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Socio-Economic Level and its Influence on the Acquisition of Translation Competence

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Abstract

This longitudinal study (2006-2013), which falls within the field of empirical-experimental translation studies, was conducted in the Language School of the Autonomous University of Baja California, Mexico. The search for paradigms to explain the mechanisms by which students translate, and how to evaluate students' development as they become experts, led me to select the holistic model proposed by the PACTE research group (Process of Acquisition of Translation Competence and Evaluation; PACTE, 2000, 2001, 2003, 2005, 2008, 2009, 2011), which breaks translation competence down into five sub-competences and a psychophysiological component.

My working hypothesis was that the higher parents' socio-economic level, the better their children's academic performance. The object of study was the fifth semester of the bachelor's degree in translation, and these variables were measured and analyzed with the aid of a pre-TOEFL exam and the Translog2000 software program. As part of this process, I isolated transfer sub-competence and linguistic sub-competence in L2, which were cross-tabulated with a socio-economic study that recorded monthly family income. The results showed that people with greater purchasing power have a more balanced development in their sub-competences (mainly in their transfer and linguistic sub-competence in L2) and a better holistic translation competence.

Keywords: PACTE; translation competence; linguistic sub-competence in L2; socio-economic level; transfer sub-competence; scale; evaluation; expertise

Resumen

Influencia del nivel socioeconómico en la adquisición de la Competencia Traductora

El presente estudio longitudinal (2006-2013), que se ubica dentro de los estudios de traducción empírico-experimentales, se realizó en la Facultad de Idiomas de la Universidad Autónoma de Baja California, México. La búsqueda de paradigmas para explicar los mecanismos por los cuales los estudiantes traducen, y cómo evaluar su desarrollo a medida que se convierten en expertos, me llevó a seleccionar el modelo holístico propuesto por el grupo de investigación PACTE (Proceso de Adquisición de la Competencia Traductora y Evaluación; PACTE, 2000, 2001, 2003, 2005, 2008, 2009, 2011), que divide la competencia traductora en cinco subcompetencias y un componente psicofisiológico.

La hipótesis de trabajo planteó que: a mayor nivel socioeconómico de los padres, mejor era el rendimiento académico de sus hijos. El objeto de estudio fue el quinto semestre de la licenciatura en traducción, cuyas variables se midieron y analizaron con la ayuda de un examen pre-TOEFL y el programa informático Translog2000. Como parte de este proceso, aislé los resultados arrojados por la sub-competencia de transferencia y la sub-competencia lingüística en L2, que se cruzaron con un estudio socioeconómico, el cual registró el ingreso familiar mensual. Los resultados mostraron que las personas con mayor poder adquisitivo tienen un desarrollo más equilibrado en sus subcompetencias (sobre todo, de la subcompetencia de transferencia y lingüística en L2) y una mejor competencia traductora holística.

Palabras clave: PACTE; Competencia Traductora; Subcompetencia Lingüística en L2; nivel socioeconómico; Subcompetencia de Transferencia; baremo; evaluación; pericia

1. Introduction

The motivation behind this study goes back to my time as a student in the bachelor's degree in English language translation, when I experienced two realities: one in my job as an editor and translator, and the other as an undergraduate student. As a result, my skills were acquired translating against the clock for a daily newspaper in Mexicali, a very different context from the school[1]. This stimulated my interest in remedying this cognitive dissonance in the teaching process (Cortez, 2009) through a change in methodology, with more practical strategies that were more closely aligned with the reality of the market and the profession. In 2005, I began studying process-oriented translation and, among other objectives, sought to observe subjects' outward manifestations while they were immersed in the translation process, such as decision-making and problem solving. I also recorded whether the use of the Pre-Translation Protocol (PPT, in Spanish; Cortez, 2009, 2011, 2012, 2013, 2014, 2015a, 2015b, 2017) could serve as a tool to help analyze the process and shed light on how novice students gain professional expertise on their pathway toward automating processes. As described by Muñoz Martín (2007: 270): experimental translation studies would benefit greatly from broadening the focus on process automation by considering awareness and unawareness as two poles of a continuum – in other words, by promoting metacognition so students may know themselves better and take ownership of their learning and future development.

Muñoz Martín (op. cit.) asserts that, among other variables, researchers may explore whether there are systematic trends in the progressive automation of tasks or in solving classifiable translation problems. Indeed, with valid samples, it becomes possible to set study objectives such as identifying similar learning progressions, recurring cognitive styles, correlations between types of problems and solutions, and stages in learning and developing expertise; establishing a hierarchy of translation problems in order of significance; and exploring subjects' internalization of immediate or postponed solutions as they gain expertise.

After one year trialing the Translog2000 User software program (see Appendix 2) and duly following the new study methodology, I found a viable object of study: the 5th-semester students of the bachelor's degree of translation, who were observed and subjected to measurements from 2006 to 2013. The study sample comprised 81 students from a universe of 125, and the aim of the study was to ascertain whether subjects' socio-economic status directly influences the acquisition of translation competence. In this sense, the initial hypothesis was that the more students' cultural and economic environment is conducive to their development, the greater the students' overall translation competence will be, and the easier it will be for them to gain expertise as translators. The object of study is immersed in a bicultural environment in a region bordering the USA, where a large percentage of spoken Spanish is Hispanicized English – loanwords conjugated or inflected in Spanish that quickly permeate the speech of inhabitants of the border area. This is outlined by Basich (2012: 119) as follows:

> As for the impact on the two languages in contact, the centuries-old mixing of English and Spanish on the border has facilitated the development of a border vernacular in each language, known as Spanglish and Chicano English – although neither is stable. On the Mexican side, the language has accommodated English loanwords and calques that typify the Spanish of the borderland. Families get together on the *porche* of their house, which is clean because it has been *mapeado*, and the mother carries a *pichel* with *ponche* for everyone. *Carros* without a *mofle* make a loud clatter. People say *aló* to greet each other and *ba-bay* when they leave. These terms, which abound in informal language, are less frequent in writing yet still permeate all social strata and activities.

In addition to the geographical location and the geolect, students' economic status also clearly influences many aspects of their development as future professionals. One such aspect is the degree to which they are exposed to the language to be translated, as will be seen below.

2. Education, inequality, and socio-economic level

2.1. Education and inequality

Research on the correlation between race/ethnicity and educational inequity in secondary education in the United Kingdom has been a major area of study since 1980 (Stevens 2007: 170). Inequality has been increasingly defined in terms of differences in educational outcomes, and research has focused on the role played by schools in the processes that generate these inequalities. Although the British government supports collecting and analyzing quantitative data on the relationship between education and race/ethnicity, and the relationship between education and inequality, most studies in this area use qualitative or ethnographic methods and an interpretive approach.

According to Stevens (2007: 171):

> The most dominant research traditions explain the existing differences in educational outcomes by pointing to processes of racism and discrimination in schools, which are explained by either the racist practices or attitudes of teachers and/or by the way in which the educational system is organized. It is argued that the educational system (in terms of its curriculum, selection mechanisms, and punish and reward systems) is organized such that it favors, usually implicitly, the interests of white, middle-class citizens at the exclusion of racial/ethnic minority people and the lower social classes.

These findings suggest a lack of opportunities for non-white ethnicities and races in the country, but this is not unique to that part of the world. In a review of the mistakes in educational reform in the United States, Berliner (2005: 2) remarks, "Although the power of schools and educators to influence individual students is never to be underestimated, the out-of-school factors associated with poverty play both a powerful and a limiting role in what can actually be achieved."

Wiggan (2007: 325) also wonders what is known about student performance and academic failure, and points to extensive research on the subject with responses that range from perspectives of genetic deficiency, social class and cultural poverty, teacher expectations and students' oppositional identity, which have been greatly popularized in discourse on student attainment. However, these responses are either inadequate as full explanations or have been politically or ideologically driven.

On the subject of education and inequality, Bruner (2004: 110) states that many groups and institutions have emphatically stressed that educational and socialization practices, both prior to and after the child's entry into school, reflect and reinforce the inequalities of the class system.

As for academic outcomes, when it comes to ascertaining student characteristics, Bruner (op. cit.) claims that one of the main concerns in current scientific debates is finding a rigorous definition of the concept of intellectual competence and establishing to what extent this concept is associated with the soul, the mind, the heart, or the wider community.

Bruner (2004: 111) makes reference to work by Bloom from 1964, which finds beyond any doubt that many differences in adult intellectual performance – measured using a wide variety of procedures – can be explained by factors present when children reach school age, which is at five years old. According to Eisner (2000: 3) so important is his work that "he was invited to testify to the Congress of the United States about the importance of the first four years of the child's life as the critical time to promote cognitive development. His testimony had an impact."

These findings can be carried over to the object of this study: inequality among students from pre-school level (kindergarten) through to higher education can be ob-

served in the disparity in the level of competence of students who took part in this experimental study conducted at the UABC since 2006.

This shows that the prior learning, general knowledge, and family environment – which may or may not be conducive to better academic achievement – of students entering the Language School, who are aged 21 on average, will be determining factors in the performance of students of translation, which will be brought to light when students are faced with a text and must make decisions and solve problems[2].

2.2. Socio-economic level and education

According to Andrews (1999: vii), participation in higher education by low socio-economic groups remains relatively low in Australia. In 1997, only 19% of higher education students came from the lowest quartile of the population, when ranked by socio-economic status. This relatively low participation, the author adds (1), has remained practically unchanged in the last two decades, despite a large increase in undergraduate admissions. The introduction of the Higher Education Contribution Scheme (HECS), which consists in scholarships or tuition fee payment programs, has been identified by some groups and critics as part of the explanation for the relatively low participation among these strata.

Goldrik-Rab (2010: 437), on the other hand, argues that the massive expansion of community colleges over the last century has enabled greater participation in higher education in the United States, particularly among individuals with limited educational opportunities – after leaving high school – due to academic difficulties, financial hardship, or other factors.

However, efforts to increase access have achieved little success in balancing the supply of existing places to the reduced demand from students. As a matter of fact, efforts to expand opportunities may have hampered attempts to increase completion rates.

Goldrik-Rab's study (2010: 454) concludes that much evidence on possible reforms to the community college system is still emerging and lacking, and that many studies claim to identify best practices but are only able to provide suggestions, which are incapable of directing education policies toward practices to increase student completion rates. The author proposes a much more rigorous research agenda on community colleges to inform and evaluate future action.

As far as Latin America is concerned, a study by García and Jacinto (2010: 73) maintains that the pathway to higher education involves first of all completing secondary education. This is becoming more and more difficult in certain countries, such as Bolivia and Peru, for young people from rural areas and women. Only a third to half of people over 19 years of age are able to accomplish this first stage of their studies (Table 1).

Table 1. Net total enrollment rates in tertiary (non-university) and university education in Latin America (Source: García & Jacinto 2010), based on household surveys conducted by Siteal (Information System on Trends in Education in Latin America, SITEAL). Data on household income is for the urban population. * Cells with a low number of cases[3].

Tertiary and university education in Latin America and income						
Country	Total	Sex		Family income level per capita		
		Male	Female	Low	Medium	High
Argentina	6,9	4,9	8,6	4,3	7,7	10,0
Tertiary University	26,1	24,7	27,4	12,4	28,5	44,8
Bolivia	5,3	4,5*	6,0*	4,8*	9,1*	5,9*
Tertiary University	20,2	20,1	20,3	13,7*	22,1	39,2
Chile	7,7	8,0	7,3	4,8	8,3	10,8
Tertiary University	19,7	19,0	20,4	10,4	17,2	33,9
Mexico	1,3	1,2*	1,4	1,0*	1,4*	1,5*
Tertiary	18,4	20,4	16,6	9,1	17,7	34,7
University Peru	9,3	8,3	10,3	11,4	10,3	9,3
Tertiary University	14,3	15,1	13,5	13,3	13,1	24,9

Once the obstacle of completing secondary education has been overcome, the authors add, the main conclusions regarding equity in access and graduation in higher education by sex and socio-economic level can be summed up in five propositions:

1. Between 30% and 50% of young people who are able to complete secondary level studies access higher education.
2. There is near gender equality in access to higher education in most of the countries studied.
3. The net enrollment rate by family income per capita shows that coverage is more even at the tertiary level than the university level. Indeed, whereas half of university students come from medium-high income households, at the tertiary level such students account for just 10% to 25% of the total, depending on the country.
4. Typically, tertiary-level students are the first generation to access higher education in their family, and most work while studying. Although combining work and study is also common in universities, it occurs in greater proportions among tertiary-level students.
5. Lastly, those accessing the tertiary level are more likely to graduate than those in university.

According to García and Jacinto (2010: 74), more specific surveys would be required to address other dimensions of equity at each level, such as differences in opportunities due to place of residence or ethnicity.

However, the authors stress, in virtually all countries studied it is difficult to transition from the tertiary level to university, owing to the lack of clear pathways from one subsystem to the other. At the same time, diplomas at the tertiary level rank below university degrees in the labor market, which may be one reason why they hold little appeal. García and Jacinto (2010: 74) report that this seems to be the case in Mexico and, in this context, recommend higher education public policy oriented toward strengthening equity within the various dimensions of the tertiary level, and not just promoting greater access and higher graduation rates through various kinds of incentives but also improving the quality and relevance of studies at this level. The researchers also recommend, within the framework of lifelong education systems, facilitating linkages between the tertiary and university levels, as occurs in some industrialized countries.

3. A holistic model of translation competence

With respect to the competence required of graduates upon completing their degree, Kelly (2002: 9) explains that the term *translation competence* has been used by various authors to describe the set of abilities, skills, knowledge, and even attitudes found in professional translators and involved in expert translation[4]. In other words, taken as a whole, this is what distinguishes professionals from non-professionals, experts from non-experts or what Toury (1984) termed *native translators*.

Among other models that seek to explain how translation is performed, it is worth citing Wilss (1976), Bell (1991), Neubert (2000), and Kelly (2005). However, according to Rodríguez-Inés (2013), only those proposed by Alves & Gonçalves (2007) and PACTE have been empirically validated. The Process of Acquisition of Translation Competence and Evaluation research group (PACTE, 2000, 2001, 2003, 2005, 2008, 2009, 2011) began studying translation competence in 1997 and breaks down its holistic model into five sub-competences and a psychophysiological component in an effort to explain the translation process empirically.

In 1998, PACTE developed the first version of a holistic model for translation competence (TC) and a dynamic model for acquiring translation competence (Hurtado, 2001: 375-408). The model developed by PACTE is based on existing work in other disciplines that define notions linked to the acquisition of translation competence, in addition to models proposed to define translation competence and the acquisition of translation competence, including empirical research on written translation (PACTE 2003: 44).

For this competence model, the group researched notions such as "competence", "expert knowledge", and "learning processes" in other disciplines like pedagogy, psychology, and language teaching (PACTE 2003: 45). Furthermore, since the group

considers translation an act of communication, they drew on studies on communicative competence, establishing the following theoretical assumptions:

> TC is the underlying system of knowledge, abilities, and skills needed to translate.
> TC is qualitatively different from bilingual competence.
> TC, like all expert knowledge, has declarative and operative components, although it is basically operative knowledge (PACTE 2001: 39)

Studies conducted believe translation competence is composed of a set of interrelated sub-competences, which include all those needed to use language (PACTE 2003: 48). Within this set, special emphasis was placed on the bilingual sub-competence, which is considered by PACTE to be predominantly *procedural knowledge* and necessary to communicate in two languages. In addition to proficiency in the language to be translated (English), the knowledge about translation sub-competence was also measured[5]. This was evaluated using a scale from 0 to 100 points (see *Materials and Methods*).

Although the instrumental sub-competence also came into play, as students translated using a software program as is Translog2000, this variable was not taken into account for this study. In fact, PACTE asserts that this sub-competence involves, first and foremost, procedural knowledge associated with using sources of documentation and information and communication technologies applied to translation (PACTE 2003: 48).

Moreover, the PACTE group places emphasis on the strategic sub-competence, which includes all individual procedures – both conscious and unconscious, verbal and non-verbal – used to solve problems during the translation process. This sub-competence plays a key role in comparison to all others, because it is used to detect problems, make decisions, and compensate for shortcomings or weaknesses in the other sub-competences (PACTE 2003:: 49).

The subjective aspect of the model is provided by psychophysiological components that constitute different types of cognitive and attitudinal components and psychomotor mechanisms that include memory, perception, attention, and emotions, as well as intellectual curiosity, rigor, critical thinking, and logical reasoning, among others (PACTE 2003: 58).

In their 2005 revision (617-618), the PACTE group discussed the trends found in their last study and revised the competences and sub-competences that make up their TC model, in which they hypothesized that the degree of expertise influences the translation process and product.

In 2009, the group published the results of another experiment in which they analyzed the work of 35 professional translators and 24 language teachers and delved deeper into the nature of translation competence. The findings support the conclusion that translation competence functions differently depending on whether the translator is working into or from a foreign language.

In 2011 PACTE presented the results of another study on what they call the concept of *dynamic translation* by expert translators, and their dynamic approach to translating specific texts stating: "We understand a 'dynamic' concept and approach to translation to be textual, communicative, and functional as opposed to a 'static' concept and approach which may be defined as linguistic and literal" (PACTE 2011: 26-27).

In this study, the group presented the results obtained for the variable "translation project" and triangulated these with results for the variable "knowledge about translation". The result of the so-called Dynamic Translation Index was then triangulated with the "acceptability" indicator to determine the relationship between the two. Their conclusion was that a dynamic approach to translation is one characteristic of translation competence and determines translation acceptability. This is one of the most important characteristics displayed by experts in translation.

In sum, PACTE's theorization formed the basis for the design of this study, which is described in the following section.

4. Materials and methods

4.1. Population of the study

Students of the Mexicali campus of the Language School of the Autonomous University of Baja California were the focus of this study. During the observation period, care was taken to consistently apply the same Pre-Translation Protocol (PPT, see Figure 1) in the groups observed, without changing the measurement instruments. Therefore, only samples that fulfilled all the requirements were taken into account for this study. All fifth-semester groups over the years studied (i.e. the study universe) were considered in extracting the sample.

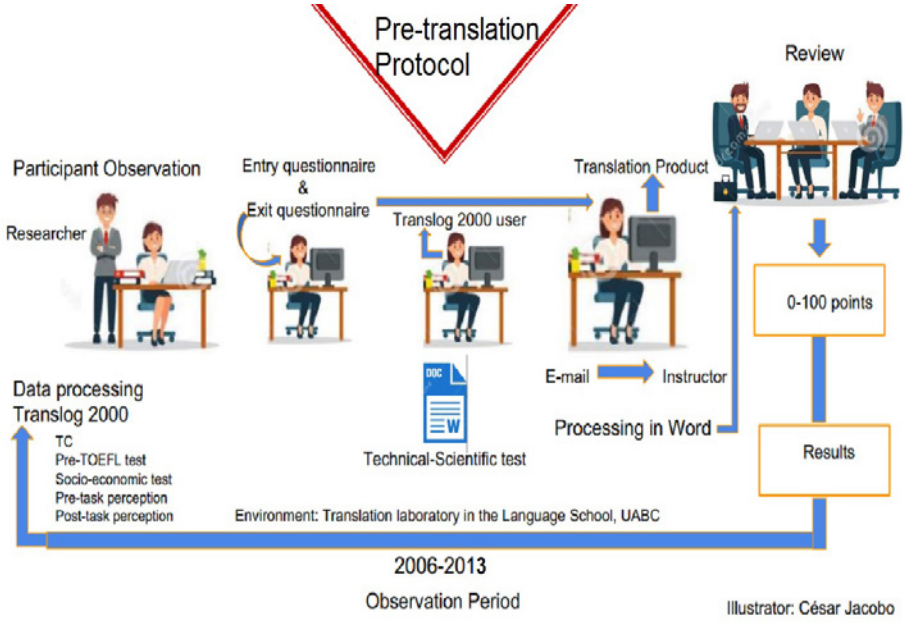
Interestingly enough, the methodology was designed intuitively, following training by teachers at the School of Translation and Interpretation of the University of Granada, and by scouring the scant literature on the subject in the region in 2005. Nonetheless, the study measurement used – bar exceptions – is similar to the C method outlined by Waddington (2001: 315).

The Pre-Translation Protocol was designed and used with the aim of establishing a local model for capturing the process by which some sub-competences in TC are acquired, and is part of a search for new methodologies for teaching translation and practical scaffolds that help improve teaching[6]. As part of the triangulated process-product analysis (participant observation, entry and exit questionnaire, text capture in Translog2000 User, pre-TOEFL exam, and transfer sub-competence weighting), a possible correlation was sought between the quality of translation and the range of transfer sub-competence reflected in products graded by members of faculty.

With respect to sample selection, and in order to achieve a margin of error of 7% with a 95% confidence level, the study universe comprised 125 subjects with a level of heterogeneity of 50%; the sample size recommended by the Netquest website was

77[7]. The sample was made up of 81 students, meaning the results may be generalized, at least within this environment, Mexicali.

Figure 1. Diagram of the Pre-Translation Protocol used in the Mexicali campus of the Language School of the UABC, in which students (A) were observed when translating. (Source: Cortez 2009: 287).



The research cycle was completed in 2013 so the use of the Pre-Translation Protocol (Cortez 2009; see Figure 1) as a method and scaffold. It should be noted that the model has only been applied to students in the fourth to eighth semesters of the bachelor's degree, although within these period comparisons were also made between different sub-competences (Cortez 2013; Cortez, Basich and Figueroa 2015b)[8].

Table 2 lists the groups selected for the study:

Table 2. Groups for which the sub-competences in translation competence were measured in the Mexicali campus of the Language School. (Source: Cortez 2014).

5th-semester groups analyzed from 2006 to 2013							
Group	Semester	No. students	Graduating class from the BA in English language translation	Group	Semester	No. students	Graduating class from the BA in Translation
1	2006-1	6	15th	5	2008-2	16	1st
2	2006-2	16	16th	6	2009-2	22	3rd
3	2007-1	7	17th	7	2011-2	13	7th
4	2007-2	10	18th	8	2012-2	16	9th
				9	2013-2	19	11th

4.2. Matrices

With the aid of three of the matrices captured during observations in these years (Appendix 1: Socio-economic study matrix [ESOC], Appendix 4: Contrast matrix for variables 11, 12, and 13 vs. 21 and 22; and Appendices 5 and 5 bis: Questionnaires I and II), variables that may help to confirm the hypothesis were isolated and cross-tabulated. It should be pointed out that variables 11 (parents' monthly income), 12 (mother's level of education), and 13 (father's level of education) kept the number they were assigned in the ESOC survey, and variables 21 (transfer sub-competence) and 22 (linguistic sub-competence in L2: pre-TOEFL) were numbered by order of capture in the spreadsheet. The psychophysiological component recorded in questionnaires I and II, which addresses subjects' perception of *self-efficacy* and *stress*, is not part of this study.

Therefore, data were gathered from:

The socio-economic study matrix from 2006 to 2013 (Appendix 1, ESOC).

Questionnaires I and II (Perception of the task at hand, after reading the text; and subjects' opinion after performing the task; see Appendices 5 and 5 bis; Appendix 5).

The TC matrix (Table 3), in which variables were measured individually.

Then, LSL2 and TRSC were extracted in order to contrast these variables in the contrast matrix (Appendix 4, which shows the details of the isolated variables so as to contrast them):

Linguistic sub-competence in L2.

Linguistic sub-competence in Spanish (Table 3).

Contrastive sub-competence in English.

Contrastive sub-competence in Spanish.

Transfer sub-competence.

Psychophysiological sub-competence (Appendix 3).

Variables 21 (transfer sub-competence: TRSC) and 22 (linguistic sub-competence in L2: LSL2; in this case, the pre-TOEFL exam) were extracted from the TC matrix, and contrasted with subjects' income (ESOC) to help verify the hypothesis. It should be stressed that the TRSC measurement was triangulated: the process was recorded on an observation card and pre- and post-task questionnaires. Furthermore, the translations were reviewed by two members of faculty in the Language School with over eight years' experience teaching translation courses, and two students from the final (seventh and eighth) semesters of the degree program.

Although there is no statistical study on the correlation in scores between the teachers who participated in evaluating the translations, it can be said that the same teachers took part in the measurements over the eight years. Moreover, the same text, method, and environment (translation laboratory) were used. On the other hand, there was variation in the seventh and eighth-semester service providers who assisted in the evaluation, but they were required to have a general average grade of at least 85/100 to participate in the study[9].

4.3. Software programs

The programs used to triangulate and measure the transfer sub-competence include Translog2000 version 1.0 Beta (4), a program developed by Arnt Lykke Jakobsen and Lasse Schou. This software program for Windows (De Rooze 2008: 18) was created as an alternative to collecting data using think-aloud protocols, and makes it possible to record and study all keylogging on a computer keyboard within the software environment.

Jakobsen (2003: 69) stresses that "Real-time keystroke logging offers an additional and complementary method of investigating the process based on the keyboard behavior of a translator (Jakobsen 1998, 1999; Jakobsen & Schou 1999)."

Translog2000 logs information about the exact time at which each keystroke operation is made, and makes it possible to replay the typing process on the computer screen. It is also possible to create a graphic representation (.log file) of an entire typing event, which includes calculating pauses of any length during the typing process (see Appendix 6). De Rooze (2008: 18) says that Translog:

> … logs the mean interval between the production of words and textual segments and the minimum and maximum production speed in paragraphs, sentences and words … the process logged through typing – pauses, omissions, revisions – reflects decision-making processes (the search for alternatives) and strategies such as omissions and paraphrasing in response to translation problems.

In order to analyze changes in variables over these years and ensure the replicability of the experiment, the same techniques and protocols were used and the same object of study was analyzed with the same tools, such as Translog2000 User[10]. Thus, data were recorded by the computer and software programs, preventing any subjective bias that may be introduced by mere human observation.

Other tools used were the Statistical Package for the Social Sciences program, Microsoft Excel to capture variables in the matrices, and Microsoft Word for the final graphic presentation.

4.4. Text

The document used for translating from English to Spanish was a 412-word text on myopia (an informative-scientific text taken from the Internet) converted to a .tpl extension so that students could translate it within the Translog2000 User program. The program produces a text log, with a .log extension, which can be analyzed by researchers in Translog2000 and then converted to .rtf format for subsequent review and grading.

The scale used by the proofreaders/reviewers ran from 0 to 100 and records whether the student is able to translate (i.e. his/her transfer sub-competence). The same scale

was used to measure student attainment in the pre-TOEFL text, and is regulated by Article 65 of the by-laws of the UABC[11].

Only the semantic level was taken as a parameter in establishing the level of quality in translations; in other words, grades only considered the informational content of the translation and whether the message was correctly transferred to the target language. Average TRSC grades were obtained for each student evaluated by dividing the sum of the four grades. Translations were converted to Microsoft Word and a printed, legible copy was submitted to the four proofreaders/reviewers with a code identifying each student (to prevent any kind of bias on the part of teachers who may know the student).

The result of the translation is a "draft" produced in 120 minutes, minus the 10 minutes (on average) students took to fill out the questionnaires, and the 2 minutes taken to read the text. What is actually measured, therefore, is students' ability to transfer meaning in one specific task. However, this provides a standard to determine the subject's general level of competence. In brief, do fifth-semester students possess the sub-competence to transfer meaning from Language A to Language B? If so, the reviewer assigns a grade based on the work submitted.

It should be made clear that, given the lack of related studies at my disposal in 2005, I established my own scale to record the consistency or discrepancy between transfer sub-competence and Linguistic sub-competence in L2. At the time, it was decided that the discrepancy between the two should not exceed 15 percentage points, or the variables would be deemed to exhibit polarization. In the scale a subject achieving 100/100 obtained *excellent* in the variable measured, 90-99/100 was a *very good* grade, 80-89/100 was *good*, 70-79/100 was considered *fair*, 60-69/100 *satisfactory* or *poor*, and a grade of 59/100 or less meant *inadequate/a fail*. For instance, if a subject exhibited a TRSC of 90/100 and a pre-TOEFL of 60/100 points, this indicated polarization between the two. Consequently, this subject should receive support to improve sub-competences that were trailing behind.

4.5. The socio-economic study

The ESOC was designed based on a study by the Mexican Association of Marketing and Public Opinion Research Agencies (AMAI) (2006), and three strata were established from the existing six[12]. Subjects were classified by monthly family income and possible covariance was analyzed in three categories[13]: a) Greater than 20,000 MXN (Mexican pesos), or Stratum 1 (S1); b) Income between 10,000 and 20,000 MXN (equivalent to US$1,509), or Stratum 2 (S2); c) Monthly parental income up to 10,000 MXN (equivalent to US$754, based on an exchange rate of 13.25 MXN per dollar), or Stratum 3 (S3)[14]. The reason for condensing the strata into just three socio-economic levels was to facilitate data collection as this topic is sensitive and the information can be difficult to obtain.

4.6. Measurement of Translation Competence

The (original) TC matrix gives measurements of contrastive sub-competence in L1 and L2 (these are not explicit in the PACTE model); besides, students' command of their mother tongue, determined using a general knowledge test consisting of 100 items; and variables 21 (TRSC) and 22 (LSL2).

Table 3. Translation competence matrix. Example of sub-competences measured in fifth-semester students in the 2009-2 semester. (Source: Cortez 2014). Code: M: man/W: woman.

Matrix of sub-competences in translation competence					
Subjects 2009-2 class	*Contrastive sub-competence in English*	*Contrastive sub-competence in Spanish*	*Sub-competence in Spanish* (L1)	*Transfer sub-competence Variable 21*	*Sub-competence in L2/ Pre-TOEFL Variable 22*
Student 1(W)	28 correct answers	28 correct answers	76 correct answers	80 correct answers	62 correct answers
Student 2 (W)	70	93	83	80	53
Student 3 (W)	80	66	79	70	59
Student 4 (W)	100	100	79	99	90
Student 5 (W)	59	67	70	80	69
Student 6 (W)	25	73	70	70	90
Student 7 (W)	55	45	57	30	60
Student 8 (W)	47	57	81	70	61
Student 9 (M)	32	47	70	70	73
Student 10 (W)	75	77	77	80	82
Student 11 (W)	45	65	65	65	47
Student 12 (W)	58	57	74	30	66
Student 13 (W)	100	100	82	99	60

For the socio-economic contrast, variables 11 (monthly family income), 12 (mother's level of education), and 13 (father's level of education) were extracted and causal relationships were identified with variables 21 and 22 (see Table 3).

5. Results and discussion

All six variables measured, which are part of PACTE's translation competence model and which I consider important, come into play in every translation project. These competences have been incorporated in the 2006-2 curriculum of the bachelor's degree in translation in the UABC.

As part of the study, the products were analyzed in depth, revealing covariance between punctual terminology management (quality control in searching for terms) and scores in subjects' transfer sub-competence (Cortez 2015a: 43)[15]. A visual review of translations captured within the Translog2000 User program made it possible to record the pauses listed in Table 4 (below). With respect to making a record of pauses as references in the analysis of translation problems, Butterworth (1980: 165, in De Rooze 2008: 11) found that cycles of pauses and segments of language production tended to last between 18 and 30 seconds. In one study, Jakobsen (in De Rooze, op. cit.) applied an ad hoc definition in segmenting translations used in his experiment, in which a segment is set apart by two pauses of five seconds or more.

Table 4. Translation problems in the 2009-2 semester of the bachelor's degree in translation. (Source: Cortez 2014).

Translation problems by time spent in minutes in the 2009-2 semester					
Phrase/term		Maximum time min./s.	Phrase/term		Maximum time min./s.
1	Short-sightedness (Title)	8´57,11´´	15	High degree myopia	2´01,41´´
2	Blurred	7´34,55´´	16	Full-time education	1´39,27´´
3	Can still be seen	4´42,94´´	17	Eye chart´´	1´39,01´´
4	Mild degree, medium degree or high degree	3´68,95´´	18	Close work	1´36,57´´
5	Medium degree	3´38,60´´	19	Around puberty	1´26,45´´
6	Resulting from the eye	3´12,57´´	20	Whilst	1´26,42´´
7	Steeply curved	2´56,94´´	21	Increased curvature	1´21,98´´
8	Mild degree	2´55,36´´	22	Optometrist	1´18,80´´
9	Mismatch	2´47,79´´	23	Lens	1´12,17´´
10	Allows light in	2´43,01´´	24	Headache and tired eyes	1´11,37´´
11	Later life	2´28,98´´	25	Book in	1´09,82´´
12	Length of the eye	2´14,95´´	26	Britain	1´04,23´´
13	Will stop getting	2´09,93´´	27	To run in	1´04,10´´
14	Focusing power	2´07,41´´			

The analysis in this study shows the translation problems that caused the longest pauses, whether to give an immediate solution, a non-immediate solution, or postponed solution, as listed by the PACTE group (2003: 89). In order to clearly visualize the relationship between pause and translation problem, a chart was produced showing the distribution of the amount of time spent researching the meaning of each term or phrase – in other words, performing a punctual terminology management.

The criterion used to present data was the number of subjects who had the same translation problem (from highest to lowest). Table 4 shows the list of translation problems, ordered by the maximum time spent solving them. This methodology was used to delve deeper into subjects' punctual terminology management over the semesters studied, and one recurring finding is that novice students spend a long time attempting to translate the title of a text even before gaining a solid understanding of the subject of the translation (e.g., 8 minutes, 57 seconds, 11 centiseconds in the 2009-2 semester, and 7 minutes, 28 seconds, 63 centiseconds in the 2008-1 semester). The mentioned is a loss of valuable time that could be used to read up on the topic or look up key words, and for teachers, it raises the issue of designing new strategies to maximize classroom teaching time and encourage students to optimize the time they spend on the translation process.

5.1. Socio-economic level and TRSC

To demonstrate the correlation between socio-economic level and subjects' TRSC and LSL2, I drew upon the matrices designed, in which it was found that only four subjects from S1 and S2 obtained less than 80/100 in TRSC (i.e. a fair to poor TRSC), which I consider very significant, as they make up just 5.06% of the sample. On the other hand, in S1 and S2 put together, in LSL2, just 11.53% of subjects scored 70-79/100, and 7.69% of the total sample were in the 60-69/100 range. In S3, on the other hand, 16.84% of subjects were in the 70-79/100 range for the LSL2 variable, with 12.82% scoring 60-69/100, which surpasses S1 and S2 in this grade range. This means that S3 – the sector with the least financial resources – has 29% more students with a fair to poor LSL2 compared to S1 and S2. It is also noteworthy that 26 of the 41 subjects from S3 (equivalent to 32.91% of the sample) scored between 80 and 93/100 in TRSC. This is very positive and suggests a powerful intrinsic motivation to climb the social ladder or achieve self-realization. However, 14.81% of the sample that belongs to S3 exhibit a TRSC from fair (70/100) to poor (60/100). The general analysis performed has established that:

(1) S1 and S2 (which make up 46.83% of the overall sample) are the only strata to have the highest TRSC scores: 100/100.

(2) The top six TRSC grades are found in S1 and S2. In fact, of the top 14 TRSC scores (Table 5, below), only three subjects are from S3, with scores from 93 to 95/100.

(3) S1 and S2, which have greater economic solvency, are a majority in the top score tables, and nobody from these strata scored below 60/100 in the variables measured.

(4) All S1 and S2 subjects in the sample achieved a passing grade in TRSC and LSL2.

(5) In S3, which makes up 53.84% of the total sample, there were no excellent grades (100/100) in TRSC.

(6) The highest grades in LSL2 were obtained in S2.

As for the phenomenon of *discrepancy* between TRSC and LSL2 across the sample, it can be stated that:

(1) From the overall sample, only 3.70% (from S1) plus 7.40% (from S2) display a discrepancy of more than 15/100 between the two variables. By contrast, S3 exhibits a discrepancy rate of 20.98%. This means that together S1 and S2 account for 11.1% of discrepancies in the total sample, compared to 20.98% in S3 alone – although it must be remembered that S3 represents 53.84% of the sample. Most importantly, though, all subjects from S1 and S2 achieved a passing grade in both variables.

(2) S3 includes the only eight subjects not to achieve a passing grade in LSL2. This is significant as this was not observed in S1 or S2.

Without a doubt, the results support the hypothesis proposed at the beginning of the study. However, there is a phenomenon whereby subjects who have not passed the pre-TOEFL test yet exhibit a *good* or *very good* TRSC; this is only observed in S3 and accounts for 10.25% of the total sample. This is very significant as this is not present in S1 or S2. This is an indication that in the Language School in Mexicali, students with a monthly family income over 10,000 MXN (S1 and S2) fall within an acceptable range of translation competence for intermediate-level students.

One sub-hypothesis confirmed by the data from the matrices captured (Cortez, 2017), as a collateral result of the study, was that the level of education of both parents has a positive impact on students of the bachelor's degree in translation as extrinsic motivation to match or improve on their parents' status. In particular, the variable "university education" is present in at least one of the parents of students with the highest scores in the transfer sub-competence and linguistic sub-competence in L2.

Another finding of the study is that in our sample I found that 82.4% were women and 17.6% men, which means that for every man who graduates from the degree, there will be three women who will be dedicated to translation and interpretation.

Table 5. Extract from the top 14 TRSC and LSL2 scores in the sample.
Key: * University merit/** S3. (Source: Cortez 2014). Code: M: man/W: woman.

History of TRSC and LSL2 in 5th semester (2006-2013)					
Subjects	Variable 11	Variable 12	Variable 13	Variable 21	Variable 22
Semesters	Parents' monthly income in Mexican pesos	Mother's level of education	Father's level of education	Transfer sub-competence	Linguistic sub-competence in L2
Student 1 (W) 2006-1/ 2006-2/ 2007-1/ 2007-2	Over 20,000	*University*	Master's degree	100	82
Student 2 (W) 2006-1/ 2006-2/ 2007-1/ 2007-2	Over 20,000	*University*	*University*	100	76
Student 3 (W) 2006-1/ 2006-2/ 2007-1/ 2007-2	20,000	*University*	*University*	100	71
Student 4 (W) 2009-2 *	20,000	*University*	Master's degree	99	90
Student 5 (W) 2009-2	20,000	High school	*University*	99	60
Student 6 (W) 2006-1/ 2006-2/ 2007-1/ 2007-2	20,000	High school	*University*	95	83
Student 7 (M) 2008-2	10,000 ** (S3)	High school	*University*	95	64
Student 8 (W) 2013-2	10,000 ** (S3)	Junior high school	*University*	93.33	62
Student 9 (W) 2011-2	20,000	*University*	Doctorate degree	93	78
Student 10 (M) 2011-2	Over 20,000	*University*	High school	93	86
Student 11 (W) 2013-2	10,000 ** (E3)	Junior high school	High school	93	72
Student 12 (W) 2008-2	20,000	*University*	Master's degree	90	75
Student 13 (W) 2012-2	20,000	*University*	*University*	89.75	82
Student 14 (W) 2012-2	20,000	High school	*University*	86.25	73

6. Conclusions

After reviewing and interpreting the data, it can be concluded that students' economic status can facilitate or limit their contact with the language to be translated, and consequently, affect their command of the language. This is reflected in the products (translations) used to measure their ability to transfer a message from a source language to a target language.

In view of this, it was confirmed that the higher the parents' socio-economic status is, the better their children's academic performance will be. This is reflected in a greater transfer sub-competence and greater linguistic sub-competence in the second language (both of which are part of translation competence).

To sum up, this study's contribution to empirical translation studies is the identification of a correlation between fifth-semester students' monthly family income and the development of transfer sub-competence and linguistic sub-competence in L2. In other words, parents' purchasing power can serve as a driving force enabling students to acquire a higher level of general knowledge and education, and ultimately, better holistic translation competence as they become experts in the field.

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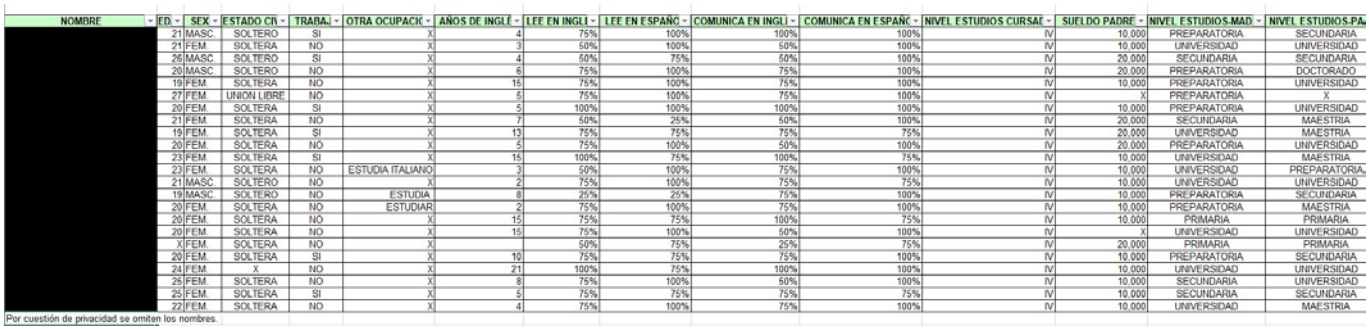
Appendix 1. Sample of the Socio-Economic Study Matrix (ESOC)

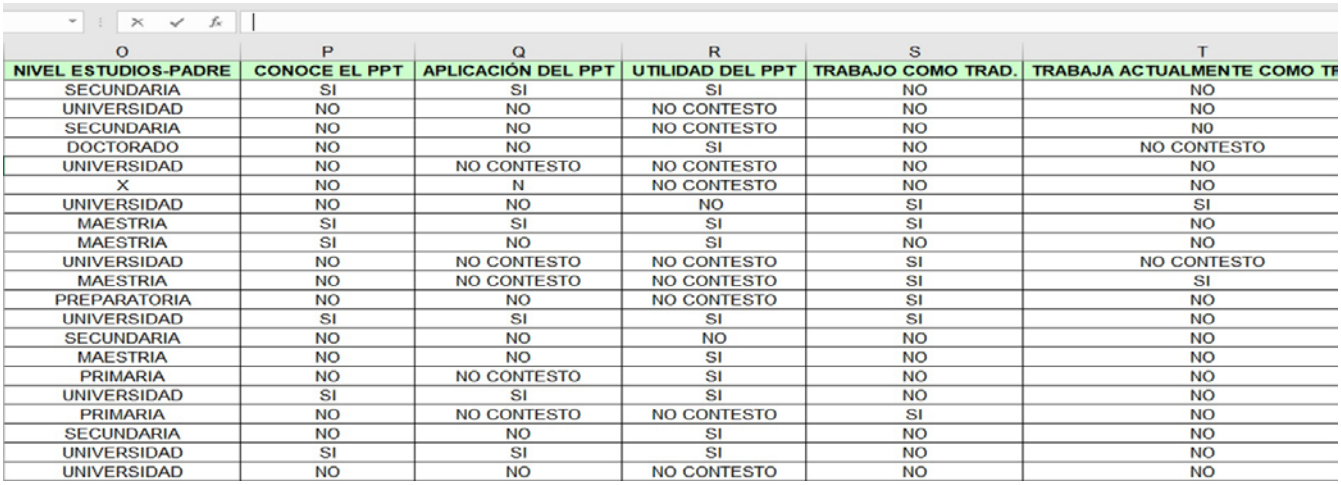


NOMBRE	ED.	SEX	ESTADO CI	TRABAJ	OTRA OCUPACIÓ	AÑOS DE INGLÉ	LEE EN INGLI	LEE EN ESPAÑ	COMUNICA EN INGLI	COMUNICA EN ESPAÑ	NIVEL ESTUDIOS CURSAI	SUELDO PADRE	NIVEL ESTUDIOS-MAD	NIVEL ESTUDIOS-PA
[redacted]	21	MASC.	SOLTERO	SI	X	4	75%	100%	100%	100%	IV	10,000	PREPARATORIA	SECUNDARIA
	21	FEM.	SOLTERA	NO	X	3	50%	100%	50%	100%	IV	10,000	UNIVERSIDAD	UNIVERSIDAD
	26	MASC.	SOLTERO	SI	X	4	50%	75%	50%	100%	IV	20,000	SECUNDARIA	SECUNDARIA
	20	MASC.	SOLTERO	NO	X	6	75%	100%	75%	100%	IV	20,000	PREPARATORIA	DOCTORADO
	19	FEM.	SOLTERA	NO	X	15	75%	100%	75%	100%	IV	10,000	PREPARATORIA	UNIVERSIDAD
	27	FEM.	UNION LIBRE	NO	X	5	75%	100%	75%	100%	IV	X	PREPARATORIA	X
	20	FEM.	SOLTERA	SI	X	5	100%	100%	100%	100%	IV	10,000	PREPARATORIA	UNIVERSIDAD
	21	FEM.	SOLTERA	NO	X	7	50%	25%	50%	100%	IV	20,000	SECUNDARIA	MAESTRIA
	19	FEM.	SOLTERA	SI	X	13	75%	75%	75%	75%	IV	20,000	UNIVERSIDAD	MAESTRIA
	20	FEM.	SOLTERA	NO	X	5	75%	100%	50%	100%	IV	20,000	PREPARATORIA	UNIVERSIDAD
	23	FEM.	SOLTERA	SI	X	15	100%	75%	100%	75%	IV	10,000	UNIVERSIDAD	MAESTRIA
	23	FEM.	SOLTERA	NO	ESTUDIA ITALIANO	3	50%	100%	75%	100%	IV	10,000	UNIVERSIDAD	PREPARATORIA
	21	MASC.	SOLTERO	NO	X	2	75%	100%	75%	75%	IV	10,000	UNIVERSIDAD	UNIVERSIDAD
	19	MASC.	SOLTERO	NO	ESTUDIA	8	25%	25%	75%	100%	IV	10,000	PREPARATORIA	SECUNDARIA
	20	FEM.	SOLTERA	NO	ESTUDIAR	2	75%	100%	75%	100%	IV	10,000	PREPARATORIA	MAESTRIA
	20	FEM.	SOLTERA	NO	X	15	75%	75%	100%	75%	IV	10,000	PRIMARIA	PRIMARIA
	20	FEM.	SOLTERA	NO	X	15	75%	100%	50%	100%	IV	X	UNIVERSIDAD	UNIVERSIDAD
	X	FEM.	SOLTERA	NO	X		50%	75%	25%	75%	IV	20,000	PRIMARIA	PRIMARIA
	20	FEM.	SOLTERA	SI	X	10	75%	75%	75%	100%	IV	10,000	PREPARATORIA	SECUNDARIA
	24	FEM.	X	NO	X	21	100%	75%	100%	100%	IV	10,000	UNIVERSIDAD	UNIVERSIDAD
	25	FEM.	SOLTERA	NO	X	8	75%	100%	50%	100%	IV	10,000	SECUNDARIA	UNIVERSIDAD
	25	FEM.	SOLTERA	SI	X	5	75%	75%	75%	75%	IV	10,000	SECUNDARIA	SECUNDARIA
	22	FEM.	SOLTERA	NO	X	4	75%	100%	75%	100%	IV	10,000	UNIVERSIDAD	MAESTRIA

Por cuestión de privacidad se omiten los nombres.

For privacy reasons, subjects' names have been omitted. Socio-economic study of students of the bachelor's degree in translation in the 2009-2 semester.

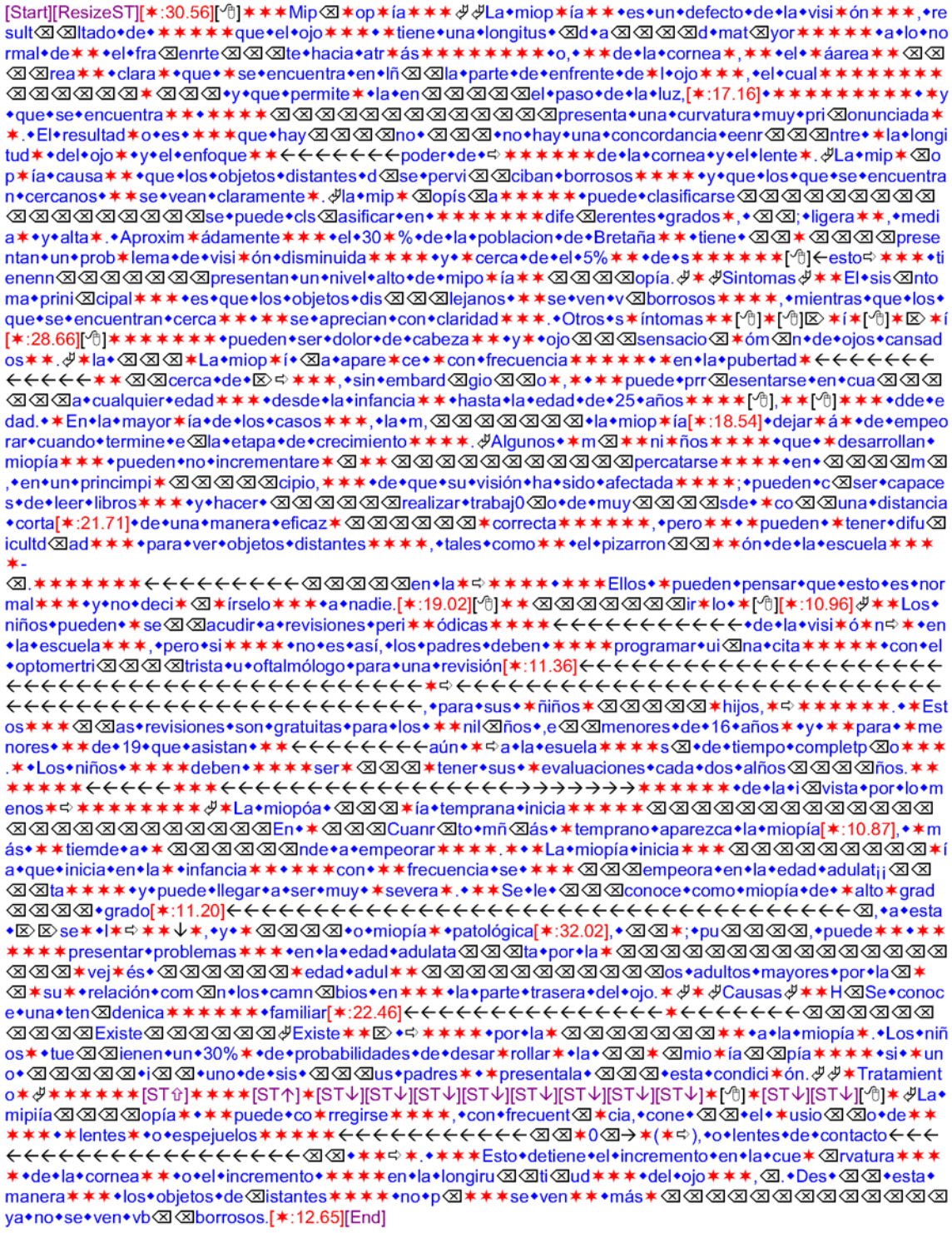
Name	Age	Sex	Marital status	Works?	Other occupation	Years studying English	Reading level in English	Reading level in Spanish	Commu-nication level in English	Communication level in Spanish	Level of studies completed	Parents' income	Mother's level of education	Father's level of education
	21	F	Single	No	X	3	50%	100%	50%	100%	4th	10,000	University	University
	25	F	Single	No	X	8	75%	100%	50%	100%	4th	10,000	Junior high	University
	22	F	Single	No	X	4	75%	100%	75%	100%	4th	10,000	University	Master's
	19	F	Single	Yes	X	13	75%	75%	75%	75%	4th	20,000	University	Master's
	20	F	Single	No	X	15	75%	75%	100%	75%	4th	10,000	Elementary	Elementary
	24	F	X	No	X	21	100%	75%	100%	100%	4th	10,000	University	University
	19	F	Single	No	X	15	75%	100%	75%	100%	4th	10,000	High school	University
	21	M	Single	No	X	2	75%	100%	75%	75%	4th	10,000	University	University
	20	F	Single	No	Studying	2	75%	100%	75%	100%	4th	10,000	High school	Master's
	20	F	Single	Yes	X	5	100%	100%	100%	100%	4th	10,000	High school	University
	23	F	Single	No	Studying Italian	3	50%	100%	75%	100%	4th	10,000	University	High school
	20	F	Single	No	X	15	75%	100%	50%	100%	4th	X	University	University
	20	F	Single	No	X	5	75%	100%	50%	100%	4th	20,000	High school	University



O	P	Q	R	S	T
NIVEL ESTUDIOS-PADRE	CONOCE EL PPT	APLICACIÓN DEL PPT	UTILIDAD DEL PPT	TRABAJO COMO TRAD.	TRABAJA ACTUALMENTE COMO TR
SECUNDARIA	SI	SI	SI	NO	NO
UNIVERSIDAD	NO	NO	NO CONTESTO	NO	NO
SECUNDARIA	NO	NO	NO CONTESTO	NO	N0
DOCTORADO	NO	NO	SI	NO	NO CONTESTO
UNIVERSIDAD	NO	NO CONTESTO	NO CONTESTO	NO	NO
X	NO	N	NO CONTESTO	NO	NO
UNIVERSIDAD	NO	NO	NO	SI	SI
MAESTRIA	SI	SI	SI	SI	NO
MAESTRIA	SI	NO	SI	NO	NO
UNIVERSIDAD	NO	NO CONTESTO	NO CONTESTO	SI	NO CONTESTO
MAESTRIA	NO	NO CONTESTO	NO CONTESTO	SI	SI
PREPARATORIA	NO	NO	NO CONTESTO	SI	NO
UNIVERSIDAD	SI	SI	SI	SI	NO
SECUNDARIA	NO	NO	NO	NO	NO
MAESTRIA	NO	NO	SI	NO	NO
PRIMARIA	NO	NO CONTESTO	SI	NO	NO
UNIVERSIDAD	SI	SI	SI	NO	NO
PRIMARIA	NO	NO CONTESTO	NO CONTESTO	SI	NO
SECUNDARIA	NO	NO	SI	NO	NO
UNIVERSIDAD	SI	SI	SI	NO	NO
UNIVERSIDAD	NO	NO	NO CONTESTO	NO	NO

Father's level of education	Knows the PPT?	Applied the PPT?	Found PPT useful?	Has worked as a translator?	Currently works as a translator?
Junior high	Yes	Yes	Yes	No	No
University	No	No	Did not answer	No	No
Junior high	No	No	Did not answer	No	No
Doctorate degree	No	No	Yes	No	Did not answer
University	No	Did not answer	Did not answer	No	No
X	No	No	Did not answer	No	No
University	No	No	No	Yes	Yes
Master's	Yes	Yes	Yes	Yes	No
Master's	Yes	No	Yes	No	No
University	No	Did not answer	Did not answer	Yes	Did not answer
Master's	No	Did not answer	Did not answer	Yes	Yes
High school	No	No	Did not answer	Yes	No
University	Yes	Yes	Yes	Yes	No
Junior high	No	No	No	No	No
Master's	No	No	Yes	No	No
Elementary	No	Did not answer	Yes	No	No
University	Yes	Yes	Yes	No	No
Elementary	No	Did not answer	Did not answer	Yes	No
Junior high	No	No	Yes	No	No
University	Yes	Yes	Yes	No	No
University	No	No	Did not answer	No	No

Appendix 2. Translation Sample in Translog2000 User



Appendix 3. Sample of Questionnaire II: Subjects' Psychophysiological Perception

J	K	L	M	N	O
PROBLEMAS	TERMINOS DE DIFICULTAD	TIPO DE DICCIONARIOS	TECNICA DE TRAD	CUAL ?	COMODIDAD AL TRAD
NO	LENGTH OF THE EYE	WORDREFERENCE	SI	ADAPTACI,AMPLIACION	SI
SI	SIGHTEDNESS	OTROS	NO SE	EQUI,ADAPT,OMISION	SI
SI	NO RECUERDA	WORDREFERENCE	NOSE	EQUIVALENCIA	SI
SI	CON	OTROS	SI	ADAPTACI,EQUIVALENCI	NO
SI	DEGREE	WORDREFERENCE	SI	EQUIVALENCIA	SI
SI	CIENTIFICA	WORDREFERENCE	NO SE	EQUIVALENCIA	SI
SI	CLOSE WORK	WORDREFERENCE	SI	MODU,OMI,ADAP,AMPL	SI
X	X	X	X	X	X
NO	X	MERRIAM-WEBSTER	X	X	SI
SI	EYE CHART	WORDREFERENCE	NO SE	X	SI
SI	CHART	WORDREFERENCE	SI	ADAPTACION	NO
NO	EYE CHART	MERRIAM-WEBSTER	SI	ADAPTACION	SI
SI	MILD	WORDREFERENCE	NO	X	SI
NO	X	WORDREFERENCE	NO SE	X	SI
NO	STEEPLY	WORDREFERENCE	SI	TRANS,MODUL,ADAP,AM	SI
SI	EYE CHART	MERRIAM-WEBSTER	NO	X	SI

Problems	Difficult terms	Type of dictionary	Use translation techniques?	Which?	Felt comfortable translating?
No	Length of the eye	Wordreference	Yes	Adaptation, expansion	Yes
Yes	Sightedness	Other	Don't know	Equivalence, adaptation, omission	Yes
Yes	Cannot remember	Wordreference	Don't know	Equivalence	Yes
Yes	Con	Other	Yes	Adaptation, equivalence	No
Yes	Degree	Wordreference	Yes	Equivalence	Yes
Yes	Científica (Scientific)	Wordreference	Don't know	Equivalence	Yes
Yes	Close work	Wordreference	Yes	Modulation, omission, adaptation, expansion	Yes
X	X	X	X	X	X
No	X	Merriam-Webster	X	X	Yes
Yes	Eye chart	Wordreference	Don't know	X	Yes
Yes	Chart	Wordreference	Yes	Adaptation	No
No	Eye chart	Merriam-Webster	Yes	Adaptation	Yes
Yes	Mild	Wordreference	No	X	Yes
No	X	Wordreference	Don't know	X	Yes
No	Steeply	Wordreference	Yes	Transposition, modulation, adaptation, expansion	Yes
Yes	Eye chart	Merriam-Webster	No	X	Yes

Appendix 4. Contrast matrix for variables 11, 12, and 13 vs. 21 and 22 Samples from 2009-2 and 2013-2 semesters

SEMESTRE 2013-2	VARIABLE 11	VARIABLE 12	VARIABLE 13	VAR. 21	VARIABLE 22
NOMBRE	SUELDO PADRES	NIVEL ESTUDIOS-MADRE	NIVEL ESTUDIOS-PADRE	CT	PRE-TOEFL
[redacted]	10,000	SECUNDARIA	UNIVERSIDAD	93.33	62
[redacted]	10,000	SECUNDARIA	PREPARATORIA	93	72
[redacted]	10,000	CARRERA TÉCNICA	SECUNDARIA	92.33	63
[redacted]	20,000	UNIVERSIDAD	UNIVERSIDAD	92	84
[redacted]	20,000	PREPARATORIA	MAESTRIA	92	84
[redacted]	20, 000	UNIVERSIDAD	UNIVERSIDAD	92	84
[redacted]	10,000	UNIVERSIDAD	PREPARATORIA	91.66	80
[redacted]	20,000	NO CONTESTO	NO CONTESTO	91.33	60
[redacted]	10,000	PRIMARIA	PREPARATORIA	90	72
[redacted]	10,000	PRIMARIA	PRIMARIA	89.33	55
[redacted]	20,000	PREPARATORIA	SECUNDARIA	88	71
[redacted]	10,000	PREPARATORIA	UNIVERSIDAD	87.66	78
[redacted]	10,000	SECUNDARIA	NO CONTESTÓ	87.66	73
[redacted]	10,000	UNIVERSIDAD	PREPARATORIA	87.33	90
[redacted]	10,000	PRIMARIA	SIN ESTUDIOS	85.66	71
[redacted]	20,000	UNIVERSIDAD	UNIVERSIDAD	82	83
[redacted]	10,000	PREPARATORIA	UNIVERSIDAD	77.66	64
[redacted]	10,000	SECUNDARIA	NO CONTESTÓ	75	78
[redacted]	10,000	UNIVERSIDAD	PREPARATORIA	NP	83

2013-2 semester	Variable 11	Variable 12	Variable 13	Variable 21	Variable 22
Name	Parents' income	Mother's level of education	Father's level of education	TC	Pre-TOEFL
	10,000	Junior high	University	93.33	62
	10,000	Junior high	High school	93	72
	10,000	Vocational high school	Junior high	92.33	63
	20,000	University	University	92	84
	20,000	High school	Master's	92	84
	20,000	University	University	92	84
	10,000	University	High school	91.66	80
	20,000	Did not answer	Did not answer	91.33	60
	10,000	Elementary	High school	90	72
	10,000	Elementary	Elementary	89.33	55
	20,000	High school	Junior high	88	71
	10,000	High school	University	87.66	78
	10,000	Junior high	Did not answer	87.66	73
	10,000	University	High school	87.33	90
	10,000	Elementary	No education	85.66	71
	20,000	University	University	82	83
	10,000	High school	University	77.66	64
	10,000	Junior high	Did not answer	75	78
	10,000	University	High school	NP	83

SUJETOS	VAR. 11	VAR. 12	VAR. 13	VAR, 21	VAR. 22
SEMESTRE 2009-2	SUELDO PADRES	NIVEL ESTUDIOS-MADRE	NIVEL ESTUDIOS-PADRE	COMPETENCIA TRADUCTORA	PRE-TOEFL
ALUMNA 1 (CASI MERITO ESCOLAR)	20,000	PREPARATORIA	UNIVERSIDAD	99	60
ALUMNA 2 (MERITO ESCOLAR)	20,000	UNIVERSIDAD	MAESTRIA	99	90
ALUMNA 3	10,000	PREPARATORIA	UNIVERSIDAD	80	82
ALUMNA 4	10,000	UNIVERSIDAD	UNIVERSIDAD	80	62
ALUMNA 5	10,000	SECUNDARIA	UNIVERSIDAD	80	53
ALUMNA 6	10,000	PRIMARIA	PRIMARIA	80	69
ALUMNA 7	10,000	PREPARATORIA	MAESTRIA	70	61
ALUMNO 8	10,000	UNIVERSIDAD	UNIVERSIDAD	70	73
ALUMNA 9	10,000	UNIVERSIDAD	MAESTRIA	70	59
ALUMNA 10	10,000	UNIVERSIDAD	UNIVERSIDAD	70	90
ALUMNA 11	10,000	UNIVERSIDAD	PREPARATORIA	65	47
ALUMNA 12	NO/CONT	UNIVERSIDAD	UNIVERSIDAD	30	66
ALUMNA 13	10,000	PREPARATORIA	UNIVERSIDAD	30	60

Subjects	Variable 11	Variable 12	Variable 13	Variable 21	Variable 22
Semester 2009-2	Parents' income	Mother's level of education	Father's level of education	Translation competence	Pre-TOEFL
Female student 1 (almost University Merit award)	20,000	High school	University	99	60
Female student 2 (University Merit award)	20,000	University	Master's	99	90
Female student 3	10,000	High school	University	80	82
Female student 4	10,000	University	University	80	62
Female student 5	10,000	Junior high	University	80	53
Female student 6	10,000	Elementary	Elementary	80	69
Female student 7	10,000	High school	Master's	70	61
Male student 8	10,000	University	University	70	73
Female student 9	10,000	University	Master's	70	59
Female student 10	10,000	University	University	70	90
Female student 11	10,000	University	High school	65	47
Female student 12	Did not answer	University	University	30	66
Female student 13	10,000	High school	University	30	60

Appendix 5. Questionnaire I

QUESTIONNAIRE I

AUTONOMOUS UNIVERSITY OF BAJA CALIFORNIA LANGUAGE SCHOOL

MEXICALI, B. C. ON SEPTEMBER 18TH, 2012 START TIME: 11:29

1.- NAME: Subject GROUP: 5th semester

2.- TYPE OF TEXT: Expository

3.- TARGET AUDIENCE: All audiences

4.- WHAT IS THE FUNCTION OF THE LANGUAGE? Referential function

5.- HOW WOULD YOU DESCRIBE THE TRANSLATION?

A____ VERY INTERESTING B____ INTERESTING

C x SOMEWHAT INTERESTING D___UNINTERESTING E____BORING

6.- WHAT TYPE OF TRANSLATION IS IT?

A_x__INTO THE MOTHER TONGUE (*DIRECTA*) B___ INTO A FOREIGN LANGUAGE (*INVERSA*) C ___ I DON'T KNOW

7.- PLACE A CHECK MARK (X) NEXT TO THE KIND OF TRANSLATIONS YOU PREFER:

I.- LITERATURE (x)

II.- POETRY ( )

III.- SCIENTIFIC TEXTS ( )

IV.- TECHNICAL JOURNALS ( )

V.- PROCEDURE MANUALS ( )

VI.- MEDICAL JOURNALS ( )

VII.- PERIODICALS (x)

VIII- LEGAL TEXTS (x)

IX.- RECIPES (x)

X.- VIDEO GAMES (x)

XI.- COMICS (x)

XII.- OTHER_____

8.- DO YOU THINK THE TEXT IS…?

A.- AN ORIGINAL_____ B.- A TRANSLATION__x____ C.- OTHER ( ).

D.- WHY? Because it mentions a percentage in Great Britain and the language is more American

TIME QUESTIONNAIRE COMPLETED: 11:44

SUPERVISOR_____

Appendix 5 bis. Questionnaire II

QUESTIONNAIRE II START TIME: 12:22

1.- HOW WOULD YOU DESCRIBE THE TRANSLATION?

A___VERY EASY B___EASY C_x__FAIR D___DIFFICULT E___VERY DIFFICULT

2.- DID YOU EXPERIENCE ANY PROBLEMS TRANSLATING?

YES_____ NO__x___ REMARKS_____

3.- WHICH WORDS OR TERMS DID YOU HAVE TROUBLE WITH?

_some medical terms_____

4.- WHAT KIND OF DICTIONARIES DID YOU USE?

ONLINE DICTIONARIES: MERRIAM-WEBSTER___ RAE____

OTHER____x_____

BRITANNICA __

PRINTED DICTIONARIES: _____

5.- DID YOU USE ANY TRANSLATION TECHNIQUE?

YES__x__ NO_____ I DON'T KNOW_____

6.- SELECT THE TECHNIQUE YOU USED:

A). - TRANSPOSITION_____ B).- MODULATION_____ C).- EQUIVALENCE____

D).- ADAPTATION_____ E). - OMISSION_x__ F).- EXPANSION_____

G).- EXPLANATION_____ H). - OTHER_____

7.- DID YOU FEEL COMFORTABLE TRANSLATING?

YES__x___ NO_____ WHY?_____

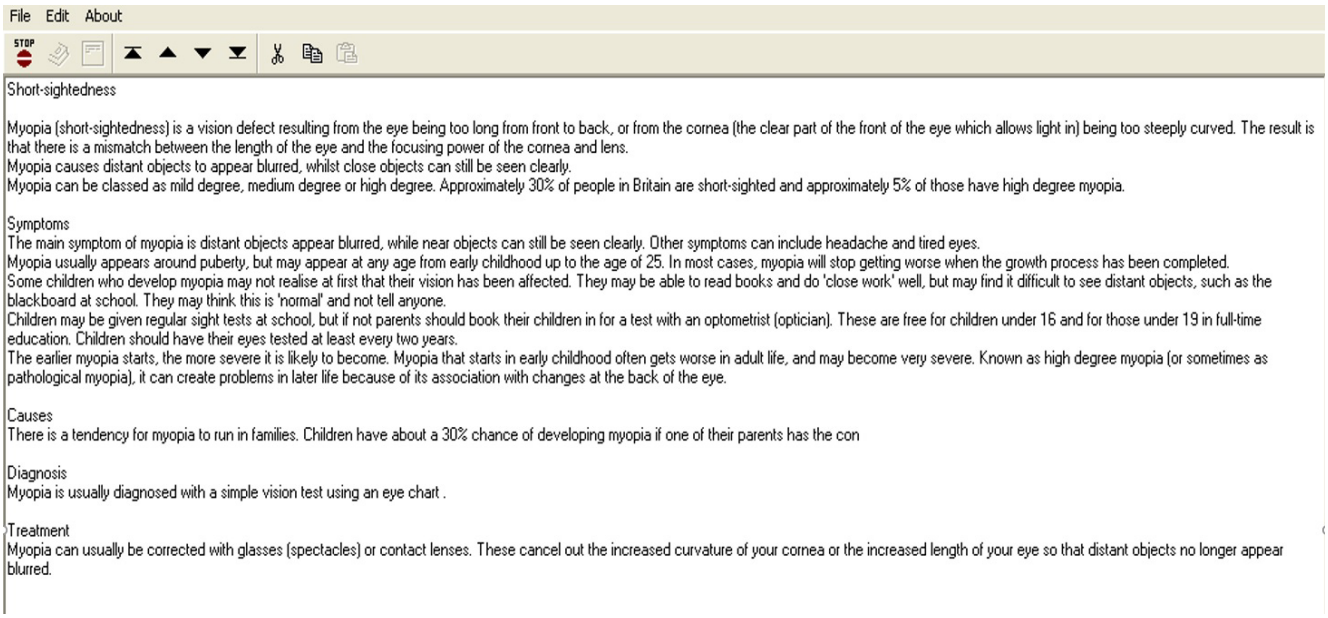
_____

8.- HOW DID YOU FEEL WHEN TRANSLATING? ___Very relaxed and calm, under no pressure_____

TIME QUESTIONNAIRE COMPLETED___12:24_____

SUPERVISOR_____

Appendix 6. Source text for translation in Translog2000 User



Notes

1. The Language School of the Autonomous University of Baja California (UABC), Mexico, where the bachelor's degree in translation is offered.

2. A study by Cortez, Basich, and Figueroa (2013) found that the average age of students upon entry into the bachelor's degree is 21.

3. The tertiary level is situated between secondary education and university, and may take the form of upper secondary education with vocational training, a 3 or 4-year technical degree, elementary or secondary school teacher training (4 years), a 3-year technical high school program, a high school-level accounting program, among other options.

4. The concept of transfer "is the stage at which the material analyzed is transferred in the translator's mind from language A into language B" (Nida & Taber, 1969: 33, in Hatim, 2001: 23).

5. What Hurtado calls the transfer competence (*competencia translatoria*, later called *competencia de transferencia*) (Pym, 2003: 485-486)

6. This was done in the knowledge that the use of the PPT (*protocolo previo de traducción,* pre-translation protocol) is an artificial strategy, as professional translators use whichever method best suits them when working (my own experience is a testament to this). The Pre-Translation Protocol serves both as a research strategy and as a support for student metacognition, raising awareness of the different steps that will later become automatic. Ultimately, the goal was to set the process down on a Petri dish and observe it as aseptically as possible.

7. Retrieved from: https://www.netquest.com/es/panel/calculadora-muestras/calculadoras-estadisticas.

8. The bachelor's degree in translation comprises 8 semesters (4 years) and students only begin to learn about translation techniques in third semester.

9. These were students nearing graduation who were enrolled in programs in which they develop the skills needed for their profession. Retrieved June 28, 2017, from http://campus.mxl.uabc.mx/index.php/servicios-estudiantiles/servicio-social/profesional.

10. It was my tutor, Dr. Ricardo Muñoz-Martín, who acquainted me with the software program, at the beginning of this undertaking in 2006.

11. The result of student evaluations shall be expressed on a centesimal grade scale from 0 to 100. Final grades shall be given as a whole number, with 70 considered the minimum passing grade in graduate studies, and 60 at other levels of study.

12. Available at http://www.amai.org/

13. It should be noted that the six existing economic strata (A-B, C+, C, D+, D, and E) were condensed into three to ensure participants were willing to provide information. Thus, broadly speaking, S1 covers from C+ up, S2 C and C+, and E3 from D+ down.

14. Retrieved from: http://www.banamex.com/economia_finanzas/es/divisas_metales/resumen.htm.

15. The difference between a real, rigorous search for keywords, and a lack thereof.