Tradução técnica na área automóvel

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Relatório de estágio de Mestrado em Tradução

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Dissertação apresentada para cumprimento dos requisitos necessários à obtenção do grau de Mestre em Tradução, realizada sob a orientação científica da Prof.ª Karen Bennett
O presente relatório tem como objetivo explorar o mercado de traduções na área da indústria automóvel, a qual, nos dias que correm, representa um campo de especialização de grande importância para a tradução técnica. Trata-se de uma indústria enorme, bem cimentada, e que toma contacto com a maioria dos países do mundo; o referente material textual que circula está, majoritariamente, escrito em Inglês, e faz com que os serviços de tradução sejam muito procurados. É neste sentido que se desenvolve o relatório — numa primeira parte irá dar a conhecer de forma abrangente o funcionamento do mercado e, numa segunda parte, as dificuldades inerentes à tradução automóvel do inglês para o espanhol. Procurará ainda demonstrar que a área da tradução técnica pode ser tão desafiante e multifacetada como as outras áreas dos estudos de tradução e, através da descrição de situações problemáticas que os tradutores enfrentam nesta área, irá propor sugestões no sentido de melhorar a performance do tradutor técnico.

PALAVRAS-CHAVE: tradução técnica, indústria automóvel, ferramentas CAT, compostos nominais, manual de instruções, tradução especializada, MemoQ, tradutor inglês-espanhol, estudos de tradução, teorias da equivalência, teorias funcionalistas.
Technical Translation in the Automotive Industry

Brenda Pérez

This report will explore the market for translations in the automotive industry, a major area of specialization within technical translation these days. It is an enormous and well-established industry, which comes into contact with people in every country and for that reason, all the material that circulates mainly in English needs to be translated and localized for different countries, resulting in a huge demand for translation services. One of the aims of this report is to give an overview of this market and then to specifically explore some of the difficulties inherent in the translation from English into Spanish. Furthermore, this work will also seek to demonstrate that technical translation can be as challenging and multifaceted as other fields of study within Translation Studies, and by describing some of the most problematic situations that translators encounter in this field, certain aspects will be proposed in order to improve their overall performance.

KEYWORDS: technical translation, automotive industry, CAT tools, compound nouns, shop manuals, specialized translation, MemoQ, English-Spanish translator, translation studies, equivalence-based theories, functionalist theories.
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Introduction

“Scientific and technical translation is part of the process of disseminating information on an international scale, which is indispensable for the functioning of our modern society.”

(Pinchuck 1977:13)

The present report documents the work done during an internship in a translation company called L10N Studio, Unipessoal Lda.¹, as part of the non-curricular part of the Master in Translation, with English specialization.

It was a 3-months internship as an in-house translator, working mainly from English into Spanish. The company works with different sectors today, but many of its major clients belong to the automotive industry and this is how I came to learn that this type of translation produces a huge quantity of work for translators. For that reason, this work aims to give a general idea of this market and specifically explore the main difficulties inherent in the translation of English to Spanish. Given that the automotive industry consists of a major area of specialization, I am interested in understanding to what extent non-specialized translators can achieve good results, given the conditions of a professional context, that is, with limited time and therefore, limited amount of resources. Understanding the complexity of this type of translation and having detected some of the main problems translators are confronted with when working with technical texts, this report will discuss which aspects could be improved to get better quality and more efficient translations. The report will be structured as follows.

The first section will make a brief presentation of L10N, the host company for the internship. I will explain how was the experience of working in a professional environment, as well as the different tasks that were learnt and practised during the internship.

The second part seeks to give an insight into the world of technical translation. Given that most of the company’s work consists of technical texts, it seems imperative to explain what is meant by this type of translation, and at the same time throw some light upon related concepts that are frequently confused. After that, the main theories in translation studies will be discussed in order to understand which approach can be more convenient when dealing with this type of translation.

¹ Technical translation agency, based in Lisbon (http://www.l10n.pt/pt/).
In the third part, the report will focus on the specific field discussed in this work, the automotive industry. Although it is a relatively recent area of study, which has not yet received much attention from academic scholars, some authors suggest a specialized language has been developing with certain characteristics that can be called “technical language of the automotive industry” (Corbacho Sanchez 2002:73). Given its vast reach, the different areas involved will be briefly described, and the types of texts that are expected in each respective area will be indicated. Afterwards, this chapter will present the most common characteristics of instructions manuals, namely shop manuals, which was the main type of text I worked with during the internship and which constitutes a significant work load for the company.

The last section will concentrate on the main challenges for translators of technical texts in the automotive area, from English to Spanish. To begin with, I will try to demonstrate the importance of the source text and how it can affect the result of the translation. Next, special attention will be given to the phenomena of compound nouns\(^2\), which are abundant in these texts and may represent the biggest difficulty for translators, especially for those without specialized knowledge. Different examples found in the translation of a shop manual will be presented to demonstrate how the specialized bibliography\(^3\) is often not enough to solve these kinds of problems and to analyse if it is possible for non-specialized translators to come up with adequate translation solutions.

To conclude, this report will claim that since technical translation is such a relevant and challenging field of study, it deserves higher visibility in translation studies\(^4\). Unlike literary translation, which has traditionally been the focus of all translation theories, technical translation lacks of a theoretical framework, since all the existent approaches do

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\(^2\) These linguistic phenomena will be better explained later in section 5.3, but for now, it can be understood as a compound unit formed by a nominal nucleus accompanied by at least one premodifier, e.g.: university lecturer.

\(^3\) With specialized bibliography I really mean any kind of online or physical resources with which translators commonly work: e.g. monolingual and bilingual dictionaries, specialized books or magazines, online translation sites, databases, as well as any CAT tool. I will call all these resources either bibliography or documentation.

\(^4\) It is true that the situation has been changing in the last years and that SciTech Translation is becoming a thriving area of study in TS, with many related topics covered by translation journals and conferences. Nevertheless, this report will argue that along the history of translation theory and since the beginning of translation studies, literary translation has received much more attention by translation scholars, and for that reason, there is still a lot of research necessary in this area. This idea will be supported by several authors later in this work.
not seem to adequate properly to this field. In this sense, it will be argued that empirical studies are necessary to understand how technical translation works, and, as various authors suggest, it seems that a deeper linguistic approach can prove useful to the study of this area.

Chapter I: Description of the host company

I. 1. Presentation of the company

L10N Studio, Unipessoal Lda. is a certified company (ISO 171005) based in Lisbon, Portugal. The company was established in 1999, under the name L10N Studio - Comunicações Técnicas and was founded by two managing partners. Initially, they specialized in the auto and industrial sector, and then they started working with medical and pharmaceutical translations. From 2009 the company adopted its actual name, L10N, which means “Localization” in translation terminology. In this business, the abbreviation usually refers to the adaptation of software from one language to another, but in this case, the company prefers to see this term in its broad sense, as the adaptation of a product, application or document content to meet the language, culture and other requirements of a specific target market. This target-oriented strategy is required in almost all translations, sometimes by order of the clients, but many times it is the company’s decision based on its experience, although there could be some exceptions.

In recent years the company has experienced a continuing growth, counting today with 13 members and working with ease in different sectors and language pairs. The structure of the company is as follows: one Chief Experience Officer (CXO), in charge of the overall performance of the organization; a Senior Project Manager who deals with translation projects but also supervises the other Project Managers (PMs); four Project Managers who deal mostly with clients and translators to carry out the translation orders; an Account Manager who has similar activities as a Project Manager but is also in charge of leading marketing activities in order to gain new clients for the company, like for example, attending translation conferences to improve and increase the company’s professional

5 ISO 17100:2015 Translation Services-Requirements for Translation Services was published on May 1, 2015. It provides requirements for the core processes, resources, and other aspects necessary for the delivery of a quality translation service that meets applicable specifications. Consulted in 8/02/2017 on: http://www.iso.org/iso/catalogue_detail.htm?csnumber=59149
network; a Vendor Manager in charge of recruiting freelance translators for on-going or urgent projects, assessing candidates, negotiating rates and other activities in the field of human resources; three in-house translators, working mainly from English to European and Brazilian Portuguese, carrying out different tasks like translating, reviewing, proofreading, etc. It is important to mention that all the members of the company are Portuguese native speakers. Although most of the work is done into Portuguese, either Brazilian or European, the company also works with other language pairs, for which they recruit native translators and reviewers from external sources.

Given that most of the work done belongs to the field of technical and scientific translation, the use of CAT tools is of great importance for the performance of the company. The most used ones are SDL Trados Studio⁶ and MemoQ⁷, but there can be projects that, depending on their characteristics and the client’s specifications, can be translated using Microsoft Word, Excel, PowerPoint or a specific client’s software. Simultaneously, there is other software available that contributes to the productivity of the company, such as SDL Multiterm, the main terminological platform used; Skype, as the communication platform among internal and external collaborators; Microsoft Outlook, for communication with clients; Plunet Business Manager, a web-based platform for managing translation projects; X-bench and Verifika, reviewing programs for terminology and quality assurance.

I. 2. Review of the experience and tasks carried out during the internship

The experience consisted of working as a full-time translator with the pair of languages English-Spanish. The internship mentor within the company was the CXO and during the first month the idea was to familiarise myself with the functioning of the company and the use of CAT tools. The main objective of the internship was to participate in a project related to the automotive area, and in order to get practice, I was assigned the translation of different types of documents, such as leaflets, brochures, press releases, internal company documentation and letters to clients and to partners, all relating to the same client. These texts were already translated, so the idea was to compare translation

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results as a way of identifying the weaknesses and which things needed special attention. All the work was done using MemoQ, but without using any translation memory or glossary.

The second half of the internship consisted of participating in the translation project of a shop manual⁸ (see an example in the Appendix A) of approximately 4000 pages, which was to be translated from English into Portuguese (European), Spanish (Spain), Italian and French. L10N had already translated a similar manual for the same client, but as there had been several changes, the client ordered a new translation. My participation in the project was both as a translator and reviewer, and in total I translated around 35000 words. A glossary was also updated during the preparation for the project. Usually, a translation project like this needs a lot of preparation, mainly regarding the documents of the source text, and since the project was at a very initial phase, I received the feedback for only some part of the work I did. One important thing to mention is that although I spent a great deal of time preparing for the project, like working on the glossary and translating similar texts to get familiar with the content, there were many things that were corrected by the reviewer, specially about terminology. Of course there are some factors to take into account, like no previous experience in the subject and a translation memory that was not as complete as in other languages, as the company receives few works into Spanish. Putting aside personal factors and all the different variables that can affect the performance of a translator, like translation ability, general knowledge, research capacity, language knowledge, rapid access to the sources and many more others, what this report will try to highlight and discuss more in detail is the importance of certain factors that need to be developed and improved in order to facilitate the work of the technical translator.

In general, the opportunity to work for a translation agency was extremely valuable, both as a first contact with the professional environment of translation and for all the things that were learnt in a short period of time.

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⁸ These Shop Manuals are published for the information and guidance of personnel responsible for maintenance of Mitsubishi Fuso CANTER series truck and Mitsubishi Fuso 4M4 series diesel engine, and includes procedures for adjustment and maintenance services. Shop Manuals includes troubleshooting information, power, charge and ground circuits, engine starting, stopping and preheating circuits, lighting and meter circuits, other circuits, information about engine, fuel and engine control, hybrid electric vehicle system, front axle, rear axle, brake, steering, wheel, tire. etc. Consulted on 08/02/2017, in: https://www.epcatalogs.com/Mitsubishi-FUSO-Canter-Eco-Hybrid-repair-manuals-service-manuals/
Chapter II: Technical Translation

II. 1. Definition and discussion about its scope

It is common to hear about different kind of translations: literary translation, technical translation, medical translation, specialized translation and many others. However, the difficulty of establishing rigid limits between these categories makes it easy to confuse them. Nevertheless, what all these denominations are trying to classify is the type of text the translation is dealing with. This classification was first introduced by James S. Holmes in 1972, in his paper “The name and nature of Translation Studies”, in which he named literary and scientific texts as example of text types. After Holmes, there were many other theorists that tried to organize the existing types of text, but without getting further into that discussion, in this report the focus is put on technical texts. For that reason, among the different areas in translation studies it solely concerns us to study the field of scientific and technical translation studies, i.e. the subfield of the discipline of translation studies which is specifically concerned with the theoretical investigation of scientific and technical translation (from now on STT) (Krüger 2014:23). Unlike descriptive translation studies (Toury 1995) and corpus-based translation studies (Baker 1996), the designation STT has no established research paradigm. This object of study was considered to lack multidimensionality and therefore, was not so appealing as other types of translations, resulting in very few research studies regarding this topic. However, there are several authors who believe the contrary, such as Jody Byrne, who suggests that in today’s information age the role of STT is more important than ever, or Ralph Krüger, who claims that the high complexity of STT and the considerable demands placed on scientific and technical translators warrant an in-depth theoretical exploration of this field on its own rights.

Before proceeding to define what is strictly meant by the term technical translation, it is necessary to clarify certain terminology issues. There are discussions about the designation of this field as scientific and technical, whether they can be named together or not. The first problematic comes with what is understood by technical texts and scientific texts, distinction which also depends on the language we are talking about. In English “scientific” means pertaining to the disciplines known as the sciences (e.g. physics, chemistry, biology, etc.), which use a discourse that is inherently technical. In the Romance
languages, like Spanish, “científico” is used for pure research in any discipline and can therefore include disciplines like philosophy, history, literary studies, etc.; whereas “técnico” is used for texts that apply scientific knowledge to specific areas (e.g. engineering, agronomy, etc.). Now, regarding the discussion whether scientific and technical translation can be or not named as only one category, there are different opinions. Byrne draws a clear distinction between them, stating that “scientific translation relates to pure science in all of its theoretical, esoteric and cerebral glory while technical translation relates to how scientific knowledge is actually put into practical use, dirty fingernails and all” (Byrne 2006:7-8). However, he recognizes that the lines separating scientific and technical texts are becoming increasingly blurred, so, while the two areas are separate in many ways, the ways in which they appear in the real world mean that they need to be considered together.

Salama-Carr makes a distinction between the “concept-centred” language of science and the “object-centred” language of technology, although she also admits the possibility of texts combining elements from both the scientific and technical realm (Salama-Carr 2013:20). Therefore, even though it seems rather intuitive at a theoretical level the distinction between scientific translation and technical translation, it also makes sense to talk about them as one category.

This close relationship between the two fields can be traced back throughout history. Whereas in the Middle Ages there was a clear distinction between the two, with science being the privilege of aristocratic philosophers and technology being the area of craftspeople, it was at this time where the ground for the cooperation between them began, after Francis Bacon (1561-1626) propagated an experimental science drawing on technological inventions (Krüger 2014:35). However, the origins of the very close interrelation between science and technology date back to the 19th century, and the huge scientific and technical progress since then has furthered the convergence of the two fields, leading to the symbiotic relationship between them that can be perceived today (Krüger 2014:35). According to him, it seems logical then that this convergence in the real world will be reflected in scientific and technical discourse. Nevertheless, while for Krüger it was the 17th century that started to pave the cooperation between these two fields, according to Halliday and Martin (1993) it was already at this time of the “Scientific Revolution” in England that the scientific and technical discourse as we know it today was developed.
(Halliday cit. Bennett 2011:190). They have shown that this discourse has its roots in a major linguistic upheaval that took place in the 17th century, when primary experience was grammatically reconstrued to create a new world view that focused on things rather than words (Idem). Later, this discourse was exported from English to other cultures by the process of *calquing*, which was partly a product of translation activity, spontaneous imitation and imposition of the host culture authorities seeking to partake of the economic benefits that science brings (Idem).

To sum up, what is important to understand here is that while it is possible to make a general distinction between science and technology, at the same time it is also possible talking about scientific and technical translation (STT), and for that reason these two fields are usually joined together as SciTech in translator training courses and for research purposes. Of course, it is also valid to say that when comparing certain texts, we can use the more specific designation of *scientific translation* or *technical translation*, if they can clearly be assigned to one of these two fields.

One last important issue to be clarified is the distinction between *specialized* and *technical translation*. Byrne puts it in simple words: “just because there is a specialized terminology, it does not make something technical” (Byrne 2006:3). He criticizes the tendency among certain theorists to include LSP (language for special purposes) texts such as legal, financial and economic texts within the field of technical translation, just because these areas have a unique or specialized terminology. In this same context, Olohan points out that technical translation is often used to refer to the translation of texts outside the fields of science and technology and that some scholars see *technical translation* as a synonym of *specialized translation* (Olohan 2009:246). Nevertheless, Krüger argues that *specialized translation* can be seen as the translation of texts that serves practical rather than aesthetic purposes, thus, it can be seen as a more general category which includes more specific modes of translation, such as legal, financial and also STT.

Having clarified the ambiguity among these terms and bearing in mind the texts that were explored during the internship, which were mostly *instruction manuals*, this report will focus solely on *technical translation*, and now it is important to understand it in its narrower sense. If we take the category of *scientific and technical translation* as a continuum, “pure scientific” would be at one endpoint whereas “pure technical” would be on the other edge.
Instruction manuals would be on this last endpoint. In order to understand what is meant by technical, we can look at the definition of “technology”, which according to the Oxford Dictionaries Online, refers to “the application of scientific knowledge for practical purposes, especially in industry”. Byrne considers that technical translation deals with technological texts, more specifically, “technical translation deals with texts on subjects based on applied knowledge from the natural sciences” (Byrne 2006:3). And regarding its function, Byrne sustains that they are “designed to convey information as clearly and efficient as possible” (Byrne 2012:2). About their role, although they always have been essential to the development of societies, it was some decades ago that this type of translation began to have the relevant role it has today, mainly because of several regulations passed in the form of laws related to products and services. In this sense, Resolution C4119 is one of the most relevant since it makes it mandatory for all products to include all the technical documentation translated into the language of the country where they are going to be commercialized. So, together with scientific translation, they represent nearly 90% of the total translations, according to Kingscott10 (2002:247) (Byrne 2012:6).

Having discussed what is meant by technical translation and explained why they represent the bulk of translated texts, the following part of this chapter will try to establish a relationship between technical translation and some of the existent translation theories.

II. 2. Current theoretical framework

In the daily work of a translation agency, it is difficult to see the influence of theory over practice; that is, all the people involved in translation projects seem to act quite automatically and rarely have enough time to reflect about which theoretical background best suits each translation job. Nevertheless, in L10N, there was a clear guidance for translators that was to adjust the text to the target audience, always following the rules and requests of the client, as regards style, vocabulary, etc. The reason for that is that the work

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10 This is not an exact figure, however, several authors, like Jody Byrne, believe it is an approximate number having into account the general confusion that exists around the definition of STT.
done in a professional context can be seen as a communicative service. Byrne reflects about this by quoting Sykes:

Practical translating...is a service industry. The value of the service provided by...the translator, depends here, primarily, not on the effort which went into its preparation, its literary merit its quality of presentation, production and reproduction, etc. , but on its gap-bridging capacity, its message and content, its scientific or commercial utility to the requester. (Sykes cit. Byrne 2006:11)

As technical translation is a communicative service done in name of a client, with a specific aim, it seems obvious that the different functionalist approaches to translation can serve as a theoretical background, such as Skopos\(^ {11}\) theory and the functionalist model of Christiane Nord\(^ {12}\). These functionalist approaches seem to be useful in the sense that they fully recognize the wider professional reality of translation, since they allow for the incorporation of a wealth of extra textual factors in the description and investigation of translation (Byrne 2012:11). The biggest disadvantage, as Byrne rightly claims, is that they have relatively little to say on how to achieve a specific skopoi when the perspective is narrowed down again to the translator creating a specific target text based on a specific source text (Byrne 2012:13-14).

On the other hand, quite opposite to functionalist approaches, we can find equivalence-based approaches, in which highlight the relationship between source and target text. Early extreme versions of the equivalence concept, which were primarily informed by systemic linguistic or contrastive linguistic theories, assigned a perhaps unreasonably high status to the source text (Krüger 2015:52). Here, the most important claim is that the ST determines to a great extent – by way of linguistic transformation or transcoding rules – the creation of the target text, to the detriment of other factors, such as the purpose of the translation for example (probably this narrow linguistic conception of translation led Bassnett and Lefevere (1990) to question the general usefulness of linguistics

\(^{11}\) Skopos theory was developed by Hans Vermeer in 1978 and was the first theory to fully recognize the professional reality of translation and the importance of the translation brief or comission, or more precisely the purpose of the target text, as the most important factor in determining the way we should translate texts (Vermeer 1982:1987).

\(^{12}\) Christiane Nord is one of the major proponents of functionalism. She agrees with Vermeer that the situation under which a target text is produced is different from that of the source text in terms of time, place (except for simultaneous interpreting), and sometimes medium. Thus the meaning of a text is found beyond the linguistic code, in the extratextual situation. In fact, she even stresses that meaning interpretation depends a lot on the personal experience of the text user.
for translation studies) (Krüger 2015:53). Although later these theories have included certain aspects of the more functionally oriented approaches, certain authors still argue that their ultimate orientation toward the source text tends to disregard important real-world factors such as time constraints, reader expectations or customer-preferred terminology or style (Byrne 2012:11). However, as an advantage, Krüger highlights the fact that they provide more nuanced yardsticks for the immediate textual work of the translator than the more holistic functional approaches to translation (Krüger 2015:53).

Having discussed the familiar dichotomy between retrospective perspectives on STT that focus on recreating the source text and prospective perspectives that focus on the target text, it is clear that none of these approaches are completely adequate or provide a fully comprehensive theoretical account specifically concerned with STT. As well as other authors, Byrne agrees on this fact claiming that “technical translation, like other specialised types of translation, does not fit neatly into any one theory or approach and that there is, as yet, no adequate explanation of technical translation as an activity” (Byrne 2012:2). Krüger believes that this situation is thanks to the generally low status of scientific and technical translation in TS and, similarly to Byrne, believes it is not convenient to revisit the entire debate between equivalence-based against functionalist approaches, but that instead is more useful trying to propose an account to reconcile both.

In an attempt to give some practical guidance, what Byrne recommends is to combine the best features of Skopos theory, equivalence theory and work carried out on text typologies (according to him, valuable work is done in this field, see for example Göpferich (1995) and Trosborg (1997)). So, while Byrne claims that it is not possible that any existing theory can provide an infallible model of the translation process, he still believes that they can provide adequate raw materials with which we can develop an informed and acceptable working theoretical model to guide our practical work. In the same line, Olohan believes that through cross-fertilisation and the application of a range of research methods, it should be possible to produce more theoretically and empirically grounded studies of STT (Olohan 2007:144).

However, like this they are not giving any proper solution for the absence of a theoretical framework, but instead they are just leaving the work for translators to assemble the various pieces from different theories to form a basic usable model. In this
sense maybe, Krüger’s attempt to build a prototype theoretical model for STT is perhaps more useful. In a way, he is following Byrne’s and Olohan’s advice, to try to combine the best features of both approaches, but the difference is that he is actually trying to develop a more tangible model and more importantly, he also introduces the relevance of linguistics for STT. It is not possible to describe or explain thoroughly his dynamic model in this work, but it is important to mention that he introduces two concepts, the one of “adequacy” and the one of “invariance of meaning”. “Adequacy” is a central notion of the Skopos theory, therefore, making his model compatible with functionalist approaches, and the idea of “invariance” refers to “those elements which remain unchanged in the process of translation” and like this, it is related to the degree of equivalence that can be achieved.

Furthermore, he also insists on maintaining in his model a prototypically close ST-TT relation at the content level, a condition necessary to develop a more linguistic approach. In this sense, Krüger believes that the field of cognitive linguistics (CL) has a lot to offer to translation studies in general, and more specifically to STT. Because CL subscribes to a conceptualist and hence encyclopaedic approach to linguistic meaning, it allows cognitive semanticists to develop a set of tools that would help modelling the organization of knowledge configurations evoked by linguistic expression in discourse (Krüger 2014:108). He carries out an extensive investigation on this matter, but just to give here a general idea, the aim of his work would be to apply the cognitive linguistics framework to relevant aspects of STT.

As well as Krüger, there are other authors who try to find in linguistics a set of tools that would solve some translation difficulties in STT. For example, Barba Redondo concentrates on the linguistic phenomena of compound nouns, and by carrying out a thorough investigation both theoretically and empirically, his objective is to design a grammatical tool to help out in the translation of nominalizations. His concern is also in line with the question proposed in this report, whether translators without subject-matter knowledge can arrive to adequate translation solutions. According to his investigation, in many cases it seems improbable for translators, at least those without experience, to achieve good quality translations, but he believes that a more profound linguistic knowledge could be useful, even when it may not solve all the existent problems of the translation of compound nouns. Similarly, Karen Bennett (2011), in her analysis of
Portuguese scientific discourse, gives some advice on how to tackle concrete problems the English translator faces when dealing with Portuguese scientific texts. She analyses certain linguistic and grammatical aspects of scientific discourse, which Portuguese calqued from English, such as nominalizations and impersonal verb forms, and through different examples she proposes concrete solutions on how to deal with translation problems (for example, in the case of impersonal verb forms probably the best solution is to translate in English using an impersonal active).

Even though it is difficult to affirm that linguistic approaches will provide a definite solution for all STT matters, they might prove more useful for technical translators than the more traditional translation theories. In the last chapter this discussion will be revisited, as well as other aspects that could improve the performance of technical translators.

**Chapter III: Technical Translation in the Automotive Industry**

**III. 1. General description of the translation market in the automotive industry**

As in any technical area, the automotive industry needs qualified translation services, and it is also subject to a range of interdependent factors that constantly increase its complexity, such as globalisation, the pressure for innovation and an on-demand culture. Car manufacturers and associated suppliers face the challenge of meeting rapidly the changing demands driven by these factors. Regarding globalisation, as new commercial opportunities appear in national markets, so the quantity of documentation increases, generating a need for product literature that is accurate, consistent and culturally appropriate for each market. On the side of innovation, thanks to the increasing demand from customers and environmental concerns, new models, features and services are constantly being created, and with them, a great quantity of new information needs to be standardised and localised for international markets. Lastly, increasing digitalisation and connectedness are changing expectations in many areas, but particularly in this industry, where in-car digitalisation and in-time updating of the global service staff bring new challenges as the user interfaces require localization and translation.

The automotive industry has historically been a trend-setter for many standards in the global marketplace and economy. Partially this is because the industry is made up of well-established companies, and partially because it is a global industry that comes into
contact with people in every country. As a consequence, it generates a huge demand of translation services from a different range of areas. The five major areas that can be distinguished are: marketing, which can include normal marketing and advertising materials, such as billboards, magazine ads, websites and commercials, or it can involve brand-specific endeavours such as product catalogues and information brochures; software, which is used through the entire process of modern automotive production, from the design of the bodies of cars new models to the software that help operate the vehicle or that runs the factories where the vehicles are built and assembled; manuals and documents, which includes all the documentation related to the automotive market, like contracts, sale slips, warranty information, as well as shop or service/repair manuals and customer manuals or user guides; on-board digital systems, which include all the user interfaces of the systems used in the car, such as climate control functions, audio systems or navigation and GPS, as well as on-board voice control systems; finally, customer service, which includes all the communication with the customer (as this is a critical area for the company, all the information must be clear and accurate).

Alfonso Corbacho Sanchez (2002), author of a bilingual dictionary specialized in the automotive sector (German-Spanish), agrees on the fact that this industry is one of the most relevant of the world economy. He points out that there has been an increasing interest in the specific language related to the automotive and mechanic sector, which still is very recent and has not yet been fully investigated, but that is possible to say we are beginning to see what can be known as the “technical language of the automotive industry”\textsuperscript{13}, with its own characteristics. Still, he recognizes that there is a need to define this specific technical language from a theoretical approach and that although there has been some linguistic research in the field undertaken within specialized translation and terminology, it has not received as much attention as other specialized discourses, such as legal or economic. It is important to mention that in his work he refers to translation from German to Spanish, two languages for which there is a high demand for translation services, as Germany and Spain are the first and second biggest car manufacturers in Europe respectively (according to the Organisation Internationale d’Automobile\textsuperscript{14}, from statistics of 2016). Nevertheless, as

\textsuperscript{13} In Spanish the equivalent could be: “lenguaje de la mecánica de automóviles”.

\textsuperscript{14} Consulted on 23/02/2017 in: http://www.oica.net/
English is the dominant language of this sector, most of the translation work is done from English to the other languages, depending on the market where the cars are being commercialized. That is why the author clarifies that although his work is done from a German approach, his observations are applicable to other languages.

Moreover, regarding the language used in this technical area, as the sector has the particularity of being in constant change and progress, its technical language has to adapt rapidly to the new developments too. For that reason, this terminological proliferation cannot be followed by specialized dictionaries, even by the most recent and complete publications. Another characteristic of this language, as some authors have pointed out, is the close relationship between technological and ordinary language, where there are numerous phrases that are used mainly in a technical and professional context, and then are adopted by colloquial language.

To sum up and to clarify what will be considered for the purpose of this work as “the technical language of the automotive industry” (a synthetic description as there does not yet exist a proper theoretical definition), it refers to the technical language used in the specialized communication of professionals in the context of engine mechanics, which is characterized by a specific terminology and certain linguistic characteristics. The next part of this section will only concentrate on the type of text included in the category of “Manuals and documentation” mentioned before, more specifically shop manuals.

III. 2. The main characteristics of technical texts: the case of shop manuals

The translation of instruction manuals represents an important part of technical translation, not only in L10N, but also in the general translation market. According to Jody Byrne (2006:51), “while it is convenient to speak of instructions simply in terms of user guides, there are, in fact, several types of instructional documents each of which has its own particular content, format and audience”. This report will present the characteristics of shop manuals, which is a specific category among technical texts, and although it shares most features common to all instructions manuals, its main distinction is that they are not aimed at the general public, but rather at a more specialized audience. Their function is to be a guide for the maintenance personnel, in order to carry out procedures for adjustment and
maintenance services; hence, they are different from owner’s or user manuals and they can also be called service/repair manuals.

Jody Byrne (2012:9) explains that the language used in these texts serves the purpose of telling someone how to do something, and for that reason it needs to be: simple, unambiguous, concise and unremarkable. Pinchuck (1977:163-164) refers to technical language as “workshop” language, which is somewhere between scientific and general language. It is less regulated, less literary and even colloquial on occasion but always strictly functional. He makes an observation of the language used in this type of texts, arguing the following:

The sources of vocabulary in technical language are: nominal phrases, compounds; derivatives; new applications of words (force, work, current); neologisms (kodak, nylon); borrowings. [...] The scientific language draws on a humanistic education, while workshop terms are non-literary, practical, colloquial and sometimes humorous (Pinchuck, 1977:166, 167).

Another characteristic of these texts is that most of the time they refer to something concrete and tangible, and because of that, they may be easier to understand compared to a more abstract text. The products and processes they refer to always exist in the external world, meaning like this, that technical texts can rely on world or background knowledge to a greater extent (Pinchuck 1977: 218-219).

In order to understand where instruction manuals, and consequently, shop manuals belong within the different types of technical texts, I will use a classification proposed by Krüger (2014) for the purpose of revealing at the same time the main characteristics of these texts. He makes a classification of scientific and technical discourse, which is structured along three interrelated dimensions, which are: 1) the primary text function, 2) the subject-matter competence of the discourse participants and 3) the degree of technicality.

The classification of texts according to their function is very common in Translation Studies, where probably the most widely applied model is Reiss’ (1983) text typology of informative, expressive, operative and multi-media texts. Regarding this classification, the type of texts analysed on this report would be primarily informative. Moreover, according to

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Krüger (2014:32), Göpferich (1995, 1998a) proposes a further sub-classification of Reiss’ informative function, having at the first level of her model four LSP (Language for Special Purposes) primary informative functions: juridical-normative, progress-oriented actualizing, didactic-instructive and compilation (Göpferich 1995: 309). Shop manuals can then be included in the category of didactic-instructive, where the information conveyed serves the purpose of practical application.

Regarding the second dimension of the classification, the subject-matter competence of the discourse participants, there can be two possibilities, a symmetrical or an asymmetrical communicative situation. The first would be an expert-to-expert or an expert-to-semi-expert communication in the same field. Krüger explains that from a theoretical point of view, this communication may exhibit stronger lexical or syntactic compression, and from a practical point of view, it means the translator needs a higher degree of subject-matter knowledge. Then, shop manuals can be included in any of these two categories: expert-to-expert and expert-to-semi-expert, since the ones that produce the information have to be professional engineers, mechanics or technicians to be able to explain complex mechanisms and functioning of the vehicles, as well as explaining how to repair and maintain them; on the other side, the audience needs to possess considerable knowledge and practice in the area to understand the instructions.

The third dimension, which is concerned with the degree of technicality, correlates very closely with the subject-matter competence of the discourse participants. For this matter, Arntz develops a ranking scale (see the complete table in Appendix B) and relates the degrees of technicality with the specific genre, intended recipients and knowledge requirements (Arntz cit. Krüger 2014:3816). Among eleven degrees of technicalities, we can find shop manuals in the 8th level, which involves the following characteristics:

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16 The ranking scale developed by Arntz has not been translated into English yet, so the scale used is a translation proposed by Krüger.
<table>
<thead>
<tr>
<th>Degree of technicality</th>
<th>Genre(s)</th>
<th>Intended recipients</th>
<th>Required specialized knowledge</th>
</tr>
</thead>
<tbody>
<tr>
<td>VIII</td>
<td>Installation manuals and assembly instructions</td>
<td>Experts in a very specific area of a scientific/technical subfield working in an applied context</td>
<td>Detailed applied knowledge in a specific area of a scientific/technical subfield</td>
</tr>
</tbody>
</table>

While this chart suggests that instruction manuals involve *expert-to-expert* communication, it could also be considered a form of *expert-to-semi-expert* situation, depending on the intended audience. In shop manuals, the audience needs considerable technical knowledge, though perhaps not to the same extent as the ones who produce the information; for that reason, they do not necessarily have to be *experts*, but they can be called *semi-experts*. As a result, the text of shop manuals will have a medium degree of technicality and a considerable amount of vocabulary that may not be specifically technical.

This classification has been presented mainly to serve as reference point to give an idea of the knowledge requirements and communicative configurations in shop manuals. To sum up the most distinctive characteristics of this type of text, we can say that they are primarily informative, and more specifically, didactive-instructive, and given that they involve a symmetrical communication between the producers and the receivers of the information, they possess a medium degree of technical vocabulary which needs to be communicated in the simples and clearest way.

The last chapter will deal with concrete examples of translation difficulties that were encountered in the translation of a shop manual, but that they can also be representative of technical texts in general.
Chapter IV: Discussion of the main Translation Issues

IV. 1. Difficulties inherent in the translation of English to Spanish

This section discusses some of the technical issues besetting the Spanish translator of English technical texts, ranging from difficulties related to the comprehension of the source text to terminology problems, namely with compound nouns.

The first section of this chapter will discuss if it is possible for translators, given their real working conditions, to have a full understanding of the text they are translating, and how it is necessary to achieve certain balance between quality and efficiency, so that the translation remains a profitable activity for all the people involved in the process. I will also mention some of the different factors that can affect the production of the source text, and, by giving several examples which represented certain difficulty in understanding, I will be demonstrate how these situations can often lead to poor quality translations.

Secondly, problems related with the comprehension and later translation of compound nouns will be explored in more detail. Although the intention of this work is to support the fact that a linguistic approach to translation in the field of STT can be really valuable to solve certain problems, such as the translation of compound nouns, several examples will be analysed to show at the same time that there might be many cases in which the linguistic background may not be enough. For those situations, it will also be argued that, surprisingly frequently, the existing documentation can be inefficient and, therefore, it seems that the most helpful resource available for translators would be conceptual knowledge of the subject-matter.

IV. 2. The role of the source text

Many authors argue that, in order to do a good translation, it is necessary first to understand well the source text. For example, Gémar affirms that “after a long time we know that we can only translate what we understand perfectly” (Gémar cit. Mayoral 1997/1998:143). Nevertheless, Mayoral recognizes that in practice, in a professional translation environment, for some types of translation and if the sources are reliable, translators can achieve good results without having a complete understanding of the text.
He believes that the level of comprehension should be enough to get an adequate final result (Mayoral 1997/1998:143). This can be true only if by reliable sources are meant both efficient documentation sources and a good grammatical knowledge. Saying this, it seems that we are admitting that total comprehension is an ideal objective that is not profitable in the real world, which suggests that translators need to accept a lower level of comprehension but that has to be sufficient to get an adequate final result. In addition to this, it is relevant to mention the fact that, as a general rule, it is not easy to find translators who specialize in only one specific area, and even for those who possess experience and specialization, there can still exist certain aspects of their knowledge that they do not dominate completely. To this respect, Mayoral believes that in practice, even with specialization, problems of comprehension are so frequent and problematic that many times they cannot be fully worked out, to the extent that they can be considered something ordinary in translator work (Mayoral 1997/1998:140).

There are many reasons why it may be difficult to achieve a full understanding of the source text, for example: the complexity of the subject-matter, like in the cases of recent discoveries or facts about which there exists little or no information; poor contextual information, which is very frequent even in a professional context; the linguistic and grammar characteristics of the text, as for example, the excessive use of nominalizations, abbreviations or non-complete phrases; information communicated in a confusing manner, which can include texts written by non-native speakers or which have been translated from another translation. Like this, the list could continue, but these are some of the ordinary situations encountered daily in the work of a translation agency. Next, I will present some examples to illustrate the different levels of difficulties that can be encountered when dealing with technical source texts. These examples were all extracted from different sections of a shop manual of the Mitsubishi FUSO Canter truck. Like in most instruction manuals, the text consists of short phrases, usually organized in bullets or small paragraphs. There are also many images and tables with text that also needs to be translated; therefore, when working in a CAT tool, there are many segments of only one word or short phrases without the grammatical structure of a whole sentence. In these particular cases it is very important to understand the exact context of these words or short phrases, for which is
essential to have access to the original document; otherwise it can often lead to translation mistakes.

Example 1:

- The test is only carried out if the inner heater resistance as there is connection to the heater in a case of an open load.
- If the DTC was triggered while the vehicle speed was < 2 km/h, the DPF cleaning switch (vehicle side).

These first two are examples of omissions in the source text, which make the sentences totally incomprehensible for the reader. For example, the first one is a conditional sentence: “the test is only carried out if the heater resistance”, where it is clear that there is something missing in the second part. Since it is impossible to translate the sentence without that information, the project manager needs to contact the client to clarify the meaning of the sentence. The answer given by the client confirmed that there was the fact missing information in the “if” clause:

Should read: “The test is only carried out, if the inner resistance of the heater indicates a problem, as there is connection to the heater in case of an open load.”

The second sentence is a very similar case, since it is another conditional phrase with missing information in the second clause. This time the answer given by the client was:

Should read: “If the DTC was triggered while the vehicle speed was < 2 km/h, check the DPF cleaning switch (vehicle side).”

Examples like this are common, especially in large translation projects, as is the case of this shop manual. There might be more or less difficult situations, where the translator needs to decide whether it is worth informing the project manager or the client, which also depends on the availability and the willingness to collaborate from them. The translator needs to be extremely careful about this, since clients may not be used to or may not be willing to answer many questions, as they believe it is all part of the job of the translation agency. In this particular case it was possible to send a “Query” file to the client (to see an example of a “Query” file, refer to Appendix C) with all the doubts related to the source text.
Example 2:

- **Air charger intercooler // Air charger cooler (intercooler) // Charge air cooler (intercooler)**

Another frequent problem of technical translation is *source text inconsistency*. In this manual, for example, there were at least three different ways to refer to the same element. It seems that the actual element the text is referring to is a “charge air intercooler”, but since the writer used a different name for it, I needed to determine if the text was talking about the same element or not. Consistency is one of the most important aspects of technical translations and for that reason it is essential to be sure about this information. In this case, a “Query” file was also sent to the client in order to clarify this term.

Example 3:

*Spot-weld a nut*

This is an example where, in this case because of a small linguistic mistake, translators can make a wrong interpretation, translating as an action something that is a noun. It is easy for translators to make this kind of mistakes and the situation can even be worse when translators do not have access to the source text context. In this example, the phrase appeared in two different contexts. One was the following image:

![Image of Earth terminal and Spot-weld a nut](P118182EU)

And, it also appeared in other parts of the text, as the following instruction:

“*Spot-weld a nut to a frame and tighten the ground bolt to the specified torque.*”
In the case of the instruction, it is correct to translate “spot-weld” as a verb, which could be rendered in Spanish as “suelde por puntos la tuerca (…)”; but in the example of the image, the translator needs to be aware that there is a mistake and should translate it for a noun: “tuerca soldada por puntos”. In cases like this, when there is a problem in the source text that can be easily solved by the translator, it is not necessary to contact the client, but yes to inform the project manager, in order to warn translators of other languages in the same project.

Example 4:

Resistance terminator (to see the text context, refer to Appendix D)

According to Byrne, in a list of errors in the source text, there is a category for factual or subject errors (Byrne 2012:162). In these cases, the knowledge of the subject area will allow the translator to detect this kind of mistakes. In the example it is written the word “terminator” which has no proper meaning in the mechanic field; nonetheless, in the same context of mechanics, there are other similar words such as terminal, terminating, termination; like this, the translator can deduct there could have been some sort of spelling mistake, or that the technical writer made a terminological error. By understanding the context and after doing some research, the conclusion was that the correct term should have been “terminating resistance” or “terminating resistor”. In such cases, it is convenient to contact the client to confirm the correct term, in order to avoid misinterpretation of the source message.

These examples were merely used as a way to understand the important role the source text has when translators are to attain good quality translations. Furthermore, there are some more comments that are relevant to be mentioned regarding this matter. One important fact related to this type of translation is that most of the scientific and technical information is spread from English to the other languages (that is, English acts as the ‘pivot language’17), and as a language shared by millions of non-native speakers around the world, it is increasingly difficult to determine which things are correct or not, or in other words,

17 Pivot language refers to an intermediary language when a text produced in a more peripheral language is being disseminated globally.
there are now different uses and variations of the same language that are widely accepted. Nevertheless, in order to improve the quality of translations and facilitate the work of translators, resulting in a better experience for readers of technical and scientific texts, a more collaborative and efficient communication would be necessary between the client and the translator agency, where small changes can significantly improve the translation result. For example, such changes could be writing the source text taking into account that it will later be translated into several languages or the use of the widely discussed translation brief\textsuperscript{18}, which in practice still has little acceptance from clients.

5.1 The use of nominalizations in technical texts

As was mentioned previously, the Scientific Revolution brought a new vision about the world. This shift had far-reaching repercussions, at the level of discourse at least, and it meant that from then on knowledge was no longer to be found in ancient texts but rather outside language, through a systematic observation of the natural world, and creating like this several linguistic consequences (Halliday cit. Bennett 2011:190). One of the consequences, which matters for the purpose of this work, is that there was a shift from a clausal-based grammar to a new noun-based grammar in everyday language. This was because the way language was used at the moment was no longer useful to convey the message of the new paradigm, so scientific discourse managed to find a new way of representing the new emphasis upon “things”, removing the subjective observer of the picture (Idem). Moreover, the victory of logical reasoning over emotions led to an emphasis on neutrality and objectivity, as the only acceptable way of arriving at conclusions that were truly universal. This was also reflected in prose, which gradually developed grammatical features, such as nominalizations, to eliminate subjectivity and to focus upon the object of study.

As a result of this development in scientific discourse, we find today that one of the most marked characteristics of scientific and technical texts is the density of its technical

\textsuperscript{18} The concept of translation brief is introduced by Vermeer and Reiss in the Skopos theory. Since translations are an assignment from a client, the brief would be the instructions to guide the translator in order to accomplish the correct skopos (function) of the translated text. Unfortunately, there is much debate and uncertainty as to what a translation brief should look like and what information should contain (Byrne 2012: 137).
terminology, which most of the times consists of all types of nominalizations. In this type of texts most of the semantic content is transported by nominal elements and verbs are used only to express the relationship among them (Halliday cit. Bennett 2011:193). The problem comes precisely at this point: where in English it became possible to summarize or “background” information that had gone before and highlight or “foreground” new information, enabling like this thematic progression (Bennett 2011:202), in Spanish it is not possible to do it in the same way. It is important to make clear that Bennett in her article is comparing English to Portuguese, but actually the same can be applied in this case to Spanish, since it has similar grammatical rules related to the modification of nouns. In Spanish the grammar demands that all the qualifying information in a noun phrase follow the head and it cannot be distributed both before and after it, like in English (Bennett 2011:202). See, for example, the following compound taken from an instructions manual which appeared in a list of potential problems related to the vehicle’s gearbox: “Gearbox primary input shaft spline worn”. In this compound the main noun is “spline” and is modified before and after by nouns and adjectives, but in Spanish it would be rendered as “Estria del eje de entrada principal de la caja de cambios desgastada”, with the head noun followed by all the modifiers, and the Spanish equivalent to “worn”, which would be “desgastada”, is presented with the same number and gender as “estría”.  

The reason why nominalizations are such a problem for translation is that the syntactical relationship between the various elements is hidden, or at least in many cases, is far from being explicit or obvious. We can relate this to the linguistic phenomena of “implicitation”19, which seems to be an inherent characteristic of scientific and technical texts, since they often show only the tip of the iceberg information and it is necessary to understand everything which is “implicit” (underneath) to have a real comprehension. In literary texts, these phenomena do not appear very frequently, as the information is organized in a more horizontal way, and not in a vertical hierarchy, like in scientific and technical texts. The situation is even worse if the translator does not possess knowledge about the subject-matter of the text. In fact, there are many studies from different

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19 Krüger considers the phenomena of implicitation and explicitation as potential indicators of text-context interaction, and for that reason, relevant for STT. He proposes a new definition of these two concepts from the perspective of cognitive linguistics, in order to avoid the circularity and imprecision of other canonical definitions of the concepts and, like that, integrate them in a wider theoretical framework for STT (Krüger 2014:186).
disciplines which try to understand and describe the semantic relationship, morphology and syntax of the components of a nominalization, but the truth is that they have not arrived at a proper conclusion and the different approaches do not even agree on a denomination for this phenomena.

One important distinction that investigators make about nominalizations is that of free nominalizations and accepted lexicalised terms. However, it is not always possible to determine such a clear-cut distinction, as for example in the case of the compound main bearing. Taken as a free compound it would be translated into “cojinete principal”, but in a more specific mechanic context, referring to the internal combustion engine, the compound should be considered as a lexicalised unit (meaning it has a specific definition in this proper context) and the translation should be “cojinete de bancada”, which is frequently used in the ordinary language of this area according to reliable bibliography (Barba Redondo 2015:191). This example reveals two problematic situations: the first is when the translator, without knowledge of the subject of the translation, may not realize main bearing is a lexicalised unit, and for that reason, believes there is no need for further research and does not recognize any interpretation conflict; the second case may be the one where the translator searches for the compound in the bibliography (monolingual and bilingual dictionaries, mechanics magazines, etc.) or in other forms of documentation, such as glossaries or translation memories, but there is no proper solution easily available, at least given a limited amount of time. Not taking into account the time restriction may facilitate the problem and the translator would possibly be able to consult a specialist if necessary, but in practice, this is not very frequent, at least on a regular basis. More problematic is the case when the translator actually encounters the term “cojinete principal” in his research and believes that it might probably be the most appropriate solution. False friends are frequently examples of this situation\(^\text{20}\).

It is out of the scope of this report to make an exhaustive analysis of the different approaches to nominalizations. Nevertheless, I will mention some of the ideas from the

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\(^{20}\) Barba Redondo uses the example of “planetary gear” and “piñon planetário” in Spanish to illustrate a case of a false friend. If the translator does not possess conceptual knowledge, it is very easy to confuse both terms, since when looking up for the term “piñon planetário” in reliable bibliography it will appear in the same context and through a superficial reading the translator is likeably to conclude that it is the appropriate equivalent in Spanish, and like that, making a translation mistake. In English “planetary gear” is the name given to the gears that go around the “sun gear”, which is the central one, but in Spanish, following the same reasoning, “piñon planetário” is the name given to the central gear, and the ones going around are called “satélices” (Barba Redondo 2015).
perspective of translation studies. Although there is no agreement to describe this phenomena, some scholars referred to them as: multiple noun compounds (Newmark 1988:41), noun clusters (Linder 2002), and in Spanish as “sintagma nominal largo” (Alcaraz 2000) or “sintagma nominal extenso especializado” (Quiroz et al 2004; Quiroz 2004:12). Moreover, there are different opinions about the difficulty of translating nominalizations. According to Quiroz, several authors agree on the fact that nominalizations represent a major problem for translators given the order of the premodifiers and the lack of explicit semantic relationship among its elements. Furthermore, they mention the fact that the translation into Romance languages, such as Spanish or Portuguese, is complicated because in these languages it is possible to make explicit the relationship of the elements through posmodification, therefore, the translator should be sure about the correct order and use of connectors (prepositions) (Quiroz 2004:21).

On the other hand, other authors believe that these types of unit do not present any difficulty for translation since there is no transposition of meaning but a mere replacement of signifiers on a one-to-one basis (Coseriu 1973:11, in Quiroz 2004:21). On the same line, Calonge argues that it seems to be evident that scientific vocabulary has nothing to do with general language: “phrases representing specialized meanings (...) are, in general, easy to translate, and only calque should be avoided” (Calonge 1995:184-185, in Quiroz 2004:21). Other authors, such as Vázquez-Ayora adopt a prescriptive perspective and as a solution for this phenomena propose the following technique: “to translate the premodifier closest to the nucleus and continue from there translating each successive adjective to the left and so on” (Vázquez-Ayora 1977:123, in Quiroz 2004:22). Nevertheless, for this solution Quiroz argues that although it can be useful in some cases, it is not enough to solve all the different types of patterns in nominalizations.

Next, after having a short experience in translating technical texts, several examples will be presented in order to support the fact that nominalizations do represent a challenge for translators.

Example 1:

*Front drive hub and spline of synchroniser sleeve worn*

The first example illustrates difficulties at the level of word order and hidden semantic relationships. The complexity also derives from the fact that this phrase appeared
as an element in a list, and was not inserted in a whole paragraph. The proposed translation for this segment\(^\text{21}\) was: “Cubo de la tracción delantera y estría de la camisa del sincronizador desgastados”. Afterwards, the translation was corrected by the reviewer, who proposed the following: “Cubo y estría de la camisa del sincronizador de la tracción delantera desgastados”. In this case, it is improbable that the bibliography or documentation would have helped to find the correct solution; at best, the translator could have found the translation of the separate elements. The problem here was that, by not having appropriate knowledge of the subject and little experience in the area, it was difficult to realize that “front drive” was modifying the nucleus compound “hub and spline of synchroniser sleeve”. It is not easy to determine in this case if better linguistic knowledge could have helped to find the most appropriate solution, since the absence of connectors in English make it difficult to obtain only one interpretation.

**Example 2:**

*Engine mounting support bracket*

This example illustrates how translating each element in turn, as proposed by Vázquez-Ayora (i.e., identifying the nucleus and then translating the successive adjectives to the left) is not always the best solution. For this segment the translation memory proposed the following translation: “soporte de fijación del montaje del motor”. It seems that the translator arrived at this solution by doing a literal translation of the English term, but without any real investigation of the actual element. Even if this solution was a more or less correct description of the element, the aim of the translator should be to find the correct term used by mechanics or professionals working in the automotive industry. Again, for someone outside this specific area, even by consulting specialized material, it was difficult to arrive to the most appropriate translation. For cases like this one, Barba Redondo demonstrates that the reliable bibliography is not enough to find the appropriate solution (Barba Redondo 2015:156). To begin with, the whole compound noun does not appear in the dictionaries, not even “support bracket” or “engine mounting”. Also, by the solutions given by the bibliography, it seems that “*support*”, “*bracket*” and “*mount(-ing)*” can be

\(^{21}\) Segments can be sentences, paragraphs or sentence-like units in which is organized a text in a Translation Memory (TM).
synonyms. Therefore, in this case, further research and knowledge about the different components of the “support”/“mounting” of an engine is needed, this time referring to the structure as a whole. After a thorough explanation about the modern components of an engine, Barba Redondo suggests that the most appropriate translation would be “soporte del taco flexible del motor”.

This example demonstrates once more how linguistic knowledge may not be enough to solve certain cases and how it may be difficult to find proper solutions in the existent documentation resources. Rather, it seems that experience and specialized knowledge can sometimes be the best resource for translators.

**Example 3:**

*Final injection components*

This is an ambiguous phrase, since we cannot be sure which noun is being modified by the adjective. As the compound does not appear in dictionaries, specialized bibliography or online translation sites, the translator needs to trust his/her experience and knowledge about the world. For this case, Barba Redondo explains that there must be an ellipsis in the compound and that the complete phrase should be: “final injection system components”. Someone with specialized knowledge about mechanics would know that “final injection system” does not exist, but that it is possible to talk about “the final components of the injection system”, thus, a possible translation for this component can be “últimos components del sistema de inyección”, or with the ellipsis, “últimos componentes de la inyección”. Here again we can see how the English grammar hides the relationship among the components. We can consider this a case of implicitation, as it was mentioned before, it is frequently encountered in scientific and technical texts, which tend to organize information in a vertical way and where not all the information is given to the reader. The use of hyphens actually can help to clarify the meaning of compounds, but English writers usually ignore the rules and customs governing this punctuation mark. For this example then, it seems improbable for linguistic knowledge alone to be helpful in finding a proper translation solution.

After looking at these few examples, it seems evident that nominalizations represent a challenge for translators. They were all extracted from a shop manual, which besides
containing abundant technical vocabulary, at the same time needs to be concise and simple so that the expected audience can understand it. From this, it can be argued that more complex texts, oriented to an even more specialized public, as is the case of expert-to-expert communication in scientific texts, the difficulty of finding proper translation solutions might probable increase. This reinforces the idea that nominalizations are actually a problematic phenomenon. What it is not obvious and can still be open to discussion is the fact whether a deeper linguistic study could provide any useful solution for translators. This report tries to demonstrate that although insufficient in itself, a linguistic approach can provide practical “tools” to solve certain translation problems. For that reason, attempts to provide practical and concrete solutions (Barba Redondo 2015, Bennett 2011) can help tackle common translation obstacles in technical texts. Moreover, this work tries to highlight the relevance of specialization and more importantly, since even specialized translators may encounter knowledge gaps in their field of study, the need for the production of different documentation sources that instead of offering terminological solutions, such as traditional dictionaries, present a more encyclopaedic content that would help translators compensate for their lack of conceptual knowledge.
Conclusion

Two important points made in this work are, firstly, that technical translation is worthy of theoretical study, and secondly, that STT does not fit properly into any present theory or translation approach. This is supported by relevant authors in this field, such as Byrne (2006, 2012), Krüger (2015) and Olohan (2007). It is also supported by the fact that there is still not enough relevant bibliography on the topic and that most of the work has been done by technical translators themselves, or certain academics that try to see how “mainstream” theories can be related to the practice of technical translation (Byrne 2012:22). This may be due to the relatively low status that STT has in TS in general, although this tendency has started to change, given the demonstrated relevance of STT in the professional translation context.

Moreover, this work has also highlighted the need to take a closer look at linguistics, which could help provide some theoretical framework for this field. Given the complex nature of this task and the impossibility to research this topic further in this report, certain attempts were mentioned in this sense, such as the case of the interface between cognitive linguistics and STT proposed by Krüger (2015). However, it was also mentioned that this linguistic approach is not meant to provide all solutions for technical translation problems, as there are many cases where mastery of the subject matter seems to be almost essential to achieve a good quality translation result.

Finally, as another purpose of this report was to discuss the kind of improvements that could be introduced to facilitate the translator’s task, I propose that a more collaborative relationship with the clients or with the source text writers would be helpful. Moreover, since subject matter knowledge plays an important role in these type of texts, translators should try to acquire as much specialization as possible. As this is difficult to achieve in the real world, another aspect that could have a positive impact is to change the way technical documentation is produced. It is true that nowadays there are many translation tools that greatly facilitate the work of translators, but finding reliable information is still an arduous task for them, especially for those with little experience, like freelance translators that do not have access to in-house translation memories or glossaries. As translators are one of the most frequent users of specialized bibliography, it is important
for such material to be created in order to meet their necessities. In that sense, it would be much more convenient if they could include a more encyclopaedic content, instead of just providing terminological solutions.
Bibliography


QUIROZ HERRERA, Gabriel Ángel (2004a): Extracción y paralelización de sintagmas nominales especializados extensos en inglés y en español. [Trabajo de investigación de segunda línea de doctorado]. Institut Universitari de Lingüística Aplicada, Universitat Pompeu Fabra, Barcelona.


http://www.iula.upf.edu/repositori/05mon010.pdf (Consulted on 10/02/2017)


Appendices

Appendix A: Extract of a shop manual

This corresponds to the “Table of contents” of a shop manual I worked with during the internship.

**Shop Manual**

**GROUP INDEX**

<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>GENERAL</td>
<td>54-00A</td>
</tr>
<tr>
<td>SPECIFICATIONS</td>
<td>54-00B</td>
</tr>
<tr>
<td>STRUCTURE AND OPERATION</td>
<td>54-00C</td>
</tr>
<tr>
<td>TROUBLESHOOTING</td>
<td>54-00D</td>
</tr>
<tr>
<td>POWER, CHARGE AND GROUND CIRCUIT</td>
<td>54-01</td>
</tr>
<tr>
<td>ENGINE STARTING, STOPPING AND PREHEATING CIRCUIT</td>
<td>54-02</td>
</tr>
<tr>
<td>LIGHTING CIRCUIT</td>
<td>54-03</td>
</tr>
<tr>
<td>METER CIRCUIT</td>
<td>54-04</td>
</tr>
<tr>
<td>INDICATOR AND WARNING LAMP CIRCUIT</td>
<td>54-05</td>
</tr>
<tr>
<td>CAB SIDE ELECTRICAL CIRCUIT</td>
<td>54-06</td>
</tr>
<tr>
<td>CHASSIS SIDE ELECTRICAL CIRCUIT</td>
<td>54-07</td>
</tr>
<tr>
<td>OTHER CIRCUIT</td>
<td>54-09</td>
</tr>
<tr>
<td>ELECTRICAL EQUIPMENT INSTALLATION POSITIONS</td>
<td>54-10</td>
</tr>
<tr>
<td>INSPECTION OF ELECTRICAL EQUIPMENT</td>
<td>54-11</td>
</tr>
<tr>
<td>STARTER AND ALTERNATOR</td>
<td>54-12</td>
</tr>
<tr>
<td>ON VEHICLE INSPECTION AND ADJUSTMENT</td>
<td>54-13</td>
</tr>
<tr>
<td>CONNECTOR CONFIGURATION</td>
<td>54-14</td>
</tr>
<tr>
<td>APPLICABLE SERVICE BULLETINS FOR THIS MANUAL INDEX</td>
<td></td>
</tr>
</tbody>
</table>

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### Appendix B: Arntz’s table for the degrees of technicality/difficulty of scientific and technical texts

<table>
<thead>
<tr>
<th>Degree of difficulty</th>
<th>Genre</th>
<th>Intended recipients</th>
<th>Required specialized knowledge</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>encyclopaedias, popular science texts</td>
<td>laypersons with a general interest in science and technology</td>
<td>little or no specialized knowledge</td>
</tr>
<tr>
<td>II</td>
<td>general works of reference in the fields of science and technology</td>
<td>persons with a specific interest in science and technology</td>
<td>general specialized knowledge at a basic level</td>
</tr>
<tr>
<td>III</td>
<td>works of reference in a scientific/technical subfield</td>
<td>persons with a specific interest in a scientific/technical subfield</td>
<td>knowledge in a scientific/technical subfield</td>
</tr>
<tr>
<td>IV</td>
<td>introductory handbooks and introductory textbooks</td>
<td>persons interested in systematically presented/systematic basic knowledge</td>
<td>knowledge of scientific basics</td>
</tr>
<tr>
<td>V</td>
<td>practice-oriented works of reference in a scientific/technical subfield</td>
<td>persons interested in the practice of a scientific/technical subfield</td>
<td>practical knowledge in a scientific/technical subfield</td>
</tr>
<tr>
<td>VI</td>
<td>advertising articles in learned journals, product information</td>
<td>potential users in a professional context</td>
<td>applied scientific/technical knowledge</td>
</tr>
<tr>
<td>VII</td>
<td>articles in learned journals</td>
<td>experts interested in very specific areas of a scientific/technical subfield</td>
<td>thorough theoretical and applied knowledge in a scientific/technical subfield</td>
</tr>
<tr>
<td>VIII</td>
<td>installation manuals and assembly instructions</td>
<td>experts in a very specific area of a scientific/technical subfield working in an applied context</td>
<td>detailed applied knowledge in a specific area of a scientific/technical subfield</td>
</tr>
<tr>
<td>IX</td>
<td>academic textbooks</td>
<td>students, scientists working in a scientific/technical subfield</td>
<td>thorough theoretical knowledge in science and technology</td>
</tr>
<tr>
<td>X</td>
<td>research reports</td>
<td>scientists concerned with theoretical issues</td>
<td>complex and detailed theoretical knowledge in science and technology</td>
</tr>
<tr>
<td>XI</td>
<td>standards, patents, application reports</td>
<td>engineers responsible for system planning</td>
<td>very detailed theoretical and applied knowledge in science and technology</td>
</tr>
</tbody>
</table>

Table 1: Degrees of technicality/difficulty of scientific and technical texts according to Arntz
Appendix C: Example 1 - Query file

A “Query” file is a document containing all the doubts related to the source text by the translator, reviewer or project manager. The questions need to be pertinent and contacting the client has to be the last resource, always depending on the client’s availability.

<table>
<thead>
<tr>
<th>File</th>
<th>Language</th>
<th>Source</th>
<th>Page</th>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>G1-C</td>
<td>all</td>
<td>Air charger intercooler - An intercooler (sometimes referred to as an aftercooler) is designed to remove heat from the compressed air coming from the supercharger (or turbo) before it enters the engine’s induction system - see <a href="http://www.superchargeronline.com/index.php/fuels/bp_2400.html">http://www.superchargeronline.com/index.php/fuels/bp_2400.html</a></td>
<td>13E-18</td>
<td>Question: Is the air charger a turbocharger or a supercharger? Answer: Air charger is a supercharger? Is it a Turbo Air Charger intercooler? See <a href="http://www.autoindustries.com/ats/18110/Turbo-Air-Charger-Intercooler-For-Vehicles-0.8-2.0L/Ask-T1-TL/G22200672325">http://www.autoindustries.com/ats/18110/Turbo-Air-Charger-Intercooler-For-Vehicles-0.8-2.0L/Ask-T1-TL/G22200672325</a></td>
<td>Minimum air pressure was exceeded = minimum air pressure was exceeded. Meaning, the pressure dropped below the minimum level.</td>
</tr>
<tr>
<td>G1-C</td>
<td>all</td>
<td>The physical cam pressure is monitored? Like in the physical cam pressure is monitored for off-set drift at engine standstill after a waiting period, which allows to drop the pressure in the camshaft to ambient pressure (XEN).</td>
<td>13E-17</td>
<td>Question: Minimum air pressure was exceeded?</td>
<td>Minimum air pressure was exceeded.</td>
</tr>
<tr>
<td>G1-C</td>
<td>all</td>
<td>If it exceeds 215,000 kPa</td>
<td>13E-31</td>
<td>Should read: The physical cam pressure is monitored after a waiting period, which allows to drop the pressure in the camshaft to ambient pressure (XEN).</td>
<td>Should read: The physical cam pressure is monitored after a waiting period, which allows to drop the pressure in the camshaft to ambient pressure (XEN).</td>
</tr>
<tr>
<td>G1-C</td>
<td>all</td>
<td>Requested fuel delivery by FMI (fuel melting unit)</td>
<td>13E-13</td>
<td>Should read: 2,100 mmHg or 2.100 mmHg</td>
<td>Should read: Requested fuel delivery by FMI (fuel melting unit)</td>
</tr>
<tr>
<td>G1-C</td>
<td>all</td>
<td>4337: The test is only carried out if the inner heater resistance is as is a connection to the heater in the case of an open load</td>
<td>13E-40</td>
<td>Sentence makes no sense. Please clarify.</td>
<td>Should read: The test is only carried out if the inner heater resistance is as is a connection to the heater in the case of an open load.</td>
</tr>
<tr>
<td>G1-C</td>
<td>all</td>
<td>Air charger intercooler - Air charger intercooler? Charge or cooler (intercooler)</td>
<td>13E-54</td>
<td>Are the three terms the same?</td>
<td>Air charger is a cooler?</td>
</tr>
<tr>
<td>G1-C</td>
<td>all</td>
<td>Check all for accerlator pedal position sensor component (continuity check)</td>
<td>13E-14</td>
<td>Check the accelerator pedal position sensor for continuity.</td>
<td>Check the accelerator pedal position sensor for continuity</td>
</tr>
</tbody>
</table>
Appendix D: Example 4- Terminology error

The following image of a concordance search in a translation memory shows the inconsistency of the source text. That is because there are different terms used for the same element: “resistance terminator” and “terminator resistance”. The problem is that they both have no proper meaning in this context; instead, it should be either “terminating resistor” or “terminating resistance”.