



Explicitation in translation memory-mediated environments. Methodological conclusions from a pilot study

Bartolomé Mesa-Lao

Universitat Autònoma de Barcelona, Spain

barto.mesa@uab.cat

Abstract: This paper outlines the design and methodological conclusions drawn from a pilot study conducted to measure how translation editing environments impact the presence in translations of one of the most studied translations phenomena: explicitation. To our knowledge, the study of this translation technique under different translation editing environments has never been undertaken and it can be two fold. On the one hand, a study of this translation technique from this new perspective can give some support in favour of or against the widespread idea that explicitation is a translation universal or just a voluntary translation technique. On the other hand, little empirical research has been conducted to assess the way in which computer-mediated translation environments (i.e. the integration of translation memories in the translation process) may have an impact on the texts they produce. This paper describes the methodological results provided by a pilot study in order to promote methodological rigour and scientific validity in experimental research in the field of translation studies. Based on the findings from this pilot study, some methodological changes were made in the subsequent final experiment.

Keywords: explicitation, translation editing environment, translation memory, pilot study

1. Introduction

Always conduct at least one pilot study. As pointed out by Bausell (1994), this is a statement that almost all researchers know but sometimes far too many ignore. In studies employing experimental interventions, it is essential to conduct these interventions provisionally with a limited number of participants to ensure both their feasibility and the appropriateness of the various components that make them up.

In this context, a pilot or a feasibility study is a stand-alone experiment designed to test logistics and gather information prior to a larger study, in order to improve its quality and reliability. A pilot study is normally small in comparison with the main experiment and therefore can provide only limited information on the sources and magnitude of variation of response measures. However, the ultimate focus of a pilot study should not be on the results themselves but on the information/insight provided to facilitate the successful running of a full-blown study.

Translators offering technical translation and localization services are often expected to produce high-quality translations in a very short turn-around time. One way in which they are trying to meet this goal is by using translation technology. Translation memories are often promoted as tools that can help translators to improve their productivity, but less is known about the actual impact that the use of such tools can have on the translation itself. Little research has been carried out to determine the differences that may exist between technical texts translated with and without translation memories, or the impact that the practice of translating using these tools may have on the characteristics of the target text (Bédard, 2000; Bowker, 2005, 2006; Mossop, 2006). In this respect, research in the field of translation technologies is of high relevance, since these tools have become part of the translation process for almost any professional translator today.

The study to which this pilot study belongs is an experimental investigation of the translation output of human translators with regard to one of the most studied translation techniques (i.e. explicitation) when a translation memory-mediated environment is used in the translation process. This investigation is motivated by the belief that, given its position linking different approaches in translation studies research, explicitation should be studied using different methods. The results of this research should thus be used to provide an impetus for further studies on explicitation from a more controlled and rigorous treatment as suggested by Becher (2010), in this case using an experimental approach to control as many variables as possible.

Although the overall aim of this research is intended to answer the question of whether explicitation as a translation technique is potentially affected by the use of different translation editing environments, in this paper we will only concentrate on the methodology conclusions drawn from the running of a pilot study. No qualitative analysis will be discussed and only conclusions regarding the methodological approach used will be presented.

2. On the notion of explicitation

Explicitation touches on many of the core questions of translation both as a process and as a product. As pointed out by Baleghizadeh and Sharifi (2010, p. 59), “[t]he examination of explicitation in a specific language pair not only raises our awareness and understanding of the very nature of translation [...], but also contributes to the translation theory enabling us to explain and predict a phenomenon in translation”.

The general idea that translations tend to be more explicit than their source texts has received a lot of attention in translation studies making it the strongest candidate for translation universals (Baker, 1993; Toury, 1995; Øverås, 1998). One of the most quoted studies on explicitation was conducted in the mid-eighties by Blum-Kulka (1986). She formulated the so-called “explicitation hypothesis”, which “[...] postulates an observed cohesive explicitness from SL to TL texts regardless of the increase traceable to differences between the two linguistic and textual systems involved” (Blum-Kulka, 1986, p.19).

Explicitation can be defined as a translation technique consisting of making explicit in the target text information that is only implicit in the source text. This concept was first introduced by Vinay and Darbelnet in 1958 in their work *Stylistique comparée du français et de l'anglais. Méthode de traduction*, subsequently translated into English in 1995. According to these two scholars, this “stylistic translation technique” does not necessarily stem from structural or semantic causes, especially when what remains implicit in the source language and made explicit in the translation is apparent from either the context or the situation (Vinay and Darbelnet, 1995, p.170).

In fact, explicitation in translation functions in the literature as an umbrella term for a number of different transfer procedures such as addition of modifiers, qualifiers and conjunctions to achieve greater transparency; addition of extra information and insertion of explanations; or specification of meaning, among others. Candace Séguinot calls for the need to reserve the concept of explicitation for “additions in a translated text which cannot be explained by structural, stylistic, or rhetorical differences between the two languages” (Séguinot, 1988, p.108).

Since Vinay and Darbelnet (1958), explicitation has been studied from different approaches, and statements about its nature are heterogeneous. The

wide variety of forms which explicitation might assume is not the only factor differentiating individual approaches. Explicitation is either known as one of the universals of translation, i.e. a natural translation-inherent procedure and a spontaneous by-product of the translation process, or as a conscious translation technique deliberately employed by professional translators wanting to avoid linguistic and socio-cultural differences between source and target texts.

According to Klaudy and Károly (2005, p.15), explicitation can be both an unconscious operation and a deliberate strategy, depending on the circumstances. Some researchers are in favour of the idea that explicitation is a translation universal, i.e. an unavoidable by-product of the language mediation process, while others maintain the approach that it is a conscious translation technique. However, it should also be noted that few of the studies cited above address the problem of conscious vs. unconscious procedure, as they concentrate on descriptive phenomena related to explicitation.

Klaudy's classification for explicitation (1993, 1996, 1998) encompasses four different types of explicitation: *obligatory explicitation*, due to language-specific differences; *optional explicitation*, resulting from the different text-building strategies and stylistic preferences between SL and TL; *pragmatic explicitation*, resulting from cultural differences between SL and TL communities; and finally, *translation-inherent explicitation*, which "can be attributed to the nature of the translation process itself" and "explained by one of the most pervasive, language independent features of all translational activity, namely the need to formulate ideas in the target language that were originally conceived in the source language" (Klaudy, 1998, p.83).

Following this classification, the view of explicitation adopted in the context of this research is probably best reflected in Séguinot's claim stating that "[...] to prove that there was explicitation, there must have been the possibility of a correct but less explicit or precise version" (Séguinot, 1988, p.108). Hence, the exclusion of all obligatory explicating shifts due to language-specific differences and also those optional shifts which can be attributed to clear-cut stylistic differences between ST and TT languages. What is more important is that explicitation is considered as such only according to definite parameters, that is, when "something is expressed in the translation which was not in the original, something which was implied or understood through presupposition in the source text is overtly expressed in the translation, or an element in the source text is given greater importance in the translation through focus, emphasis, or lexical choice" (Séguinot, 1988, p.108).

3. The present investigation: experimental context

A specific research methodology is decided upon depending on the object of analysis or description. Historically, explicitation has been studied from a corpus-based approach, i.e. comparing translations against their source texts or against non-translations in the same language. Many of these studies (Baker, 1993, 1996; Øverås, 1998; Pápai, 2004) have proposed the status of explicitation as a translation universal when analysing certain selected explicitation phenomena. However, problems with operationalization, i.e. basic control of the background behind the texts that made up the corpus of analysis, continue to limit the results of this kind of research to just some manifestations of explicational behaviour that may be affected by many

possible confounding variables.¹

As pointed by Neunzig and Tanqueiro (2007), translation studies have only recently adopted the formalism of the social sciences as well as the methodology from other scientific approaches arguing that, even when theoretical principles seem to well explain the phenomena observed within a specific field, theoretical constructs can only acquire a scientific and epistemological status if they can be operationalized, that is, if they can be validated through systematic and experimental observation.

3.1. Experiment design

Our theoretical hypothesis is that translations done with or without a translation memory-mediated environment are different. The aim of our research is not to establish which kind of translations are better in terms of linguistic quality, but to establish what kind of differences may be observed between translations obtained with and without the aid of computer-aided translation (CAT) tools (Sánchez-Gijón et al, 2010; Torres-Hostench et al, 2010).

The research in this study was devised with the following aims in relation to explicitation as a deliberate strategy:

1. To test whether explicitation is an observable or even a dominant phenomenon in technical translations from English into Spanish.
2. If so, to identify if the use of explicitation as a translation technique is potentially affected by the use of different translation editing environments while translating.

In designing a research plan to satisfy the above-mentioned aims, three methodological decisions were made. Firstly, it was decided to carry out an experiment using professional translators working in a simulated real-world environment. A corpus of translations done with and without the use of CAT tools under experimental conditions would be compiled. Secondly, ten different indicators in each of the three texts used in the experiment would be chosen so as to measure explicitation in translations both quantitatively and comparatively. Thirdly, in order to measure explicitation in translations the statistical analysis of the corpus compiled would only be made at the indicators' level.

Below, there is a description of the dependent and independent variables of the experiment, as well as information on the data collection instruments and participants in the experiment.

3.1.1. Dependent variable: translation-inherent explicitation²

In order to measure explicitation in translated texts under experimental conditions, the following explicitation-related categories were used to analyse the data:

¹ Apart from Denver (2007, 2009), we don't know of any other studies which purport to offer new insights into explicitation phenomena analysing translations resulting from a controlled experiment.

² It should be reminded that the purpose behind the selection of this variable is not to establish which translation is "better" depending on the amount of explicitation traces that can be found on the text. Our aim is to establish how translations differ in relation to this parameter on the basis of the translation editing environment used (according to whether a translation memory is used or not). The ultimate goal is to be able to compare translations as products resulting from different translation processes.

- i) the proportion of implicit to explicit cultural and contextual referents;
- ii) the proportion of phoric to fully lexical (auto-semantic) phrases, i.e. replacement of pronouns;
- iii) the number of newly introduced cohesive referents per discourse segment, i.e. introduction of explicit cohesion markers between sentences;
- iv) the use of lexical specification; i.e. replacement of general terms for more specific ones.

These four parameters to measure the appearance of explicitation traces in texts are partly based on the previous findings made by the corpus-based project CroCo from Saarland University (Germany)³, and they aim to provide further data for explicitation research that can also be tested under experimental conditions in technical texts translated both with and without a translation memory-mediated environment. All four categories can be classified under the translation-inherent explicitation category proposed by Klaudy (1998) (see section 2).

A list of examples is provided below for each of the four explicitation-related parameters under study (the Spanish target sentences show explicitation traces in underlined text):

- i) Implicit to explicit cultural and contextual referents:

[ST – English] *Pittsburgh, PA 15260*

[TT – Spanish] *Pittsburgh, PA (Pensilvania – EUA) 15260*

Cultural information about the state and the country is added in the Spanish translation. Three indicators of this category were measured in a nominal scale of 0 or 1 (absence/presence) for each of the three texts used in the experiment.

- ii) Phoric to fully lexical (auto-semantic) phrases:

[ST – English] *SpyPredator [...]* It can be downloaded from our website.

[TT – Spanish] *SpyPredator [...]* SpyPredator puede descargarse desde nuestro sitio web.

The pronoun *it* is replaced in the Spanish translation by its actual reference (the name of the software product). Only one indicator of this category was measured in a nominal scale of 0 or 1 (absence/presence) for each of the three texts used in the experiment.

- iii) Newly introduced cohesive referents per discourse segment:

[ST – English] Be sure to un-check *Don't create a Start Menu Folder*; this parameter creates a program group on your start menu.

[TT – Spanish] *Asegúrese de desactivar* No crear una carpeta en el menú Inicio. En caso de que este parámetro este activado, se creará un grupo de programas en el menú Inicio.

³ *Das Projekt CroCo: Sprachliche Eigenschaften von Übersetzungen – eine korpusbasierte Untersuchung für das Sprachenpaar Englisch-Deutsch (DFG-Projekt)*
 <<http://fr46.uni-saarland.de/croco/index.html>> [Last accessed: December 15, 2010]

The translator makes explicit the cause-and-effect relationship between these two sentences by adding a conditional clause at the beginning of the second sentence. Three indicators of this category were measured in a nominal scale of 0 or 1 (absence/presence) for each of the three texts used in the experiment.

iv) Lexical specification:

[ST – English] Spyware refers to...

[TT – Spanish] El término spyware o software espía hace referencia a...

The Spanish version of this sentence offers, apart from the loanword which is also used in Spanish, a more explicit and transparent equivalent for the English term. Three indicators of this category were measured in a nominal scale of 0 or 1 (absence/presence) for each of the three texts used in the experiment.

3.1.2. Independent variable: the translation editing environment

One independent variable, i.e. the presence or absence of a translation memory in the translation process, is measured under the following conditions:

1. *Condition 1:*

- Translation without using a translation memory-mediated environment. Translation was performed using Microsoft Word 2003, the most commonly used word processor in the translation field at the time of this pilot study (summer 2008). This translation editing environment is referred to as E1.

2. *Condition 2:* Translation using a translation memory-mediated environment. This condition was sub-divided into:

- *Condition 2.1:* Translation using a translation memory-mediated environment with a WYSIWYG interface. Translation under this condition was performed using a combination of SDL Trados Translator's Workbench 2007 and Microsoft Word 2003. This translation editing environment is referred to as E2.
- *Condition 2.2:* Translation using a translation memory-mediated environment without a WYSIWYG interface. Translation under this condition was performed using a combination of SDL Trados Translator's Workbench 2007 and SDL Trados TagEditor, a very common combination of tools when translating tagged files. When using TagEditor as a translation editing environment, translators do not necessarily see the layout of the source text, but only plain text surrounded by tags. This translation editing environment is referred to as E3.⁴

⁴ Depending on the format of the source file, TagEditor (E3) also offers a preview option to view in context the segments that are being translated (i.e. HTML files). However, this was not the case for E3 in the experiment, since the three source texts used in E3 were ready-made translatable *.ttx files converted from FrameMaker files (*.mif) for which TagEditor does not offer full layout preview without a subsequent conversion.

These three conditions are the independent variables manipulated in the experiment in order to measure their effect on the dependent variable.

Table 1. Characterisation of the three translation editing environments in the experiment

	<i>Automatic segmentation</i>	<i>Layout information</i>
E1: MS Word 2003 text processor	–	+
E2: MS Word + SDL Trados TWB 2007	+	+
E3: TagEditor + SDL Trados TWB 2007	+	–

As can be seen in table 1, automatic text segmentation while translating and the degree of layout information to which the translator has access are the two main features that differentiate these three conditions in the experiment. Both E2 and E3 are translation memory-mediated environments against E1, where there is no intervention of any kind of CAT tool.

When undertaking technical translation projects involving the use of CAT tools, translators normally have at their disposal a previously established translation memory with previously translated sentences. However, the translation memories provided in this experiment for E2 and E3 were empty so translators could not base their translations on previously translated segments that might affect or restrict their approach to the text and the translation editing environment used. Should this have been the case, it would have been impossible to determine whether more or less cases of explicitation were attributable to the translating editing environment used or the role played by any possible reference material coming from the translation memory.

3.1.3. Data collecting instruments: source texts and measurable indicators

In this sense, theoretical science has defined criteria based on experimental accuracy that must be observed when considering an experiment to ensure the validity of the results. Measuring and data collection instruments used, i.e. source texts in our case, are a determining factor in experimental research in translation in order to meet the criteria for experimental accuracy.

As stated by Orozco (2001), one of the key elements in translation product research from an empirical and experimental point of view is the use of standardized measuring instruments and a widely recognized scientific research approach. For this reason, the checking of source texts should be carried out in depth when conducting empirical product-based research in order to ensure the objectivity and the ecological validity of the results obtained in an experimental setting.

Data for this pilot study was collected through the translation of three comparable texts under three different translation editing environments (see section 4.1 for a description of the randomization procedure). Given the objective of our experiment, the appropriate selection of texts and indicators that would provide the data necessary to test our hypotheses is of paramount importance. Thus, the three texts used in the experiment had to be comparable in length and complexity, and appropriate for use in the three different translation editing environments proposed, with or without the integration of a translation memory system. All three texts dealt with some aspect of information technology and they all returned similar scores when

submitted to automatic readability tests.⁵ None of the three texts was longer than 528 words in order not to make the experimental task too demanding for participants.⁶

Once the texts had been selected, a first selection of possible triggering explicitation indicators were to be selected according to the four explicitation-related categories presented in section 3.1.1. The first proposal for indicators was based on my personal assumptions as a professional translator and, to test the validity of these indicators, the three selected source texts were sent to be translated by a translation company giving them instructions of the translation editing environment that should be used as part of the translation assignment.

The resulting translations provided by the translation company enabled the determination of the validity of the initial indicators since many of them showed explicitation behaviour on the part of the translators. Moreover, other indicators that had not originally been considered and which also proved to be highly informative were also introduced in order to fine-tune the final selection of explicitation-related indicators in texts. Finally, all indicators chosen in the three texts were submitted for external evaluation by university lecturers in translation for the language pair English into Spanish in the form of a questionnaire. These lecturers were invited to validate whether or not each of the indicators selected was appropriate for measuring our dependent variable.

3.1.4. Participants

Having decided to carry out an experiment using professional translators as subjects, the following selection criteria were established: *a)* participants should have at least two years of experience as a professional translator; *b)* with English into European Spanish as their main professional language direction; *c)* with experience in translating technical texts, and *d)* be regular users of SDL Trados 2007 software, with sufficient instrumental knowledge to translate in any of the three environments proposed in the experiment with no external assistance.

4. The pilot study: methodological aspects

The following methodological criteria were used to assess the successful running of the pilot study as a way to guarantee the successful deployment of the subsequent main study:

4.1. Sample size calculation and randomization procedures

Once the texts and indicators to be used in the experiment had been chosen and validated both internally and externally (see section 3.1.3), the experiments for the pilot study were conducted. To do this, 18 postgraduate students having English into Spanish as their main language direction from the master's degree courses in translation technologies at the Universitat Autònoma de Barcelona were invited to participate in the pilot study. These

⁵ The tool used to apply automatic readability tests for the three texts in the experiment was *EditCentral* <<http://www.editcentral.com>> [Last accessed: December 15, 2010]

⁶ The word-counts for each of the three texts in the experiment are as follows: T1: 528 words, T2: 472 words and T3: 418 words. An average of 500 words was considered not to be a too demanding task for professional translators used to translating technical texts with CAT tools.

students had received extensive training in the use of SDL Trados 2007 during the previous months as part of their master's degree. Their translator profile was thus similar to that of novice professional translators, i.e. a professional translator with less than three years' experience.

For obvious experimental reasons, none of the participants translated the same text twice or used the same translation editing environment twice in the experimental task assigned.

In order to control the tool-order and the text-order variables, in the pilot study a complete tool-order combination was trialled (a total of six) and a simplified text-order combination (a total of three). Not all possible text-order combinations were tested, since texts are not our independent variable. Thus the number of participants in the pilot study was determined by the minimum number required to work with all the six possible combinations of translation editing environments (E1/E2/E3) and a minimum of three possible text combinations (T1/T2/T3), i.e. 6x3 (n=18).

Table 2. Pilot study design (environments and texts combinations for each participant)

	<i>1st translation task</i>	<i>2nd translation task</i>	<i>3rd translation task</i>
Participant 01	T1 in E1	T2 in E2	T3 in E3
Participant 02	T2 in E1	T3 in E2	T1 in E3
Participant 03	T3 in E1	T1 in E2	T2 in E3
Participant 04	T1 in E1	T2 in E3	T3 in E2
Participant 05	T2 in E1	T3 in E3	T1 in E2
Participant 06	T3 in E1	T1 in E3	T2 in E2
Participant 07	T1 in E2	T2 in E1	T3 in E3
Participant 08	T2 in E2	T3 in E1	T1 in E3
Participant 09	T3 in E2	T1 in E1	T2 in E3
Participant 10	T1 in E2	T2 in E3	T3 in E1
Participant 11	T2 in E2	T3 in E3	T1 in E1
Participant 12	T3 in E2	T1 in E3	T2 in E1
Participant 13	T1 in E3	T2 in E1	T3 in E2
Participant 14	T2 in E3	T3 in E1	T1 in E2
Participant 15	T3 in E3	T1 in E1	T2 in E2
Participant 16	T1 in E3	T2 in E2	T3 in E1
Participant 17	T2 in E3	T3 in E2	T1 in E1
Participant 18	T3 in E3	T1 in E2	T2 in E1

Pilot study: n=18 (6x3)

4.2. Ethical consent

With regard to obtaining informed consent from the participants, all of them decided to take part in the pilot study after reading the ethical consent form. In order to preserve the ecological validity of the experiment, participants in the pilot study were informed that they were going to take part in an experiment on the use of CAT tools, but no extra information was provided about the actual research object, i.e. explicitation, so as to avoid unnatural behaviour on the part of the participants in regard to this variable. In the ethical consent form, it was also stated that their participation was voluntary and they had the right to withdraw their consent or discontinue participation at any time. Their individual privacy was also guaranteed in all published and written data resulting from the study. No changes had to be made in the ethical consent sheets after testing them in the pilot study.

4.3. Testing of data collection tools and hand-outs

When conducting research where participants are asked to perform a task using software, it is of paramount importance to check that the participants are sufficiently skilled in the use of the software. In the context of this research, it was important to check that the actual impact of the translation editing environment on the translation was due to the environment itself and not to the lack of familiarity on the participants' part with each of the three translation editing environments in the study. Participants in the pilot study demonstrated sufficient skill in the use of SDL Trados Translator's Workbench 2007, both when used in combination with Microsoft Word 2003 (E2) and with TagEditor (E3).

Participants used clone computers in the same computer room, with exactly the same hardware and software. Apart from the translation technology that was going to be used in the experiments, other data collection tools (see section *b*) below) were also tested in the pilot study to collect data not only about the translation product but also about the translation process. Two methods were used:

- a*) Direct human observation: Participants were supervised without intervention while performing the three translation tasks and the activity in the whole room was logged (answering queries, solving technical problems, control of beginning and end of the session, etc.) while the experiment was being run.
- b*) Recording software: Each computer was equipped with a screen-recording tool (FlashBack Recorder v. 2.3) and a keyboard-logging tool (InputLog v. 3.0) to record everything that appeared on the screen or was typed on the keyboard during the pilot study. These videos and key-logs were subsequently used to ensure that each participant had followed the instructions given for each text (basically, the translation environment used for each translation according to the translation task assigned) as well as to gather information about translation as a process. This recording software was also used to measure the time needed to translate each of the texts.

From performing the pilot study, we learnt that InputLog software did not work properly in combination with E3 (i.e. SDL Trados Translator's Workbench 2007 + TagEditor). Some participants reported problems with the configuration of their keyboards when typing accents in Spanish. For this reason, the decision was made to avoid key logging recording in the full-blown study whenever E3 was used. We would lose information about the key-logging process during translation in E3, but it was essential not to compromise the natural running of the translation task. Process data would only be used to triangulate results found on translations as a product.

A pilot study is also the best way to check if the instructions given to the participants for the experimental task are unambiguous and easy to understand. In regard to this point, instructions were successful and the pilot study could be run as planned. No changes were made in the instructions hand-outs except from asking the participants not to send their translations by e-mail but to save them on the computer. We realised that it was in our own interest to avoid the circulation of translations by e-mail in order to prevent future participants in the final experiment having access to the texts. In order to prevent the ecological validity of the full-blown study, none of the participants should have seen any of the three texts before they were asked to translate them.

4.4. Testing of measuring instruments and data tabulation

Piloting the coding protocol for data tabulation is no less essential than piloting the correct functioning of the software used in the experiment. Firstly, it supplies the researcher with first hand experience in applying the conventions and decision rules of the process prior to coding the main sample. Secondly, it assesses whether the researcher's basic interpretations of conventions and decision rules are consistent. Thirdly, the pilot study can identify inadequacies in the protocol itself, such as the need for additional categories for particular variables or additional variables to adequately map the object of research.

For our research, a nominal scale was proposed for measuring explicitation in translations done with different translation editing environments. This scale measured the presence or absence (1 or 0) of explicitation in the 10 possible indicators previously chosen for each of the three texts (see section 3.1.3). A value to represent if the indicator was not measurable (99) was also predicted. In relation to this, no major problems were found in the coding of data resulting from the pilot study and there was no noteworthy use of 99 in the data collecting file. The coding protocol for data tabulation was thus validated prior to the tabulation of results from the final experiment.

4.5. Integrity of the experiment protocol

In order to ensure the replicability required by the scientific method, an experiment protocol which describes all the steps in detail is always necessary so that other researchers can independently perform the experiment and expect to get similar results to the original experiment.

The experiment protocol used in the pilot study was devised in order to test logistics in regard to: *a)* software to be used, *b)* distribution of participants in the computer room depending on the tool-order and text-order assigned (see section 4.1), and *c)* data handling and storage after each translation task.

The experiment did not include any kind of time pressure as an independent variable, but time constraints had to be determined in order to control and handle the three translation tasks of the experiment. For this reason, a timing track of one hour and a half was assigned per translation assignment. No participant in the pilot study required any extra time to complete their translations. In fact, after the pilot study, we were convinced that participants in the final study (i.e. professional translators) could translate each text in no more than one hour and ten minutes, as that was the mean time used by participants in the pilot study (postgraduate students with a profile similar to that of novice translators).

Time needed to translate in the pilot study was one of the reasons for modifying the experiment protocol in regard to the time allocated for each translation task so the three translation tasks could be done in just one session. The second reason for changing the experiment protocol into a single translation session were the results coming from the statistical analysis performed on the translations resulting from the pilot study⁷. In the pilot

⁷ Once the indicators for each translation were tabulated (see section 4.4), they were submitted for quantitative analysis in order to find statistical significance for the potential role of the translation editing environment (independent variable) on the manifestations of the four categories of explicitation (dependent variables). Given the characteristics of the sample and

study, because of students' schedule incompatibilities, two translation sessions were needed to complete the three translation tasks (two translations on one day and the third the day after). Even with such a small sample in the pilot study (n=18), deviating results were found for the single translation task carried out in the second session, independent of the text translated and the tool used. This would therefore support the belief that all three translation tasks should be carried out in one session in order to preserve the ecological validity of the main experiment.

4.6. Acceptability of intervention

A pilot study is also the ideal context to measure if the level of intervention from the researcher during the performance of the experimental task is appropriate. Given the large sample of participants anticipated for the main study—a total of 90 professional translators—it was decided that the final experiment should be undertaken in different sessions. The level of intervention from supervisors during the experiment would thus be the same in all sessions, and their intervention would not compromise the results of the experiment.

Although the experiment did not include any kind of human intervention after the experiment had started (all information gathered about the translation process was being monitored by the screen-recording and the keyboard-logging software), the pilot study was useful in testing the role of the experiment supervisors in the computer room to help with any queries the participants might have without compromising the ecological validity of the experiment.

The protocol stated that, since all the instructions about the experimental task were clearly explained in the hand-outs, no extra information should be provided by the experiment supervisors in the room. Their role was basically to assist participants in case of software failure or any other kind of help needed by the participants beyond the experimental task. No linguistic queries were answered either, in order not to alter the translation solutions offered by the participants.

In the light of the results obtained in the pilot study, no changes were to be introduced to this end. Questions from the participants in the pilot study did not require any extra intervention from the researchers during the study and no extra questions had to be answered once the experimental task was presented and the translation assignment hand-outs were distributed.

5. Conclusions

In this paper we have provided a framework to test the appropriateness of an experimental pilot study in the field of translation studies and have suggested several methodological reasons why a pilot study should always be conducted prior to the final experiment. Regardless of the results obtained from a pilot study (which may or may not be taken into account as part of the main study), a number of methodological objectives can always be met in order to ensure methodological rigour and scientific validity.

As a result of this pilot study, some changes were made to the way in which the final experiment was to be conducted. Firstly, it was observed that

the variables to be measured, the statistical test used was the Kruskal–Wallis one-way analysis of variance.

too much time had been allocated for the three translation assignments. Thus, the decision was made to reduce the allocated time so that each text could be translated in a single session, and not in two, in order to reduce the presence of possible external variables that may compromise the ecological validity of the experiment. Secondly, some participants in the pilot study complained about keyboard performance. It was then discovered that only those using E3 were affected, and that the problem disappeared when InputLog, the key-logging software used to record the translation process, was not activated. For that reason the decision was made not to use InputLog software in combination with E3 for the main experiment. Finally, the running of a pilot study proved to be highly relevant for improving some organisational aspects of the experiment (i.e. validity of the ethical consent form, hand-outs with the translation assignment, and the role of the experimental supervisors in the computer room).

All in all, it can be said that clear aims and objectives in a well-conducted pilot study will promote the need for these preliminary studies from which the whole research community can learn in order to promote sound and scientific results in the field of translation studies research.

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