent. This would compromise authors' textual ownership.

If the translation memory software is not used individually, it threatens translators' textual ownership as well. Translators' copyright of textual data is a current topic in research on non-literary translation (see e.g. Drugan, 2013, pp. 187–188; Moorkens, 2017, p. 472).¹² In case literary translators had to store aligned content in a cloud, as many of their colleagues in non-literary translation do, their copyright would be violated. However, this kind of practice seems unlikely in the publishing of fictional texts, where uniqueness is more valued than similarity. A more realistic threat to literary translators' copyrights comes from the emergence of the e-book. As Toral and Way (2015, p. 240) point out, e-books are useful in building literary-specific statistical MT systems, which can be trained on novels and their translations. In such cases it would be important to ensure that translators receive royalties from the use of their translations, especially since it potentially threatens their livelihood (see also Moorkens, 2018).

3.2.2. Noise in MT

As any translator, each MT system also has a voice, which can be distinguished from other voices. More often than not, the voices of MT have been considered to be noise, as something unacceptable both aesthetically and morally. In this section I present alternative aesthetic views on MT through the notion of noise that I understand in a metaphoric sense as 'disturbance made by voices' (*Oxford English dictionary online* (2018), *s.v.* 'noise'). Whether observed as a metaphorical notion or concrete phenomenon, a thin line separates voice from noise. As the musicologist Hegarty (2016) points out, experiences of noise are subjective and related to social and musical order. The idea that experiences of noise in music depend on the social context comes from Attali (1977), who also made the connection between noise and avant-garde music. Even though not all avant-garde music tests the limits between voice and noise, there has been a keen interest among avant-garde musicians in creating noise music and in musicalizing noise, for example the sound of machines (Hegarty, 2016).

A similar interest in noise can be observed in poetry made with the help of MT. Lennon talks about the literary production of 'pseudo-avant-gardes' who have culturalized the culture of computation (Lennon, 2014, p. 145). The fascination for noise is explicit in the bilingual poem collection *Fenhongse zaoyin/ Pink Noise* (2007) by the Taiwanese author Hsia Yü, discussed by Lee (2011).¹³ Applying the same noise aesthetics she had explored in acoustic art CDs, Hsia used a MT system named Sherlock to translate short strings of words from English into Chinese in several rounds. The resulting poems were then printed on transparency sheets, with the English texts in black and the Chinese MTs in pink (Lee, 2011, pp. 94–96). In the second edition of *Pink Noise*, Hsia argues that she prefers MT to human translators because it 'makes no commitment', and 'like

any lethal lover, it announces from the very beginning that it is not to be trusted' (Hsia, 2008; quoted in Lee, 2011, p. 99).

Hsia's project challenges traditional views on the voice of MT. According to the stereotypical image, this voice is disturbing or ridiculous, even though not all raw MT output is odd or erroneous. The stereotypical voice of MT is characterized by non-linearity, unpredictability, and a lack of common sense. In both Hsia's and Lee's writings, however, the noise made by MT becomes a virtue. And it becomes not only an aesthetic virtue but a translational virtue for Lee, who bases his ideas on translation on Barthes, Benjamin, and Venuti (Lee, 2011, pp. 102, 108–109). For Lee, the 'machine translator' is superior to a human translator thanks to its' 'mindless' literalism:

The above example shows that the machine translator has assumed a curious kind of unconscious autonomy of its own, enabling the original English poem to branch off in a way that *a human translator, bounded by the ethics of translation*, would not tolerate. By delegating the work of translation to a computer program, *Hsia has relinquished yet another form of subjectivity – that of the translator*, and she does so for a reason. (Lee, 2011, p. 99, emphasis added)

In Lee's thought-provoking article, attributes of the human translator – such as striving for understanding, subjectivity, and an ethical motivation behind actions – become flaws. Lee thus reverses the traditional human/machine dichotomy to the latter's advantage.

4. Concluding comments

The human/machine dichotomy actually forms the background of every ethical discussion on MT or artificial intelligence, not just those conducted in the field of translation. Machines are often seen as an extraneous threat that will turn humans into redundant workers. Petrilli (2014, Chapter 12.1) offers a way out of this dichotomy by pointing out that 'the intelligent machine' actually belongs to the same world as mankind. It is a human artefact constructed on the basis of human inventiveness. According to Petrilli's estimation (2014, Chapter 12.3), automatization in linguistic work and translation will not lead to the passivation and exclusion of humans. Rather, it will increase humanmachine interaction and continue enhancing human creativity. Automatization will also require lifelong learning from humans:

Unlike machines unendowed with language, intelligent machines elicit interactivity. Active, variable response, innovation, updating and permanent training are all necessary and inevitable factors in the human-machine relationship, even if merely for the sake of implementation. (Petrilli, 2014, Chapter 12.3)

For Petrilli the real problem with linguistic and immaterial work in today's labor market is the contrast between the value and quality of this work and its status as a commodity (see also Moorkens, 2017, pp. 469–470). This contradiction marks our 'communication-production' era (Petrilli, 2014, Chapter 12.3).

CAT and interactive MT will probably increase in literary translation in the coming years. Those literary translators who are comfortable with translation tools will adapt more easily to the situation. Literary translators might even benefit from the change, provided that all players in the field, especially the powerful ones, such as major publishing houses, incorporate sustainable development as part of their view on translation quality.

Notes

- 1. By literary translation I mean 'translations made of "literary" originals, whereby the translators are expected to preserve or to recreate somehow the aesthetic intentions or effects that may be perceived in the source text' (Delabastita, 2011, n.p.).
- 2. Rule-based MT was established by codifying all known linguistic aspects of the source and target languages and then creating manually transfer rules and bilingual dictionaries. Statistic MT systems, by contrast, are based on information retrieved from parallel texts. They compute the most likely acceptable translation by analysing aligned sequences from translations and their source texts. (Giammaresi & Lapalme, 2016, pp. 216–217.)
- 3. CAT may range from simple spelling and grammar checkers to complete solutions that include translation memory and terminology tools, workflow organization, concordancers, and links to MT (Ehrensberger-Dow, 2017, p. 337). Most contemporary literary translators use computers, for instance word-processing software and the internet. By more comprehensive CAT of literary texts I mean the introduction of translation memory tools, concordancers or machine translation systems to this field.
- 4. Some public institutions already provide their staff or the general public with MT services. The bilingual Canadian federal government allows their public servants to use a 'comprehension tool', i.e. a MT system, for unofficial communication (Bowker, 2017). The administrative pages of the city of Gothenburg are available in more than one hundred languages via Google Translate (see http://goteborg.se).
- 5. In 2016 a Finnish journalist wrote on Twitter and Facebook that the Finnish translation of *King Lear* she had purchased online from a well-known Finnish bookshop turned out to be an unedited machine translation (Saarinen, 2016). This caused a scandal in Finland. Quotes from the machine translation were used as examples of the poor quality of machine translations.
- 6. Abdallah refers to ergonomic criteria from Dul et al. (2012, p. 378) when arguing for sustainable development in translation industry. Dul et al. stress the importance of optimizing the performance and well-being of humans in designing any human artefact (which range from consumer products to organizational environments). Artefacts should be shaped around the capacities and aspirations of humans and not the other way round.
- 7. Ehrensberger-Dow (2017) also writes that '[t]ranslation can be understood as a language product, an activity, or an important sector of the economy, but it always involves the situated activity of people within a system interacting with texts, translation aids and other people' (p. 332).
- 8. Admittedly, Toral and Way (2015) write that 'the challenge with translating literature is that the primary function of its translation is expressive, the aim of the translation being not just to communicate meaning but to replicate the source text's stylistic and textual effects on the reader' (p. 243). They also mention ethical factors, such as translators' low fees and accessibility to literature for communities of minority languages (Toral & Way, 2015, pp. 243, 247–248). When testing MT material on readers, however, they do not take stylistic and narrative factors properly into account.
- There is a whole body of research on structural differences between languages and their effect on literary translation. For starters, see e.g. Alvstad et al., 2017; Bandia, 2012; Bosseaux, 2007; Kuusi, 2003; van Leuven-Zwart, 1989; Lips, 1926; May, 1994; Roux-Faucard, 2008; Taivalkoski-Shilov, 2006; Taivalkoski-Shilov & Suchet, 2013.
- 10. Note that hypertextuality (Genette, 1982, p. 12), for instance, is not always explicit in the literary text but must be inferred by the reader.
- 11. '*Grosso modo* [...], une voix, c'est un faisceau de traits textuels qui donne l'impression de pouvoir être reconduit à un seul foyer d'énonciation' (Folkart, 1996, p. 127, n3).
- 12. The Translator's Charter states that '[t]he translator is therefore the holder of copyright in his/her translation and consequently has the same privileges as the author of the original work' (International Federation of Translators, 1963/1994, Section 2.15).

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13. Lee (2011) explains that pink noise is a 'technical term used in audio engineering to denote a type of spectral density' (p. 94).

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