

## Machine translation systems and guidebooks: an approach to the importance of the role of the human translator

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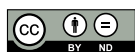
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## Abstract

Computer-assisted translation tools are increasingly supplemented by the presence of machine translation (MT) in different areas and working environments, from technical translation to translation in international organizations. MT is also present in the translation of tourism texts, from brochures to food menus, websites and tourist guides. Its need or suitability for use is the subject of growing debate. This article presents a comparative analysis of tourist guides translated by a human translator and three machine translation systems. The aims are to determine a first approach to the level of quality of machine translation in tourist texts and to establish whether some tourist texts can be translated using machine translation alone or whether human participation is necessary, either for the complete translation of the text or only for post-editing tasks.

**Keywords:** machine translation; tourist translation; post-editing; human translator; translation quality.

## 1. Introduction

The development of machine translation (MT) and the release of new and modern machine translation software (such as Google Translate, DeepL, Systran, Babylon, Microsoft Translator, Yandex.Translate, and Bing) has led to an increasing use of these tools to translate different text types, from newspaper articles to advertisements. Moreover, globalization and digitalization are two key processes that have contributed to this fact. Tourist texts, such as guidebooks, websites, or even restaurant menus, also follow this new trend. Unfortunately, it is not uncommon to find translations which have neither been done by a human translator nor appropriately revised and post-edited. The result is frequently far from correct and leads to misinterpretations and does not meet quality standards. However, several authors state the parity of the most advanced MT systems and professional human translation (Läubli et al., 2018; Castilho et al., 2017), while others affirm that the quality of human translation is still higher than MT (Aslerasoul & Abbasian, 2015; Banitz, 2020).

This paper intends to present an overview of the translations given by MT systems and describe their tendency in the translation of guidebooks.

The objectives (O) of this article are as follows:

- O1: To determine the level of quality of MT in the translation of tourist texts.
- O2: To compare the results obtained by a translation carried out by a human translator and one carried out by MT systems.
- O3: To establish which tourist translations could be done by MT systems and which could not and should be carried out by a human translator instead, or at least post-edited by one, always bearing in mind quality criteria.

## 2. Brief introduction to machine translation (MT): history and evolution

Weaver's Memorandum in 1949 was the agent of change that started the development and research of MT in the USA. Until 1966 there were several universities and private companies that decided to invest and presented very ambitious programs (International Business Machine, Mark II, Georgetown Automatic Translation). However, with the publication of the ALPAC report (Automatic Language Processing Advisory Committee) all this funding disappeared, and the USA decided that investing in these engines was a waste of both time and money. Other countries, such as Canada, France, and Germany, continued investigating in this area and by the end of the 1980s, beginning of the 1990s, the situation started to change, due to the appearance and development of the World Wide Web.

The first popular MT systems were called RBMT or rule-based machine translation systems as they based their knowledge on rules (Sumita & Iida, 1991). During the second half of the 80s,

new systems appeared based on corpus and probability, which received the name of SBMT (statistical-based machine translation) and benefited greatly from the widespread use of the Internet. We could affirm that they are the most popular systems and have been the most “dominant translation paradigm for decades” (Wu et al., 2016), although they have been followed by even more powerful ones that are based on artificial neuronal networks. These are called NMT (neural machine translation) and their development started relatively soon and have opened the way for new and improved systems, which do not show any sign of stopping as they are opening the way to new systems based on artificial intelligence (Fu et al., 2016). Their potential lies in the “ability to learn directly, in an end-to-end fashion, the mapping from input text to associated output text” (Wu et al., 2016).

Several authors have defined MT. In 1966, the US ALPAC Committee gave one of the first definitions to the term, and stated that “Machine Translation presumably means going by algorithm from machine-readable source text to useful target text, without recourse to human translation or editing” (19). Hutchins and Somers (1992: 2) also defined it as “the now traditional and standard name for computerised systems responsible for the production of translations from one natural language into another, with or without human assistance”. Quah (2006: 57), on the other hand, defined MT as “an interdisciplinary enterprise that combines several fields of study such as lexicography, linguistics, computational linguistics, computer science and language engineering [...]. It is based on the hypothesis that natural languages can be fully described, controlled, and mathematically coded [...]”. The history of MT dates back to the 20th century and its popularity and consolidation arrived with the development of the World Wide Web. MT is framed within the discipline called computational linguistics, that is, “the interdisciplinary field concerned with the processing of language by computers” (Mitkov, 2009: 1).

We place the birth of MT at the end of the 1940s and its evolution, in general terms, follows this outline:

### FIGURE 1

Chronology of MT development (Adapted from Quah, 2006: 58)



### 3. The use of MT and post-editing (PE) by professional translators

MT systems, as well as computer-aided translation (CAT) tools, have evolved and improved (Nunes Vieira et al., 2019) in the last years and are a clear indicator of the inclusion of technology in the translators’ everyday lives. Recent studies (Zaretskaya, 2015) have shown that

professional translators currently use (36%) or might use MT in the future (15%), as opposed to the 38% of translators who admit that are not using it. Other researchers focus on the “hostile attitude towards machine translation programs” by language professionals (Schmitt, 2015). When asked about the domains of specialization and use of MT, the first five fields in which professional translators resort to MT are (1) technical domains, (2) marketing, (3) legal, (4) business and (5) tourism (Zaretskaya, 2015). On the other hand, when asked about the domains of translation that could benefit the most from MT, translators highlighted technical, marketing, legal, tourism and business fields. These results show the opinion of professional translators towards the current or future possible use of MT in the specialized field of tourism, being this one of the most frequent domains in which MT may be used.

Post-editing (PE) services have also experienced an increase in demand (Carl et al., 2011; Koponen & Salmi, 2017) due to globalization and the immediacy demanded when communicating large texts (Aramberri, 2014). Translation, MT systems and post-editing have become great allies, which has had an effect on the number of translation companies that offer this post-editing service, the university translator training programs that include it as part of their study programs (Alcalde Peñalver & Santamaría Urbieto, 2018) or the training companies. When defined, we understand post-editing as the editing of segments obtained through MT systems (Sánchez-Gijón, 2016). Although in this paper we will not focus on the need of post-editing, it is a translation-related process closely related to MT that should be carried out by a professional or the process could end up being “time consuming and inefficient” (Austermühl, 2001: 165).

#### 4. MT and tourist texts

Although the data confirm the use of MT by translators when faced with the translation of tourist texts, several authors have stated that its use may not yield good results and could jeopardize the prestige of museums (Leiva Rojo, 2020) or hotel websites (Korolkova et al., 2017). Others state that “even the most accurate machine translation technology can’t automatically account for branded content, terminology preferences, formatting considerations, subject-matter, cultural issues, and other important factors” (Volkova, 2018: 2) and receivers of the target text may end up perceiving “inferior language content as normal” (Korolkova et al., 2017: 80).

Tourist texts are a transverse unit of meaning which falls within the scope of specialized texts because of their terminology and phraseology from several and diverse fields such as culture, gastronomy, art or history, among others (Castellano Martínez, 2018). Moreover, their complexity has been studied and analysed for years, although many clients and translators have actually underestimated such complexity, based on the allegedly typical simplicity of the grammar and lexicon used in this type of texts (Pierini, 2007). This could be one of the reasons behind the frequent use of MT in the translation of tourist texts, as well as the lack of interest by tourist establishments in investing in such linguistic tasks. It should be pointed out that,

in our view, such lack of interest is rather a lack of awareness about the need to use quality translations in the tourist sector and the serious consequences that low quality translated texts may have for the different businesses and institutions in the tourist sector.

Quality professional translation is therefore paramount in tourist texts (Fuentes-Luque, 2017) as the lack thereof could have negative consequences both for the image and reputation of the announced products or services regardless of its category: restaurants, rural establishments (Fuentes-Luque, 2006) or hotels. Guidebooks are not an exception to this, and they could even be defined as one of the most specific tourist discursive genres (Calvi, 2016). Their translation requires being aware of specific language structures and cultural features from the source language and being able to successfully translate them into the target language and culture. Quality translation of these texts “gains vital importance as they are one of the connections between foreigners and the source of income of a country” (Santamaría Urbieta, 2014a: 39).

## 5. Methodology

To determine which translations need to undergo a post-editing process it is necessary to check the differences and similarities between the translation of the same text by a human translator and by a MT system. To carry out this first approach, we will recur to a set of print travel guidebooks published by Lonely Planet (Barcelona, Berlin, Japan, London, Mexico, Morocco, New Zealand, New York City, Rome and Thailand) and translated from English into Spanish by human translators hired by the publishing company of whom we do not have information. This corpus is part of a previously published project (Santamaría Urbieta, 2014a) in which the translation of practical information was studied and analysed according to the verbal and non-verbal elements included. Some of the examples included in that study will be randomly selected to give a first approach to the translation of guidebooks through a MT system.

Given the length of these texts, and the objectives that we aim with this first approach to the differences and quality between MT and human translation when talking about guidebooks, the examples provided will be taken from the chapter entitled “Practical Information”, as it includes both data about the cities and countries, as well as pieces of advice for the tourist. The reason behind this choice lays on the fact that in one chapter we have both objective (history, directions) and subjective information (cultural aspects, pieces of advice). Taking as a reference the corpus obtained in a previous analysis (Santamaría Urbieta, 2014a) we will use three popular, freely available online MT systems: (1) Systran<sup>1</sup>, (2) Google<sup>2</sup> and (3) DeepL<sup>3</sup>, to

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1 <https://translate.systran.net/translationTools/text?lang=es>.

2 <https://translate.google.es/>.

3 <https://www.deepl.com/translator>.

compare the translations rendered by the three systems and that of the human translator as published by Lonely Planet. We have not resorted to a MT system based on rules, as the results given by these systems are currently far from what we understand as quality translations.

## 6. Analysis

We will divide our analysis into three main sections: (1) the morpho-syntactic field, (2) the lexical-semantic field and (3) the cultural field, to present more organized results when analyzing the translation of grammar and lexical aspects by a MT system and by a human translator.

### 6.1. The morphosyntactic field

Within this first field, we will focus on the following 3 aspects: (1) the passive voice, (2) the mode of the verb and (3) verb tenses. An example of each of the categories will be presented, accompanied by the translation given by the Lonely Planet translator and the translations given by the three chosen MT systems.

#### 6.1.1. The passive voice

As the following example shows, the passive voice is removed from human translation and MT systems. The English language resorted to the use of the passive voice, whereas the Spanish language preferred its replacement by an active voice. Google and DeepL preferred the use of the formal register (*usted*), whereas Systran opted for the more informal approach by including the second person singular (*tú*). The human translator, on the other hand, opted for establishing a distance with the addressee and included the formal approach.

**TABLE 1**

The passive voice translated by a human translator and by three MT systems

SOURCE TEXT (ST)	HUMAN	SYSTRAN	GOOGLE	DEEPL
<b>You'll be shown</b> around the place and then to your room where you <b>will be served</b> a cup of tea, or <b>shown</b> a hot-water flask and some tea cups so you can make your own.	Entonces <b>mostrarán</b> al cliente el lugar y la habitación, donde le <b>servirán</b> una taza de té o le <b>indicarán</b> un termo y varias tazas para preparárselo él mismo.	Te <b>enseñarán</b> el lugar y luego te acompañarán a tu habitación donde te <b>servirán</b> una taza de té, o te <b>enseñarán</b> un matraz de agua caliente y unas tazas de té para que puedas prepararte la tuya.	Le <b>mostrarán</b> el lugar y luego a su habitación, donde se le <b>servirá</b> una taza de té, o se le <b>mostrará</b> un matraz de agua caliente y algunas tazas de té para que pueda hacer las suyas.	Se le mostrará el lugar y luego a su habitación donde se le <b>servirá</b> una taza de té, o se le <b>mostrará</b> un frasco de agua caliente y algunas tazas de té para que pueda hacer la suya propia.

The active voice will always be present in the translations produced by machines, but translators and language users do not always prefer its translation as such, but rather the maintenance of the passive voice in the target text (TT), as we can see in the following example. The human translator preferred to keep it in the passive voice, but none of the MT systems kept this voice, due to its lack of frequency in the Spanish language.

**TABLE 2**

The passive voice translated by a human translator and by three MT systems

ST	HUMAN	SYSTRAN	GOOGLE	DEEPL
There are no duty-free allowances for travel between EU countries. For duty-paid items bought at normal shops in one EU country and taken into another, the allowances are 90L of wine, 10L of spirits, unlimited quantities of perfume and 800 cigarettes	Para los ciudadanos de la UE, estas franquicias <b>han sido suprimidas</b> y pueden desplazarse de un país a otro con 90l de vino, 10l de licor, una cantidad ilimitada de perfume y 800 cigarrillos, siempre que todo ello <b>haya sido adquirido</b> en comercios normales, con impuestos incluidos	<b>No hay</b> franquicia para los viajes entre países de la UE. En el caso de los artículos de pago de derechos <b>comprados</b> en tiendas normales de un país de la UE y llevados a otro, las asignaciones son de 90L de vino, 10L de licores, cantidades ilimitadas de perfume y 800 cigarrillos	<b>No hay</b> permisos libres de impuestos para viajar entre países de la UE. Para artículos pagados con impuestos <b>comprados</b> en tiendas normales en un país de la UE y llevados a otro, los descuentos son 90L de vino, 10L de licores, cantidades ilimitadas de perfume y 800 cigarrillos	<b>No existen</b> franquicias para los viajes entre países de la UE. En el caso de los artículos con derechos de aduana <b>comprados</b> en tiendas normales de un país de la UE y transportados a otro, las franquicias son de 90 litros de vino, 10 litros de bebidas espirituosas, cantidades ilimitadas de perfume y 800 cigarrillos

### 6.1.2. Verbal mode

In a previous study of the tourism discourse in travel guidebooks, Santamaría (2014a) points out that the use of the imperative mode in the Spanish language is restricted to certain occasions only, whereas its use is frequent in English because the writer is addressing the readers directly. The Spanish traveler does not want the writer to make them do something or go somewhere, but rather suggest a handful of possibilities. However, in the translation obtained from the MT systems, although the formal pronoun “usted” was used, the imperative mode was included, which would go against the tendency of the Spanish language to maintain the interpersonal relationship with the traveler.



**TABLE 3**

The imperative mode translated by a human translator and by three MT systems

ST	HUMAN	SYSTRAN	GOOGLE	DEEPL
If you don't have a lawyer or family member to help you, <b>call</b> your consulate.	Si no se dispone de abogado o familiares, <b>se recomienda contactar</b> con el consulado.	Si no tiene un abogado o un familiar que le ayude, <b>llame</b> a su consulado.	Si no tiene un abogado o miembro de su familia que lo ayude, <b>llame</b> a su consulado.	Si no tiene un abogado o familiar que lo ayude, <b>llame</b> a su consulado.

### 6.1.3. Verb tenses

Concerning the translation of verb tenses, as we can observe in the following examples, MT-rendered texts stuck to the verb tense of the ST. The human translator, on the other hand, opted for a more fluent and natural use of the verb tenses. This instance shows how the human translator preferred the use of the present verb tense, instead of the future, to give the guidebook a present sense.

**TABLE 4**

Verb tenses translated by a human translator and by three MT systems

ST	HUMAN	SYSTRAN	GOOGLE	DEEPL
Quite a lot of restaurants and guesthouses in beach spots or country areas <b>will let</b> you pitch a tent on their patch for around M\$25 to M\$40 per person.	Muchos restaurantes y casas de huéspedes en zonas playeras o campestres <b>permiten</b> acampar en sus terrenos a cambio de entre 25 y 40 MXN por persona.	Una gran cantidad de restaurantes y casas de huéspedes en puntos de playa o zonas rurales te <b>permitirán</b> poner una tienda de campaña en su parche por entre 25 y 40 dólares por persona.	Bastantes restaurantes y casas de huéspedes en lugares de playa o áreas rurales te <b>permitirán</b> armar una tienda de campaña en su parche por unos M \$ 25 a M \$ 40 por persona.	Una gran cantidad de restaurantes y casas de huéspedes en lugares de playa o zonas rurales le <b>permitirán</b> montar una tienda de campaña en su terreno por alrededor de M\$25 a M\$40 por persona.
In this book, we <b>have defined</b> budget as up to Dh400 for doubles, midrange as Dh400 to Dh800 for doubles and top end above Dh800.	En esta guía <b>se considera</b> alojamiento económico el que cuesta hasta 400 MAD por una habitación doble, de precio medio entre 400 y 800 MAD y de precio alto por encima de 800 MAD.	En este libro, <b>hemos definido</b> el presupuesto como hasta Dh400 para doubles, de rango medio como Dh400 a Dh800 para doubles y superior a Dh800.	En este libro, <b>hemos definido</b> el presupuesto como hasta Dh400 para doubles, rango medio como Dh400 a Dh800 para doubles y extremo superior por encima de Dh800.	En este libro, <b>hemos definido</b> el presupuesto como hasta Dh400 para los doubles, el rango medio como Dh400 a Dh800 para los doubles y el extremo superior por encima de Dh800.

This last example includes the present perfect of the verb in the three MT systems, whereas the human translator resorted to the impersonal form, due to the features of this type of discourse in the Spanish language, which omits the use of the first person plural to maintain the aforementioned interpersonal relationship with the reader. The texts of the MT systems stuck to the ST and included both the same verb tense and the personal pronoun. This is linked to the next aspect analysed here: personal pronouns.

## 6.2. The lexical-semantic field

Within this second field, we will focus here on the following 7 aspects: (1) personal pronouns; (2) possessive determiners; (3) borrowing; (4) loan; (5) currency, units and time; (6) informal/colloquial expressions, and (7) cultural aspects.

### 6.2.1. Personal pronouns

Linked to the analysis in the previous section, the TT obtained after introducing the ST in a MT system included, in all three versions, the formal use of the Spanish verb “can” (*poder*) (*usted puede*), whereas the human translator resorted again to an impersonal form of the verb. In the second example, the human translator preferred to include the third person singular subject “*el viajero*”, to avoid the personal form “you”. The MT systems analysed, apart from Systran, resorted again to the formal form of the verb. It should be noted that this MT system in this sentence opted for the more informal approach and resorted to the use of the second person singular, as opposed to how this personal pronoun was translated in the first example.

Once more, these systems highlight the formal features of the Spanish language, by always translating “you” by “*usted*”, and closing the relationship with the traveler, while the human translator sticks to maintaining this interpersonal relationship, frequent in this type of tourist texts. One interesting point that arises from this phenomenon (and which merits consideration for further research) is whether the MT system would do the same with other text subtypes, such as recipes (see Table 5 on the next page).

### 6.2.2. Possessive determiners

Continuing with the topic of interpersonal relationships, the inclusion of possessive determiners like “your” or “our” are frequent in tourist texts written originally in English. However, the Spanish language, as has been mentioned, resorts to more formal structures, as can be seen in the following example. Systran yielded a translation that is literal and sticks to the ST. Google, on the other hand, offered a more understandable solution and sticks to a more formal form (use of *usted*). DeepL’s system now includes the use of the second person singular (*tú*), which in our opinion has to do with the informal context in which these possessive determiners are included. This situation highlights the importance that these systems give to

**TABLE 5**

Personal pronouns translated by a human translator and by three MT systems

ST	HUMAN	SYSTRAN	GOOGLE	DEEPL
Although <b>you</b> can no longer bring in dutyfree goods from another <b>EU</b> country, <b>you</b> can bring in duty-paid goods that cost less than <b>you'd</b> pay for the same items in your destination country.	Aunque ya no se admiten artículos libres de impuestos de otro país de la UE, <b>se pueden</b> introducir mercancías de cualquiera de ellos aunque sean más baratas.	Aunque ya no puede traer productos libres de derechos de aduana de otro país de la UE, <b>puede</b> traer productos pagados por derechos que cuestan menos de lo que <b>pagaría</b> por los mismos artículos en su país de destino.	Aunque ya no puede traer mercancías libres de impuestos de otro país de la UE, <b>puede</b> traer mercancías con pago de impuestos que cuestan menos de lo que <b>pagaría</b> por los mismos artículos en su país de destino.	Aunque ya no puede traer mercancías libres de impuestos desde otro país de la UE, <b>puede</b> traer mercancías pagadas con derechos de aduana que cuestan menos de lo que <b>pagaría</b> por los mismos artículos en el país de destino.
If <b>you</b> can't do without one, you'll find many tiny storefronts - most run by Verizon, T-Mobile or AT&T - where you can buy a cheap phone and load it up with prepaid minutes, thus avoiding a long-term contract.	Si <b>el viajero</b> no puede prescindir del móvil tiene a mano muchas oficinas pequeñas -en general propiedad de Verizon, T-Mobile o AT&T- donde comprar un teléfono barato y cargarlo con minutos de prepago, evitando hacer un contrato.	Si no <b>puedes</b> prescindir de uno, encontrarás muchos pequeños escaparates (la mayoría de ellos gestionados por Verizon, T-Mobile o AT&T) en los que puedes comprar un teléfono barato y cargarlo con minutos prepagos, evitando así un contrato a largo plazo.	Si no <b>puede</b> prescindir de una, encontrará muchas tiendas pequeñas, la mayoría dirigidas por Verizon, T-Mobile o AT&T, donde puede comprar un teléfono barato y cargarlo con minutos prepagos, evitando así un contrato a largo plazo.	Si no <b>puedes</b> prescindir de uno, encontrarás muchas tiendas pequeñas -la mayoría administradas por Verizon, T-Mobile o AT&T- donde puedes comprar un teléfono barato y cargarlo con minutos prepagos, evitando así un contrato a largo plazo.

the context, to choose a more formal or informal path, which in this case does not correspond to this discourse's features in the Spanish language.

**TABLE 6**

Possessive determiners translated by a human translator and by three MT systems

ST	HUMAN	SYSTRAN	GOOGLE	DEEPL
And when you get to town, get <b>your</b> hands on a copy of the weekly Time Out Kids magazine, [...].	Nada más llegar a la ciudad <b>lo mejor es hacerse</b> con un ejemplar de la revista semanal Time Out Kids, [...].	Y cuando <b>llegues</b> a la ciudad, <b>pon tus manos</b> en una copia de la revista semanal Time Out Kids, [...].	Y cuando <b>llegue</b> a la ciudad, <b>obtenga una copia</b> de la revista semanal Time Out Kids, [...].	Y cuando <b>llegues</b> a la ciudad, <b>consigue una copia</b> de la revista semanal Time Out Kids, [...].

### 6.2.3. Borrowing

The inclusion of borrowings is frequent in this type of text, as seen in the following example. The human translator opted for the translation of the term “scuba diving” (“buceo con bomba de oxígeno”, which back translated into English would be “diving with oxygen tank”) and the inclusion of the other sports in the source English language, due to the familiarity readers have with these activities. The traveler of the Systran system would not know which type of sport he or she is going to practice (*paracaidismo ascensional* or *salto en búngicos*) as those terms as utterly meaningless in Spanish. The Google system, meanwhile, opted for including some of the terms (rafting) in the English language as its use is normally done in that language, and the other terms, like *parapente* (paragliding), in Spanish. This is a misleading case, as this is not the type of sport the ST is talking about. Finally, DeepL’s translation is very close to the human translator, although the term “puenting” (bungy jumping) was translated as just “saltos” (literally “jumps”).

**TABLE 7**

Borrowing phenomenon translated by a human translator and by three MT systems

ST	HUMAN	SYSTRAN	GOOGLE	DEEPL
Some policies specifically exclude designated ‘dangerous activities’ such as scuba diving, <b>parasailing</b> , bungee jumping, white-water <b>rafting</b> , [...].	Algunas pólizas excluyen de forma específica las “actividades peligrosas”, como <b>buceo con bomba de oxígeno, parasailing, puenting, rafting</b> en aguas bravas [...].	Algunas políticas excluyen específicamente las “actividades peligrosas” designadas, como el <b>submarinismo, el paracaidismo ascensional, el salto en búngicos, el rafting en aguas blancas</b> , [...].	Algunas políticas excluyen específicamente las “actividades peligrosas” designadas como el <b>buceo con escafandra, el parapente, el bungee jumping, el rafting</b> , [...].	Algunas políticas excluyen específicamente las denominadas “actividades peligrosas”, como el <b>buceo, el parasailing, los saltos, el rafting</b> , [...].

### 6.2.4. Loan

The human translator opted, in this case, to include both the term in English (cell phone) and the Spanish translation of the term, in brackets and inverted commas. The reason behind this choice lays on the fact that the traveler, apart from being provided with an explanation of the use of mobile phones in the US, can gather lexicon in English which could help him or her during his or her stay. The analysed MT systems did not include the term in English, as their goal is to translate an input word sequence in the source language into a target language word sequence (Popovic & Ney, 2004). The traveler, in the three MT versions, loses the possibility of using the term during his or her trip.

**TABLE 8**

Loan phenomenon translated by a human translator and by three MT systems

ST	HUMAN	SYSTRAN	GOOGLE	DEEPL
Mobile phones, known in the US as ‘ <b>cell phones</b> ,’ have taken over the city; [...].	Conocido en EE UU como cell phone (“ <b>teléfono celular</b> ”), tiene cobertura por toda la ciudad [...].	Los teléfonos móviles, conocidos en los Estados Unidos como “teléfonos celulares”, han tomado la ciudad; [...].	Los teléfonos móviles, conocidos en los Estados Unidos como “teléfonos celulares”, se han apoderado de la ciudad; [...].	Los teléfonos móviles, conocidos en los Estados Unidos como ‘teléfonos celulares’, se han apoderado de la ciudad; [...].

One aspect worth mentioning from this example is the use of *teléfono celular*, which is a term used in Latin American Spanish, and not popular in Spain. This may give us information about the origin of the translator, or it could also be the term preferred by the publishing company.

### 6.2.5. Currency, units and time

As for currency, units and time, the first example shows that all three MT systems yielded a literal translation and did not adapt the term “gallons” to the Spanish “litros” (liters), as the human translator did. Regarding currency, only the human translator and the RBMT system placed the symbol of currency immediately after the number, whereas the SBMT and the NMT maintained it before the number. In any case, it is surprising that Google’s system placed the currency symbol before the number but kept the compulsory space between the symbol and the figure in Spanish. Google applied the same principle to time, as this MT system maintains the AM and PM system and added a space between the acronyms and the time. The RBMT is the only system that adapted it to the 24-hour clock, following the rules of the language.

**TABLE 9**

Currency, units and time translated by a human translator and by three MT systems

ST	HUMAN	SYSTRAN	GOOGLE	DEEPL
They're busy, social places where you'll find <b>gallons</b> of hot water and staff available to scrub you squeaky clean.	Se trata de locales concurridos y sociales en los que hay <b>litros y litros</b> de agua caliente y un personal que deja limpia a la gente a base de frotar.	Están ocupados, lugares sociales donde encontrarás <b>galones</b> de agua caliente y el personal está a tu disposición para limpiarte.	Están llenos de gente, lugares sociales donde encontrará <b>galones</b> de agua caliente y personal disponible para limpiarlo.	Son lugares concurridos y sociales donde encontrará <b>galones</b> de agua caliente y personal disponible para limpiarlo todo.

Prices average <b>¥6000</b> per person per night, or <b>¥8500</b> including two meals.	El precio medio ronda los <b>6000 ¥</b> por persona y noche, y los <b>8500 ¥</b> con pensión completa.	Precios promedio <b>6000 yenes</b> por persona por noche, o <b>¥8500</b> incluyendo dos comidas.	Los precios promedio <b>¥ 6000</b> por persona por noche, o <b>¥ 8500</b> incluyendo dos comidas.	Precios promedio <b>¥6000</b> por persona por noche, o <b>¥8500</b> incluyendo dos comidas.
You're free to get off and back on at any of the stops. Buses depart roughly every 15 or 30 minutes between <b>10am and 5pm or 6pm</b> daily.	Los viajeros se pueden subir o bajar en cualquier parada (cada 15-30 min, <b>10.00-17.00 o 18.00</b> , diario).	Puedes bajar y volver en cualquiera de las paradas. Los autobuses salen aproximadamente cada 15 ó 30 minutos entre las <b>10:00</b> y las <b>17:00</b> o las <b>18:00 h</b> al día.	Eres libre de subir y bajar en cualquiera de las paradas. Los autobuses salen aproximadamente cada 15 o 30 minutos entre las <b>10 am y las 5 pm o las 6 pm</b> todos los días.	Usted es libre de bajar y volver a subir en cualquiera de las paradas. Los autobuses salen aproximadamente cada 15 o 30 minutos entre las <b>10am y las 5pm o 6pm</b> diariamente.

### 6.2.6. Informal/colloquial expressions

In this case, we can observe how the informal expression p.i.t.a. (pain in the ass) was not translated into Spanish in any of the three MT systems, probably due to the unfamiliarity of these engines with such expression. However, the human translator did provide a correct translation of this expression into Spanish. This is a clear example of the need to translate this type of sentences by a human translator and revise and post-edit the machine-generated translation.

**TABLE 10**

Informal and colloquial expressions translated by a human translator and by three MT systems

ST	HUMAN	SYSTRAN	GOOGLE	DEEPL
In the annoyances category, NZ's sandflies are a royal <b>p.i.t.a.</b> (see the boxed text, below).	En la categoría de cosas molestas, las moscas de la arena se llevan la palma (véase recuadro en p. 726).	En la categoría de las molestias, las moscas de arena de Nueva Zelanda son un real <b>p.i.t.a.</b> (véase el texto en caja, más abajo).	En la categoría de molestias, las mariposas de arena de Nueva Zelanda son un <b>p.i.t.a.</b> (ver el texto en el recuadro, abajo).	En la categoría de molestias, las moscas de arena de NZ son un <b>p.i.t.a.</b> real (ver el texto en el recuadro de abajo).

### 6.2.7. Cultural aspects: fixed expressions and cultural references

Finally, we will look into cultural aspects, one of the most common features of tourist guidebooks. The first example included in Table 11 shows the translation of a proper name, the

alcoholic cocktail “Martini”, into the TL. The human translator opted for the omission of this cultural reference, whereas the three MT systems gave two different alternatives. Systran understood the sequence “apple martini” as a noun + noun structure and literally translated it, word per word, even including the feminine indefinite article for *manzana* (apple). Google and DeepL, on the other hand, seemed to recognize the proper name “martini” and translated it accordingly. It should also be noted that none of the three systems recognized the verb “to surf” in the correct context, as they translated it literally as *surfear* and not as *navegar* (literally, “to sail”, but in this context, “to browse a website”), which is the correct option for this case as the text is describing Internet cafés.

The second example in the ST describes the moment in which a customer asks for a pint of beer at a bar. The human translator decided to use a generalization translation strategy for the term “pint” (“bebidas”, that is, “drinks”) and an addition when including the sequence *en la barra* (“from the bar”). None of the three MT systems included this addition to their texts, as they literally translated the phrasal verb “to pull in” as *llevar* or *sacar*. It is also worth mentioning that some irony was included in the ST “some of the coins will glue themselves to the bottom” and, when literally translated with MT systems, this literary device is lost in the three systems and in the human TT. Although the translator may have resorted to this transference strategy to maintain the distance with the addressee (Santamaría Urbieto, 2014b), Systran, Google and DeepL just translated the SL sequence into the TL sequence without any changes.

**TABLE 11**

Cultural aspects translated by a human translator and by three MT systems

ST	HUMAN	SYSTRAN	GOOGLE	DEEPL
[...] where you can surf while sipping an <b>apple martini</b> .	[...] donde es posible navegar por Internet mientras se toma <b>algo</b> .	[...] donde se puede practicar surf tomando una <b>manzana martini</b> .	[...] donde puedes surfear mientras tomas un <b>martini de manzana</b> .	[...] donde puedes surfear mientras bebes un <b>martini de manzana</b> .
You never tip to have your <b>pint pulled in a pub</b> but staff at bars often return change in a little metal dish, hoping some of the <b>coins will glue themselves to the bottom</b> .	Nunca se deja propina a los camareros que <b>sirven bebidas en la barra</b> , aunque ellos suelen devolver el cambio en un platito de metal intencionadamente.	Nunca se aconseja que <b>te lleven la pinta en un pub</b> , pero el personal de los bares a menudo regresa el cambio en un pequeño plato de metal, esperando que <b>algunas de las monedas se peguen al fondo</b> .	Nunca das propina para <b>que te saquen una pinta en un pub</b> , pero el personal de los bares a menudo devuelve el cambio en un pequeño plato de metal, <b>esperando que algunas de las monedas se peguen al fondo</b> .	Nunca das propina para <b>que te saquen la pinta en un pub</b> , pero el personal de los bares suele devolver el cambio en un pequeño plato de metal, <b>esperando que algunas de las monedas se peguen al fondo</b> .

The translation of these terms entails great difficulty for human translators, as their main target is to produce the same effect and function on the TT reader, as that experienced by the ST traveler. For this reason, the use of MT systems in these cases may not be the best solution.

## 7. Conclusions

Three main objectives were established in this paper regarding the use of machine translation systems to translate tourist texts (namely, guidebooks): firstly, to determine the level of quality of MT in the translation of tourist texts; secondly, to compare the results obtained by a translation carried out by a human translator and one carried out by MT systems; thirdly, to establish which tourist translations could be done by MT systems and which could not and should instead be carried out by a human translator, or at least post-edited by one, always bearing in mind quality criteria. The examples included in this first approach bring to light the recurrent question: will translation and human translators as we know them today disappear? Although we are aware of the fact that this study does not allow us to give a clear answer to the question, we can infer that the results show how challenging translation factors such as cultural aspects, informal language, colloquial expressions, as well as the type of language expected by tourists (Nobs, 2006, 2005) on texts like the ones analysed here are; this makes it difficult to affirm that the role of the human translator as we know it will disappear.

This brief analysis has shown that especially grammar aspects, such as the passive voice or verb tenses, are not difficult to be dealt with by MT systems. However, these do not take into account the features of specialized discourse and they only stick to translating language from the ST into the TT, that is, they leave aside cultural aspects, or the features of the tourist discourse here studied. Table 12 summarizes the solutions to the aspects analysed here and includes some main techniques (omission, borrowing and adaptation) that have been adapted from Hurtado Albir (2001). By adaptation we understand the replacement of one cultural element from the source language by another of the target culture. Borrowing, on the other hand, is the technique of using the same term of the ST in the TT. Omission, named elision by Hurtado Albir, eliminates structures, terms or phrases from the ST in the TT.

Can we affirm that the human translator will be replaced by a machine in the near future? MT systems would have to be trained so that they are able to identify expressions, adapt them and understand nuances, irony and the colloquial expressions which are common in tourist guidebooks in English, or in any given language. Also, MT systems would have to bear in mind the features of the same type of discourse in Spanish and English, and that although the text type may be the same, the language in use is not, and the readers are not the same either. The role of the human translator will have to



**TABLE 12**

Comparison of the translations given by the human translator and the three MT systems

ST	HUMAN	SYSTRAN	GOOGLE	DEEPL
Passive	Active/Passive	Active	Active	Active
Imperative	Indicative	Imperative	Imperative	Imperative
Future	Present	Future	Future	Future
Present Perfect	Present	Present Perfect	Present Perfect	Present Perfect
You	Impersonal forms	<i>Usted</i>	<i>Usted</i>	<i>Usted</i>
Your	Omission	<i>Usted/Tú</i>	<i>Usted</i>	<i>Usted/Tú</i>
Borrowing	Borrowing	Incorrect borrowing	Partial borrowing	Borrowing
Loan	Adaptation	Literal translation	Literal translation	Literal translation
Currency, units and time	Adaptation	Partial adaptation	Literal translation (with some exceptions)	Literal translation
Informal/colloquial expressions	Adaptation	Term in English	Term in English	Term in English
Cultural aspects	Adaptation	Literal translation	Literal translation	Literal translation

be present for as long as machines do not understand such nuances or are not trained for understanding that translating is much more than expressing the sense of words or text in another language. However, we must admit that MT engines are developing fast and that they yield results that make us wonder about the future of translation as we know it today. In any case, in terms of quality of translated tourist texts such as those analysed in this article, we agree with Austermühl in that “if the user’s aim is to achieve a translation indistinguishable from that of a human translator, post-editing is of essential importance” (2001: 166).

Further research should focus on a quantitative analysis of the fields included in this paper so as to give a clear answer to the above posted question and determine the exact degree of mistakes and correct translations given by MT systems. Also, the idea of further developing post-editing tasks should be the focus of future studies, as some of the translation mistakes found in the TT produced by MT systems could be fixed or replaced by other “more correct” sequences after a post-editing process.

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