



Universidad de Valladolid

Facultad de Filosofía y Letras

Grado en Estudios Ingleses

**The Fundamental Work of the Translator:
The Steps for the Translation of a Specialised
Medical Text about the Integumentary
System**

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Curso: 2021-2022

ABSTRACT

Medical journals and articles are translated into several languages so that they can be understood not only by other doctors around the world but also by non-experts. Hence, the work conducted by the translator is of vital importance, since otherwise only a small percentage of people would be able to comprehend these texts. One of the main objectives of this undergraduate dissertation is to highlight the importance and the complexity of the work of the translator in specialised medical translation. Furthermore, the difficulties of specialised medical translation have been analysed in depth, in particular those posed by an English medical text about a specific field such as ‘the integumentary system’ when translated into Spanish. The results and the solutions to these problems have been successfully obtained thanks to a documentation process and the consultation of different parallel texts in Spanish.

Keywords: Translator, Specialised medical translation, Translation procedures, Integumentary system, Parallel texts.

RESUMEN

Las revistas y artículos médicos se traducen a diversos idiomas para que puedan ser entendidos no solo por otros médicos de todo el mundo sino también por los no expertos. De ahí que el trabajo que realiza el traductor sea de vital importancia, ya que, de lo contrario, solo un pequeño porcentaje de personas sería capaz de comprender estos textos. Uno de los principales objetivos de este trabajo de fin de grado es destacar la importancia y la complejidad del trabajo del traductor en la traducción médica especializada. Así mismo, se han analizado en profundidad las dificultades de la traducción médica especializada, en particular las que plantea un texto médico en inglés sobre un campo tan específico como ‘el sistema tegumentario’ cuando se traduce a español. Los resultados y soluciones a estos problemas se han obtenido con éxito gracias a un proceso de documentación y a la consulta de diferentes textos paralelos en español.

Palabras clave: Traductor, Traducción médica especializada, Técnicas de traducción, Sistema tegumentario, Textos paralelos.

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List of abbreviations

LGP – language for general purposes

LSP – language for specific purposes

SL – source language

ST – source text

TL – target language

TT – target text

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1. Introduction

In today's world, new advances in technology allow almost everyone to have everything within their grasp through their computers or smartphones, for example an electronic book or dictionary. Besides, thanks to translators, whether they are people or online resources, it is possible to access to a web page in practically any language. Nevertheless, even though there are resources with which texts can be translated into other languages, these do not always give an accurate translation of the ST and can include mistakes of all kinds. That is why the work conducted by translators is essential since they allow many people who do not know how to speak the language of the ST to understand this text by its translation into their language. In fact, translators are necessary in different fields, including everyday life, whether in the culinary, scientific, or literary field, for example. However, the field that will be highlighted in this undergraduate dissertation is a specialised one: the medical field.

Specialised medical translation arises from the need to help people overcome the linguistic and cultural barriers that exist in this complex field. The work conducted by translators should not be underestimated since without them many medical texts could not be understood by the vast majority of people, including doctors. According to Montalt, Zethsen, and Karwacka: “the scope of medical translation is rich and varied in genres – ranging from research articles to biomedical patents to fact sheets for patients – terminologies, registers, styles, formats, modes as well as in health cultures and ethical restrictions and dilemmas” (28). Not only is the work of translators essential in itself, but it is also a complex work because they must be specialised in this field and be able to translate all kinds of medical texts.

This undergraduate dissertation will hopefully shed some light on the different difficulties regarding specialised medical translation, in this case those posed by a medical text about the integumentary system, in addition to help seeing the work of the translator as fundamental, especially in fields as complex as medicine.

1.1. Objectives

The main objectives of this undergraduate dissertation are the following:

1. Firstly, to emphasise the complexity and the significance of the work of the translator, in particular in specialised medical translation.
2. Secondly, to analyse and to solve the problems that have been found when translating a ST dealing with the field of medicine, in particular the integumentary system, into Spanish. In this way, providing solutions that can be useful both for the translation of this text and for any other medical text.

1.2. Structure

This undergraduate dissertation is divided into four sections. The theoretical part includes sections 2, 3, and 4. Section 2 covers theoretical aspects about languages for general purposes (LGP) and languages for specific purposes (LSP), although paying special attention to specialised language and its characteristics, in addition to specialised terminology, in this case related to the field of medicine. Section 3 deals with the origin of specialised medical translation, and the complexity and significance of the work of translators not only in the field of medicine, but in different fields where their work is extremely complex and fundamental. Section 4 presents and explains the different translation procedures or techniques, which will also be seen in section 6.2.2. of this undergraduate dissertation with examples taken from the ST.

The practical part comes in sections 5 and 6. Section 5 includes the hypothesis of this undergraduate dissertation and explains the methodology that has been followed to translate the ST about the integumentary system into Spanish, that is the explanation of how the practical part was conducted. Furthermore, in the ‘methodology section’, special attention is also paid to the documentation process and the significance of the parallel texts found in Spanish in order to compile a monolingual comparable corpus.

Section 6 constitutes the essence of the practical part of this undergraduate dissertation. It states and explains the characteristics of the ST, and the results and the solutions to the different problems found in the translation of the medical text (ST) into

Spanish. Besides, this section also presents the process of finding equivalents for the TT as well as the translation procedures that have been used in the TT with their corresponding equivalents in the ST, and the terminology that has been found in the ST in terms of affixation, Latinisms, abbreviations and acronyms.

Section 7 comprises the conclusions reached in this undergraduate dissertation and there is also an analysis of the objectives and the hypotheses based on the results obtained in section 6. Finally, there is the section about bibliography (section 8) and the appendix (section 9), which includes four screenshots of Spanish equivalents of some specialised medical terms in English such as *cold sore*, *carbuncle*, or *corium*.

2. LGP vs LSP

In this section, the concepts of LGP and LSP are defined and explained, although the main focus will be on LSP, specifically on specialised medical language, which is the basis of this undergraduate dissertation. The criteria to classify specialised texts are also explained since they have been a key aspect in order to be able to conduct an accurate translation of the ST and an adequate elaboration of the TT (see sections 3. and 6.1.).

Primarily, though there are different ways to classify language, one of the classifications consists in differentiating between two types of language, LGP and LSP. LGP is the language that people use on a daily basis, in different common situations, but without overly complex terminology. On the contrary, LSP, as Méndez Cendón (2021) notes: “is the language used by the members of a particular subject field, which is aimed at promoting an unambiguous communication inside that field using a specific terminology and other specific linguistic means”.

Nonetheless, these two types of language share some aspects in common such as having a joint syntax and grammar since both come from the same linguistic system, or using certain words that are necessary when giving an explanation, whether it is a specialised or everyday topic, like articles, determiners and certain verbs such as the verb ‘to be’. Additionally, thanks to the access to new technologies, some specialised words are used in LGP on a daily basis, and according to Bowker and Pearson this process is known as “de-terminologization” (26). They remark that “This usually happens when

terms that once belonged exclusively to a specialized domain make their way into the everyday lives of ordinary people, either through the mass media or through direct impact” (26). This phenomenon is quite common in the field of medicine since certain specialised terms that were previously only known by doctors or researches are now used almost every day by many other people who are not experts, such as ‘COVID-19’ or ‘pharyngitis’.

2.1. Criteria to classify specialised texts

Firstly, before explaining the criteria to classify specialised texts, it is important to define what a specialised text is. Méndez Cendón (2021) claims that “a specialised text is the written production of an LSP” and she continues on saying that it is also a “coherent and complete written utterance in a social sphere of activity dealing with a job-specific subject by using general and specific linguistic means and by including optional non-linguistic visual elements”. Then, the criteria to classify specialised texts are based on these linguistic and non-linguistic characteristics of the texts. The linguistic characteristics are called internal criteria and involve the topic, the style, and other linguistic characteristics such as grammar and syntax, whereas non-linguistic characteristics are called external criteria and involve the audience and the context.

Considering all this, Jennifer Pearson created in 1998 a classification¹ of specialised texts taking into account the level of expertise of both the author and the audience, that is, the communicative setting of the text, and in which she established three categories depending on this: the expert-to-expert communicative setting, the expert-to-semi-expert communicative setting, and the expert-to-non-expert communicative setting (Méndez Cendón 2021). In the expert-to-expert communicative setting, specialised and complex terminology is used since it is completely understood by both the author and the reader as they share the same level of expertise. Bowker and Pearson states: “Because these experts share a common background and specialized language, they understand what is meant by specific terms and phrases in the field and do not provide explanations for their readers” (28). Conversely, in the expert-to-semi-expert communicative setting,

¹ Jennifer Pearson’s classification has been seen in the subject *Terminología y Lexicografía de la Lengua Inglesa*, taught by my professor Beatriz Méndez Cendón during this academic year 2021/2022.

specialised terminology can be used but some terms may be too complex for the readers, so it will be necessary for the author to add definitions or explanations for a complete understanding of these. Thus, it is also achieved that readers learn new specialised terms since they are usually students or people who are learning about a specific subject field. Lastly, in the expert-to-non-expert communicative setting: “the expert will use fewer terms, and may even use general language words to give simplified descriptions of a specialized concept” (Bowker and Pearson 28). As the readers are non-experts, they cannot be expected to understand the specialised terminology of a particular subject field, and that is why the author prefers to use general language words to explain it.

2.2. Medical language

Medical language is one of the many fields covered by LSP and, what is more, within medical language there are different ‘specialised medical languages’ such as the language of ‘dermatology’ or the language of ‘immunology’, which are the ones that this undergraduate dissertation deals with. That is why the translation of specialised medical texts requires the translator to have a high level of medical knowledge, but it is practically impossible to reach it in each and every one of the specialisations of medicine. As a result, the consultation of documentation in different specialised medical languages is a fundamental process for translators.

In addition to all this, it is important to emphasise that medical language also comprehends different LSP genres such as medical articles, manuals, dictionaries, reviews, etc., but also different formats, styles, communicative settings, and a complex terminology. Montalt, Zethsen, and Karwacka suggest that:

Appropriate use of medical terminology is one of the core conditions for successful communication in monolingual and multilingual healthcare communities. Medical terminology is diverse not only in terms of the obvious differences between languages, but also due to differences between registers or communication channels. (29).

Medical terminology is a key aspect in order to facilitate communication and understanding in spite of the level of specialisation, but it is also complex since there are different communicative settings, so the terminology have to be used at all times keeping in mind to whom the text is addressed. In fact, another problematic aspect that can arise

in English medical language are the words derived from Latin, which for the languages that come from it, such as Spanish or French, this is not a problem at all. Spanish or French speakers find it really easy to understand these words and their roots because they are usually very similar between these languages and Latin. Nevertheless, though it may seem that speakers of those languages which do not come from Latin and which have a Germanic origin like English have many difficulties to comprehend words derived from Latin and a communication problem can arise, this is not at all what really happens since “English medical terminology is predominantly Latin or Latinate” (Marecková, Simon, and Cervený 582). And not only this, but also the terms that come from Latin are considered ‘international terms’ in medicine and, in addition to this, the VI International Congress of Anatomy held in 1955 in Paris agreed in the formation of an international nomenclature committee, the Paris Nomina Anatomica (PNA), in which it was established that the universal language is Latin² (“Terminología Anatómica”).

It is important to note that even though Latin was previously abolished in the 19th and 20th centuries “as a teaching and scientific language, it has retained its nominating function, and has preserved a permanent position in the key component of the language of medicine terminology” (Marecková, Simon, and Cervený 581). In this way, Latin could be considered the basis of medical terminology and on which many other languages are based, whether they come from it or not. In fact, Gutiérrez Rodilla³ remarks that if we search for a term in an updated medical dictionary in Spanish, the origin of this term would be more or less the following: 48% Greek; 35% Latin; 10% Greco-Latin hybrids; 3% eponyms; 1.5% English; 0.5% Arabic; 0.5% French; 0.5% acronyms. With this information, it can be seen, first of all, the overwhelming influence that the two great Classical languages, Greek and Latin, continue to have in medical terminology. Besides, the relevance of Latin at the present time is not due to its possibility for the creation of new terms, but rather to the fact that most of the words that are used in Spanish medical language come from Latin (89), and this does not happen only in Spanish but also in English. Therefore, it is clear the influence that Latin has in medical terminology over the

² This is my own translation of the original source.

³ This is my own translation of the original source.

languages that come from it but also over the Germanic languages whose origin is completely different, in spite of the fact that Latin is a language that is no longer spoken.

3. The origin of specialised medical translation: the fundamental work of the translator

It is conceivable that the origin of medical translation could be relatively close, since translation does not consist of purely translating a text from the SL into the TL but prior knowledge of medicine is required both in the SL and in the TL, and in ancient times, in addition to being very difficult to access this knowledge, it was only available to a privileged few who could understand it. However according to Montalt, Zethsen, and Karwacka:

Historically translation and medicine have gone hand in hand. A brief look at history reveals that medical translation has existed since the oldest forms of cuneiform writing on clay tablets in Ancient Mesopotamia. Archeologists have found a dictionary in Sumerian, Ugaritic, Akkadian and Hurrian dating from around 1300 BCE containing medical information in its pre-scientific form. (27).

Taking all this into account, it is important to explore the origin of European (Western) medical translation, which dates back to the 17th and 16th centuries BC with the discovery of two medical treatises in the form of papyri, the Edwin Smith papyrus and the Ebers papyrus. The Edwin Smith papyrus, as van Middendorp, Sanchez, and Burrige claimed, “is credited as containing the earliest known scientific writings on rational observations in medicine” (1815). In fact, it includes 48 cases which “contain highly accurate descriptions of signs and symptoms of different types of spinal injuries” (1815). Conversely, the Ebers papyrus is “of particular interest to dermatology since it contains significant references to skin diseases and cosmetic issues” (Tracey). It is necessary to note that thanks to these papyri and their references to medicine, it was found that the medical knowledge that the Egyptians had laid the foundation for the medical knowledge of the Greek, Roman, and Mesopotamian cultures, and not only this but also “much of the Hippocratic corpus is thought to be of Egyptian origin. The ancient medical works that were most influential for the development of Western medicine are attributed to Hippocrates, Celsus, Dioscorides and Galen” (Tracey). They conducted research on skin

diseases and their treatments, and they also made their first classifications. In fact, some of their texts were translated into Latin between the 6th and 7th centuries AD (Tracey), and in the 9th century, they were translated into Arabic and Syriac. Baghdad was a very important place both culturally and economically, and one of its most important translators was Hunayn ibn Ishâq, who translated several medical texts written by Galen and Hippocrates into Arabic and Syriac.

During the 11th century, it is noteworthy the work of Constantine the African since his translations of medical and scientific texts from Arabic to Latin marked the revival of medical translation in Europe: “Constantine’s work was followed by the Arabic-Latin translation movement in Spain, which flourished in the twelfth and thirteenth centuries. It involved monks and scholars from many parts of Europe who translated Arabic texts [...] into Latin and Castilian” (Tracey). This allowed medical translation to develop in such a way that the first medical colleges and universities were founded all throughout Europe, and Montalt, Zethsen, and Karwacka remark that: “medicine gradually turned into a scientific discipline and made huge progress, generating an ever-increasing amount of information as well as compelling needs for knowledge transference, international communication and translation” (28).

All in all, it is clearly seen that translators have been playing a fundamental role for centuries and nowadays, their work is still greatly needed in spite of the fact that recent technologies and the existence of different resources may replace them, they are essential not only in medicine but in numerous other fields. Moreover, their work is not easy at all since they must be experts in the field in which they are specialised, and they must be able to make good decisions to conduct an accurate translation. Regarding this, López Guix and Minett Wilkinson noted that such decisions do not necessarily have to be right or wrong, but they open and close possibilities, they create and eliminate relationships, they make and break balances⁴ (19). Though one of the most enriching aspects of translation is that translators may be able to make their own decisions based on their own interpretation and create a new translation accordingly, it should be pointed out that in order to conduct an accurate translation, the original ideas provided by the SL must be maintained in the TL. This can be problematic since certain terms that exist in the SL may

⁴ This is my own translation of the original source.

not exist in the TL. Therefore, an equivalence process would have to be conducted, which implies a certain subjectivity on the part of translators that usually involves the creation of alternative translations. Translators are often criticised for this as it sometimes leads to losing the original ideas of the SL.

In this way, the work of the translator is not only complex in itself, having to analyse each and every one of the words of a text as well as the intention of the author, but the more specialised the text is, the greater degree of complexity its translation will have, for example with specialised medical translation.

The complexity of specialised medical translation lies not only in researching and knowing extremely specific medical terms both in the SL and in the TL, but also in adapting the translation according to the readers and their needs: “What seems to be particularly problematic for medical translators and writers is adapting their terminological choices to genre-specific and register-specific conventions” (Montalt, Zethsen, and Karwacka 30). Taking into account Jennifer Pearson’s classification previously seen in section 2.1., if, for example, the text belongs to an expert-to-non-expert communicative setting, since non-experts do not have the same level of expertise as experts, it would be necessary to add explanations and definitions to complex terms which might be not understood, and according to Méndez Cendón (2021) “no prior subject-specific knowledge is assumed, authors may choose a general language word to describe a concept rather than using a more appropriate specialised term”. But if, on the contrary, the text belongs to an expert-to-semi-expert or an expert-to-expert communicative setting, the translator may use specialised terms because they are going to be completely understood and, in the case of an expert-to-expert communicative setting, no explanations or definitions are needed because “writer and reader are assumed to have the same or very similar level of expertise” (Méndez Cendón 2021). However, in the case of an expert-to-semi-expert communicative setting, since semi-experts do not have the same level of expertise as experts, in some cases it would be necessary to add explanations or definitions of terms that the writer believes are complex or unknown to the reader. As it will be seen in section 6.1. of this undergraduate dissertation, both the chosen ST to be translated and the TT elaborated based on it belong to an expert-to-semi-expert communicative setting since they are aimed at medical students, with a medium-high

level of expertise that makes it possible to use specialised terms, but in some cases explanations and definitions will be needed due to their complexity.

In addition to this, even though the origin of medical translation dates back to 1300 BC, the field of medicine is constantly changing and advancing, which leads to the appearance of new terms, so translators must be up-to-date and know beforehand what difficulties they may face and how they can solve them.

4. Translation procedures

The translation procedures that are going to be explained below are common both for any field of LSP and for LGP; however, as it will be seen in section 6.2.2., the examples that have been chosen belong to the field of medicine.

4.1. Transposition

One of the most common translation procedures is transposition, which Herrero Quirós (2019) defines as an “ordinary translation procedure involving a change in grammatical categories” and he also notes that transpositions can also be called “shifts”. If we consider the following sentence: *His heart stood still*⁵, and its corresponding translation into Spanish: *Su corazón dejó de latir*, it is seen that in the English version *still* functions as an adverb, but in the Spanish version this word no longer functions as an adverb but as a verb which is *latir*, in English *beat*. Additionally, there is a subtype of transposition called ‘crossed transposition.’ According to Vázquez-Ayora⁶, a crossed transposition concerns double units of English consisting of a verb and its ‘particle’. This particle is responsible for expressing the action of the verb, whereas the verb is responsible for indicating the modality in which the action is performed. What happens in Spanish is just the opposite, the verb expresses the action and the particle is in charge of indicating the modality. Therefore, in Spanish, first the action is stated and then its circumstances (281). Though the following example does not correspond to a medical

⁵ This example has been taken from the subject *Teoría y Práctica de la Traducción Inglés/Español*, taught by my professor Carlos Herrero Quirós during the academic year 2019/2020.

⁶ This is my own translation of the original source.

context, it illustrates crossed transposition properly: *He swam across the river*⁷, whose translation into Spanish would be: *Cruzó el río a nado*. It is clear that the verb *swam* that goes right after the subject in the English version, in the Spanish version it occupies a final position in the sentence and it is translated as *a nado* since it indicates the modality of the action. The particle *across*, which indicates the action of the verb and which goes right after it in the English version, it occupies an initial position in the Spanish version and it is translated as *cruzaron*.

4.2. Modulation

This translation procedure implies varying the form of a sentence and giving it a different perspective but without changing its meaning. Besides this, Vázquez-Ayora⁸ remarks that modulation involves a change of the ‘conceptual base’ within a sentence, without disrupting its meaning, which forms a ‘modified point of view’. In other words, the meaning must be the same, but the symbols are different in both languages (291). An example of modulation is the following sentence: *He is going to be a father*, and its modulated translation: *Él va a tener un hijo*. The meaning is the same in both sentences but the form and the perspective of the sentence in Spanish is completely different. Another example could be the term *colour blindness* and *daltonismo*⁹, which is its modulated translation. *Colour blindness* is an informal term for *daltonismo* since its accurate and formal term in English is *colour vision deficiency (CVD)*. As it can be seen in this example, an informal term is changed for a formal one but without disrupting its meaning.

4.3. Equivalence

Similar to modulation, equivalence is the replacement of an existing reality by another existing one in the TL¹⁰ (López Arroyo 2021), for example this idiom in English:

⁷ This example has been taken from the subject *Teoría y Práctica de la Traducción Inglés/Español*, taught by my professor Carlos Herrero Quirós during the academic year 2019/2020.

⁸ This is my own translation of the original source.

⁹ This example has been taken from the subject *Traducción Inversa Español-Inglés*, taught by my professor Belén López Arroyo during this academic year 2021/2022.

¹⁰ This is my own translation of the original source.

They are as like as two peas, and its equivalent in Spanish: *Se parecen como dos gotas de agua* (Vázquez-Ayora 317). Although a literal translation of this idiom can be possible, it does not make sense, so the best way to translate it is looking for the equivalent of this idiom in Spanish. Moreover, equivalence also implies looking for terms in the TL that have the same meaning as the terms in the SL, like *carbuncle*, whose equivalents in Spanish are both *carbunco* and *ántrax maligno* (see section 6.2.2.3.).

4.4. Loan translation

It is necessary to explain loan translation or calque since there are numerous examples of this in both the ST and the TT analysed in this undergraduate dissertation. Loan translation is the literal translation of names of organizations, organisms, compounds, or medical procedures from one language to another. For example: *Human papilloma virus (HPV)* and *Virus del papiloma humano (VPH)*, or *Systemic lupus erythematosus (SLE)* and *Lupus eritemaso sistémico (LES)* (see sections 6.2.2.4. and 6.2.3.3.).

4.5. Borrowing

A similar translation procedure to loan translation or calque is borrowing, which is the use of the same word or expression in both the SL and the TL without translating it. For example, the Latin term *integumentum* appears untranslated in both the ST and the TT analysed in this undergraduate dissertation in order to explain the origin and the meaning of the term *integumentary system*, which in Spanish is *sistema tegumentario* (see sections 6.2.2.5. and 6.2.3.2.).

4.6. Expansion

Expansion is the addition of linguistic elements in the TT considered necessary for the translation of the ST in order to be better understood¹¹ (López Arroyo 2021). The

¹¹ This is my own translation of the original source.

following examples do not correspond to a medical context but they illustrate expansion properly: *No way*¹², and its Spanish translation: *De ninguna manera*, and: *I wonder about that*, whose Spanish translations would be: *Me pregunto si eso es verdad*, or: *¿Quién sabe si eso es verdad!* (Vázquez-Ayora 342). As it can be seen in these examples, different linguistic elements have been added in the Spanish translations so that the sentences can be better understood.

4.7. Reduction

As opposed to expansion, reduction or omission is the elimination of those elements of the ST that are considered irrelevant in the TT, either to avoid repetitions or the lack of naturalness. Even though the following example does not correspond to a medical context, it illustrates reduction properly: *And a loan is currently being negotiated to help implement this plan*, whose Spanish translation would be: *Y se negocia ahora un préstamo para poner en marcha el plan* (Vázquez-Ayora 362). In fact, what Vázquez-Ayora¹³ proposes with the use of this translation procedure is not translating each and every one of the elements that form a sentence, in addition to avoiding repetitions and the lack of naturalness (361-363).

5. Methodology and hypothesis

This section includes the methodology that has been followed to translate the ST about the integumentary system into Spanish, and the hypothesis of this undergraduate dissertation. Special attention is paid to the documentation process and the significance of the parallel texts found in Spanish in order to compile a monolingual comparable corpus. Both of them are essential aspects of specialised translation since without them it would not have been possible to make good decisions to translate the ST nor would it have been possible to obtain key information to be able to translate certain specialised medical terms.

¹² This example has been taken from the subject *Traducción Inversa Español-Inglés*, taught by my professor Belén López Arroyo during this academic year 2021/2022.

¹³ This is my own translation of the original source.

5.1. Methodology

5.1.1. Documentation process

Documentation has been a key aspect in conducting the translation of the ST and the correct elaboration of the TT, especially since it is a specialised medical text that requires a medium-high level of specialisation. Before the elaboration of the TT, I have consulted different articles and medical texts both in English and in Spanish in order to have a basis for conducting a specialised translation about the integumentary system. Furthermore, many of these same texts have been consulted while conducting the translation, as well as numerous bilingual dictionaries¹⁴ such as *Collins Dictionary* or *WordReference*, encyclopaedias like *Encyclopedia Britannica*, medical dictionaries and manuals such as *dicciomed* or the *NCI Dictionary of Cancer Terms*, etymological dictionaries like the *Online Etymology Dictionary*, and translation manuals like *Manual de traducción: inglés / castellano: teoría y práctica*, written by López Guix and Minett Wilkinson, and *Introducción a la Traductología: Curso Básico de Traducción* by Vázquez-Ayora.

In addition to this, it is necessary to add that I am familiar with dermatology and immunology both in English and in Spanish because biology and medicine have been especially interesting to me since I was little; in fact, my previous studies have been related to health sciences.

Therefore, the documentation process has been essential in this undergraduate dissertation but if it had not been for my prior knowledge of these fields, it would have been much more difficult for me not only to conduct an accurate translation of the ST, but also to find adequate parallel texts and documentation to solve the problems encountered.

5.1.2. Compiling a monolingual comparable corpus

In order to find Spanish equivalents and to analyse the frequency of use of certain specialised medical terms in English that appear in the ST, four Spanish parallel texts

¹⁴ All of them listed in the bibliography section of this dissertation.

were chosen to compile a monolingual comparable corpus. As Bowker and Pearson state: “comparable corpora consist of sets of texts in different languages that are not translations of each other” (93), but these sets of texts “have been selected because they have some characteristics or features in common; the one and only feature that distinguishes one set of texts from another [...] is the language in which the texts are written” (93). Moreover, Olohan remarks that a monolingual comparable corpus consists of a corpus of comparable non-translations in the TL (35). This monolingual Spanish comparable corpus consists of 43,744 words, and the program that I used to be able to find the equivalents for the TT and to analyse their frequency was WordSmith Tools, which was also the same program that my classmates and I used in the subject *Terminología y Lexicografía de la Lengua Inglesa*, taught by my professor Beatriz Méndez Cendón during this academic year 2021/2022.

The four parallel texts that were chosen are all written in Spain by Spanish authors in order to avoid any deviation from the Spanish of outside the peninsula. Additionally, these parallel texts are aimed at non-experts or semi-experts in order to have more similarities in terminology and phraseology with the ST (see section 6.1.). These Spanish parallel texts have been found in electronic format, and they are specialised medical articles and manuals¹⁵ about dermatology and immunology, in particular about the integumentary system. The medical articles are “Anatomía y fisiología de la piel” by García Dorado and Alonso Fraile, both doctors working in a dermatology clinic in Salamanca (Spain), “Tejidos. Membranas. Piel. Derivados de la piel” by Reiriz Palacios, a professor at the University School of Nursing in Barcelona, and “Las 25 enfermedades dermatológicas más comunes” by Bertran Prieto, a microbiologist from Barcelona (Spain). The other parallel text is entitled “Enfermedades de la piel” which was originally written by Durocher, a professor of dermatology, and which corresponds to chapter 12 of a manual of medicine called *Enciclopedia de salud y seguridad en el trabajo*, which is a Spanish edition of the original one entitled *Encyclopaedia of Occupational Health and Safety, fourth edition*. The editors and authors of this Spanish version are experts in different fields, especially medicine, who work for organisations such as the National

¹⁵ All of them listed in the bibliography section of this dissertation.

Institute for Safety and Health at Work. All the authors of these four parallel texts are professionals in the field of medicine, and most of them are specialised in dermatology.

As it can be seen in the table below, this is all the information that has been gathered from the four Spanish parallel texts to compile the monolingual comparable corpus:

Code	Number	Source	Author	Date	Words	Language
01ARGDAF218882SP	01	Article	García Dorado and Alonso Fraile	2021	8,882	Spanish
02ARRP0912632SP	02	Article	Reiriz Palacios	2009	12,632	Spanish
03ARBPX2485SP	03	Article	Bertran Prieto	X	2,485	Spanish
04MADU9819745SP	04	Manual	Durocher	1998	19,745	Spanish

Table 1: Information on the parallel texts which compile the monolingual comparable corpus.

So the total number of words of the monolingual comparable corpus is 43,744 words.

Following this, I will illustrate an example of how the code of each parallel text has been created. The first code that appears in the table is ‘01ARGDAF218882SP’ and to create it, the information that appears in the columns has been written in order. So, ‘01’ is the number assigned to this text, and ‘AR’ corresponds to the source of the text, in this case an article. The next column corresponds to the author of the text, which in this case it was written by two authors so the initials of both were taken, ‘GD’ from García Dorado and ‘AF’ from Alonso Fraile. ‘21’ corresponds to the year of publication of the text, which is 2021, but for instance, for the parallel text assigned as number ‘03’, an X appears in this column to indicate that it is incomplete since this data is unknown. Finally, ‘8882’ is the total number of words in the text, and the last column corresponds to the language of the text, which in all cases is Spanish, ‘SP’.

5.2. Hypothesis

The hypothesis of this undergraduate dissertation is that certain specialised medical terms are not expected to be as common in the TL as in the SL. In this way, the objective is to prove the difficulties encountered when finding equivalent terms in Spanish of certain English specialised medical terms. Additionally, it is also expected that the most common translation procedure used in the TT will be transposition and that numerous examples of loan translations will also be found. Nonetheless, the results could show the frequency of the different translation procedures that have been used in the TT with their corresponding equivalents in the ST, so it would be verified that the previously mentioned translation procedures are the most frequent in the TT.

6. Results: analysis and translation of a specialised medical text about the integumentary system

This section constitutes the essence of the practical part of this undergraduate dissertation, in which the ST, a specialised medical text about the integumentary system, and the TT, which is its translation into Spanish, will be analysed in depth. This practical section states and explains the characteristics of the ST, and the results and the solutions to the different problems encountered. Moreover, it presents the process of finding equivalent terms for the TT and the translation procedures or techniques that have been used in the TT with their corresponding original structures in the ST. Lastly, there are also comments on the terminology that has been found in the ST in terms of affixation, Latinisms, abbreviations and acronyms.

6.1. Characteristics of the ST

Before analysing the numerous aspects of interest that have been found in the ST about the integumentary system when it was translated into Spanish, it is important to point out its main characteristics since they are necessary in order to be able to conduct an accurate translation, as well as to be able to interpret the intentions of the authors and make good decisions regarding all this.

The ST, entitled “The Integumentary System”, corresponds to chapter 6 of a manual of medicine called *Modern Medical Language*, whose authors are C. Edward Collins and Juanita J. Davies, and which was published in 1996. This manual of medicine was written for educational purposes and it belongs to an expert-to-semi-expert communicative setting, since it is aimed at medical students, semi-experts, who do not have the same level of expertise as the authors of this text, and who may be unaware of certain specialised medical terms, for which the authors provide easier-to-understand equivalents as well as explanations and definitions. That is why the TT has been elaborated based on these parameters and following the intentions and purposes of the authors of the ST.

Furthermore, I have chosen this specific ST because I am familiar with biology, dermatology, and immunology both in English and in Spanish. The translation of the ST can be found in the CD which is attached to this undergraduate dissertation. Nevertheless, it is necessary to note that not all the pages of the ST have been translated into Spanish. For example, pages 82 and 83, and pages from 100 to 107 have not been translated since they are not relevant for the results section because they do not provide new terms of interest or aspects that pose difficulties to the translation. As a reminder to the reader, the process and the methodology followed to conduct this translation was explained above, in section 5.

6.2. Results and solutions to the problems encountered

6.2.1. Finding equivalents for the TT

In this section, one of the hypotheses of this undergraduate dissertation will be verified by considering the table below with the frequency of occurrence of certain specialised medical terms in the ST and the frequency of occurrence of their equivalents in the four Spanish parallel texts. The objective is to verify that these terms are not as common in the TL as in the SL, and thus, proving the difficulties encountered when finding equivalent terms in Spanish of certain English specialised medical terms.

ST		Spanish parallel texts	
Term	Frequency	Equivalent	Frequency
Abnormal condition	15	Proceso patológico	1
Blood supply	2	Flujo sanguíneo	4
Carbuncle	2	Ántrax maligno	0
		Carbunco	1
Cold sore	1	Herpes labial	0
Condition	16	Enfermedad	23
		Infección	9
		Patología	3
		Trastorno	15
Fungal condition	1	Infección fúngica	7
Fungal infection	12		
Physical examination	5	Examen físico	0
		Exploración física	2
Skin condition	4	Enfermedad de la piel	7
		Enfermedad dermatológica	16

Table 2: The frequency of occurrence of specialised medical terms located in the ST and the frequency of occurrence of their equivalents in the Spanish parallel texts.

Even though it is true that all the terms of the SL have equivalents in the TL, it can be seen that in some cases they are not as common in the TL as in the SL. For example the equivalent in Spanish to the term *abnormal condition*, which is *proceso patológico*, is only used once in the four parallel texts in Spanish. In the case of the term *carbuncle*, it has two equivalents in Spanish, *ántrax maligno*, which is not used in the parallel texts, and *carbunco*, which is only used once. The term *physical examination* has also two equivalents in Spanish, *examen físico*, which is not used in the parallel texts, and *exploración física*, which is only used two times. Moreover, the term *cold sore* is only used once in the ST and its equivalent in Spanish, *herpes labial*, is not used in the parallel texts, so in order to find this equivalent, I had to search for it in Collins dictionary (see

Figure 1). For this reason, and as it will be seen in section 6.2.2.3., finding equivalents in Spanish of these English specialised medical terms has been very complicated.

6.2.2. Comments on the translation procedures

As previously mentioned in section 4. of this undergraduate dissertation, the translation procedures that have been used to elaborate the TT are common both for any field of LSP and for LGP. However, the examples chosen to be analysed belong to the field of medicine, specifically to dermatology and the integumentary system.

6.2.2.1. Transposition

Some examples of transpositions used in the TT with their original structures in the ST are presented in the table below together with the grammatical category of the words that change.

There is a complex specialised medical term that is important to analyse which is the term *avascularity*. In Spanish, this term does not exist, however there is an adjective for this term which is the same as in English and it also has the same meaning, *avascular*. This is the reason why transposition was chosen. So, the grammatical category of *avascularity* was changed from a noun to an adjective, *avascular*.

ST	TT
Upon <i>successful completion</i> of the chapter... (adjective and noun)	Una vez <i>completado</i> el capítulo <i>con éxito</i> ... (verb and adverb)
Keratin gives the stratum corneum its <i>hard, tough, and water-resistant character</i> . (adjectives + noun)	La queratina le da al estrato córneo su <i>dureza, fuerza, y resistencia al agua</i> . (nouns)
Another general characteristic of the epidermis is <i>avascularity</i> , which means it contains no blood vessels. (noun)	Otra característica de la epidermis es ser <i>avascular</i> , que significa que no contiene vasos sanguíneos. (adjective)
...that the nail <i>grows</i> . (verb)	...que permite <i>el crecimiento</i> de la uña. (noun)

The capillary blood <i>found</i> in the dermis... (non-finite verb)	La sangre capilar <i>que se encuentra</i> en la dermis... (relative clause)
Melanin is endogenous, <i>meaning</i> it is produced... (non-finite verb)	La melanina es endógena, <i>lo que significa que</i> es producida... (relative clause)
Abnormal condition <i>exhibited</i> by... (non-finite verb)	Proceso patológico <i>que se caracteriza</i> por... (relative clause)
<i>Shaped</i> like a thread. (non-finite verb)	<i>Que tiene forma</i> de hilo. (relative clause)
...and appears as a red <i>macular</i> or <i>papular lesion</i> ... (adjectives + noun)	...donde aparece una <i>mácula</i> o <i>pápula</i> roja... (nouns)
Although the cause is <i>obscure</i> ... (adjective)	Aunque <i>se desconoce</i> la causa... (verb)
Characterized by macules, papules, and lesions with silvery <i>scales</i> . (noun)	Produce <i>máculas, pápulas y lesiones escamosas</i> de color plateado. (adjective)
...believed <i>to be genetically based</i> ... (non-finite verb, adverb and verb)	Se cree <i>que tiene una base genética</i> ... (relative clause, noun and adjective)
...that can result from <i>blocked</i> pores and hair follicles. (adjective)	... <i>que pueden producirse por la obstrucción</i> de los poros y de los folículos pilosos. (noun)
Pitting edema is characterized by an indentation <i>left</i> on the skin following <i>light pressure</i> . (non-finite verb, adjective and noun)	El edema con fóvea se caracteriza por un hundimiento <i>que permanece</i> en la piel después de <i>presionarlo ligeramente</i> . (relative clause, verb and adverb)
This surgical procedure involves <i>the introduction</i> of a tube... (noun)	En esta intervención quirúrgica <i>se introduce</i> un tubo... (verb)

Table 3: Transpositions used in the TT and the original structures in the ST.

6.2.2.2. Modulation

As it can be seen in the following table, some examples of modulation used in the TT with their original structures in the ST are presented.

ST	TT
The skin,..., <i>has</i> two separate layers...	La piel,..., <i>está constituida por</i> dos capas separadas...
Skin cells infiltrated with keratin <i>are said to be</i> keratinized.	A las células de la piel infiltradas con queratina <i>se las denomina</i> “queratinizadas”.
...allowing more blood to come to the surface, <i>where it can be cooled</i>permitiendo que más sangre suba a la superficie <i>para así poder enfriarse</i> .
<i>There is</i> the occurrence of large blisters.	<i>Conlleva</i> la aparición de grandes ampollas.
The sweat glands <i>play a role in</i> thermoregulation.	Las glándulas sudoríparas <i>también están relacionadas con</i> la termorregulación.
<i>Additional</i> conditions include those caused...	<i>Otras</i> patologías son aquellas causadas...
<i>Common</i> locations include the back...	<i>Suele aparecer en</i> la parte posterior...
<i>Called</i> furunculosis if persistent and troublesome.	Si es persistente y problemático, <i>pasa a denominarse</i> forunculosis.
... <i>and appears as</i> a red macular or papular lesion...	... <i>donde aparece</i> una mácula o pápula roja...
Pediculosis is transmitted easily from <i>person-to-person</i> and <i>is often seen in</i> schoolchildren.	La pediculosis se transmite fácilmente de <i>una persona a otra</i> , y <i>suele afectar a</i> niños en edad escolar.
...there are several types <i>including</i>existen varios tipos, <i>entre ellos</i> ...
... <i>characterized by</i> keratin-plugged pilosebaceous follicles...	<i>Consiste en</i> el taponamiento con queratina de los folículos pilosebáceos...
... <i>forming a</i> butterfly appearance.	... <i>asemejando una</i> forma de mariposa.
... <i>which is</i> the depigmentation of the skin <i>showing up as</i> a white patch or patches...	... <i>que consiste en</i> la despigmentación de la piel, <i>produciendo</i> una mancha o manchas blancas...
<i>Characterized by</i> macules, papules, and lesions with <i>silvery</i> scales.	<i>Produce</i> máculas, pápulas y lesiones escamosas <i>de color plateado</i> .

The condition can also <i>occur in</i> women...	La enfermedad también puede <i>afectar a</i> las mujeres...
Alopecia areata <i>refers to</i> temporary bald patches.	La alopecia areata <i>ocasiona</i> parches temporales de pérdida del pelo.
Metastasis is <i>rare</i> ...	La metástasis es <i>poco frecuente</i> ...
The difference between the two <i>is</i> the way the polyp is attached...	La diferencia <i>reside</i> en la forma en la cual el pólipo se adhiere...
Topical preparations <i>include</i> ...	La medicación tópica <i>se divide en</i> ...

Table 4: Modulation used in the TT and the original structures in the ST.

6.2.2.3. Equivalence

In some cases where the translation of complex medical terms has been really difficult, it has been decided to search for equivalents in the TL.

One example of this is the term *carbuncle*. In Spanish, the term *carbuncle* can have two equivalents, *carbunco* and *ántrax maligno*. Nonetheless, it is necessary to remark that the term *ántrax* in its own without using the term *maligno* together is not an equivalent to *carbuncle*, since *ántrax*, whose correct equivalent in English is *anthrax*, is a totally different disease from *carbuncle* and they are even caused by different bacteria, in the case of *ántrax* (*anthrax*), it is caused by the bacterium *Staphylococcus aureus*, and in the case of *carbunco* or *ántrax maligno* (*carbuncle*), it is caused by the bacterium *Bacillus anthracis* (Cortés Gabaudan) (see Figures 2 and 3).

Furthermore, the term *physical examination* has also two equivalents in Spanish, *examen físico*, which is not used in the parallel texts so it is not used in the TT either, and *exploración física*, which is used both in the parallel texts and in the TT.

Another example where equivalence was necessary is the term *condition* and its derivatives, such as *abnormal condition*, *fungal condition* and *skin condition*. *Condition* could be translated into Spanish as *condición* or *estado* but they are too literal translations for a medical field, so when analysing this term in depth, it was found that *condition* also means *illness*, *infection* or *pathology*, in Spanish *enfermedad*, *infección*, *patología*, or *trastorno* which are more appropriate equivalents to the real meaning of *condition* in

medicine. Therefore, the equivalents of *abnormal condition*, *fungal condition* or *fungal infection*, and *skin condition* in Spanish would be *proceso patológico*, *infección fúngica*, and *enfermedad de la piel* or *enfermedad dermatológica*.

6.2.2.4. Loan translation

As it can be seen in the following table, these are examples of loan translation of terms found in the ST and their corresponding literal translations in the TT.

ST	TT
Centigrade (C)	Centígrado (C)
Discoid lupus erythematosus (DLE)	Lupus eritematoso discoide (LED)
Erythema chronicum migrans (ECM)	Eritema crónico migratorio (ECM)
Erythema multiforme (EM)	Eritema multiforme (EM)
Goeckerman regimen	Régimen de Goeckerman
Human papilloma virus (HPV)	Virus del papiloma humano (VPH)
Herpes simplex virus type 1 (HSV-1)	Virus del herpes simple tipo 1 (VHS-1)
Herpes simplex virus type 2 (HSV-2)	Virus del herpes simple tipo 2 (VHS-2)
Idoxuridine (IDU)	Idoxuridina (IDU)
Immunofluorescent (IF)	Inmunofluorescencia (IF)
Lupus erythematosus (LE)	Lupus eritematoso (LE)
Lyme's disease	Enfermedad de Lyme
Mohs' surgery	Cirugía de Mohs
Psoralens ultraviolet light A (PUVA)	Psoraleno más luz ultravioleta A (PUVA)
Ringer's lactate solution	Solución de lactato de Ringer
Systemic lupus erythematosus (SLE)	Lupus eritematoso sistémico (LES)
Ultraviolet (UV)	Ultravioleta (UV)

Table 5: Examples of loan translation of terms found in the ST and their translations in the TT.

6.2.2.5. Borrowing

An example of borrowing that can be found in both the ST and the TT is the Latin term *integumentum* which appears untranslated in both texts. The purpose of using this Latin term without translating it into English and Spanish was to explain the origin and the meaning of the term *integument*, in Spanish *integumento*, and hence the origin of the term *integumentary system*, which in Spanish is *sistema tegumentario* (see section 6.2.3.2.).

There are also other examples of borrowing in which the terms maintain the same form both in English and in Spanish, the term *Borrelia burgdorferi*, which is a microorganism, the term *shock*, and the term *Fahrenheit (F)*, which also keeps the same abbreviation both in English and in Spanish (see section 6.2.3.3.).

6.2.2.6. Expansion

As it can be seen in the following table, some examples of expansion used in the TT with their original structures in the ST are presented.

ST	TT
The Latin word <i>integumentum</i> means “covering.”	La palabra <i>integumentum</i> , que proviene del Latín, significa “cubierta”.
Circulation to pressure points,..., is cut off...	Lo que sucede es que se interrumpe la circulación a los puntos de presión...
Occurring most frequently in males and at the back of the neck.	Se produce con mayor frecuencia en hombres y aparece en la parte posterior del cuello.
One of the most common skin conditions...	Es una de las enfermedades de la piel más comunes...
...commonly known as a birthmark (nevus is Latin for birthmark).	...comúnmente conocida como marca de nacimiento o lunar (la palabra “nevus” proviene del latín y significa “lunar”).
In the elderly...	En las personas de edad avanzada...

...can be called a lesion. Various names are used to describe lesions.	...puede denominarse lesión, aunque se utilizan diversos nombres para describir las lesiones.
...bleeding into the skin.	... la infiltración de sangre en la piel.
Blisters that break producing an erosion as seen in some bacterial skin infections.	Algunas infecciones bacterianas de la piel producen ampollas que se rompen dando lugar a una erosión.
Seen in chronic dermatitis...	Se suele producir en pacientes con dermatitis crónica...
This procedure aids in the diagnosis of conditions from simple dermatoses to malignant neoplasms.	Esta intervención sirve de ayuda en el diagnóstico de diversas enfermedades, desde dermatosis simples hasta neoplasias malignas.
Patch test.	Prueba de parche, epicutánea o alérgica.
Anti-infectives used to stop bacterial growth such as...	Agentes antiinfecciosos, utilizados para detener el crecimiento bacteriano en enfermedades como...
Emollients soften and soothe the skin...	Agentes hidratantes (emolientes) para suavizar y calmar la piel...
Scabicides and pediculicides used to kill scabies and lice.	Insecticidas y pediculicidas, utilizados para tratar la sarna y las infestaciones de piojos.
Surgical destruction of tissue by freezing Liquid nitrogen, which boils at -321 degrees F, is often used...	Dstrucción quirúrgica del tejido congelándolo con nitrógeno líquido, que alcanza su temperatura de ebullición a -196 °C (-321 °F). El nitrógeno líquido se utiliza a menudo...
Types include...	Los tipos de trasplantes de piel son...

Table 6: Expansion used in the TT and the original structures in the ST.

6.2.2.7. Reduction

Examples of reduction used in the TT with their original structures in the ST can be seen in the table below. The elements that have been omitted from the ST appear in bold.

ST	TT
...but it is not considered to be a layer of the skin.	...pero no está considerado una capa de la piel.
Melanocytes produce a skin pigment called melanin, which darkens the skin.	Los melanocitos producen un pigmento llamado melanina que oscure la piel.
Another general characteristic of the epidermis is avascularity, which means it contains no blood vessels.	Otra característica de la epidermis es ser avascular, que significa que no contiene vasos sanguíneos.
The dermis is also called the corium. The dermis , a nonlayered structure of the skin...	La dermis o corion, una estructura no estratificada de la piel...
The cell types of the dermis are...	Las células de la dermis son...
This layer is the actively growing layer.	Esta es la capa en crecimiento activo.
First degree burn or superficial burn ...	La quemadura de primer grado o superficial...
...the white, half-moon shaped lunula (luna is the Latin word for moon). It is from the lunula that the nail grows.	...la lúnula blanca, con forma de media luna, que permite el crecimiento de la uña.
...and along the hair shaft. The gland secretes through ducts...	...y a lo largo del tallo del pelo, a través de conductos...
Sudoriferous (sweat) glands secrete sweat through pores. There are two types of sweat glands ...	Las glándulas sudoríparas secretan sudor a través de los poros, y existen dos tipos...
An inflammation of the hair follicle, commonly known as a boil .	Inflamación del folículo piloso.

Scabies, transmitted by skin-to-skin contact, is also known simply as “the itch.”	La sarna se transmite por el contacto piel con piel.
A malignant condition of the squamous or flat, scalelike cells of epithelial tissue.	Patología maligna de las células escamosas o planas del tejido epitelial.
...especially following surgery such as abdominal surgeryespecialmente después de una cirugía, por ejemplo abdominal.
Injury to the structures beneath the skin but no puncture of the skin itself .	Lesión de las estructuras debajo de la piel pero sin perforarla.
Culture and smear and sensitivity.	Cultivo, muestra y sensibilidad
This surgical procedure involves the introduction of a tube into the subcutaneous layer. The tube is attached to a strong suction apparatus that sucks out...	En esta intervención quirúrgica se introduce un tubo en la capa subcutánea conectado a un potente aparato que succiona...

Table 7: Reduction used in the TT and the original structures in the ST.

6.2.3. Comments on the terminology found in the ST

This section includes the analysis of the terminology found in the ST by taking into account affixation, Latinisms, abbreviations, and acronyms since all of them are common elements in medical language.

6.2.3.1. Affixation

As it can be seen in the table below, this text not only explains what is the integumentary system but it also analyses the different affixes that form its terminology. Although all the medical terms that appear in the table below do not pose any problem at first glance since they all have their equivalents in Spanish, some of them are made up of affixes that can be considered problematic.

For example, the equivalent in Spanish to the suffix *-graft*, which means *transplant*, can be both *-trasplante* and *-injerto*. In English, this suffix is used for both but in Spanish there is this distinction, so sometimes, it is really difficult to know if the term refers to one or the other, and what is more, *trasplante* and *injerto* have a similar meaning but not the same. According to the NCI Dictionary of Cancer Terms, *injerto* is “healthy skin, bone, or other tissue taken from one part of the body and used to replace diseased or injured tissue taken from another part of the body”, and *trasplante* is a “surgical procedure in which tissue or an organ is transferred from one part of the body to another or from one person (the donor) to another person (the recipient)”. So, it is necessary to have the context in which a term with the suffix *-graft* appears in order to identify whether it means *injerto* or *trasplante* in Spanish.

ST		TT	
Term with affixation	Affixes	Equivalent	Affixes
allograft	all/o- = referring to another -graft = transplant	aloinjerto alotrasplante	alo- = otro -injerto alo- = otro -trasplante
anhidrosis	a(n)- = lack of; no; not hidr/o- = sweat -osis = abnormal condition	anhidrosis	a(n)- = sin; no hidr/o- = sudor -osis = proceso patológico
autograft	auto- = self -graft = transplant	autoinjerto autotrasplante	auto- = de o por sí mismo -injerto auto- = de o por sí mismo -trasplante
avascular	a(n)- = lack of; no; not vascul/o = vessel	avascular	a(n)- = sin; no vascul/o = vaso -ar = relativo a

	-ar = pertaining to		
dermatitis	dermat/o- = skin -itis = inflammation	dermatitis	dermat/o- = piel -itis = inflamación
dermatology	dermat/o- = skin -logy = study of	dermatología	dermat/o- = piel -logía = estudio
epidermis	epi- = upon; above -dermis = skin	epidermis	epi- = sobre -dermis = piel
fibroblast	fibr/o- = fiber -blast = immature; a growing thing	fibroblasto	fibr/o- = fibra -blasto = forma celular inmadura
hemangioma	hem/o- = blood angi/o- = vessel -oma = tumor; mass	hemangioma	hem/o- = sangre angi/o- = vaso sanguíneo -oma = tumor
ichthyosis	ichthy/o- = fish -osis = abnormal condition	ictiosis	icti/o- = pez -osis = proceso patológico
keratinocyte	kerat/o- = hornlike -cyte = cell	queratinocito	querat/o- = de textura córnea -cito = célula
melanocyte	melan/o- = black -cyte = cell	melanocito	melan/o- = negro -cito = célula
pilosebaceous	pil/o = hair seb/o = sebum -ous = pertaining to	pilosebáceo	pil/o = pelo seb/o = sebo -ceo = relativo a

Table 8: Affixation found in the ST and their equivalents in the TT.

6.2.3.2. Latinisms

Numerous references to Latin words and Latinisms appear in the ST, and there are even many that the authors have decided not to translate into English, so they maintain their original Latin form. As it can be seen in the table below, this does not usually occur in Spanish, since many of these Latinisms have been translated so they do not maintain their original Latin form. This is somewhat curious, since Spanish comes from Latin but English does not, its origin, as seen in section 2.2. is Germanic, but the influence of Latin on medical terminology is overwhelming and in fact, the terms that come from Latin are considered ‘international terms’ in medicine.

For example, the Latin word *integumentum*, which means *covering*, is used in the ST, as well as in the TT, to explain the origin of the word *integument*, in Spanish *integumento*, and thus the origin of the term *integumentary system*, in Spanish *sistema tegumentario*. The Latin word *corium*, which means *skin*, is used as an equivalent to the term *dermis*, and it can be seen that in English, the word *corium* maintains the same form as in Latin. Nevertheless, in Spanish, this equivalent to the term *dermis* has changed to *corion* (see Figure 4).

There are also other interesting examples of Latin words which appear in the ST that need to be pointed out. On the one hand, the compound words of Latin origin derived from the term *stratum* (“horizontal layer” (Harper)), which are *stratum basale*, *stratum corneum*, *stratum germinativum*, *stratum granulosum*, *stratum lucidum*, and *stratum spinosum*. As it can be seen in all these examples, the original form of these terms in Latin is maintained in English. Nonetheless, this does not occur in Spanish since the equivalents of these compound words of Latin origin have been translated into Spanish completely. On the other hand, something similar happens with the compound words of Latin origin derived from the term *tinea* (“ringworm” (Harper)), which are *tinea barbae*, *tinea capitis*, *tinea corporis*, *tinea cruris*, *tinea pedis*, and *tinea unguium*. The original form of these terms in Latin is maintained in English and practically all their equivalents in Spanish have been translated into Spanish completely. However, the term *tinea capitis* maintains its original Latin form both in English and in Spanish.

Finally, another examples similar to the previous ones in which the original Latin form of the term is kept in English but in Spanish it is completely translated are the term

verruca and the compound word *verruca vulgaris*. In Spanish, these terms have been translated as *verruca* and *verruca vulgar*.

ST	TT
Corium	Corion
Decubitus	Decúbito
Fascia	Fascia
Integumentum	Integumentum
Lunula	Lúnula
Nevus (singular form of nevi)	Nevo
Pruritus	Prurito
Sebum	Sebo
Staphylococcus (singular form of staphylococci)	Estafilococo
Stimulus (singular form of stimuli)	Estímulo
Stratum (singular form of strata)	Estrato
Stratum basale	Estrato basal
Stratum corneum	Estrato córneo
Stratum germinativum	Estrato germinativo
Stratum granulosum	Estrato granuloso
Stratum lucidum	Estrato lúcido
Stratum spinosum	Estrato espinoso
Streptococcus (singular form of streptococci)	Estreptococo
Tinea	Tiña
Tinea barbae	Tiña de la barba
Tinea capitis	Tinea capitis
Tinea corporis	Tiña corporal
Tinea cruris	Tiña crural
Tinea pedis	Tiña del pie
Tinea unguium	Tiña ungueal
Verruca	Verruga

Verruca vulgaris	Verruga vulgar
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Table 9: Latinisms located both in the ST and in the TT.

6.2.3.3. Abbreviations and acronyms

As it can be seen in the table below, the use of abbreviations and acronyms is very common in medical language, and even though most of the abbreviations and acronyms that occur in the ST are used in the same way both in English and in Spanish, there are two examples of abbreviations which have been found in the ST that do not exist in Spanish as such. One is the abbreviation *decub* for *decubitus*, in Spanish *decúbito*, which was mentioned in the previous section, and the other abbreviation is *bx* for *biopsy*, in Spanish *biopsia*. These two abbreviations, although their use is very frequent in English, in Spanish, on the contrary, they do not exist and there are not even equivalents.

There are some abbreviations and acronyms that are exactly the same both in English and in Spanish, for example *C* for *centigrade*, in Spanish *centígrado*, or *UV* for *ultraviolet*, in Spanish *ultravioleta*. Moreover, Hernández de la Rosa and Moreno-Martínez suggest that “[...] some acronyms are translated and these can be considered loan translations from English, i.e. they are anglicisms of semantic kind and they have to do with translation matters” (149), for example the acronym *HPV* for *human papilloma virus*, whose equivalent in Spanish is *VPH* for *virus del papiloma humano*. They also claim that “others are in their original form and thus non-adapted Anglicisms, adopted in their original form” (149), for example the term *Fahrenheit* (*F*).

It is important to point out that these abbreviations and acronyms always appear together with their meaning or explanation since both the ST and the TT belong to an expert-to-semi-expert communicative setting, so the authors cannot assume that the readers understand each and every one of these specialised abbreviations and acronyms that are used.

ST	TT
Centigrade (C)	Centígrado (C)
Discoid lupus erythematosus (DLE)	Lupus eritematoso discoide (LED)

Erythema chronicum migrans (ECM)	Eritema crónico migratorio (ECM)
Erythema multiforme (EM)	Eritema multiforme (EM)
Fahrenheit (F)	Fahrenheit (F)
Human papilloma virus (HPV)	Virus del papiloma humano (VPH)
Herpes simplex virus type 1 (HSV-1)	Virus del herpes simple tipo 1 (VHS-1)
Herpes simplex virus type 2 (HSV-2)	Virus del herpes simple tipo 2 (VHS-2)
Idoxuridine (IDU)	Idoxuridina (IDU)
Immunofluorescent (IF)	Inmunofluorescencia (IF)
Lupus erythematosus (LE)	Lupus eritematoso (LE)
Psoralens ultraviolet light A (PUVA)	Psoraleno más luz ultravioleta A (PUVA)
Systemic lupus erythematosus (SLE)	Lupus eritematoso sistémico (LES)
Ultraviolet (UV)	Ultravioleta (UV)

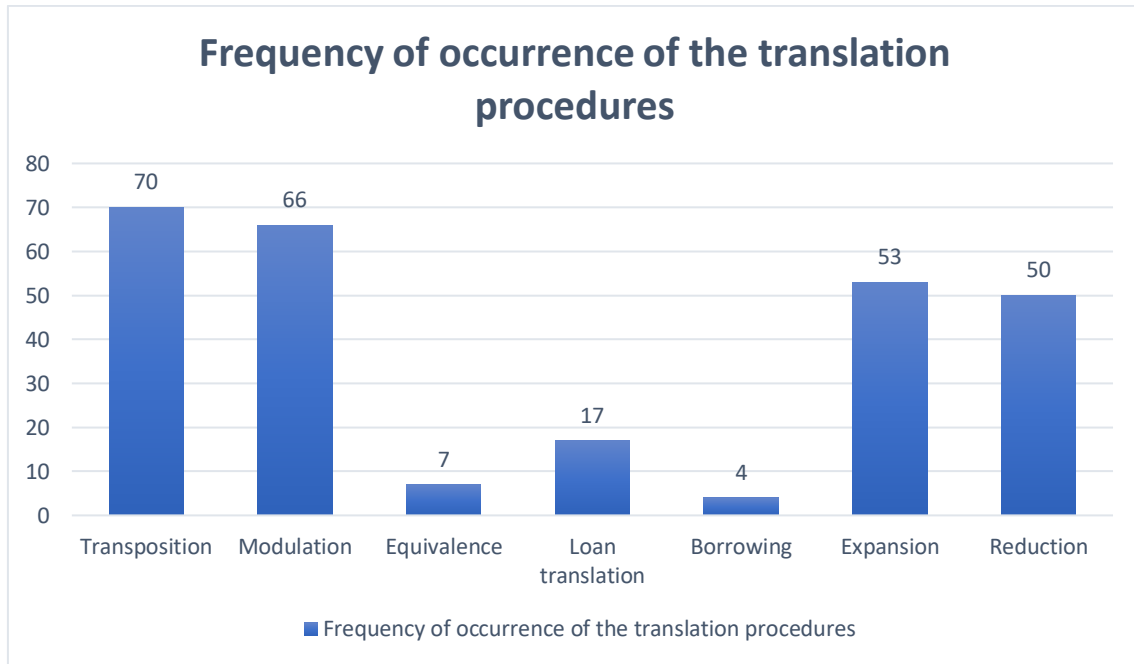
Table 10: Abbreviations and acronyms found in the ST and their equivalents in the TT.

7. Conclusion

After having analysed the results of the previous section, the two hypotheses of this undergraduate dissertation have been verified. One of these two hypotheses that have been achieved verifies that certain specialised medical terms are not expected to be as common in the TL as in the SL, hence the reason why it has been so difficult to find equivalent terms in Spanish of certain English specialised medical terms. The other hypothesis verifies that the most common translation procedure used in the elaboration of the TT is transposition and that numerous examples of loan translation have been found, though it is not one of the most used translation procedures in the TT.

In relation to translation procedures, Duque García, González and Catrain¹⁶ suggest that transposition and modulation are imposed by the style of the author of the SL, and in the case of technical translation, the authors of technical texts tend to be clear and precise when expressing their ideas and deduction in the creation of their articles. This style is what makes transposition more frequent than modulation in technical translation (149).

¹⁶ This is my own translation of the original source.



Graphic 1: The frequency of occurrence of the different translation procedures used in the TT.

As it can be seen in the graphic above and as it was expected, since it is a scientific-technical translation, the most used translation procedure in the elaboration of the TT has been transposition, followed by modulation, expansion, and reduction. The least used translation procedures have been loan translation, though numerous examples have been found, equivalence and borrowing.

From these results, it could be deduced that the most used translation procedures in this undergraduate dissertation coincide with those most used in the translation of medical texts in general, although, as mentioned in the previous sections, everything depends on the decisions made by the translator and the readers to whom the text is addressed. In this case, there were many sentences in the ST that were not well understood when translated literally into Spanish, so I decided to use both transposition and modulation to maintain the original meaning of these sentences but changing the grammatical category of the words or using others. Expansion has been very useful to add information in the TT that was missing in the ST, and also reduction in order to avoid repetitions and explanations that were too complex or long.

Finally, I hope that this undergraduate dissertation can be of help to translators of specialised medical texts and that they can solve the different problems they encounter. In addition, the fundamental work that translators have had throughout history and they continue to have despite the new technologies which seek to replace them has been analysed in depth. Nevertheless, their work is not something that can be replaced since translation, whether specialised or not, is a very personal work to which a lot of effort must be devoted and for this a person is needed.

8. Bibliography

8.1. Works cited

Bowker, Lynne, and Jennifer Pearson. *Working with Specialised Language: A Practical Guide to Using Corpora*. Routledge, 2002.

“Clínica Universidad de Navarra Dictionary.” *Clínica Universidad de Navarra*, 2020, <https://www.cun.es/diccionario-medico>.

Collins, C. Edward, and Juanita J. Davies. “The Integumentary System.” *Modern Medical Language*. West Publishing Company, 1996, pp. 74-107.

“Collins Dictionary.” *HarperCollins*, 2022, <https://www.collinsdictionary.com/>.

Cortés Gabaudan, Francisco. “dicciomed.” *Universidad de Salamanca*, 2022, <https://dicciomed.usal.es/>.

Duque García, M^a del Mar, M^a Trinidad González, and Magdalena Catrain. “Transposición y modulación en la traducción técnica.” *III Encuentros Complutenses en torno a la traducción*, 1993, pp. 137-149. https://cvc.cervantes.es/lengua/iulmyt/pdf/encuentros_iii/13_duque_gonzalez_catrain.pdf.

“Encyclopedia Britannica.” *Encyclopædia Britannica Inc.*, 2022, <https://www.britannica.com/>.

Harper, Douglas. “Online Etymology Dictionary.” *Online Etymology Dictionary*, 2022, <https://www.etymonline.com/>.

Herrero Quirós, Carlos. *Teoría y Práctica de la Traducción Inglés/Español*. 2019. Class notes. University of Valladolid.

Gutiérrez Rodilla, Bertha M. “El lenguaje de la medicina en español: cómo hemos llegado hasta aquí y qué futuro nos espera.” *Panace@: Revista de Medicina, Lenguaje y Traducción*, vol. 15, no. 39, 2014, pp. 86-94. Tremédica, https://www.tremedica.org/wp-content/uploads/n39-tribuna_GutierrezRodillaB.pdf.

- Hernández de la Rosa, Yurima, and Francisco L. Moreno-Martínez. “Acronyms in the medical language.” *Cuban Society of Cardiology*, vol. 4, no. 3, 2012, pp. 148-150. CorSalud, <https://www.medigraphic.com/pdfs/corsalud/cor-2012/cor123a.pdf>.
- Kellogg, Michael. “WordReference.” *WordReference.com*, 2022, <https://www.wordreference.com/>.
- López Arroyo, Belén. *Traducción Inversa Español-Inglés*. 2021. Class notes. University of Valladolid.
- López Guix, Juan Gabriel, and Jacqueline Minett Wilkinson. *Manual de traducción: inglés / castellano: teoría y práctica*. Editorial Gedisa, 2019. eLibro, <https://elibro-net.ponton.uva.es/es/ereader/uva/122234>.
- Marecková, Elena, Frantisek Simon, and Ladislav Cervený. “Latin as the language of medical terminology: some remarks on its role and prospects.” *Swiss medical weekly*, vol. 132, no. 41-42, Nov. 2002, pp. 581-587. NIH, <https://pubmed.ncbi.nlm.nih.gov/12571757/>.
- Méndez Cendón, Beatriz. *Terminología y Lexicografía de la Lengua Inglesa*. 2021. Class notes. University of Valladolid.
- “Merriam-Webster Dictionary.” *Merriam-Webster Incorporated*, 2022, <https://www.merriam-webster.com/>.
- Montalt, Vicent, Karen Zethsen, and Wioleta Karwacka. “Medical translation in the 21st century – challenges and trends.” *Current Challenges and Emerging Trends in Medical Translation*, no. 10, Dec. 2018, pp. 27-42. MonTI, <http://www.e-revistas.uji.es/index.php/monti/article/view/3683/3011>.
- “NCI Dictionary of Cancer Terms.” *National Cancer Institute*, 2020, <https://www.cancer.gov/publications/dictionaries/cancer-terms>.
- Olohan, Maeve. “Comparable corpora.” *Introducing Corpora in Translation Studies*. Routledge, 2004, pp. 35-44.
- “Terminología Anatómica.” *Wikipedia, La enciclopedia libre*, 2022, https://es.wikipedia.org/wiki/Terminolog%C3%ADa_Anat%C3%B3mica.

- Tracey, David. “Early History of Medical Translation.” Tracey Translations, <https://traceytranslations.co.uk/history-of-medical-translation/>.
- van Middendorp, Joost J., Gonzalo M. Sanchez, and Alwyn L. BurrIDGE. “The Edwin Smith papyrus: a clinical reappraisal of the oldest known document on spinal injuries.” *European spine journal: official publication of the European Spine Society, the European Spinal Deformity Society, and the European Section of the Cervical Spine Research Society*, vol. 19, Aug. 2010, pp. 1815-1823. National Library of Medicine, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2989268/pdf/586_2010_Article_1523.pdf.
- Vázquez-Ayora, Gerardo. *Introducción a la Traductología: Curso Básico de Traducción*. Georgetown University Press, 1977, https://wiac.info/docdownloadv2-pdf-vazquez-ayora-introduccion-a-la-traductologia-curso-dl_af6f684f3c6f56e3c8af1ad24fb49f6c.

8.2. Parallel texts in Spanish

- Bertran Prieto, Pol. “Las 25 enfermedades dermatológicas más comunes.” MédicoPlus, <https://medicoplus.com/dermatologia/enfermedades-dermatologicas-mas-comunes>.
- Durocher, Louis-Philippe. “Enfermedades de la piel.” *Enciclopedia de salud y seguridad en el trabajo*, 4 ed., 1998, pp. 12.1-12.21. <https://www.insst.es/documents/94886/161958/Cap%C3%ADtulo+12.+Enfermedades+de+la+piel>.
- García Dorado, J., and P. Alonso Fraile. “Anatomía y fisiología de la piel.” *Regreso a las Bases*, vol. 24, no. 3, April-May 2021, pp. 156.e1-156.e13. *Pediatría Integral*, <https://www.pediatriaintegral.es/publicacion-2021-05/anatomia-y-fisiologia-de-la-piel/>.

Reiriz Palacios, Julia. “Tejidos. Membranas. Piel. Derivados de la piel.” *Col·legi Oficial d’Infermeres i Infermers de Barcelona*, 2009. Infermera virtual, www.infermeravirtual.com/files/media/file/95/Tejidos%2C%20membranas%2C%20piel%20y%20derivados.pdf?1358605323.

9. Appendix

The screenshot shows the Collins dictionary interface. At the top, there is a navigation bar with links for LENGUA, TRADUCTOR, JUEGOS, ESCOLAR, BLOG, and RECURSOS. The main search area contains the text 'cold sore' and a dropdown menu with language options: Español, Inglés, Francés, Alemán, Italiano, and Portugués. Below the search bar, there are tabs for 'cold sore', 'Oraciones de ejemplos', 'Tendencias', and 'En otros idiomas'. The main content area displays the translation 'traducción al español de "cold sore"', followed by the term 'cold sore' and its frequency indicator (four red dots). Below this, the Spanish equivalent 'herpes m inv labial' is shown with a pronunciation icon, followed by 'pupa' with a pronunciation icon. A note states 'See full dictionary entry for cold below' and a copyright notice is at the bottom: 'Copyright © by HarperCollins Publishers. All rights reserved.'

Figure 1: Spanish equivalent of *cold sore*.

carbunco [carbuncle]


m. (Patol. Infeccioso). Enfermedad infecciosa de diversos animales como bovinos, cabras, ovejas, etc., causada por la bacteria *Bacillus anthracis*. Se transmite al hombre por contacto con animales infectados. La lesión del carbunco cutáneo pasa por diversas fases: elevación, pápula, vesícula, ulceración y finalmente una costra o escara negra. Otra denominación: ántrax maligno. [Wikipedia](#)

lat. *carbunculu(m)* [carbō(nem) lat. 'carbón' + -cul(um) lat. 'pequeño']

Leng. base: lat. Antigua calco del gr. Docum. en 1410 en esp. En lat. significa 'trozo de carbón' y 'carbunco', 'ántrax'; su uso en patología es un calco del gr. *ánthrax* ἄνθραξ; pasó a lat. medieval; docum. en fr. en s. XI; en esp. a principios del s. XV con gran variedad de formas. En la actualidad también se usa *carbunclo* y *carbúnculo*.

Figure 2: Spanish equivalent of *carbuncle* (*carbunco*).

ántrax [anthrax]

1. m. (Patol. Infeccioso). **Ántrax maligno**: **Carbunco**. [Wikipedia](#) .
2. m. (Patol. Derm.). **Inflamación** de un grupo de **fóliculos del pelo** y **tejidos** cercanos, originada generalmente por la **bacteria** *Staphylococcus aureus*, con **zonas de necrosis** (células muertas) en su interior.

[anthrak- ἄνθραξ/-κος gr. 'carbón', 'carbunco' + -s gr.]

Leng. base: gr. Antigua, significado antiguo y nuevo. Docum. en 1350 en esp. En gr. significa entre otras cosas 'carbunco' desde Hipócrates, s. V a.C.; pasó a lat. tardío *anthrax*, lat. y esp. mediev. La 2ª acep. se explica por el parecido de las **lesiones**.

Figure 3: Spanish equivalent of *carbuncle* (*ántrax maligno*).

• **PIEL**

CARACTERÍSTICAS

La piel o membrana cutánea, forma parte del **sistema tegumentario**, constituido por la piel y sus derivados: el pelo, las uñas y las glándulas subcutáneas.

La piel es un órgano porque está formada por diferentes tejidos, unidos para realizar actividades específicas. Es uno de los órganos más grandes del organismo en área de superficie y en peso. En los adultos, la piel cubre un área de unos 2 m², pesa unos 4.5-5 Kg y su grosor varía de 0.5-4 mm dependiendo de su localización. La piel no solo cubre la superficie del cuerpo sino que realiza, además, varias funciones esenciales y está constituida por dos capas principales:

- Una externa, formada por epitelio de superficie, la **epidermis**
- Una interna, formada por tejido conjuntivo, la **dermis o corion**.

Por debajo de la dermis hay otra capa: la **hipodermis** o **capa subcutánea**, que consiste en tejido conjuntivo laxo y tejido adiposo. La piel queda anclada al tejido subcutáneo por fibras procedentes de la dermis. A su vez, la hipodermis se une a los tejidos y órganos subyacentes. Los límites entre la parte epitelial y la parte conjuntiva se ven claramente, en cambio los elementos fibrosos de la dermis se entremezclan con los de la hipodermis y no hay una separación clara.

La piel se continúa con varias membranas mucosas en las llamadas **uniones mucocutáneas**, que se encuentran en los labios, párpados, vulva, prepucio y ano. Son zonas de transición entre las membranas mucosas y la piel y están humedecidas por glándulas mucosas situadas dentro de los orificios corporales. Tienen un característico color rojo debido a la sangre de los capilares subyacentes, ya que en estas zonas la epidermis es más delgada.

CAPAS

En la piel distinguimos dos capas:

- Una externa, formada por epitelio de superficie, la **epidermis**
- Una interna, formada por tejido conjuntivo, la **dermis o corion**.

Figure 4: Spanish equivalent of the Latin term *corium*.