Susana Murcia-Bielsa

Instructional Texts in English and Spanish: a Contrastive Study

Thesis submitted towards the degree of

Ph.D.

Departamento de Filologías Extranjeras
Facultad de Filosofía y Letras
Universidad de Córdoba (Spain)
1999

Supervisors: Dr. Judy Delin
Dr. Antonio León Sendra

1. Abstract

This thesis presents a comparative corpus-based study of English and Spanish instructional texts for household appliances, in order to provide a general characterisation of

instructional texts in these two languages and to show the factors underlying the choice of particular syntactic expressions within this text type.

The study is carried out at two levels of analysis: the macro-textual and the micro-textual. The macro-textual analysis examines (i) the situational context of instructional texts and (ii) how instructional texts are characteristically organised to convey the information necessary for the correct use of the device. The micro-textual analysis is concerned with the function that the micro-element (e.g., single directives) serves in the macro-text and how this affects its realisation in syntactic form.

The major focus is on the micro-textual level. This micro-textual analysis is based on the fact that the actions being instructed have a hierarchical structure (called task structure) and can be represented in a task plan (cf. Sacerdoti, 1977). This analysis focuses on different aspects of the task plan and examines (i) the procedural relations holding between actions in the task plan and their linguistic realisations, (ii) the expression of directives and (iii) the explicit expression of goal through the use of purpose expressions. By investigating the mapping of the task plan onto the grammatical level, this study looks at both function and form and aims at discovering some of the factors that influence the choice of expression in instruction manuals. The results of the analysis for each language are compared systematically stressing both the similarities and the differences between Spanish and English.

The analysis of the Spanish corpus in particular adds to the existing work on instructions in other languages (e.g., French, English, German).This contribution is made through studies of Generation and Enablement, negative directives and purpose expressions. Other important contributions of the thesis include the identification of the factors underlying the choice of directive and purpose expressions in Spanish and English. The formal representation of these factors in terms of semantic networks can be useful for text generation applications. The comparative description of English and Spanish directive forms through a cline which shows the degree of necessity of the actions may also prove useful for generation and translation purposes.

This cross-linguistic study provides a better understanding of the two languages concerned with regard to the use and function of syntactic forms frequently used in instructional texts. The results of this thesis can have applications to various areas: didactic applications to foreign language teaching (either for general or specific purposes), contributions to the improvement of manuals writing, and applications to automatic text generation either in a single or multiple languages.

2. Acknowledgements

My thanks to my supervisors Dr. Antonio León Sendra and Dr. Judy Delin for their inspiration and support, and their comments and advice which have improved the thesis tremendously. Special thanks to Judy Delin's direction, encouragement and patience, and for putting me in contact with the right people. Without her, this thesis would have never taken shape. The funding I gained through the teaching and research she organised for me is also greatly appreciated.

Many thanks to my parents, brothers and sisters for their encouragement, patience and support. Special thanks to my father for lifting a big weight from my shoulders by helping with innumerable details regarding formatting, translation and bureaucracy throughout the writing of this thesis and particularly in the final stages.

Special thanks also to Mick O'Donnell, without whom this thesis would still be 'almost finished'. He was called in at a time of mental block and he helped me to a breakthrough. His encouragement and support have helped me through the final stages of this thesis.

My thanks to all those people who have commented on my work, especially to Cécile Paris, Keith Vander Linden, Donia Scott, and Marco Perestrello for their help in the budding stage of this thesis. My thanks to John Bateman, Eija Ventola and Martin Davies for substantial comments on this thesis.

My thanks also to those people who have helped me throughout this thesis, especially Valia Papoutsaki, Galit Ferguson, Angela Bradley, Ian Gilroy, and my D-21 colleagues Lynn Ang, Nilgun Ariturk, Seema Ginde, Kris Jozajtis, Rita Lago, John Oswald, Nicki Page, and Arnold Temple who have endured my ups and downs.

I am also grateful to Lottie Gregory, Dick Johnstone and staff in SCILT for giving me the chance to have a break from my thesis and for providing a friendly ear and computer facilities.

Thanks to Finlay Nichol, Alison Giles and Neil Armstrong for their computer and software support.

My thanks also to "las niñas" Celia, Esther and Elvira for their help with scanning the corpus.

Finally, I would like to acknowledge the Junta de Andalucía, the European Union, the Stevenson Foundation (Glasgow) and the Ministerio de Asuntos Exteriores for their funding.

A mis padres

3. Contents

4. List of Figures

5. List of Tables

6. List of Summary Tables

CHAPTER SIX:

7. List of Boxes

CHAPTER FOUR:

8. Notational Conventions

The notational conventions used in this thesis are as follows:

Examples

Examples are numbered from the start of each chapter. Spanish examples are glossed. Examples appear as follows:

(1) *Lift the handset.* [E001]

(2) *Para cerrar hay que girar de izquierda a derecha.* [S006]
(To close it is necessary to turn from left to right.)

The key to the notation used in these examples are as follows:

Italic	Text from manuals.
`Courier`	Constructed Examples.
[E001]	The source text code (see tables 1 and 2 of chapter 1).
*****	Ungrammatical.
?	Questionable (either on pragmatic or grammatical grounds).
( )	Glosses (not necessarily translation) of Spanish examples.

Terminology

- When pronominalising the writer/reader, the writer is referred to as 'she', the reader as 'he'.

SMALL CAPS	Defining mention of terminology

9. Abbreviations

α	Matrix action.
α^β	Matrix action precedes the goal action.
β	Goal action.
β^α	Goal action precedes the matrix action.
CA	Contrastive Analysis.
ε	Task plan.
EST	English for Science and Technology.
iff	if and only if.
INF	Infitinitive.
L1	Source language.
L2	Target language.
MNLG	Multilingual Natural Language Generation.
MT	Machine Translation.
MTG	Multilingual Text Generation.
NLG	Natural Language Generation.
NP	Noun Phrase.
OCR	Optical Character Recognition.
OHP	Overhead Projector.
PrepP	Prepositional Phrase.
r/s	Rankshifted.
RST	Rhetorical Structure Theory.
TC verbs	“Take care” verbs.
VP	Verbal Phrase.
WAG	Workbench for Analysis and Generation.

Chapter One: Introduction

The language found in everyday life is full of what could generally be called "instructional text".[1] In fact, we find instructions in many forms and in many different situations through our lives. We are so used to them that they can pass unnoticed. Simple instances of instructions appear written on doors:

Pull or *Push.*

Emergency Exit. Break Glass. Move Lever (on an emergency exit door).

Press to exit (on the switch for a security locked door).

And now wash your hands. Prevent disease (on a public toilet door);

... on notices in buildings:

Quiet please (in a library);

... on road signals:

Please drive carefully to protect wildlife;

... even on a small packet of nuts:

Tear here;

... or on the cap of a soft drink bottle:

Turn right to open.

Instructional texts, however, are not always so brief and straightforward as these examples. They extend beyond short written notices to include longer texts in writing as well as in speech. Written instructional texts include, to give but a few examples, recipes, user's manuals, safety regulations, rules for games, medicine prescriptions, instructions for filling an application form, official directives, checklists, etc. Spoken mode instructions are also possible, including street directions, a teacher telling her students how to use language lab equipment, an aerobics session, a cooking programme on TV, and also army orders during training or a parade.

Whatever the length, complexity, situation and mode of instructional texts, they all share one common feature: their ultimate aim is to get someone to perform (or not to perform) one or more actions. Even in simple instructional texts such as the *Quiet please* notice in the library, whose aim does not seem to be 'action', but rather a state, it can be argued that this state is achieved by a non-action; in other words, the state of 'quietness' is achieved by not talking.

It is the purpose of this thesis to compare English and Spanish instructions in order to tease out some of the factors that influence the choice of expression within this text type. It is also the aim of this research study to provide a better understanding of the two languages concerned with regard to the use and function of syntactic forms frequently used in instructional texts. It is hoped that this study will provide results that can have applications to various areas: didactic applications to foreign language teaching (either

[1] The term "instructional" is most frequently applied to the kind of language found in the education environment, such as the language of the classroom or the language of textbooks. I am, however, using this term now in a broader sense, and it will be used later in this study to identify exclusively the particular type of text chosen for the corpus.

for general or specific purposes), contributions to the improvement of manuals writing, and applications to automatic text generation either in a single or multiple languages.

The study will be based on two well-known claims within linguistics. The first one refers to the influence of context on language (cf. Halliday *et al.*, 1964; Halliday, 1978; Fairclough, 1992; and Biber, 1995) and can be traced back to Firth (1957) and Hymes (1972). The influence of contextual or situational features is revealed in the lexis, in the grammatical and syntactic forms employed to convey the message, and in the discourse organisation of the information. The second claim on which this study is based comes from contrastive rhetoric studies, which assume that different languages make different choices about how to present similar information (cf. Kaplan, 1966).

Since the contexts in which the numerous types of instructional texts mentioned above vary, valid conclusions can only be guaranteed by restricting the study to a specific kind of instructional texts whose situational variables remain constant. I will therefore focus my attention on one specific type, consumer product instructions, in other words, the instructions that accompany purchased products. These, however, still include a wide range of texts, from rules for games to directions for medicine dosage and software manuals, which appear in very different situational contexts. Consequently, the data to be analysed here will be further limited, including only instructions that accompany household appliances and other electrical devices. From now on, then, the terms "instructional texts" and "instructions" will be used to refer to only consumer-product instructions of the kind just specified.

This thesis will explore instructional texts at two levels. On the one hand, it will examine the individual elements of instructional texts. These elements are typically individual clauses (e.g., *lift the handset*), however, some elements may be smaller than the clause (e.g., *for lower temperatures*). On the other hand, it will explore the organisation of these elements into larger bodies of text. We call the first the MICRO-TEXTUAL, and the latter, the MACRO-TEXTUAL. A more formal statement of this framework will be given in section 2.

The micro-textual analysis looks at form in relation to function. This analysis will be concerned with the function that the micro-textual element serves in the macro-text and how this relates to the realisation in syntactic form. At the macro-textual level, it will be shown how instructional texts are characteristically organised to convey the information necessary for the correct use of the device.

To distinguish between these two levels of analysis, the term "instructional text" will be used to refer to the macro-text, i.e., the whole manual or leaflet, while the term "instructions" will refer to the micro-text, that is, to the individual instances of actions to be performed that are contained in the macro-text.

1. Motivations for the study

Instructional texts are culturally significant for a number of reasons. They are usually necessary to make the product work at all, and for this reason, they are most frequently packed in the same box as the product, or appear written on the outside packaging. Their existence is so closely linked to the product that they can be considered part of the product itself. Instructional texts also contribute to the efficient and safe operation of the device[2], without

[2] This claim, of course, does not apply when the user is well acquainted with the product through either frequent use or ownership. Nonetheless, even if the user knows the product, the particular brand or model acquired might have specific requirements to guarantee its good condition during a long period of time; therefore, the user will almost certainly be compelled to read the manual or specific parts of it to ensure a good use in all respects.

which either the product or the user may suffer damage. In addition to the potential uselessness of a product without instructions, there are also legal reasons behind the existence of instructional texts; manufacturers need to provide the instructions in order to avoid being sued for any hazard caused to the user as a result of lack of information about the product.

Given the cultural significance of instructional texts, studies of such texts, including this one, can contribute to improving the quality of their writing, or of their translation. Firstly, the effectiveness of product use can be improved by providing a clear and well organised instructional text. As Crystal and Davy (1969) have pointed out, when producing any set of instructions, the most important criteria to take into account are the "need to organise the information into clearly defined stages, to avoid ambiguity and to bear the level of one's audience clearly in mind" (Crystal and Davy, 1969:263). Although it is not the purpose of this study to *evaluate* instructions, the research presented here can provide insights into how to write good (effective and clear) instructions in both English and Spanish, by showing which expressions are preferred (or more suitable) for a given message, and what factors influence the choice of expression.

Secondly, the quality of instructional text *translation* can be improved by such studies. In an ever-growing multinational market, where import and export of goods are more and more frequent, many manufacturers already provide their instructional texts in multiple languages. The quality of multilingual and translated instructional texts, however, is far from being good. The poor quality of translated manuals has even reached the newspapers. Javier Martín, in his 1995 article "Antología de la prosa electrodoméstica" published in *El País*, criticises the Spanish found in instructions for foreign household appliances as being carelessly written, incomprehensible and sexist. Apart from the innumerable orthographic and grammatical mistakes found in the instructions booklets of foreign products, translations might result in the transfer of features of the source language that are pragmatically and culturally inappropriate for instructions in the target language (cf. Delin *et al*., 1993). A clear example of this pragmatic and cultural mismatch is provided by the use of cartoons – which provide scenarios for product use and personify the device itself – in Japanese instructions (cf. Carroll and Delin, 1998) and is a feature that for the moment is not appropriate in European countries.

The cross-linguistic study proposed here, which aims at finding the pragmatic factors influencing linguistic choices and tries to formalise what translators do intuitively when choosing one expression instead of another, can be very useful for the translation of instructional texts from English into Spanish and vice versa, whether it is human or machine translation.

In addition to improving the quality of a culturally significant text type, there is a more pragmatic reason for pursuing this study. Instructional texts provide a good *control of content knowledge*. The general purpose of instructional texts is to get the reader to operate the device by performing a series of actions. These actions have a structure, that is, they cannot be performed at random. On the contrary, their performance in a particular order will achieve specific goals. It can then be said that the actions are grouped into tasks, which consist minimally of a GOAL and the individual actions (or action) necessary to achieve that goal. For example, let us imagine that we want to make a phone-call, that is our goal. To achieve this goal it is necessary to follow a specific procedure consisting of a series of individual actions: lifting the handset, listening for the dial tone, and dialling the numbers. It is clear from this example that the actions mentioned here have a hierarchical structure that will be called TASK STRUCTURE and which can be represented in a TASK PLAN (cf. Sacerdoti, 1977), where the boxed action is the goal, as shown in figure 1.

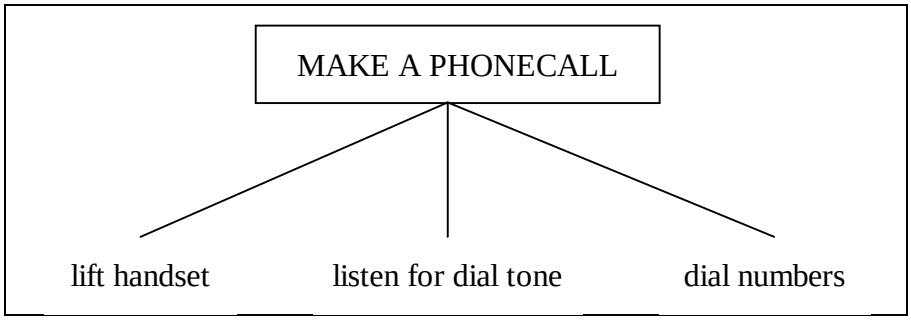

Figure 1. The task plan

Instructional texts involve a multiplicity of tasks (or just one task) similar to the one represented above. Even when the instructional texts in different languages deal with very different products, the commonality which enables the language comparison is provided by the task structure. Instructional texts, therefore, provide a good control of the content knowledge which is lacking in other text types (such as, for instance, a chairman's statement), and this control facilitates the cross-linguistic study.

Due to the optimal control of content knowledge, the results of this work can have a range of applications, including implementation within a text generator, for either monolingual or multilingual purposes.

All things considered, this study of instructional texts offers contributions to different areas. Firstly, taking into account that consumer product instructions often appear in multiple languages, the cross-linguistic study proposed here can be very useful for the translation of instructional texts from English into Spanish and vice versa, whether it is human or machine translation. Secondly, this thesis, by showing what linguistic realisations are ambiguous, can also benefit technical writers and help them produce good instructions. Thirdly, the results of this study can have computational applications and be implemented for text generation purposes with a monolingual or multilingual output. The findings of the research can have pedagogical implications for the teaching of either English or Spanish for specific purposes, both at the macro- and micro-textual levels. Finally, the study also provides insights into the very nature of languages which can be taken back to monolingual studies.

2. The framework of analysis

This section will briefly introduce the theoretical framework for the data analysis. Three levels of representation have to be taken into account when studying instructional texts:

1. **The Content Structure**: the representation of the content of the text. For the purposes of this thesis, this will largely concern task plans: the hierarchical structuring of tasks (ACTIONS). As explained in the previous section, a task plan obligatorily contains some GOAL, which is usually expressed as an abstract action (e.g., *to make a phonecall*). Apart from actions (which are agentive), STATES (involving no change) and EVENTS (happenings independent of the product user) may also be involved in the task plan. Actions, states and events[3] are called collectively TASK PRIMITIVES.
2. **The Discourse Structure**: the structure of the text. I assume a tripartite division of the discourse into:

[3] For a more detailed description of these categories, see Bach (1986) and Moens and Steedman (1988). Notice that "action" corresponds to what is frequently called in the literature "process".

a) INSTRUCTIONAL TEXT: the complete document, which may range in scope from a booklet which expresses a number of task plans (e.g., how to change the date, how to set the time, etc.), a single page, or even a single sentence.

b) INSTRUCTION SET: the textual realisation of a single task plan.[4]

c) INSTRUCTIONAL ELEMENTS: the textual realisation of single actions, events or states from a task plan. These can be given functional labels, such as directive, purpose, result, condition, etc. These are typically realised by single clauses, but may be realised as components of a clause (e.g., a purpose expression such as *for adjustment*).

Instructional texts always include at least one instruction set, but in some cases they may include several instruction sets (e.g., a set explaining how to change the data, another one explaining how to set the time, etc.). They may also contain other sub-texts, such as table of contents, errata, contact information, index, guarantee, etc. However, I will largely ignore these in this study.

Instruction sets always include at least one directive, but usually contain a series of directives, along with associated purposes, results, etc.

3. **Syntactic Form**: the grammatical realisation of individual instructional elements.

The higher levels of representation are mapped onto the lower level of representation as shown in figure 2 (focusing only on the task plan and its realisation). In addition to these three strata, there is a further one: the context, involving the situation in which the texts appear and influencing the text at the different levels of representation.

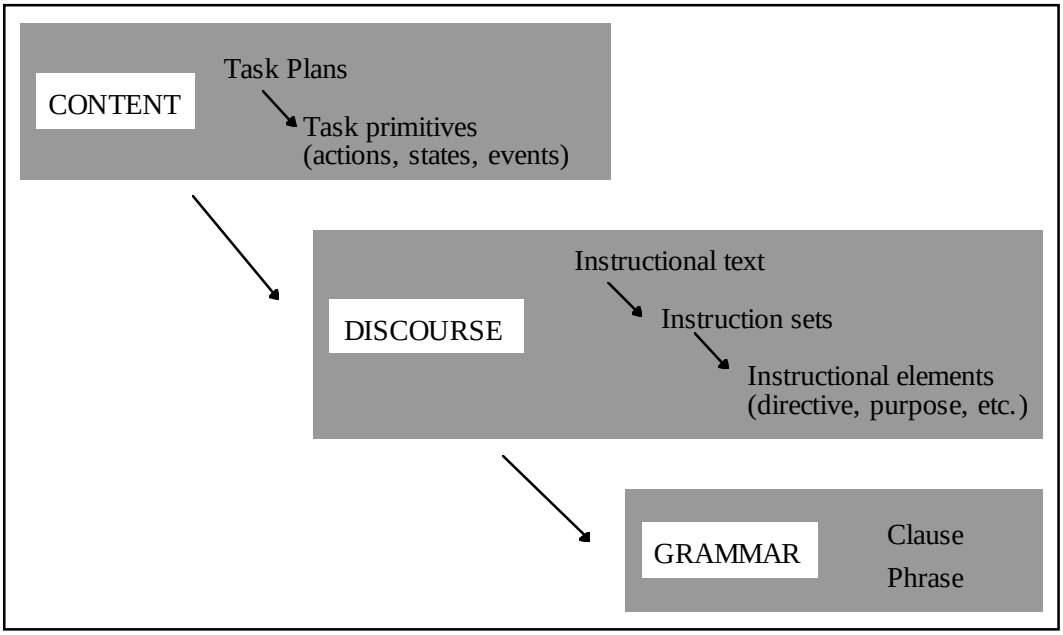

Figure 2. Three-level representation of text

We can also view our analysis in terms of micro-text and macro-text. The MICRO-TEXTUAL analysis concerns the analysis of individual instructional elements, in terms of their role in the task plan, their semantic function, and their syntactic realisation. The MACRO-TEXTUAL analysis concerns the context in which instructional texts appear as well as their structure at higher levels of representation: the structure of the task plan, the sub-structure of

[4] In some cases, an instruction set may realise a task plan *complex*, a top-level task plan which has other task plans embedded within it, e.g., where a single step in the task plan is itself another task plan.

instructional texts and instruction sets. In the research presented here the corpus will be examined at both the macro-textual and the micro-textual levels, although the emphasis will be on the micro-text.

At the macro-textual level, various issues related to the situation and its influence on the text will be dealt with. These issues include the context of production and interpretation, as well as the characteristic structure in which the information is organised in instructional texts. The analysis of the macro-textual level follows the systemic functional framework of field, tenor and mode in order to provide a general characterisation of instructional texts. However, this analysis is also informed by issues discussed in Pragmatics, Speech Act Theory, Translation Theory and Computational Linguistics, as it will be shown in chapter 3.

At the micro-textual level, I will focus on the linguistic realisations of task primitives, in order to discover the factors influencing the choice of expression. The micro-linguistic analysis will present a statistical study of three aspects of the task plan in their relation to linguistic forms: the semantic relations holding between the actions, the directive function of instructions, and the explicit expression of the goal as such through the use of purpose expressions. By investigating the mapping of the task plan onto the grammatical level, the present study looks at both function and form. The overall approach taken here is, therefore, a hybrid one.

The study of semantic relations presented in chapter 4 is a top-down analysis: going from the content level to the grammatical one. This particular study follows the path established by several studies of instructions within Computational Linguistics (cf. Pollack, 1986; Balkanski, 1993; Delin *et al.*, 1994, 1996a, 1996b; Grote, 1995), which use Goldman's (1970) notion of Generation and Enablement relations. These are two ways in which elements in a task plan can be related. These PROCEDURAL RELATIONS can be defined in terms of a plan representation model as follows. A GENERATION relation exists between two actions when one of the actions is a goal and the performance of the second action automatically results in the performance of the goal action, as illustrated in example (1).[5] An ENABLEMENT relation exists when the performance of the second action helps achieve the goal, but does not automatically perform it, as in example (2).

(1) *To clean, wipe with a damp cloth*. [E001]

(2) *To keep the soleplate of your iron clean and free of lime, make a paste of mild scouring powder and a little water*. [E003]

In (1), wiping with a damp cloth automatically results in cleaning, therefore, a Generation relation holds between "wiping" and the goal action of "cleaning". In (2), making a paste does not automatically result in a clean soleplate, but it helps in achieving the goal of keeping the soleplate clean; the relationship between these two actions, then, is one of Enablement.

Chapters 5 and 6 look at two discourse elements of instructional texts: directives and purpose. The analyses in these two chapters start from the discourse level and look for the linguistic realisations of these discourse functions. These two analyses, however, do not look only at the form; the linguistic realisations are examined in detail in order to identify the factors, at the content and contextual levels, that influence the choice of expression. These two chapters make use of system networks to formalise the factors that influence the choice of one particular expression instead of others. Chapter 5, for instance, shows that the choice of

[5] It will be normal procedure throughout this thesis to indicate the source from which the examples are extracted through a code number in square brackets. To identify the source refer to tables 1 and 2 in chapter 1 and/or see Appendices 1 and 2.

directive realisation depends on a series of factors that are closely linked to Halliday's (1985) ideational, interpersonal and textual functions.

Figure 3 represents the aspects of the various levels of representation dealt with in the micro- and macro-textual analyses.

	MACRO-TEXT	**MICRO-TEXT**
CONTEXT	Field, Tenor, Mode	
CONTENT	Task Plan (actions relationships)	Actions, events, states (role in task plan)
DISCOURSE	Instructional Text (instruction sets & other sub-texts)	Instructional elements (directives, purpose)

Figure 3. Micro-and macro-text in relation to levels of representation

The analysis of the micro-textual level offers insights into the most common functional and syntactic features of instructional texts, but by no means exhausts the wide range of functions and forms available in this text type. The methodology used here follows the path established by previous research into instructions (cf. Di Eugenio, 1993b; Delin *et al.*, 1994, 1996a, 1996b), where the task plan is taken as point of departure for the study of the linguistic forms. The analyses of Generation and Enablement (chapter 4), directives (chapter 5) and purpose expressions (chapter 6) can be considered as independent, though related, studies, and their methodology will be discussed in detail in the relevant chapters. If we observe example (1) again we can see how these three studies are related: the study of Generation and Enablement addresses the relationship between the two actions ('clean' and 'wipe'); the study of directives will answer questions about the choice of expression for the 'wiping' action; and finally, the study of purpose expressions will focus on realisations such as *'to clean'*, which express a goal. In trying to establish the link and overlaps between these three chapters, the following observations have to be made:

1. Directives and purpose are means of realising Generation and Enablement. These semantic relations, however, are not exhausted by these two studies. Generation and Enablement can be expressed via other discourse functions such as means, condition and temporal sequence,[6] for instance, which are also frequent elements of instructional texts, but will not be dealt with in this thesis.
2. The study of directives covers more than just Generation and Enablement; these relations do not always hold, for instance, between actions presented in a sequence. An example follows.

   (3) *Fit empty paper bag. Close the bag housing cover.* [E005]
3. All the expressions of purpose studied in chapter 6 establish a relationship of either Generation or Enablement with their main clauses. Some examples of purpose, however, are not included in the chapter on Generation and Enablement (chapter 4) for the only reason that, when the study of these two semantic (or procedural) relations was carried out, only those cases involving actions yet to be performed were analysed; on

[6] These discourse relations are captured in theories such as Rhetorical Structure Theory (Mann and Thompson, 1988).

the contrary, the study of purpose expressions presented in chapter 6 includes actions that were already performed, like the one in the following example.

(4) *To protect elements against over-heating, safety cut-outs have been incorporated with each element.* [E010].

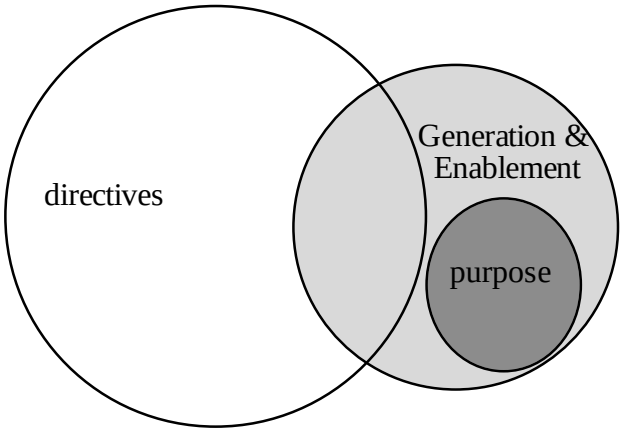

Figure 4. Overlaps between individual studies

The overlaps between the three studies are better illustrated through the graph in figure 5, which shows that only some Generation and Enablement relations are expressed using directives and purpose. It also shows that directives do not realise only Generation and Enablement relations. The discourse function of purpose studied here only expresses Generation and Enablement.

3. The corpus

Now that the framework of analysis has been explained, this section will introduce the corpus that was used for the analysis. The section will be broken down into several subsections that will address issues such as corpus design, the ways the texts were collected, the nature of the corpus resulting from the data collection, and how the data were analysed.

3.1. Corpus design

Two factors were taken into consideration for the selection of instructional texts. First, a choice had to be made between using translated versus native instructions. Second, the validity of cross-linguistic comparisons using texts which are not matched in content needs to be taken into account.

It might at first be assumed that commercially-produced instructions in a multilingual form would be a good starting point for comparison between languages, since they would provide text in different languages for the same content and the same product. However, this thesis does not use multilingual instructions, because they are usually the outcome of a translation, and it is well known that translations can be influenced by the source language. The language of the original text can have a considerable effect on different aspects of its translation: lexis, grammar and, even more importantly, on discourse structures, as well as pragmatic and cultural aspects.[7]

[7] The orthographic and grammatical mistakes found in translated instructions have been criticised by Javier Martín (1995). Furthermore, Martín points at the fact that some translated instruction manuals are written in an "autobiographical" style and that, for instance, one particular device (a cooker) 'talks' "from woman to

All things considered, the quality of translated instructions is, in general, far from the standards required by either linguists or the user himself. The language of translated manuals has constructions and structures that would not normally have been used by a native speaker when writing the instructions in her own language.

The following instructions, extracted from an extremely popular children's cyber-pet, illustrates the bad quality of translated instructional texts.[8]

(5) *When pet get sick, please take care till become health.* [Not in corpus]

(6) *Pet chrping: select pet will chirps when he needs to take care or keep silent.* [Not in corpus]

To avoid the problems posed by translations, special care was taken to collect the corpus from native companies (i.e., British companies for the English texts, and Spanish companies for the Spanish texts). It is assumed that, since the products to which the manuals refer are from native suppliers, the instruction manuals are genuine texts produced in each language under scrutiny.

Although the instructions in the corpus are neither of the type "same product and same brand" nor even "same product but different brand" in both languages, it is still possible to compare them because, as it will be explained in the following, they are 'parallel texts'. Hartmann (1980) claimed that contrastive statements only make sense if they are based on the analysis of 'parallel texts', which he later defines as "examples of discourse from corresponding genres of a pair (any pair) of languages" (Hartmann, 1996:948). He distinguishes the following three kinds of parallel texts (summarised from Hartmann, 1996:950):

a) those result from a full-scale translation act, e.g., a literary text such as Remarque's novel together with its other-language version(s);

b) those that are the result of interlingual adaptation, e.g., other-language versions of advertisements for products like cigarettes, or multilingual formulations of documents published by international organisations such as the European Commission or by local health authorities in multicultural communities;

c) those that are not translationally equivalent, but functionally similar in situational motivation and rhetorical structure, e.g., cooking recipes, wedding announcements, obituary notices, encyclopaedia articles on related topics, and the like, from any pair or multiple of languages.

Although the term 'parallel text' is generally used, especially among computational linguists, for translationally-matched types (a) and (b)[9], in a narrower sense it is used to refer to category (c), i.e., texts which are "typically unrelated except by the analyst's recognition that the original circumstances that led to the creation of the two texts have produced accidental similarities" (Hartmann, 1980:45). He calls parallel texts of this type PAIRED TEXTS.

---

woman." The personification, through the use of cartoons, of the device a user manual refers to is a common feature of Japanese instructions (cf. Carroll and Delin, 1998) and might be available in other cultures. The use of the 1st person singular and the ascription of gender to the cooker mentioned in Martín's article, as well as to the user (as female), might be the result of the transfer of features that are pragmatically and culturally appropriate for instructions in one particular civilisation to another where those features do not work in the same situation.

[8] The particular toy these instructions refer to is called "My duck", was made in China, has Japanese writing in the graphics, and was distributed by SJR Associates, Romford, Britain.

[9] As reported in Hartmann (1996), Brian Harris (1988) conflates translationally-matched types of text under the category of "bi-text".

Since the texts in my corpus are functionally-matched rather than translationally-matched texts, they belong to this category.

The parallelism of the texts collected for this study is also reflected in their level of detail. Manuals vary according to the level of knowledge that the writer assumes in her potential readers. Thus, for instance, the level of detail in user-oriented instruction manuals is different to the level in manuals for maintenance engineers, because they are aimed at audiences with different levels of knowledge. Taking this into consideration, only texts aimed at non-expert users were selected for my corpus of analysis.

3.2. Method for collecting the data

I set out to get samples of instructional texts over a range of products (all of them household appliances) and a range of companies also. The reasons for these two choices are that the same products and/or the same companies might prefer certain expressions. By choosing a wider range of products and companies, the results are bound to be more comprehensive and reliable.

The following two methods were used for collecting the texts composing the corpus:

a) by asking friends, family, and students to provide me with any kind of instructional texts they could find at home; or
b) by requesting manuals from the manufacturer companies themselves or from their distributors.

The first data collection method provided instructions (at times multilingual) of many different products and brands. A process of selection was then carried out to identify those instructions that were exclusively written by native speakers. Instructions of unknown origin (i.e., whose brand did not appear on the booklet) were not included in the corpus.

The second data collection method enabled me to choose manufacturing companies founded in either Britain or Spain, and allowed me a better control of the instructions that were to be collected; the letter sent to the companies explicitly requested instruction manuals written only by native speakers and without the mediation of a translation. The response from British companies was much better than that of the Spanish manufacturers contacted, and provided data for different products and from various brands. A random selection of texts was carried out here as well, to make sure that there were not too many samples from any one company. Having said that, manuals from the same company were used in order to provide instructional texts for a varied range of products.

For ease of reference, some conventions regarding the data will be used in this thesis. Italics will signal the tokens extracted from the corpora and used as examples in the chapters to follow. Each of the examples will indicate their source text by showing the source document code (provided in tables 1 and 2) in square brackets. Wherever constructed examples are used, these will be indicated through the use of courier regular font.

Code	Item	Name	Brand	Language	Words
E001	Telephone	TX 194	Morphy Richards	English	2566
E002	Hairdryer		Morphy Richards	English	1035
E003	Iron	Dry, steam & spray	Morphy Richards	English	1751
E004	Coffee-maker	Cappuccino / Espresso	Morphy Richards	English	1491
E005	Vacuum cleaner	Turbopower	Hoover	English	3728
E006	Kitchen scale		Boots	English	184
E007	Pressure cooker		Prestige	English	1694
E008	Light	Razorlite S 6000	Sector	English	655
E009	Shower units	CM7, CM8	Sector	English	1566
E010	Cooker	Concept Solar Plus	Creda	English	7092
E011	Refrigerator	8214, 8215, 8221	Hotpoint	English	5701

Table 1. The English data

Code	Item	Name	Brand	Language	Words
S001	Desk-lamp		Acapri	Spanish	112
S002	OHP		Bobes	Spanish	505
S003	Fan heater	C800/A, 805, 806, 810	Ufesa	Spanish	409
S004	Fan heater	TC-M Monomando & bimando	Cata	Spanish	726
S005	Refrigerator		Cointra	Spanish	5115
S006	Cooker	450-550-551	Corberó	Spanish	1751
S007	Cooker	Installation regulations	Corberó	Spanish	1495
S008	Cooker	400-3	Corberó	Spanish	914
S009	Refrigerator		Corberó	Spanish	2611
S010	Coffee maker		Fagor	Spanish	218
S011	Telephone	Forma	Telefónica	Spanish	3102
S012	Oven	HE-490/510/610/ TURBO MX/RT-800(ME)	Teka	Spanish	3711
S013	Refrigerator		Ibelsa	Spanish	779
S014	Telephone network	Ibercom	Ibercom	Spanish	1450
S015	Deep fat fryer	Mod. 25/35	Jata	Spanish	610
S016	Grill		Magefesa	Spanish	1116
S017	Steam iron	Mod. 58	Ufesa	Spanish	1013
S018	Coffee maker		Oroley	Spanish	463
S019	Sandwich maker	516-518	Solac	Spanish	657
S020	Iron	electrónica-automática bitensión	Solac	Spanish	561
S021	Iron (travel)	automática de viaje	Solac	Spanish	429
S022	Wax-melter	CR-8L	Sorisa	Spanish	1447
S023	Blender	Bapitaurus BPCM / BPCP	Taurus	Spanish	709

Table 2. The Spanish data

3.3. The resulting corpus

The research presented here is based on 34 instructional texts amounting to a total of 57,366 words. The data consists of commercially-produced instructions for household appliances, written in either Spanish or English by native speakers. These texts are intended for non-expert readers. The length of the instructional texts varies from 1 page (sometimes only 1 paragraph and just over 100 words) to 20 pages with a total of more than 7,000 words. Some of the samples consist only of text, while others (such as refrigerators, washing machines, cookers) provide graphics, drawings or photographs together with the text.

The English corpus consists of 11 sets of data (provided in Appendix 1) with a total of 27,463 words; the Spanish corpus (fully provided in Appendix 2) consists of 23 instructional texts adding up to 29,903 words. These data are specified in table 1 and table 2 respectively. The tables provide the following details: the type of item the instructions are for, its commercial name, brand, source language and number of words. In addition, a code for each item in the data is provided to enable easy reference when citing the examples. The different numbers of texts in each corpus is due to the fact that the Spanish texts initially collected were much shorter[10] than the English texts and there was a huge difference in word number between both corpora. To counteract this initial difference in word counts, more Spanish texts were collected to reach a word count closer to that of English. As a result, the Spanish corpus ended up with twice as many texts as the English corpus.

3.4. Analysing the corpus

The texts to be analysed were collected in their printed form. They were scanned into the computer using OCR software to produce machine-readable text. During this process, graphics and drawings disappeared. The interaction between image and text is important in instructions and deserves attention, however, the study of this area was beyond the scope of this thesis. The only typographical markers that it was possible to keep were font features such as boldface, italics and upper case. They also play an important role in instructions because they draw the reader's attention to specific elements in the text. After checking the spelling of the data with the original texts, the corpus was ready for the analysis.

The data analysis was facilitated by the use of two software tools: a concordancer and a coder. MicroConcord (Scott and Johns, 1993) is a concordancer which searches for words, or a particular string, and displays occurrences in their context. The use of this concordancer facilitated the task of extracting tokens of specific linguistic forms which are studied and discussed in chapters 4, 5 and 6. In addition, the study of purpose expressions presented in chapter 6 made use of the WAG coder (O'Donnell, 1995). WAG (Workbench for Analysis and Generation) is a semi-automatic tool which supports the coding and statistical analysis of the data through the use of a systemic network designed for the purpose by the analyst.

Further details about the method of analysis used for each particular study will be provided in the corresponding chapters.

[10] It would be interesting to assess whether this difference in length is a genre distinction, that is, whether Spanish manuals are shorter in general.

4. Outline of chapters

The topics so far described are structured as follows. Chapter 2 provides a literature survey on previous studies of instructions and on language comparisons. Chapter 3 presents a general characterisation of instructional texts in terms of the communicative situation in which they appear and the way in which the information is structured. This chapter deals in particular with issues such as the context of production, the context of interpretation, and the role that intentions and beliefs play in instructional texts. Chapter 4 examines the relationships holding between the actions in the task plan, and shows how Generation and Enablement relations map onto the grammatical level. Chapter 5 addresses one of the most important functions of instructional texts, the directive function, studying its linguistic realisations; it also establishes the factors that influence the choice of expression, formalising them into a semantic network. Chapter 6 focuses on the explicit expression of the goal action, realised through the discourse function of purpose, and examines the factors that influence the choice of purpose expression. In each of the studies reported in chapters 4, 5 and 6, the results for English and for Spanish are compared, stressing similarities and differences.

Finally, chapter 7 summarises the findings of the previous chapters which offer a better understanding of Spanish and English with regards to specific syntactic forms such as purpose and directive expression, and can have applications to: foreign language teaching in general, the teaching of languages for specific purposes, translation (whether human or machine-translation) and multi-lingual text generation. This chapter also provides paths for further research which remain to be explored.

Chapter Two: Approaches to cross-linguistic pragmatics

This chapter aims at locating the present study within linguistics in general. In order to do this, we have to consider that it is a contrastive study of instructions. This opens up two areas of research that need to be surveyed here: language comparisons and studies of instructions.

The comparison of languages has attracted much attention throughout the history of Linguistics. Comparative language studies can be distinguished along three dimensions:

1. **Motivation**: Languages have been compared for different reasons which include theoretical and application-based motivations:
   a) *Theoretical*: The theoretical motivation derives from a purely linguistic interest in either the reconstruction of a proto-language or the search for universals in language modelling. This latter view was even acknowledged by Saussure in the following words:

      "the linguist is obliged to acquaint himself with the greatest possible number of languages in order to determine what is universal in them by observing and comparing them." (Saussure, 1916:23)

   b) *Applied*: Language comparisons have been carried out for more practical applications such as translations, the teaching of foreign languages, and over the last few years, the automatic generation of texts in multiple languages.
2. **Temporal perspective**: The comparative study of languages has been approached from either a diachronic or a synchronic perspective. The diachronic perspective involves the study of languages across time: that is, it looks at how languages have evolved. The synchronic perspective is concerned with languages at a specific moment in time, usually languages in the present time.
3. **Unit of comparison**: A distinction can also be made between the units chosen for comparison. Sometimes the language comparisons are carried out at a micro-linguistic level, in other words, the sentence (or part of it) is taken as unit for comparison (cf. Di Pietro, 1971; and Stockwell *et al.*, 1975, for example). In other cases, the unit for language comparison is larger than the sentence; in these cases the comparisons are made at the macro-linguistic level (cf. Hartmann, 1980).

As regards instructional texts, there have been, in general, two motivations for their study. On the one hand, instructions have been investigated in individual languages with particular teaching aims in mind (cf. Serra Borneto, 1992a), in addition to purely linguistic interests. On the other hand, the need to produce multilingual user manuals has motivated computational linguists to perform cross-linguistic studies of such texts (cf. Paris *et al.*, 1995; Delin *et al.*, 1993, 1994, for example).

This chapter will provide a literature survey of previous work on the areas of language comparison and studies of instructions. The chapter will be divided into three main sections. Section 1 will provide a general account of the approaches to language comparisons, focusing in particular on those that can contribute to the present study of Spanish and English instructions. Section 2 will introduce previous research on instructions in general and instructional texts in one or various languages. Finally, section 3 will outline the approach

taken in this thesis, relating it to previous approaches to language comparisons and studies of instructions.

1. Comparative approaches

Comparative studies are based on the descriptions of individual languages, which are then compared across two or more different languages. The natural need to compare the results of the investigations on individual languages or cultures across the full range of languages and cultures around the world, and the importance of these comparisons for what can be called "contrastive pragmatics" have been pointed out by Oleksy (1989:ix-x) in the following terms:

> "The generalizations arrived at by means of abstract theoretical frameworks as well as the ones worked out on the basis of empirical evidence have to be confronted with the richness of cross-linguistic and cross-cultural data to allow a degree of generality that could lead to discovering universal patterns and categories. This alone constitutes a raison d'être for contrastive pragmatics."

Similarly, Péry-Woodley (1990:143) specifies (i) the anthropological foundations of comparative linguistics, (ii) its benefits for individual language descriptions and (iii) its benefits for the understanding of communication:

> "Contrasting and comparing are basic to any form of anthropological investigation, and this includes of course linguistic investigation. It is the contrastive light which shows a particular practice as specific to a group; conversely, it is the contrastive approach which allows the identification of universals. Not only is a contrastive stance a superlative way of gaining precise descriptive knowledge about individual languages and cultures, it is invaluable in the quest for a general understanding of language-based communication, as it forces the researcher to relativise particular ways of doing things with language: it is the best antidote to 'ethno/linguocentricity'."

Comparative linguistics is therefore identified by two steps: description and comparison. The way in which an individual language is described or characterised at a particular moment depends on the current trends of general linguistics at the time. As a consequence, comparative linguistics has been influenced by the developments within general linguistics. Taking this into consideration, the task of providing a structured account of comparative approaches is not an easy one.

One way to classify comparative studies is to do it according to the purposes of the comparisons. However, it must be taken into account that the results from any single approach to language comparisons can be applied to many different disciplines (e.g., teaching, translation, text generation).

These studies could also be classified according to the level of analysis, but it is also possible to find the distinction between micro- and macro-linguistic levels of analysis within one single approach (e.g., in typological register analysis).

A distinction relevant for the purposes of this study can be made according to whether language comparisons use a diachronic or a synchronic perspective, as discussed in section 1.1. There is, however, a very important issue which is not taken into account in the diachronic / synchronic distinction: the issue of comparability which is well known in contrastive studies as *tertium comparationis* (cf. James, 1980; Hartmann, 1980). Two languages can only be compared if they have an element in common between them which allows the comparison (their *tertium comparationis*). This chapter classifies different approaches to language comparison depending upon the *tertium comparationis* used. Following the general distinction in linguistics between form and function, comparative

approaches can be classified according to whether they take formal or functional elements as their *tertium comparationis*. Section 1.2, therefore, will provide a classification of comparative studies distinguishing between formal or structural approaches and functional approaches.

1.1. Diachronic versus synchronic language comparisons

The distinction between diachrony and synchrony is due to Saussure and exerted a great influence in the development of modern linguistics.

Traditional grammars had been concerned almost exclusively with the description of language change across time and the reconstruction of a hypothetical proto-language from which other languages evolved. The best known kind of reconstruction is *comparative historical linguistics*, which looks at the forms of words in genetically related languages in order to draw conclusions about the common ancestor language they have derived from. Saussure's claim that "language is a system whose parts can and must be considered in their synchronic solidarity" (1916:87) changed the course of general linguistics, setting off the reaction to the diachronic or evolutionary study of language change that was characteristic of the nineteenth century. In language comparisons, and, in particular, for purposes of teaching foreign languages, this reaction has been voiced by Halliday *et al.* (1964:112) in the following words:

> "what is needed is a method for comparing languages according to how they work, not according to how they have evolved."

Since the purpose of this research is to study contemporary texts, the diachronic perspective for language comparisons is not appropriate here and a synchronic perspective will be used instead. It should, however, be pointed out that a diachronic approach to instructions would be justified and enlightening in the research, for instance, of the increased use of the infinitive as a directive in Spanish, and the change in the interpersonal relations that seems to be currently taking place in Spanish recipe books.[11]

The synchronic approaches to language comparisons are numerous and will be dealt with in the following section. These approaches will be divided according to the elements they take as *tertium comparationis* into two groups: formal or structural approaches, and functional approaches.

1.2. Formal versus functional language comparisons

As it was mentioned above, comparative linguistics is based on the description of individual languages which are then compared. Individual descriptions of languages can be classified into two main groups: formal and functional descriptions. This classification depends on whether the object of study is simply the form or whether it includes the function.

Broadly speaking, formal approaches view language as a grammatical system whose elements are arranged into categories (e.g., nouns, verbs, adjectives, etc.) and/or structures

[11] Angela Downing has pointed out to me the use of the non-distant address form in a new Spanish recipe cookbook by Karlos Arguiñano, a well-known cook who had successfully run a cookery programme on TV for quite a long period of time. Recipe cookbooks have always used either the distant address form (*usted*), or an impersonal form such as the infinitive or the impersonal passive form with *se*. The use of the non-distant form (*tú*) would have been unthinkable five or ten years ago. It might be worth studying under what circumstances this change in interpersonal relationships takes place. Is it an isolated case? Is it motivated by house-style? Or is it the beginning of a change in the contextual features of the cookbook genre in Spanish? These questions remain to be answered in future research.

(e.g., phrase, clause, sentence) with a syntactic organisation. Linguistic models such as the American Structuralism or 'Taxonomic' Model (Bloomfield, 1933) and Transformational Generative Grammar (Chomsky, 1965) are included under the umbrella of formal approaches.

Functional approaches are characterised by their interest in what people can do with language, i.e., in the uses to which language is put. The notion of function is not new in linguistics and has been used since Saussure. Bühler (1934), for instance, suggests that language can have three functions (representational, expressive and appellative or vocative), which are on the other hand closely related to the three components of communication that he mentions in his work (the things, the sender and the receiver, respectively). The model of language suggested by Bühler is taken up and broadened by Jakobson (1960), who suggests six different factors taking part in communication and determining other six functions of language.[12] These are represented in figure 1.

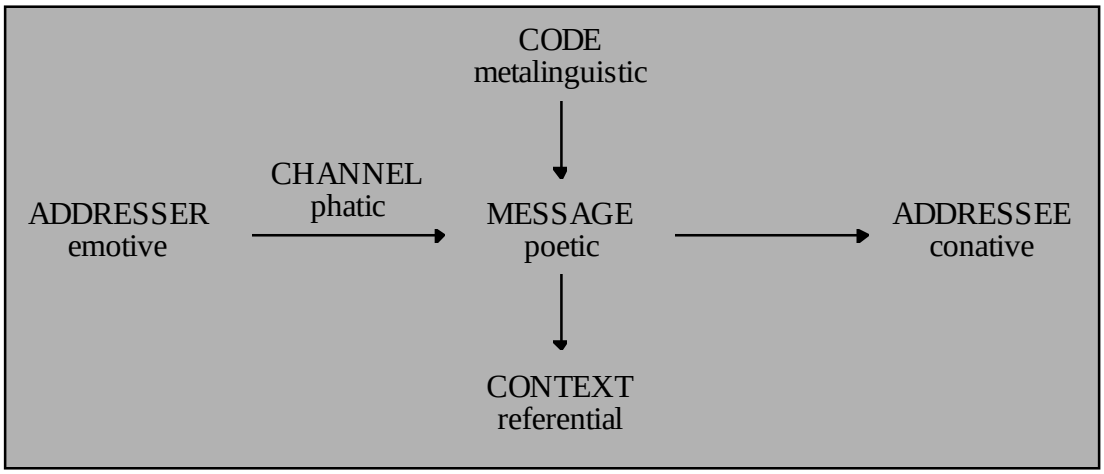

Figure 1. Jakobson's elements of communication and functions of language

Halliday *et al.* (1964:4) view function as a necessary element in the interpretation of the linguistic system:

> "Language is as it is because of the functions it has evolved to serve in people's lives; it is to be expected that linguistic structures could be understood in functional terms."

In Systemic Functional Linguistics (Halliday, 1985) the elements of the clause are described in terms of functions, or the semantic contribution that these elements make to the utterance as a whole, rather than simply in terms of their grammatical role as formal linguistics did. Halliday identifies three macrofunctions (ideational, interpersonal and textual) which are reflected in the lexico-grammatical system.

The representation of the communicative event in figure 1 above can help us show the main difference between formal and functional approaches. Formal approaches focus on the code or the linguistic system, while functional approaches are concerned with the context in which language is used, in addition to the code itself, and the relationships between code, context and the other elements of the communicative event (message, participants, channel).

Examples of functional approaches include Functional Sentence Perspective (Firbas, 1992), Register Analysis (Halliday *et al.*, 1964), and Discourse Analysis (Coulthard, 1977), to name but a few.

[12] Notice that Bühler's expressive function is called by Jakobson the emotive function, and that the formerly appellative or vocative function is now called conative function.

These two broad trends in the description of languages have also been used as the basis for language comparisons. Sections 1.2.1 and 1.2.2 will outline various formal and functional approaches that can be taken when comparing languages. The account provided here is not intended to be a comprehensive one, but rather aims at providing a brief introduction to the approaches available in order to see how they can benefit a cross-linguistic study of instructional texts.

1.2.1. Formal approaches

Formal approaches to language comparisons are concerned purely with micro-linguistic descriptions which do not go beyond the sentence level. Their comparisons are based on formal equivalence: they study, for instance, how the imperative or the passive voice are formed in two different languages.

Comparative studies which have used formal models include Language Typology, Contrastive Analysis and Translation Theory. A brief description of each of them will be provided in the following.

1.2.1.1. Language Typology

Language or Linguistic Typology has a theoretical motivation because it aims at "building a universal theory of language based upon data form a wide variety of genetically unrelated languages" (Myhill, 1992:1). This synchronic approach, then, has purely linguistic interests and is based on the assumption that, despite the fact that each language has individual characteristics, all languages have enough characteristics in common which allow us to compare them and classify them into types (cf. James, 1980).

The interests of language typologies have changed across time, but their comparisons have been carried out at the micro-linguistic level. Their object of study has included from the sounds and forms of a language (in traditional linguistics), through the more recent concern for typologies of sentences, to the construction of cross-cultural typologies for languages of similar constructions. For instance, as summarised in James (1980:2), Linguistic Typology has classified languages according to the grammatical devices they prefer into the following types: 'synthetic', 'analytic', 'inflectional', 'agglutinating', and 'tone' languages.

As Beaugrande and Dressler (1981) have pointed out, all of these typologies are devoted to *virtual systems*, i.e., to the abstract potential of languages. Typologies of this kind cannot offer many contributions to the present study, since we are concerned here with actual systems. A more useful approach for the purposes of a cross-linguistic study of instructional texts would be provided by typologies that deal with "*actual systems* in which selections and decisions have already been made" (Beaugrande and Dressler, 1981:182-3) and that consider the text in its context, rather than isolated features or constructions. Typologies of this kind include Typological Register Analysis, Text Typology, and Typological Discourse Analysis, some of which will be outlined in section 1.2.2 on functional approaches to language comparisons.

1.2.1.2. Contrastive Analysis and the formal approach

Contrastive Analysis (which will also be referred to here as CA) was born of classroom experience and was, therefore, pedagogically oriented in its origins. The original aim of Contrastive Analysis (cf. James, 1980) is to provide detailed comparisons of pairs of languages in order to uncover the differences between a foreign language being taught (L2) and the student's mother tongue (L1). These contrastive analyses allegedly enable foreign language teachers to predict difficulties likely to be experienced by their learners, and will in

addition influence the preparation of teaching materials. This approach, however, soon widened its scope beyond the strict pedagogical application and was divided into 'pure' (or 'theoretical') CA and 'applied' CA, depending on their purposes.

Contrastive Analysis started as a micro-linguistic approach with a strong Chomskyan influence. It is grounded on the 'Universal Base Hypothesis', that is, on the assumption that languages share a number of essential features, called universals. These origins led CA to establish a further hypothesis regarding comparability, as pointed out by Hartmann (1996:28):

> "The '*correspondence' hypothesis* asserted that comparability and equivalence between languages was best achieved by reference to the concept of a universal underlying structure as a *tertium comparationis.*"

It is universals that constitute the *tertium comparationis* or comparability of different languages. Once the deep structure is established as universal, the next step is to find the dissimilarities. Di Pietro (1971:5) points out that the "differences are to be found in the ways these universals are realized in particular grammars," that is, in the surface structure.

The micro-linguistic approach originally taken by CA has been criticised by Hartmann (1996:28) in the following terms:

> "The record of deep-structure contrastive linguistics has not been impressive so far because it has tended to be concerned with small fragments of language rather than textual discourse, and because its static outlook has ignored the fundamental fact that language is interactive. So, inevitably, a final swing seems to be taking place, directed at the shortcomings of two earlier hypotheses, the claim of classical CA that a description of the differences between source and target language can predict interference and learning difficulties, and the claim of deep-structure CA that there are neatly corresponding hierarchical levels of equivalent structure (cf. Carl James 1980)."

The micro-linguistic approach originally taken by Contrastive Analysis can offer no contributions to a cross-linguistic study of instructions, because it deals only with differences between languages as regards particular grammatical forms, without paying any attention to the context in which they are produced and the function they serve.

However, under the influence of new tendencies in linguistics, Contrastive Analysis shifted its attention from the code or linguistic system to the context and its influence in the production and interpretation of messages. This new stage in Contrastive Analysis will be explained in detail in section 1.2.2 on functional approaches.

1.2.1.3. Translation Theory and the formal approach

One way of establishing comparability between different languages is translation. Translation is concerned with EQUIVALENCE. Equivalence can be found at different levels and translation theory has been influenced by different linguistic trends in the search for different types of equivalence (e.g., formal equivalence, contextual equivalence). Formal approaches to translation are greatly influenced by Chomsky and look for FORMAL EQUIVALENCE, i.e., the translator tries to render the exact words (form for form, or word for word) of the original language into the target language. Purely formal approaches to the description and comparison of languages constitute a dead end for the purposes of the present study, because there is much more to instructions than just linguistic forms. However, even the models of Translation Theory that are based on formal approaches, have underlying functional aims. Thus, for example, Nida (1964) suggests a model based on transformational grammar, consisting of the following three steps, as summarised by Robert L. Thomas (1990:150):

> "reduction of the source text to its structurally simplest and most semantically evident kernels, transference of the meaning from the source language to the receptor language on a structurally simple level, and generation of the stylistically and semantically equivalent expression in the receptor language."

According to Hartmann, Nida's procedure is good enough for translating simple sentences, but poses problems when trying to translate more elaborate sentences:

> "This is an adequate procedure for tackling simple sentences ... but the linguistic operations required for analysing and restructuring more complex sentences would have to become unmanageably elaborate." (Hartmann, 1980:53)

Despite its formalist influence, Nida's model was aimed at achieving DYNAMIC EQUIVALENCE, that is, the translated text should have the same effect on the readers as the source text had on its audience. Dynamic equivalence, is therefore, functional and in fact Nida has recently renamed it FUNCTIONAL EQUIVALENCE (cf. Waard and Nida, 1986).

1.2.2. Functional approaches

Functional approaches are those concerned with what can be done with language, the purposes it is used for, and its context. The language descriptions provided by theories such as Discourse Analysis, Register Analysis and Text Linguistics are functional.

Functional descriptions have also been used for cross-linguistic studies, resulting in the approaches which will be outlined in the following. These approaches are characterised by the fact that they compare items which have the same function, rather than the same form. A formal approach would, for instance, compare the imperative form in two languages, while a functional approach would rather establish a cross-linguistic comparison of the directive function.

Functional comparisons can be carried out at two levels. At the micro-linguistic level, they are restricted to the sentence and compare elements with the same syntactic or semantic function. At the macro-linguistic level, they go beyond the sentence boundaries and compare, for example, texts of the same register or the same text type, or items which perform the same function in discourse.

It should be pointed out that some of the theories to which functional approaches have been applied were already mentioned in section 1.2.1 on formal approaches. This means that those particular theories had in their origins a formal influence, but they later developed and introduced a functional approach in their studies.

Apart from making important contributions to the theory of language, the approaches discussed in this section can have general applications (e.g., pedagogical, computational). Some of them, however, have very specific motivations: contrastive analysis and contrastive rhetoric are originated by specific needs in foreign language teaching; the functional approach to translation tries to overcome the problem of communicative equivalence, which was not covered by formal approaches; the interest of computational linguistics in language comparisons appears as a result of the need to generate multilingual texts.

1.2.2.1. Computational Linguistics

Within the area of Computational Linguistics, the focus of attention has been shifting from a concern with single language processing (either for text analysis or for text generation) to a concern with multilingual processing, e.g., machine translation (MT) and multilingual text generation (MTG). This concern has motivated comparative studies of two or more languages, both for MT and MTG. Many of these studies have felt the need to establish

functional comparisons and have looked at the relations between form and function. Attention has been devoted to instructions in particular, addressing the following aspects: rhetorical structure (Rösner and Stede, 1992a), discourse and genre features (Hartley and Paris, 1997), intention and rhetoric of instructions (Delin *et al.*, 1993), procedural relations (Delin *et al.*, 1994; Grote, 1995) and thematic progression (Lavid, 1995).

To avoid unnecessary repetition, comparative studies within the area of Computational Linguistics will be addressed in detail in section 2.3, when discussing the different cross-linguistic studies of instructions.

1.2.2.2. Contrastive Analysis and the functional approach

We have already seen that Contrastive Analysis initially followed a formal approach. However, contrastive studies soon shifted their attention from form to function. This shift was influenced by Hymes' (1972) suggestion that the object of linguistic enquiry should be a speaker's COMMUNICATIVE COMPETENCE, rather than his/her LINGUISTIC COMPETENCE. Contrastive analyses under Hymes' influence take into account that knowledge of the code (also known as linguistic competence) is not enough for successful communication; and that the appropriateness of the text to the situation (i.e., communicative or pragmatic competence) plays an important role in communication. When teaching a foreign language, then, students should be made aware that a sentence, for instance, can be appropriate in two ways: it can be *formally* appropriate if it does not violate the rules of textual organisation; and, on the other hand, it can be *functionally* appropriate if it communicates what its speaker intends.

The characteristics of contrastive analyses following a functional approach, in contrast to the formal approach, are summarised in James (1980:101-102):

- Concern for communicative competence rather than for 'linguistic' competence in the Chomskyan sense.
- Description of linguistic events within their extralinguistic settings. In other words, they place a great emphasis on the context and its influence in the production and interpretation of messages.
- Search for units of linguistic organisation larger than the single sentence, i.e., the comparisons tend to be established at the macro-linguistic level.

1.2.2.3. Contrastive Rhetoric

Similarly to Contrastive Analysis, Contrastive Rhetoric (cf. Kaplan, 1966; Connor, 1996) has pedagogical motivations and it has been considered a branch of Contrastive Analysis. Contrastive Rhetoric has devoted its attention to the different ways in which different languages organise their messages, and its results have been applied to the teaching of writing in a foreign language.

The origins of Contrastive Rhetoric can be traced back to the Sapir-Whorf hypothesis, which suggests that language influences the way people think and perceive reality. The consequence of this hypothesis for second language acquisition is that L1 interferes with L2 acquisition. Contrastive Rhetoric as such was initiated by Robert Kaplan's (1966) article, which as summarised in Connor (1996:100),

> "was concerned with the transfer of first-language cultural conventions to second language performance. It dealt with the rhetorical organization of ideas in writing, which was assumed, without much question, to be culturally determined. The emphasis of the work was on rhetorical styles; little attention in that early work was paid to reasons for culture-specific writing styles."

As cited in Connor (1996), more recent works by Kaplan (e.g., 1987; 1988) modify his initial hypothesis and suggest that "rhetorical differences do not necessarily reflect different patterns of thinking. Instead, differences may reflect different writing conventions that are learned in a culture" (1996:16). Foreign language students, then, need to be taught these rhetorical patterns which are both adequate and acceptable in the L2. The differences between rhetorical patterns of native and non-native speakers can be disclosed by carrying out contrastive text analyses which, according to Swales (1990:65), "need to compare texts of the same genre in different languages", that is, texts written for similar purposes in similar contexts. This has links with Hartmann's Contrastive Textology, the next functional approach to cross-linguistic comparisons to be introduced here.

1.2.2.4. Contrastive Textology

One further branch of contrastive linguistics which is interesting for the purposes of this study is what Hartmann (1980) has called *contrastive textology*. This approach is based on real texts and it looks for *similarities* as well as differences between languages.

The goal of Contrastive Textology is "to find out in what respects languages differ from one another, or, more specifically, under what conditions a pair of contrasted language systems exhibits similar or different traits" (Hartmann, 1980:22).

It is this interest in the conditions under which languages are similar or different that identifies Contrastive Textology as a functional approach; the comparisons are established between texts which have the same communicative purposes.

Hartmann proposes Contrastive Textology as "the necessary combination and integration of contrastive analysis and discourse analysis" and argues that contrastive statements only make sense if they are based on the analysis of 'parallel texts', i.e., on "examples of discourse from corresponding genres of a pair (any pair) of languages" (1996:948).

As cited in Hartmann (1996), this idea of carrying out cross-linguistic studies based on real texts is supported by Johansson and Hofland's (1994:25) in the following words:

> "Bilingual corpora provide evidence on similarities and differences between two languages. They make it possible to carry out text-based contrastive studies, while traditional contrastive studies have often focused on a comparison in the abstract of language systems, or parts of language systems, without being connected to real texts."

Since the unit of analysis is the text, the comparisons are made at the macro-linguistic level.

Hartmann claims that discourse analysis and text grammar are best considered together, because they provide complementary views of the fact that "messages are encoded as (or translatable into) discourse, discourse is realised as text, and text must be organised into a pattern to be decodable" (Hartmann, 1980:18).

The guiding principle for this fact is referred to as "'*transphrastic textuality' hypothesis*", and is based on the following assumptions quoted from Hartmann (1980:18):

a) that it is the text where linguistic and extralinguistic categories correlate,
b) that for a characterisation of the linguistic patterns we need to go beyond the limits of the clause or sentence, and
c) that 'text-ness', 'texture' or 'textuality' is a more realistic notion for capturing communicative events than the more narrowly conceived component notions of phonemicity, grammaticality, and semanticality.

The transphrastic textuality hypothesis "also implies that the features that establish text-ness vary between different stylistic genres or 'text-types'" (Hartmann, 1980:20). It has been

argued in the literature that "whilst a comparative description of *intra*lingual registers is essential, an *inter*lingual contrastive analysis of register differences across languages is just as important" (Ellis and Ure, 1974:44). This type of interlingual contrastive analysis will "show whether and how the corresponding functional varieties of any two or more languages differ significantly" (Hartmann, 1980:32).

The use of parallel texts in Contrastive Textology offers an advantage, because:

> "they document contrasts between discourse types within and across languages and thus confirm ... the existence of relatively separate language varieties." (Hartmann, 1980:39-40)

Interlingual comparison of whole texts representative of these varieties thus guarantee descriptive adequacy.

Two further ideas present in Hartmann's Contrastive Textology are reflected in the work to be presented in the following chapters. The first one refers to the importance of beliefs and presuppositions for the text production and interpretation:

> "Knowledge of objects and events in the world around us is transmitted through language, but in turn the production and comprehension of meaningful discourse relies heavily on presuppositions and beliefs, shared between the interlocutors." (Hartmann, 1980:20)

The second idea taken from Contrastive Textology concerns the possibility to distinguish different text types depending on the organisation of the text, which is influenced by the conditions of communication:

> "the external conditions of communication are reflected in the internal organisation of the text (cf. David Crystal and Derek Davy 1969). Thus it makes sense to use this correlation for the establishment of a text typology, with due consideration of the verbal as well as non-verbal manifestations of discourse." (Hartmann, 1980:21)

These two issues will be discussed in the general characterisation of instructions provided in Chapter 3.

1.2.2.5. Translation Theory and the functional approach

In Translation Theory, the shift from form to function is noticeable in the search for equivalence. In contrast to earlier approaches to translation whose aim was to achieve formal equivalence, functional approaches to translation are concerned with situational or contextual equivalence (Vinay and Darbelnet, 1958), and with dynamic or functional equivalence (Nida, 1964; Waard and Nida, 1986), that is, with achieving the same effect as the original text.

The relevance of the situational context in translation is emphasised by Halliday *et al.* (1964:124), who regard translation as

> "the relation between two or more texts playing an identical part in an identical situation",

… and by Hartmann (1980:27), who states that

> "A target-language message may be considered equivalent to the source-language text both because it has the same 'meaning' (whatever that may be), and because the situations to which the message relates are identical."

Functional approaches have also broadened the scope of Translation Theory. In addition to focusing on the product of translation (i.e., the translated text), more recent works have been concerned with the activity of translation. Hatim and Mason (1990) analyse the product and process of translation in their social contexts, emphasising the role of the translator as

mediator between two cultures or as communicator. In order to show what translators do when they translate, Bell (1991) proposes a model of the translating process based on Halliday's (1985) Systemic Functional Theory –which contains three stages: syntactic, semantic and pragmatic processing.[13] According to Bell, the translation is carried out as a combination of bottom-up and top-down processing:

> "the analysis (and later synthesis) of the clause is approached simultaneously by both pattern-recognizing procedures and by inferencing based on previous experience and expectations." (1991:60)

Bell's method, therefore, involves decoding the source text and re-encoding it in the target language through the following three stages (1991:61):

1. the *analysis* of the source language text;
2. the organisation of the semantic representations of the text into an *integrated schema* containing the whole information the reader accumulates while reading the text;
3. the *synthesis* of the new target language text.

1.2.2.6. Typological Discourse Analysis

The influence of Discourse Analysis initiated a new branch of Language Typology which Myhill (1992) has called Typological Discourse Analysis. Following Myhill, this approach combines the methodology and theory of the research traditions of Typology and Discourse Analysis. Consequently, it shares with traditional typology "the concern for building a universal theory of language based upon data from a wide variety of genetically unrelated languages", while it takes from traditional discourse analysis "the consideration of extrasentential context as a factor in motivating the use of one or another form" (Myhill, 1992:1).

Taking into account the influences of both Linguistic Typology and Discourse Analysis, Myhill (1992:1) provides the following definition:

> "typological discourse analysis is the cross-linguistic study of the factors affecting the choice of one construction or another in a given language, taking the surrounding discourse context into consideration as having a crucial effect on this choice."

This approach, then, is concerned with the relationships between form and function. In order to show that "the form-function relationships claimed by the linguist are in fact general patterns of the language" (Myhill, 1992:13), Typological Discourse Analysis uses quantitative analysis. This methodology also provides a guarantee against the selective use of data.

The most obvious application of Typological Discourse Analysis is that it "can provide a variety of parameters for linguists who are wrestling with the problem of how to characterize alternations between different forms or constructions in a language they are investigating" (Myhill, 1992:17). In this respect, Typological Discourse Analysis can offer contributions to the present study, since one of the main concerns of this thesis is to explain why certain realisations are chosen instead of others.

1.2.2.7. Typological Register Analysis

This approach to cross-linguistic studies proposed by Biber (1995) takes as point of departure the claim that contextual factors influencing register variation operate across dialects (cf. Halliday *et al.*, 1964). In other words, that different dialects often reflect similar registers.

[13] Note, however, that the division into syntactic / semantic / pragmatic is not Hallidayan.

Biber, however, takes this claim one step further and suggests that register factors operate in similar ways across languages and cultures.

Taking into account that there are two kinds of descriptive approaches (micro-linguistic and macro-linguistic), cross-linguistic comparisons can be based on two different aspects: form and function. Biber rejects cross-linguistic comparisons based on individual linguistic forms on the grounds that it does not provide a reliable basis for cross-linguistic generalisations: a particular linguistic construction in one language might not appear in other languages even though its function might be realised through other linguistic forms. He proposes instead a multi-dimensional analysis that "cancels the requirement that the 'same' linguistic feature be compared cross-linguistically. That is, dimensions can be functionally equivalent across two languages but comprise structurally different linguistic features, depending on the grammatical resources of the language in question" (Biber, 1995:84). The multi-dimensional approach, then, incorporates the full range of linguistic features. Its research goal is "the linguistic analysis of texts, registers, and text types, rather than analysis of individual linguistic constructions" (Biber, 1995:34).

Biber uses *register* as "a general cover term associated with all aspects of variation in use" (1995:9). He defines *register* as "text categorizations made on the basis of external criteria relating to author/speaker purpose" and "the text categories readily distinguished by mature speakers of a language" (Biber, 1988:68).[14]

He makes a distinction between text type and register. According to Biber, text type refers to categories defined in strictly linguistic terms, while register refers to text categories interpreted on functional grounds and shared by different text types.

Biber's framework for a single register analysis consists of three major components:

> "description of the situation in which the register is used; description of the linguistic characteristics of the register; and analysis of the functional or conventional associations between the situational and linguistic features." (Biber, 1995:10)

The same framework is used for the cross-linguistic study of register variation.

Biber's approach to register variation is grounded on the following aspects specified in Biber (1995:60):

- the fact that "the distribution of linguistic forms across registers is systematic because it is functionally motivated", in other words, that the preference for certain linguistic features corresponds to the communicative demands of different registers; and
- the hypothesis "that there are some communicative functions that are marked in all languages, and that registers can therefore be compared cross-linguistically with respect to the linguistic features serving those functions." In addition, those communicative functions that are not equally important in all languages will serve to mark the distinctiveness of particular languages.

Biber's Multi-Dimensional approach is concerned with the identification of systematic co-occurrence patterns (*dimensions* of variation) among linguistic features. The first step is to identify the general register category on the basis of its characteristic surface linguistic features, followed by the identification of the various linguistically well-defined *text types* within that register category. He further suggests the possibility that some of these shared

[14] These quotations stem from an earlier work where Biber was using the term *genre* instead of *register*. However, in his 1995 work, he states that his current usage of *register* corresponds exactly to what he had previously called *genre*.

patterns will turn out to reflect universals of register variation which will constitute the base for cross-linguistic typology. In his own words,

> "Assuming that all languages comprise a range of registers, the analysis of these shared patterns of register variation is central to any comprehensive theory of cross-linguistic typology and universals." (Biber, 1995:22)

Biber's approach, therefore, starts with a formal analysis and then establishes the functional motivation behind the use of formal features such as nominalisations, prepositional phrases, attributive adjectives, etc. The dimensions of variation have both linguistic and functional content:

> "Linguistically, each dimension comprises a set of linguistic features that co-occur frequently in texts (...) functionally, each dimension reflects a grouping of forms that serve common situational and communicative purposes." (Biber, 1995:83)

These dimensions are based on the assumption that "linguistic features co-occur in texts because they reflect shared functions" (Biber, 1995:30).

Biber's cross-linguistic analyses of register variation can make a valuable contribution to two areas: computational linguistics (e.g., the development of computational systems for machine translation), and the development of comprehensive text typologies. Biber's contribution to the latter area is explained by the systematic regularities across languages found in the text categories which are linguistically well defined (i.e., the *text types*), when these texts are compared from a multi-dimensional perspective.

To conclude, the Multi-Dimensional research framework proposed by Biber, allows for the identification of universal patterns of register variation across languages. The analysis is open to the inclusion of additional linguistic features (e.g., features relating to information structure, cohesion, coherence, and rhetorical organisation) which would possibly result in the identification of additional dimensions.

2. The study of instructions and instructional texts

This section will provide an overview of previous research on instructions, whether it has been devoted to instructions in one or various languages.

Before going any further, however, it is important to make a few remarks about what is meant in the literature by instructions as compared to other uses of language. This issue will be addressed in section 2.1 (definitions of instructions). The remaining sections will discuss monolingual studies of instructions (section 2.2) and cross-linguistic studies of instructions (section 2.3).

2.1. Definitions of instructions

In the literature consulted, instructions have been considered as a text type, as a form of message and as a rhetorical function.

Instructions as a text type. Two different criteria are often invoked for defining text types: purely linguistic characteristics, and functional features. Biber (1995), for instance, takes the first stance and defines text types "such that the texts within each type are maximally similar in their linguistic characteristics, regardless of their situational characteristics" (1995:320). This linguistic definition of text types, however, requires a multi-dimensional approach (Biber, 1995) that will allow us to identify the various text types through a detailed linguistic analysis of many different texts and through the comparison among them according to the frequency of their linguistic features.

A second view of instructions as a text type is provided by the functional approach taken by Hatim and Mason (1990). They define the instructional text type as the one focusing on the formation of future behaviour; in their own words, there is "an attempt to regulate through instruction the way people act or think" (1990:156). Hatim and Mason identify two sub-types of instructional text: instruction with option, such as the ones found in advertising and consumer advice; and instruction without option, like the ones appearing in contracts and treaties. Although the presentation of an option (or not) to the reader can be a useful way of distinguishing some instructions from others, it is sometimes difficult to tell whether a particular instructional text belongs to one sub-type or the other. It must be taken into account that even in instructions which, as a whole, would be classified as instructions without option (e.g., a user manual), the actions to be performed might be presented as optional (e.g., "the device can be washed with a sponge" in that same user manual). Optionality, therefore, is not enough to distinguish between instructional texts.[15]

For the purposes of the present study, both the linguistic and the functional definitions of instructions as a text type are useful. However, neither of them on their own is comprehensive enough to explain what instructions are. Rather, what is needed is a definition of instructions that investigates the linguistic forms in relation to the functions they perform, and that takes into account the contextual factors that distinguish between instances within the same text type.

Instructions as a form of message. For Sager *et al.* (1980), *messages* consist of *text* and *intention*, and instructions are a traditional form of message which can be distinguished from other forms of message (e.g., direction and directive) whose primary intention is the directive one. They point out that, though instructions are particularly important in technology, they occur in all areas of usage and consequently are not an exclusive special message form. In their definition of instructions, Sager *et al.* (1980:164) make the following interesting remarks which are picked up and developed in the data analysis presented in this thesis:

- Instructions are not imperatives for action and are not considered as orders or commands. Rather, they are intended as guidelines for the performance of the recipient's work; they indicate the ways actions are to be performed if the recipient chooses to undertake them. This point is picked up and further developed in chapter 5 on directives through the notion of action-relevance and the degrees of action obligatoriness.
- Instructions are often collected in manuals and vary according to the level of the recipient. In other words, the level of detail in instructions for users is different to the level of detail in instructions for maintenance engineers, because they are aimed at audiences with different levels of knowledge. Variation according to the level of the recipient can be controlled through a careful data selection, as the one carried out for this thesis.
- The structure in which instructions are organised is normally determined by their objectives and the procedures for achieving those objectives; obscurities in the understanding of instructions are likely to occur through uncertainty or unfamiliarity with the events or the situation of the event, rather than through difficulties with language. In the present work, I approach this point by taking seriously the notion of task plan, which consists of a goal (or objective) and a series of actions to be performed for achieving that goal.

[15] Issues related to optionality will be dealt with in chapter 5 when discussing the factors involved in the choice of directive expressions.

When comparing other 'forms of message' with instructions, Sager *et al.* (1980:157-158) point out that directions have a greater imperative force; are primarily directive, containing only the minimum information required to fulfil the objective of the form; and are more often used to elicit an immediate response. On the other hand, they define a directive as a broad statement of decisions to be carried out, resulting from a policy decision, and usually presented as specific directions or orders before it can be implemented.

Instructions as a rhetorical function. Louis Trimble's (1985) interest in instructions is motivated by pedagogical concerns. In the context of teaching English for Science and Technology (EST), he investigates the rhetorical functions that can be found in the paragraphs of EST texts. Trimble defines instructions in opposition to description, definition, classification and visual-verbal relationships, which are all rhetorical functions found in the EST paragraph. Instructions are defined as "the rhetoric of telling someone what to do and how to do it to achieve a certain goal" (Trimble, 1985:92). He claims that this rhetorical function can be broken into the following two major groups specified in (Trimble, 1985:92-93):

1. *Instructions*, which are "the actual telling someone what to do and how to do it," and can be of two types:
   a) *direct instructions*, which Trimble describes as being stated in the imperative, and
   b) *indirect instructions*, which often sound more like suggestions than commands but which actually function as imperative statements. According to Trimble this type of instructions "usually contains a modal verb such as 'can', 'may', 'should', and less often 'must'" in EST texts.
2. *Instructional information*, "additional information that accompanies most sets of instructions and provides explanations, theory, warnings, etc."

Trimble's classification, then, boils instructions down to directive speech acts only. He further narrows down the definition of instructions to include only two types (direct and indirect). This functional view of instructions takes a far too simplistic view of form for the purposes of this study. A suitable investigation of instructions needs to provide a serious account of both form and function.

Despite the previous criticism, Trimble's classification is valuable for recognising that not all parts of instructional texts have a directive function. Although the present study is not concerned specifically with instructional information, this element of instructional texts (which has also been recognised by Serra Borneto, 1992a; and Paris and Scott, 1994) will be dealt with in chapter 3.

When comparing these three different views of instructions (as a form of message, as a text type and as a rhetorical function), we should keep in mind that the term 'instructions' is used in different ways. In one usage, 'instructions' refers to what I call instruction sets (see chapter 1), a macro-textual usage. Sager *et al*. (1980), for instance, take this view. In the other usage, 'instructions' refers to the individual instructional elements, a micro-textual concern. This usage is adopted by Trimble (1985), who distinguishes between direct and indirect instructions, and Hatim and Mason (1990) who make a distinction between instructions with and without option. In the following chapters, this confusion will be avoided by substituting the term 'instructions' with the more precise terms 'instructional text', 'instructional set' and 'instructional elements'.

Several psychology and artificial intelligence studies focusing exclusively on instructions are more relevant than the above views of instructions for the purposes of the present investigation. These will be discussed in the following two sections, dividing them into two groups, according to the number of languages they deal with: monolingual studies and

multilingual or cross-linguistic studies. It must, however, be pointed out that there is a close relationship between monolingual and cross-linguistic studies, in the sense that the former very frequently inform the latter.

2.2. Monolingual studies of instructions

Within the area of psychology, Dixon (1987a, 1987b) and Dixon *et al.* (1988) analyse written directions for accomplishing a task. With the aim of explaining how directions are understood, these studies carry out several experiments which draw the following interesting conclusions:

- understanding directions involves the construction of mental plans for carrying out the task;
- these mental plans are organised hierarchically, i.e., the actions to be performed have a hierarchical structure, and directions are read (and understood) more quickly when they take that organisation into account;
- the construction of the mental plan begins at the top of the hierarchy and works down.

The results of these studies have obvious linguistic implications for the writing of successful instructions. Dixon (1987a) claims that those sentences which begin with high-level information and continue with the lower-level information are easier to understand. Consequently, when writing directions, a component of the task plan at a high level in the hierarchy will be stated as an explicit action; when it is at a lower level in the hierarchy, it will be stated implicitly as a state or condition.

A purely linguistic interest motivates Simons' (1992) study of official directive documents written in Spanish, within the educational field. Her ultimate aim is to expose the hidden intentions underlying the linguistic ambiguity within this type of discourse. Her work is relevant for the purposes of my study in two areas: Simons' pragmatic characterisation of official directive documents and my own characterisation of instructional texts provided in chapter 3 present similarities as regards writer's beliefs and authority relations. This shows that the two text types have many features in common. Furthermore, Simons does a useful study of the syntax of Spanish commands and the implications of certain linguistic choices; her work has also informed the study of directives provided in chapter 5.

A pedagogical motivation lies behind the study of around 200 instructional texts carried out by an Italian research group whose results are provided in Serra Borneto (1992a). Their characterisation of Italian user manuals for household appliances on three levels (communicative context, content and general structure) can help manufacturers and technical writers to improve their manuals, by showing the optimal uses of the language; it can also help technical students, and in fact they devote a whole chapter to didactic manuals for the technical profession, applying the same model that they propose for user manuals; finally, they also suggest their potential contribution to text typology.

Their views are similar to those of Dixon (1987a) as to the importance of the action as a unit for the analysis of instructions. In addition, the Italian study provides a comprehensive characterisation that includes the generic structure of instructions, the types of information contained in the texts as well as their linguistic expression, the general syntactic and morphological features of instructions, and their lexical characteristics.

Within the area of Computational Linguistics, instructions have been studied mainly for text generation purposes; some of these studies, however, are more concerned with the cognitive processes involved in the understanding and performance of instructions. Agre and Batali (1991), for instance, study videotapes of pairs of subjects following together the

instructions to assemble a piece of furniture. They are particularly interested in "the ways in which participants organize and understand the activity, using space, language, background knowledge, and the tools and materials themselves" (1991:1).

The work of Di Eugenio and White (1992) focuses on instruction interpretation and action representation and provide a formalism of their analysis which can be implemented for natural language generation.

Balkanski (1993) focuses on the intentions and beliefs in instructions, and her work has been relevant for my characterisation of the context of instructions, as explained in chapter 3.

Following Goldman's (1970) procedural relations, Pollack (1986b), Di Eugenio (1993b) and Balkanski (1993) suggest that two relationships hold between the actions provided in instructions: Generation and Enablement. Their work has influenced much research on monolingual and multilingual instructions, as it will be shown in section 2.3.

Vander Linden (1993) addresses the problem of text generation systems in managing different choices of expression at the textual level. His work is concerned with the computer generation of various types of expressions that can be found in instructional texts, and aims at exploring the contextual factors that influence the choice of grammatical form. Vander Linden uses Mann and Thompson's (1988) Rhetorical Structure Theory (RST) as his framework of analysis and relates the RST rhetorical relations to the procedural relations underlying instructions. Similarly to Di Eugenio (1993b), Vander Linden investigates purpose expressions in particular and their work will be discussed in more detail in chapter 6.

The research within the area of Computational Linguistics mentioned up to now has been devoted to instructions in English and has influenced cross-linguistic studies of instructions, in the ways outlined in the following section.

2.3. Cross-linguistic studies of instructions

Within the area of Natural Language Generation, the interest has recently extended from generation in a single language, to generation in multiple languages, sometimes referred to as Multilingual Natural Language Generation (MNLG). This new interest is motivated by the need to produce texts, in particular user manuals, in different languages, and has resulted in the comparative study of two or more languages. MNLG offers an alternative to translating manuals, being more effective, less costly and less time-consuming than human translation (Paris *et al.*, 1995). It is more effective because the target text is not constrained by the source text, less costly because a technical translator is not required, and less time-consuming because the translation step is eliminated. In addition, these studies can offer valuable contributions to machine translation (MT).

Particularly influential in this thesis is the work of researchers concerned with the automatic generation of user manuals in multiple languages (cf. Rösner and Stede, 1992a, 1992b; Delin *et al.*, 1994, 1996a; Grote, 1995; Paris and Scott, 1994; Paris *et al.*, 1995; Scott *et al.*, 1995; Hartley and Paris, 1997). There are also studies such as Carroll and Delin (1998) which, although not particularly concerned with *automatic* text generation, can certainly offer very valuable contributions to that area, as well as to the present investigation. The main contributions of these studies will be summarised here.

These works are, in general, concerned with the underlying semantics of instructional texts and how this is mapped onto the linguistic expression and have touched on several issues: the relationship between intentions and stylistic variation, the expression of procedural relations, the influence of genre on the selection of task structure elements and their linguistic realisations, and the use of graphical devices.

2.3.1. Intention and variation

Since, as pointed out by Delin *et al.* (1993:7), the production of instructional texts is triggered "by a set of underlying intentions relating to the actions that the user is intended to perform," these underlying intentions need "to be expressed in the text in a grammatical and pragmatically effective way." They, however, observe that "what is pragmatically effective in one language may not be what is preferred in another." They tease out six levels of representation at which variability can arise: knowledge of the artefact, deep intentions, knowledge selected for communication, shallow intentions, rhetorical structure, and syntactic structure. They pay special attention to the two levels of intentions, and claim that deep intentions (the intentions for the user to perform concrete actions) do not specify linguistic acts to be performed; while shallow intentions (the intentions relating to the way in which the originator will convey the action requirements to the user) specify the particular discourse functions to be used. They conclude that "the interface between shallow intentions and discourse relations plays a crucial role in determining the naturalness and appropriateness of the target text" and that since the nature of variation at this level is likely to be language-dependent, "the decisions taken in the production of the source text may not be appropriate for the target" (Delin *et al.*, 1993:10).

Paris and Scott (1994) investigate the range of *styles* in user manuals in different languages, and the relationship between stylistic variation and the global structure of the manual both within and between languages. They show that the different styles in instructional manuals are related to the stance the writer takes towards the reader (namely, information provision, eulogy, directive and explanation). They conclude that "instructions generated with the wrong stance can lead readers to misinterpret the importance of the steps presented in various parts of the text", that the mappings from stance to realisation is language-dependent and that "the choice of stance itself could also be culturally motivated." Taking this into account, they suggest that "computational systems should be able to generate the variations found in texts" (Paris and Scott, 1994:51).

A cross-linguistic study of the directive intention, in particular, is provided by Carroll and Delin (1998). They study, among other issues, the range of linguistic forms available for expressing the directive intention in Japanese and English instructions, and the factors influencing the choice of expression.

2.3.2. Procedural relations

Delin *et al.* (1994) show that Rhetorical Structure Theory (Mann and Thompson, 1988) on its own fails to capture the common semantics underlying instructions in different languages. Since the rhetorical structure directly matches the grammatical forms used in the text, an RST approach would result in different RST structures for different languages, even when the information conveyed[16] is the same. Instead, they suggest an alternative approach based on Goldman's procedural relations of *Generation* and *Enablement*, which apply between actions in a task plan, and which they now define in terms of a plan representation model. The results of their analysis indicate preferred mappings from these relations onto various languages (English, French, Portuguese), and show which expressions are ambiguous. Grote (1995) follows this approach in her study of German instructions and improves it by analysing the actions individually, rather than as a whole, and by taking into account as well the ordering of the actions in the action pair.

[16] This is what they had previously called *deep intentions* (Delin *et al.*, 1993).

The procedural relations approach allows one to generate texts which "are *congruent* with the content embodied in the task to be performed and with other relevant information about the task" (Scott *et al.*, 1995:2). Only when both the semantic message and the syntactic form have been specified can one "begin to look at the kinds of decision-making process that intervene between the message and the choice of syntactic carrier, thereby exposing the site for pragmatic influence on syntactic choice" (Scott *et al.*, 1995:2). Following up from this, Delin *et al.* (1996a) show how the choices of linguistic forms exposed by the procedural relations are further constrained by pragmatic factors at times based on the writer's communicative intention. They further claim that some of the kinds of pragmatic marking they refer to are similar to those that RST has tried to capture through the notion of rhetorical relation.

2.3.3. Genre influence on linguistic expression

Hartley and Paris (1997) look at the role played by genre in controlling the text generation process of software instructions. This work focuses in particular on French software instructions, although they are interested in generating both French and English instructions. They consider each of the sections differentiated in a typical software manual to be a distinct genre, since each of them has different communicative purposes. On this premise, they analyse three genres identified in software instructions: *ready-reference*, which corresponds to the section providing descriptions of the commands that are available in the application software; *procedure*, referring to the step-by-step instructions that enable the reader to perform the tasks; and *elaboration*, which corresponds to the communicative purpose of enabling the reader to increase his knowledge about the task. They also identify one further genre corresponding to tutorial exercises, but they do not study it. Through this analysis, Hartley and Paris conclude that genre does constrain the choices of the task structure elements and their linguistic expression. To give but an example of these constraints, goals are mainly realised by a nominalisation in the procedure genre, while in ready-reference and elaboration they are realised through a dependent clause introduced by a purpose conjunction (Hartley and Paris, 1997:24-25).

2.3.4. Graphical devices

Carroll and Delin (1998), in their study of a Japanese and English corpus, touch upon an interesting issue regarding the structure of instructions: the layout, document navigation, and the use of diagrams and pictures. They claim that the presentation of information in Japanese and English instructions is differently distributed between text and graphics, and that these differences arise from the varying sociolinguistic and cultural expectations of both languages. Furthermore, they suggest that "any theory that aims at achieving pragmatic equivalence between the two languages must include both text and graphics within the semiotic resources it has at its disposal" (1998:382). The issue of the interaction between text and graphics is worth researching further, not only in Japanese and English, but also in other languages.

3. Approach of this thesis

Taking into account the previous approaches to language comparisons and instructions introduced in sections 1 and 2 respectively, this section provides an outline of the approach taken in this thesis for the study of instructional texts in Spanish and English.

The study of instructions presented here follows a synchronic perspective. Considering that one of the purposes of this investigation is to provide insights for the generation of instructions to accompany present-day consumer products, a diachronic study would not be appropriate. However, it was acknowledged in section 1.1 that a diachronic study might be

potentially enlightening for explaining the increased use of the infinitive as a directive in Spanish, and the change in the interpersonal relations that seems to be taking place in Spanish recipe books.

As it is normal procedure in synchronic cross-linguistic studies, this investigation looks at instructions in two ways: on the one hand, it renders an individual language description of instructions in English and in Spanish, and then these descriptions are compared cross-linguistically. The descriptive phase presented in the following chapters concerns the situational, semantic, pragmatic, functional and linguistic features characteristic of the instructional genre or text type. Following the suggestions made in Contrastive Textology (Hartmann, 1980) this description will be based on actual instances of this particular text type.

In contrast with the normal procedures in Contrastive Analysis, I am not looking only for dissimilarities, but for both similarities and dissimilarities which might be useful for text-generation, teaching, etc. This is also one of the aims of Contrastive Textology (Hartmann, 1980).

Following the work on NLG, I will look also at different levels of representation; I am not concerned strictly with differences in constructions, but with how the semantic or content level is mapped onto the discourse and the grammatical levels (regardless of whether these mappings are similar or different in both languages).

In relation to language comparisons and the establishment of comparability, the cross-linguistic study of instructions is possible thanks to two important factors: the task plan, and the shared communicative purposes and situational context of the texts chosen.

As regards the first issue, the *tertium comparationis* of the instructions in my data is clearly the task plan. This follows much of the cross-linguistic work carried out in Computational Linguistics: even though the actions are not the same, they are hierarchically organised in a structure (cf. Delin *et al.*, 1994 for instance) which is common to all instructional texts, whatever language they are written in. In addition, commonalities that enable the comparisons can also be found at the more restricted level of register or text type, as shown by typological register analyses (cf. Biber, 1995). However, building a typology of registers is outside the scope of this thesis, given that I am dealing with one single register in Biber's terms. Having said that, I will definitely be exposing functional features shared, within the same register, by the two languages I am concerned with; some of these functional features may be disclosed as universal after research into other languages.

Chomsky's notion of competence influenced translation theory in its focus on linguistic and grammatical equivalence. However, the influence of Hymes' (1972) notion of communicative competence shifted the focus from grammatical to communicative equivalence. Formal equivalence, then, does not necessarily mean communicative equivalence. The fact that formal equivalence is not all there is to translation would be further exposed when translating instructions from another culture. The case of Japanese instructions immediately springs to mind; the cartoons constituting a typical feature in Japanese instructions (cf. Carroll and Delin, 1998) would have to be adapted when translating them into a European language, where cartoons would not work for this specific genre. Cultural factors, then, can have an important role that a formal approach would fail to portray.

It is precisely communicative or situational equivalence (i.e., shared communicative purposes) that justifies the comparison of the texts in my corpus. This links up with Hartmann's (1980) suggestion that contrastive statements only make sense if they are based on the analysis of parallel texts; section 3.1 in chapter 1 showed that my corpus belongs to Hartmann's class of situationally-equivalent *paired texts*, since they were produced in the

same situation (purposes, circumstances, as well as the task plan), even though the content is different.

It has been shown (Delin *et al.*, 1993) that, when comparing instructions in different languages, looking only at the code is not enough. The imperative form, for instance, appears in both Spanish and English instructions; however, it could be argued that in many cases the Spanish infinitive is closer to the English imperative than the Spanish imperative form itself. Only by going beyond the code and by taking into consideration pragmatic and semantic factors such as those shown in chapter 5 can one make that suggestion.

One of the purposes of this study is to explain why certain expressions are preferred to others. Formal approaches (which look at the linguistic forms without taking into account situational factors influencing the linguistic choices) fall short for this purpose even within a single language. It is, therefore, necessary to turn to functional approaches.

Register Analysis had already claimed that one dimension of linguistic variation depends on the situation. The context of situation, composed of field, tenor and mode, of the instructional texts I am concerned with, will be studied in chapter 3. The specification of the context includes the context of production and the context of interpretation, which as explained in chapter 6 (on directives) have an influence on the choice of expression. The context of production and interpretation have also been suggested in text analysis as standards of textuality (cf. Beaugrande and Dressler, 1981). Both are related to the text-typology hypothesis (cf. Hartmann, 1980) that production and comprehension of meaningful discourse relies on presuppositions and beliefs shared between the interlocutors.

Functional approaches, through their interest in the context, and their study of units longer than the sentence, offer a much more suitable approach for the purposes of this study. The approach taken in this thesis, then, is a functional one. However, this does not necessarily mean neglecting the form. In fact, both form and function need to be studied in combination, as it was explained in chapter 1 when discussing the method of analysis.

Chapter Three: Characterisation of instructional texts: their context and their structure

Having presented in chapter 2 an overview of the literature on language comparisons and on the study of instructions, the present chapter starts the analytical part of this thesis with the analysis of instructional texts at the macro-linguistic level. This chapter will provide a general characterisation of instructional manuals that takes into account the importance of context in the shaping of any text, and will answer questions such as 'why do instructional texts exist?,' 'what processes are involved in their generation?' and 'how do they achieve their purpose?' Section 1 will be devoted to the social context in which these texts occur; section 2 will address issues such as intentions and beliefs involved in the production of instructional texts; finally, section 3 will show how context (which includes the writer's beliefs about the reader, his knowledge and his needs) influences both the information to be included in the text and the way it is structured.

1. Social context of instructional texts

The instructional texts described in chapter 1 come to life in the same environment or, to use the sociolinguistic terminology, they belong to the same SITUATION TYPE or SOCIAL CONTEXT (cf. Halliday, 1978). The social context has been described in the literature as consisting of "those general properties of the situation which collectively function as the determinants of text, in that they specify the semantic configurations that the speaker will typically fashion in contexts of the given type" (Halliday, 1978:110). The features of the social context, then, establish a set of typical semantic patterns which the speaker or writer will reproduce in her text through a particular structural organisation and specific linguistic realisations. In this section, the social context of instructional texts will be described following Halliday's framework.

According to Halliday, a particular social context is a semiotic structure consisting of three dimensions: the ongoing social activity, the role relationships involved, and the symbolic or rhetorical channel, which he refers to respectively as FIELD, TENOR and MODE. This framework is useful because, as Halliday claims, field, tenor and mode determine or activate different semantic components which lead to specific linguistic realisations. Other sections in this chapter will show how certain aspects of the situation type influence the information to be included, its structure and the linguistic realisations. In addition, the influence of context on the choice of particular realisations will be further studied in other chapters, especially in chapter 5.

In the following three subsections, the features of the situational context of instructional texts will be grouped under the three components of the situation: field, tenor, and mode.

1.1. Field of instructional texts

Field is defined in Halliday and Hasan (1989:12) as follows:

> "The FIELD OF DISCOURSE refers to what is happening, to the nature of the social action that is taking place: what is it that the participants are engaged in, in which the language figures as some essential component?"

The field of instructional texts includes the features specified in the following. Instructional texts appear in the context of goods purchase. The overall purpose of instructional texts is to get the purchaser to use the product safely, efficiently and correctly (cf. Delin *et al.*, 1993). To achieve this objective, it is important to produce a good set of instructions that provide the necessary information not only to use the product, but to get the most out it (e.g., tips and recommendations); to take the necessary precautions to avoid damage to the product (e.g., care and maintenance) or the user himself (e.g., safety warnings); and to get the user to perform the actions necessary to operate the device in the right sequence. The kind of information contained in instructional texts can be classified, following Serra Borneto *et al.* (1992), into two components: *procedural* and *non-procedural*.

Ciliberti *et al.* (1992) define the *procedural component* as the information that affects the operation of the device either directly or indirectly. This component can be subdivided into two sub-components: *operational* and *non-operational*. The *operational sub-component* involves all the information about use (i.e., the interaction between the user and the device) and consists of a series of actions that have to be performed in a particular order to achieve specific goals. This sub-component is essential in instructional texts because it provides the information necessary to operate the device. The analysis presented in the chapters to follow will precisely look at different aspects of the operational component and its linguistic realisations.

The *non-operational sub-component* consists of information that describes the device. Although this information is not directly concerned with the use of the machine, it is important because it provides the user with the necessary background information about the product, thus enabling him to use it.

The *non-procedural component* refers to the information that is neither directly nor indirectly related to the device. According to Ciliberti *et al.* (1992), this component includes information about the identification of the device, guarantee and customer service, advice and warnings.

The amount of information to be included greatly depends on the complexity of the product and the reader's familiarity with it. The more complicated or unfamiliar the product is, the more detailed the information will have to be to cover for the reader's lack of knowledge about the product. In order to choose what information is to be included, the writer has to make assumptions about how much the purchaser knows about the product. Section 2 below will provide further information on the writer's assumptions about the reader, and section 3 will show how the information is structured within instruction manuals.

1.2. Tenor of instructional texts

The tenor involves the relationships between the participants in the communication event:

> "The TENOR OF DISCOURSE refers to who is taking part, to the nature of the participants, their statuses and roles: what kinds of role relationship obtain among the participants, including permanent and temporary relationships of one kind or another, both the types of speech role that they are taking on in the dialogue and the whole cluster of socially significant relationships in which they are involved?" (Halliday and Hasan, 1989:12)

In the case of instructional texts, tenor concerns the writer, who represents the manufacturing company, and the reader, who is most frequently the buyer and/or the user.

One of the tenor features that characterise instructional texts and differentiate them from other types of directive texts concerns the writer's and reader's views of the purpose of instruction manuals. As Ciliberti *et al.* (1992) have pointed out, both the instructor and the instructee have the same aim in mind: that the user operates the device. This means that, in

contrast to other directive contexts (e.g., army orders and legal regulations), the communicative context of instructional texts is a co-operative one (Ciliberti *et al.*, 1992:27). This feature influences the interpersonal relationship concerning AUTHORITY RELATIONS between instructor and user.

As in many other directive texts, the instructor is in a position of authority with respect to the instructee. Her authority, however, does not come from status or social class, but from her knowledge about the product. The writer knows how to use the product, while the reader is assumed not to know much about his new purchase. This feature will have an influence on the linguistic forms used and on the interpretation of those forms. Further issues related to authority relations will be discussed below in section 2. In addition, chapter 5 will show that the kind of authority relations involved in instructional texts allows for the use of direct directives such as the imperative or the modal *must.*

The interpersonal relationships in instructional texts are also related to legal factors. The binding contract characteristic of purchase contexts is involved in the need for providing the instructional texts (however short these may be) and in the level of detail provided. If instructions (or perhaps detailed information about safety) are not provided with the product, the manufacturer is liable for any hazard resulting from the lack of information, and the user can sue the manufacturing company.

Other interpersonal relationships characteristic of the goods purchase context may be involved, although less frequently, in instructional texts. The relationships established between the instructor and the instructee in their roles of seller and customer, respectively, include the manufacturer's wish to please the reader, the manufacturer's intention to offer a good service, and in some cases the manufacturer's effort to attract a potential buyer. These seller-customer relationships are reflected in the language used in instructional texts: the use of positive adjectives to qualify the device is aimed at pleasing the reader, as well as attracting his attention to buy the product when these adjectives are used in the outer package; the inclusion of information on repair service and guarantee are a result of the manufacturer's wish to offer a good service. Chapter 5 will deal with various linguistic choices affected by tenor: for instance, the use of agent defocusing mechanisms vs. agentive realisations, and the use of Spanish distant vs. non-distant 2nd person singular when giving directives.

Finally, as pointed out in Serra Borneto (1992a), instructional texts are widely circulated texts (i.e., they reach a wide variety of users who vary greatly in technical ability). For this reason, manuals include a kind of communication that is in between specialist (as a result of the instructor's knowledge about the product) and non-specialist (to suit the lower technical knowledge of the user).

1.3. Mode of instructional texts

The third component of the social context involves the channel of communication and is described as follows.

> "The MODE OF DISCOURSE refers to what part the language is playing, what it is that the participants are expecting the language to do for them in that situation: the symbolic organisation of the text, the status that it has, and its function in the context, including the channel (is it spoken or written or some combination of the two?) and also the rhetorical mode, what is being achieved by the text in terms of such categories as persuasive, expository, didactic and the like." (Halliday and Hasan, 1989:12)

The instructional texts under study here are written to be read. In relation to this, it is important to notice that there is a considerable time gap between the production and the

reception of these texts, or as it has been said elsewhere, it is text "at a distance" (Ciliberti *et al.*, 1992:42).

The instructional text is usually located inside the packaging. This allows for a detailed description of all the steps to be followed and safety information, as well as the inclusion of information regarding the guarantee, which on the other hand depicts part of the contract binding the manufacturer and the purchaser. The detailed information is, as mentioned above, also related to aspects of field (e.g., complexity of the product) and tenor (e.g., seller-customer relationships).

Instructional texts are also sometimes found on the outside package, and this is, once more, related to aspects of field and tenor. Due to the limited space available in the outside packaging, the instructions can only appear in this location when the product they refer to is simple to use, when they are easy to memorise (e.g., a coffee-maker), and when no safety risks are involved. It must also be taken into account that part of the instructional text found on the outside package has the purpose of attracting the attention of potential buyers.

A further important aspect of the mode of instructional texts concerns the use of pictures and diagrams to illustrate and clarify the information provided in the text. Although this thesis will not deal with the relations between image and text, other researchers on instructions have shown that this particular issue is extremely important when dealing with instructional texts in Japanese. Further information on this topic can be found in Carroll and Delin (1998).

Having introduced the general characteristics of the social context of instructional texts, the following section will focus in particular on the cognitive processes involved in the production of instructional texts.

2. Communicative situation of the production of instructional texts

In instructional texts, like in any other kind of communication, there are at least two participants involved: the addresser (who will be called WRITER since we are dealing mainly with written instructional texts), and the addressee (who is the reader or user, henceforth READER or USER). The fact that there is a time gap between the production of the text and its reception by the reader/user points at the existence of two differentiated contexts, one at each end of the communication chain. These will be called from now on CONTEXT OF PRODUCTION and CONTEXT OF INTERPRETATION. These two terms have been chosen instead of context of "writer" and "reader/user" because, as it will be shown below, factors relating both to the writer and the reader/user are involved in these two contexts.

It will be shown that the beliefs that the writer and reader have (or the assumptions they make) play a very important role in the production and the interpretation of instructional texts, as well as in the reader's performance of the actions instructed. It will be explained in the following sections that the writer's assumptions about the reader's beliefs lead to a series of intentions. These intentions result in the production of a text which will include particular sets of information and sections depending on the writer's assumptions.

2.1. The context of production

It has been suggested (cf. Sager *et al.*, 1980:23, for instance) that, before engaging in the production of the text, the addresser carries out an evaluation of the situational factors (namely, speaker, time, place, listener and topic) and the various relationships that emerge from a combination of these features. It can be added that this evaluation results in a series of writer's beliefs about "the real world" (cf. Beaugrande and Dressler, 1981:146), which includes, among other things, the reader/user and the situation he is in.

The most important situational factors to be taken into account before producing the text are shown in the following.

Instructional texts constitute part of a one-to-many communication process, i.e. there is one addresser and many potential addressees; in addition, there is a time gap between the generation of the message and its reception by the reader/user. As a consequence, the writer gets no feedback from the reader, and no chance of filling in the information gaps that are left after the user has carefully read the instructions. To avoid the problem of information gaps, the writer must bear her audience's level of knowledge in mind (Crystal and Davy, 1969:236).

Another problem arises also here in that different receivers might have varied levels of familiarity with the product. How does the writer tackle this problem? Since she cannot get to the readers and ask them, the writer has to make some assumptions about the audience's level of knowledge. As Hatim and Mason (1990:92) put it,

> "We can never 'know' what our interlocutor 'knows'. But we can and do make assumptions about the cognitive environment we both share."

It seems plausible to suggest that the writer 'invents' an imaginary reader/user who has a minimum knowledge about the product. One thing that the writer can always assume the reader to know is just the overall purpose of the product; we are concerned here with consumer-product instructions, which usually appear inside the packaging, and it is natural to think that the consumer would buy only products whose purpose he knows. In general, this is the minimum knowledge that the writer would assume the reader to have.

This assumption about the reader's knowledge influences the information to be included in the text. The importance of familiarity with the product has been pointed out by Sager *et al.* (1980:164):

> "obscurities are likely to arise not so much through difficulties with language as to uncertainty or unfamiliarity with the events or the situation of the event."

The writer's assumptions or beliefs about the user's level of knowledge about the product and the actions to be performed may vary according to the product. Simple and everyday-use products, such as a coffee-maker or a hairdryer, do not really need a description of their parts because the parts, their use, and names are already known to the user; in those cases, not even a very detailed description of the task is necessary. Complex and unfamiliar products, on the contrary, need more information and more detailed directions, otherwise the reader might get confused and would be unable either to identify the parts that the directions refer to, or to perform the task properly. As a consequence of the time gap mentioned above, the writer must produce the instructional text without the possibility of checking her beliefs about the hearer's knowledge. This will influence the content to be included.

The level of knowledge that a writer can assume about a given product may vary across cultures. The following examples illustrate differences of 'level of detail' between instructions for a coffee-maker[17] in English and in Spanish.

(1) *Always use espresso (fine ground) coffee and lightly tamp down the coffee into the filter. (...) Place the filter into the filter holder ... and using the markings inside the filter, add the amount of espresso coffee powder needed using the scoop*. [E004]

[17] The examples have been extracted from instructional texts for coffee-makers; a slight difference exists between the products: the English one is an electrical coffee-maker, while the Spanish one is not electrical, but a cafetiere for the hob.

(2) *Desenroscar la parte superior de la inferior, sacar el embudo y llenarlo de café ... Poner el embudo con el café en su sede, enroscar y poner la cafetera sobre la fuente de calor*. [S010]
(Unscrew the top part from the bottom part, take out the filter compartment and fill it with coffee ... Place the filter compartment back in its position, screw and put the coffee-maker on the hob).

As example (1) shows, the English text gives information about the type of coffee to be used and how to put it in the filter; in addition, it points at the markings inside the filter and the scoop as a way of controlling the quantity of coffee. This example contrasts with the level of detail provided by Spanish example (2), which makes no mention of either type of coffee or quantity (despite the markings being also present in the filter). In the Spanish culture, where espresso coffee making is a common activity, the writer assumes the reader to know about the essentials of coffee making. On the contrary, the English writer knows that espresso coffee is not very frequently made at home and, therefore, assumes that the reader will need more detailed information about what kind of coffee to use, how much to use, and how to press it down.

Detailed instructions may not only result from the assumption of an unfamiliar potential reader, legal factors may also give rise to some of the producer's intentions. When using the product, there are actions or situations that may endanger the consumer or the product itself. In order to avoid the liability for any accidents caused by such hazardous actions or situations, the manufacturer must provide warning and advice about them. Legal factors, then, give rise to specific intentions (e.g., the use of warnings and guarantee text) and to the inclusion of more detailed information. One typical example is the directions for the wiring of a power plug, such as (3), in the English instructions for electrical devices, even when the plug is already provided with all connections in place by the manufacturer.

(3) *Important: The wires in the mains lead are coloured in accordance with the following code:*
Green/yellow = Earth
Blue = Neutral
Brown = Live
If you fit your own plug and the colours of the wires in the mains lead do not correspond with the markings identifying the terminals on your plug proceed as follows:
*The wire which is coloured Green and Yellow must be connected to the terminal in the plug marked E or earth symbol ** or coloured Green or Green and Yellow. The wire which is coloured Brown must be connected to the terminal in the plug which is marked with the letter L or coloured Red. The wire coloured Blue must be connected to the terminal in the plug which is marked with the letter N or coloured Black.* [E003]

This specific kind of information is lacking in Spanish electrical devices, possibly because Spanish manufacturers have always provided the plug and the user never needed to do the connections himself as a preliminary step for using the product.

Apart from legal reasons, the number of warnings and advice sections and the level of detail in warnings can be due to cultural factors, as is the case with Japanese instructions when compared with English (cf. Carroll and Delin, 1998).

The information to be included in instructional texts also depends on issues related to the writer's intention. As shown in much of the work on speech production, "given the

communicative intention, the speaker will select information for expression that is expected to be instrumental in realizing the goal" (Levelt, 1989:107).

Moore and Paris (1993:668) further claim that the information to be included is related to the rhetorical means of expressing it:

> "What knowledge is included (...) greatly depends on the speaker's intention and the linguistic strategy chosen to achieve it (...) At the same time, which strategy is chosen to satisfy an intention must depend on what knowledge is available."

A further factor to be taken into account is the position of authority (cf. Jones, 1990:155; Sager *et al.*, 1980:164; Stubbs, 1983:161) adopted by the writer. This is perhaps more important at the other end of the communication chain (the interpretation context), but it must be mentioned here as well, because it plays a role in the production of the text. Sager *et al.* (1980:164) remark that

> "although the knowledge and social superiority of the writer of instructions is unquestioned, it is futile to write or issue instructions which cannot be understood, or which can be understood only with great difficulty, or which are difficult to follow in the likely situations of reception. Superiority normally entails an assumption that the reader will be expected to make concessions to the writer: in instructions that is not a safe assumption."

It is the writer's position of authority (as a result of her knowledge about the product) that justifies the reliability of her communicative act (cf. Jones, 1990:155). This is related to the optimal conditions that, according to Jones (1990:114), must obtain: that the communicator can be relied upon not to mislead, and that the communicator is behaving as he ought to, relative to the receiver's interest in being reliably informed; thus, the communicator's intention is linked to the audience's interest in reliability. Jones (1990:150) talks about reliability as follows:

> "*s* acts in a committed way when he carries his communicative act with the intention of getting his audience to believe that their interest in being reliably informed was satisfied."

The speaker (*s*), or writer in our case, is then committed to reliably informing the addressee. It can be added that, in the case of instructional texts, this commitment is not only dependent on the assumption that the reader wants to be reliably informed, but it is also due to legal factors such as the ones mentioned just above and in section 1.2.

2.2. The context of interpretation

Similarly to what happens with the context of production, at the other end of the communication chain, the reader/user also carries out an evaluation of the communicative situation before interpreting the message. While the writer's evaluation of the context of production and interpretation results in the creation of intentions which motivate the production of the text, the reader's evaluation of the factors involved in the context of interpretation results in the formation of beliefs that will help the reader in his interpretation of the text. The immediate effect of the text will be a change in the user's beliefs, which will then produce the writer's intended effect: either an action or simply a new belief.

When talking about the context of interpretation, one must draw upon some of the issues discussed in Critical Theory as well as in Translation Theory literature. For instance, it is claimed that, once released into public, the text is subject to different interpretations; its meaning being determined in the light of local circumstances (cf. Patterson, 1990; Wimsatt and Beardsley, 1946). In the case of instructional texts, these circumstances will be quite

similar for all readers (the only difference being, perhaps, the level of familiarity with the product). Patterson (1990) further claims that interpretive *conventions* govern the interpretation of the text. In instruction manuals, these conventions will help readers identify the correct intention behind indirect speech acts and will motivate them to act accordingly. Some of the interpretive conventions for instructional texts seem to be universal. However, it has been pointed out that not all linguistic expressions work similarly in all languages: different languages make different linguistic choices to express the same content knowledge (cf. Kaplan, 1966; and Delin *et al.*, 1994, for instance). This leads us to think that literal translations, or translations that do not take into account language specific factors (which might, on the other hand, be related to cultural and pragmatic differences) might be misinterpreted, and might not produce the effect intended in the source language text. This is precisely what seems to have happened in the instructions for the "chatty" cooker criticised by Javier Martín (1995)[18] or in the different perceptions by British and Japanese readers of the high number of warnings and the level of detail in Japanese instructions (cf. Carroll and Delin, 1998).

As was the case with the context of production, one of the most important factors in the context of interpretation is the relationship between the writer and the reader:

> "the correct interpretation of the illocutionary force depends both on the linguistic form of the utterance and on an understanding of the social network, for example the authority status of speakers." (Stubbs, 1983:161)

In most cases, the reader finds himself in a position of ignorance as regards the steps to follow in order to properly use the product; whereas the writer is in a position of superiority because she knows what actions have to be performed. The reader will then expect the text to provide the solution for his lack of knowledge. Therefore, the reader forms some beliefs about the text as a reliable product of authority. Due to the time gap between the production of the message and its reception, the writer is not available to clarify the intention of each particular piece of text. Therefore, the only element for judging the intentions of the writer is the text itself.[19] The intention has to be inferred from the text. As regards this, Wimsatt and Beardsley (1946), as quoted in Lodge (1972:334), argue that the "words on a page" may indicate intention but can never finally prove it. However, several factors (such as the writer's position of authority, and the reader's belief about that position) provide a good justification for resorting to the text in order to identify the writer's intention.

After taking into account the situational factors (for instance, the fact that the reader does not know how to use the device; and that the reader believes in the authority position of the writer as a result of her possession of the knowledge that he lacks), the reader is helpfully disposed towards the speaker (Cohen and Levesque, 1990:241); his attitude of cooperativeness (Perrault, 1990:166; Cohen and Levesque, 1990:238) in the performance of

---

[18] For details about the particular style criticised by Javier Martín, refer to footnote 5 in chapter 1.

[19] It is true that the reader/user hardly ever thinks about the writer (cf. Bennet and Royle's (1995) idea of the author as a ghostly figure). The reader, rather, thinks about the text as solving his problem with the new device; though the writer is implicit in the text, she is hardly ever present. Furthermore, it can be claimed that the author or writer of instructional texts is not perceived to be a single person, but she represents the company or manufacturer; this is the reason why, as noticed in Paris and Scott (1994:46), the style of instruction manuals is referred to as "house style".

As regards the ghostly figure of the author, it is important to notice that the writer/manufacturer is only present in some texts which congratulate the reader on his choice of product, as well as in some advice given (e.g. *we recommend*) to the reader. It is interesting to notice that even the guarantee, which refers to the manufacturer and therefore author, is written in 3rd person singular.

the actions depends, according to Cohen and Levesque (1990:238), "on what the hearer actually thinks the speaker wants and intends", i.e. on the hearer's beliefs about the writer's intentions. Pollack (1990:84) adds that "for an act to be included in my plan, I must believe that it plays a role in that plan". This means that the reader must believe that the directions for action given by the writer are important for his (the reader's) own plan of operating the device.

In instruction manuals the writer provides what Pollack (1990) calls a "recipe-for-action", expecting the reader/user to take the recipe-for-action as his plan. Since the reader believes that the writer is in a position of authority, he will usually take the acts mentioned by the writer as his own plans (i.e., as the user's plans) unless there is something that suggests otherwise, something that makes him realise that it is not his plan at that specific moment; the reader/user will follow, for instance, the installation instructions and perform the actions suggested, but not if the device has already been installed. In a sense, it can be said that this relates to Perrault's default logic and his persistence theory of belief. Perrault (1990:166) assumes that "an agent will adopt the beliefs he believes another agent has, as long as those do not contradict his existing beliefs." Thus, the reader will, for instance, take cleaning instructions as his own plan, and will follow them, as in (4). However, the presence of either a conditional, a purpose, or a temporal clause, as in (5), (6) and (7) respectively, shows that the plan provided by the writer applies only in certain cases. If this is not one of those cases specified by the conditional, purpose or temporal clause, then the reader will not take it as his plan at that particular moment.

(4) *Wash in hot soapy water, rinse and dry immediately*. [E007]

(5) *If the supply cord is damaged, the complete product with supply cord must be returned to Morphy Richards returns department*. [E002]

(6) *To store the scale invert the bowl and place it over the body*. [E006]

(7) *When in use, your iron should never be placed flat and left on an ironing board*. [E003]

Following examples (5) through (7), if the supply cord is not damaged, if the reader does not want to store the scales, or if the reader is not using the iron, then he will not follow any of the instructions given for those specific cases.

The fact that the reader will usually take the actions mentioned by the writer as his own plan might explain why some instructions are bad. Let us look, for instance, at constructed example (8).

(8) **Turn the knob to the right until you hear a click to cut off the electricity supply**.

In this order, the reader will take the first action as his plan and might do it before finishing reading the sentence and realising that he should not have done it. This, of course, depends on whether the reader performs the actions at the time of reading or whether he performs them after completing the reading process. Yet, even in the latter case, it has been demonstrated that directions are easier to understand if the information higher in the plan hierarchy precedes the information that comes at a lower level in the task plan (cf. Dixon, 1987a). Example (8), therefore, would be a bad instruction.

Mutual beliefs (cf. Cohen and Levesque, 1990; Jones, 1990), as well as the particular writer's and reader's beliefs, are crucial in the interpretation of the text and the achievement of its intended effect. Cohen and Levesque (1990) also point out the importance of beliefs in the interpretation of indirect cases.

Whatever way we look at it, beliefs (both previous to and following the utterance) play a most important role. As suggested by Perrault (1990:163), "the mental state of speaker and hearer after an utterance is strongly dependent on their mental state before." In the context of instructions this quote can be interpreted as follows: the beliefs of the reader[20] after reading the instructions depend on both the writer's and the reader's beliefs before the instructions are written and/or read. These beliefs and the effect that the text has on them will be explained in the following sections.[21]

2.3. The writer's beliefs

Apart from having beliefs about herself, the writer also makes assumptions about the reader and his beliefs. Thus, the writer's beliefs involve factors of the potential context of interpretation as well as those of the context of production. It seems that the most relevant beliefs for the production of instructional texts are those she holds about the reader's knowledge of the product and his intentions. These beliefs can be summarised as follows:

- The writer believes that the hearer needs/wants to use the product, otherwise he would not be reading the instructions.
- The writer believes that the reader does not know what to do in order to correctly operate the device. Without the help of the instruction manual, then, the reader would not normally perform the actions required to get the device to work properly.
- The writer believes (as a result of her assumption) that the hearer has a limited knowledge about the product (e.g., components and functions) or at least wants to enhance it.
- The writer believes that the reader is co-operative and that, consequently, he will perform the task(s) indicated in the manual if relevant to his needs.
- The writer believes that the reader is capable of performing the actions (cf. Simons, 1992).

These beliefs influence the writer in producing the instructional text. It is this instructional text, produced according to the writer's beliefs, that enables the reader to use the device. Or, to use Simons' (1992:7) words, "la concreción de la acción por parte del receptor es posible en virtud del acto de habla del emisor" (the performance of the action by the addressee is possible thanks to the addresser's speech act).

2.4. The reader's beliefs

The reader also has some beliefs prior to reading the manual. These beliefs mainly involve the participants in the communication, that is, the writer (who is not necessarily perceived as an individual, but as the product manufacturer or company) and the reader himself. The hearer's beliefs can be summarised as follows:

[20] The writer's beliefs after producing the text are not relevant; instructional texts are generally a one-way communication process, that is, the writer communicates to the reader and can change his beliefs, but the reader cannot provide any feedback or comments to the writer and, therefore, cannot change her beliefs.

[21] Some of the beliefs alluded to here have also been pointed out by Simons (1992) for the particular case of official directives in Spanish.

- The reader believes, prior to reading the manual, that he cannot do the task without help.
- The reader believes that the writer is in a position of authority and that she knows what actions must be performed to correctly use the product.
- The reader believes that the writer will reliably inform him.
- The reader believes that the writer believes that the reader will be co-operative and perform the actions indicated in the manual.

To recapitulate, the production of the text starts (as suggested by Sager *et al.*, 1980) with the writer's evaluation of the situational factors and the various relationships that emerge from a combination of these features. That evaluation results in a series of writer's beliefs about the reader/user and the situation he is in (i.e., the probable context of interpretation). Based on these beliefs, the writer will then adopt goals or intentions that will give rise to her production of the text. The notion of intention seems, therefore, to be crucial in the generation of text (cf. Levelt, 1989; Cohen and Levesque, 1990; Sager *et al.*, 1980). The relation of intentions to the structure of the text and to the different styles found in instructional texts will be discussed further below in section 3.

First, however, we will examine the role of the text in *changing* the reader's beliefs.

2.5. The effect of the text: change of beliefs

Bühler (as reported by Innis, 1982:162) claimed that "the immediate intentional goal of all signals is the *behavior* of the addressee." In the case of instructions it is obvious that the intended behaviour is the performance of some actions. Grice (1957) specifies this further and discusses the creation of a belief or an intention in the hearer.

Speech Act Theory (Austin, 1975; Searle, 1976) highlights the effect of illocutionary acts, known as perlocutionary acts. In this regard, Perrault (1990:179) remarks on the importance of the mental state of the participants before and after the utterance, and claims that "an illocutionary act has been performed successfully if the speaker did it while in a certain mental state, whereas it has been fully consummated if the hearer recognised that the speaker performed it successfully."

With regards to speech act recognition, it is worth noticing Derrida's (1988) position. He claims that though the notion of *telos* or fulfilment is constitutive of intentionality, intention does not necessarily mean pure plenitude (Derrida, 1988:120-121). Indeed, it is possible for any text to lead to an unintended effect due to either misinterpretation, the reader's failure to recognise the writer's intention, or perhaps the reader's lack of co-operation.

In addition, Wimsatt and Beardsley (1946) claim that practical messages are successful only if we correctly infer the intention. However, at least in the case of instructional texts, I would have to disagree with this claim. While their claim can be applied to those parts of instructional texts with directive or explanatory intention, there are other parts whose intention does not need to be recognised in order to have the intended effect, for example, those parts with eulogising intention (i.e., parts that emphasise the qualities of the product in order to make the reader happy with his purchase). In fact, as pointed out in much of the literature on speech act recognition, in some cases (e.g., jokes whose purpose is to deceive), you *must not* recognise the intention.

Adapting Simons' (1992:8-9) claims for official directives to our instructional texts, several conditions must hold in order to change the reader's beliefs and get him to perform the actions:

- A *preparatory condition* that (i) the reader is capable of performing the action and (ii) that the reader is unlikely to perform the actions without the instructions. See sections 2.3 and 2.4 for more detail.
- An *essential condition*, comprising (i) the wish and intention of the writer to get the reader to perform the actions; and (ii) the writer's position of authority with regard to the reader.
- A *sincerity condition*, which means that (i) the information the writer provides is reliable and that (ii) she wishes the reader to do the actions specified. Although insincerity on the part of the writer might occur, it is not relevant here; the important issue in the case of instructions is the intention or illocutionary force recognition. In other words, whether the writer is sincere or not in her expression of a wish to get the reader to perform the actions, the decisive element for the performance of the actions is the reader's recognition of the expression of this wish (be it sincere or not).

Since, as already mentioned, both the writer and reader/user have some beliefs, the goal of the text is to achieve a change in those beliefs (cf. Perrault, 1990:179). The communication process in instructional texts – because of their written mode – is not reciprocal (i.e., the writer does not get any messages back); therefore only a change in the user's beliefs is expected. This change of the user's beliefs or mental state will (or at least is expected to), eventually, lead to actions where necessary.

To put it briefly, the immediate effect of the text is a change in the mental state of the receiver, that is, a change of the reader's beliefs. Following are some of the new beliefs of the reader/user after reading the instructions:[22]

- the reader now believes that he can do the task because the writer believes he can;
- the reader now believes that he has to act according to the instructions in order to use the device properly.

As pointed out above, these changes in the reader's mental beliefs and his actions are possible thanks to his belief that the writer is in a position of authority. The change of beliefs implies that the preparatory condition of the communication event is fulfilled, and that, as a result, the actions will be performed.

This section has shown the relevance of beliefs and intention in the production, interpretation and effect of instructional texts. In the following I will focus on the text and attempt to explain how beliefs and intentions influence the structure and style of instructions.

3. Intentions, Structure and Stylistic Variation

This section relates the issues of beliefs and intentions, discussed in section 2, to the different styles and the characteristic structure in which information is presented in instructional texts.

As mentioned above, when producing the instructions for a product, the writer (and/or manufacturer) may have various intentions in relation to her beliefs about the user's beliefs and goals. Those intentions give rise to the inclusion of certain information and content knowledge which are presented through various styles and organised in a particular structure. To support this claim, this section will first draw on the literature on stylistic variation in instructional texts.

[22] The change of beliefs indicated here also match those specified by Simons (1992) for Spanish official directives.

Instructional texts are mainly intended to get the reader to use the device properly and efficiently by performing a series of actions. The speech act whose illocutionary force is the performance of actions is the directive one, which is frequently realised by the imperative form. However, various research studies on different kinds of instructional texts (Puglielli, 1990; Simons, 1992; Serra Borneto, 1992a; Paris and Scott, 1994; Delin *et al.*, 1996a; Hartley and Paris, 1997) have shown that directives are not the only speech act found in this text type. Apart from sequences of imperatives, the different styles within instructional texts include, for instance, the use of purpose expressions to express the goal of actions, enumerations of the different parts of the device and their description, and the use of positive adjectives for describing the product.

The term STYLE is used here to refer to "the way in which language is used in a given context, by a given person, for a given purpose" (Leech and Short, 1981:10). It can be drawn from this definition, then, that the use of a specific style serves a particular function in the text.

The issue of style has been addressed by many linguists and has received different names: styles (Crystal and Davy, 1969; Leech and Short, 1981); special languages (Sager *et al.*, 1980); sublanguages (Kittredge and Lehrberger, 1982); and registers (Halliday *et al.*, 1964). Whatever term is used to refer to them, the different styles in instructional texts are, as suggested by Paris and Scott (1994), closely related to "the stance the writer takes towards the reader" (1994:46). They mention that those stances can be related to Sager *et al.*'s (1980) notion of intention as a psychological category of language. This notion of intention clearly implies the idea of intended effect of the addresser on the addressee, and takes into account the fact that the addresser's intention may not be recognised or understood by the addressee.

Taking as point of departure the classification of speech acts according to intention as proposed by Sager *et al.* (1980:25), Paris and Scott (1994:48) identify the following four "stances" that manuals can adopt:

- *information provision*, which aims at augmenting the reader's knowledge about the artefact and or the task;
- *eulogy*, which emphasises the positive aspects of the product or congratulates the reader on his purchase;
- *directive* as how to perform a task; the aim of the directive stance is to get the reader to achieve a task exactly as prescribed;
- *explanation* of the preferred means of achieving the task; through this stance the writer advises the reader on how to achieve a task, and provides an explanation as to why it should be done in the prescribed way.

These stances or intentions roughly correspond to some of the functions identified by Ciliberti (1990, 1992) in instructional texts: identifying the machine, representing its parts and specifying the technical characteristics (informative intention), instructing the user (directive intention), publicising the product and pleasing the reader (eulogising intention) and, finally, commentative or explanatory function.

Here I follow Paris and Scott's (1994) work to explain the relationship between intentions, structure and styles. To show this link, I will mention each of Paris and Scott's "stances", which I will rather call intentions, and I will also explain briefly the factors involved in the creation of each intention, showing their influence on the structure and the linguistic choices of the instructional text.

Directive intention: The "primary or principal intention" (Sager *et al.*, 1980) of any instructional text is to get the user to perform a series of actions (a task) necessary to operate the device or use the product. This goal gives rise to the writer's inclusion of several sections providing a sequence of steps to follow for various purposes (e.g., installation, use, care and maintenance). As pointed out by Paris and Scott (1994), the actions directed in these sections are usually realised through directive speech acts such as order. Further information on directive expressions in English and Spanish instructions will be provided in chapter 5.

Sequences of imperatives are informed by the directive intention, sometimes in combination with purpose clauses, as in (9), and sometimes not, as in (10).

(9) *To make a call, lift the handset, listen for the dial tone and press the appropriate buttons of the number you wish to dial*. [E001]

(10) *Saque la cubeta y límpiela con agua y jabón. Coloque la cubeta y el conjunto eléctrico en sus posiciones originales.* [S015]
(Take out the oil compartment and clean it with water and soap. Put the oil compartment and the electrical unit in their original location.)

It is convenient to include here a sub-type of directive intention whose aim, rather than the performance of actions, is most frequently that the reader does *not* perform certain actions. I am referring here to warnings, such as (11) and (12), whose aim is to warn about actions or situations which are dangerous or hazardous either for the user or the product itself. In other studies of instructional texts, warnings have been included as part of the directive stance (Paris and Scott, 1994) and the directive sub-text (Ciliberti, 1992) and here also they are considered to have directive intention, although of a slightly different kind from other pieces of text within instruction manuals.

(11) *Do not allow fruit or other acidic foodstuffs to stand in the bowl for long periods.* [E006]

(12) *IMPORTANTE: No debe sumergirse el aparato en agua.* [S015]
(IMPORTANT: The device must not be immersed in water.)

The use of warnings in instructional texts has two motivations: firstly, to avoid any harm to the user or product by misuse of the product, and secondly, to avoid being blamed for any such misuse. Warnings, which usually concern legal factors, are important for the correct use of the product, therefore, the writer often considers it convenient to write one section on warning and safety issues. Sometimes, it is not necessary to have one section exclusively for warnings and safety, but instead warnings appear scattered throughout the whole manual, at points where dangerous actions may occur. This sub-type of directive intention is expressed through directive speech acts, such as prohibitions instead of orders, and at times orders with a negative component (e.g. *take care not to*...); statements can also appear. Typographical clues such as boldface, red print or uppercase are often used to highlight the warnings. In addition, warnings are frequently accompanied by the explanatory intention, as in (13), which encourages the appropriate behaviour.

(13) *Do not spray with aerosol polishes as they may enter the holes in your telephone and cause damage*. [E001]

Informative intention: Depending on the knowledge of the user,[23] the writer will intend to facilitate the reader's performance of the task by providing one section which describes the different parts of the device, and at times even the function of each part. This is done through the use of statements, such as the one in (14) below.

(14) ***Tone button*** *This key enables you to switch from Pulse to Tone dialling during a call.* [E001]

Pieces of text like this have a specific function in the performance of the tasks: they usually appear as enumerations that introduce the different components of the device, by saying what they look like and/or what they are used for. In this way, they facilitate the user's identification of the components, when he performs the different tasks. Of course, these enumerations and descriptions do not always appear, but in some cases they become a necessary element to facilitate the performance of the tasks. The level of detail of the information provided in the manual will also depend on the writer's assumptions about the reader's familiarity with the product.

In addition, this intention of making the reader know more about the product, will result in the inclusion of a section providing information about the guarantee, as illustrated in (15) and (16). This guarantee section, however, does not appear in all products, since there are some that are not guaranteed. The inclusion of information about the guarantee has a legal purpose and avoids the writer/manufacturer being liable if the instructions are not followed and the warnings are not heeded.

(15) *Creda appliances are guaranteed and will give lasting service. The Guarantee is only applicable if the appliance has been installed in accordance with the instructions packed with each unit.* [E010]

(16) *La garantía no cubre los accidentes debidos al mal uso o cuidado del aparato.* [S015]
(The guarantee does not cover accidents caused by the misuse or inadequate care of the device.)

Though indirectly, this style also plays a role in the performance of the tasks, encouraging the user to follow the directions given in the manual if he wants the guarantee to apply.

It can, therefore, be said that the informative intention is an intention of the writer as a direct representative of the manufacturer.

All these examples respond to the purpose of using the product correctly, by providing a series of steps to be carried out in order to enable the user to use the product, or by preventing him from performing certain actions that might cause damage.

Explanatory intention: The writer might also want to make the user understand the purpose of the actions, by providing the reasons for the actions. This does not need to be a clearly identified section, since the reasons can be provided immediately after or before the actions in the sequence of steps to follow. The explanatory intention is greatly motivated by the kind of authority characteristic of instructions. The authority, as pointed out above, does not come from status or social class, but from superiority of knowledge. The use of explanations, in addition, supports the interpretation of the instructions as 'advice' (cf., Sager *et al.*, 1980) instead of as face-threatening orders. The explanatory intention usually appears in combination with the directive intention, as illustrated in (17), which can also include warnings, as illustrated in (18).

[23] This refers to the knowledge that the writer assumes the reader/user to (or not to) have.

(17) *Move the jug up and down so that the cone opening is just under the surface of the milk – this will give maximum foaming.* [E004]

(18) ***Importante:*** *No cruzar el tubo de plástico o goma sintética por la parte dorsal de la cocina, pues el calor desprendido por el horno podría llegar a quemarlo.* [S006]
(Important: Do not put the plastic or synthetic rubber tube across the side of the cooker, as the heat released by the oven could burn it.)

It could be argued that explanation is a kind of informative intention, but texts produced with an explanatory intention do more than just informing. In contrast with purely informative texts, explanations usually accompany texts with directive intention and do not appear on their own. The information provided in the explanation aims at producing a specific inclination on the reader (either to act or not to act, depending on the situation) which is not the effect of purely informative texts.

Eulogising intention: The manufacturer might have the intention of producing a favourable impression on the reader by means of magnifying the qualities of the product. The style realising this intention may vary slightly depending on the location of the text: when the text is on the outside of the package, the manufacturer most likely wants to encourage a potential buyer to purchase the product[24] by providing information about it. This information has to appeal to the buyer to make him choose this product instead of another that might be available. Therefore, the language will be very similar to that of advertising (exaggerating the qualities of the product and making it more positive through the use of hyperbole, positive adjectives, contrasts, etc.). The following example illustrates the eulogising intention characteristic of the text in the outside package.

(19) *La Cafetera OROLEY es fiel a sus principios de calidad, por eso se la reconoce desde 1950, como la cafetera exprés que con menos café sabe hacer mejor CAFE... CAFE.*
Con la Cafetera OROLEY, podrá conseguir este aroma y sabor, cuerpo y color que Vd. espera del mejor café. [S018]
(OROLEY Coffee Maker proudly keeps quality as his rule being recognised since 1950 as the coffee maker that gives you better coffee with less COFFEE... With the OROLEY Coffee Maker you can obtain this aroma, taste, body and colour that you are looking for, from the best coffee.)[25]

Pieces of instructional texts written with eulogising intention can also be found in the inside package, as illustrated by examples (20) and (21).

(20) *Congratulations.*
You are now the owner of a totally electronic Morphy Richards auto-dialling telephone, offering you the same features as your existing telephone plus much more. [E001]

[24] This is what Ciliberti (1990) calls 'publicising' function.

[25] This translation is provided in the product package just below the Spanish text from which the example was extracted.

(21) *Señor/a cliente:*
Le felicitamos por la adquisición de nuestro producto.
El frigorífico o combinado COINTRA que usted ha elegido, ha sido proyectado, fabricado y comprobado cuidadosamente para satisfacer sus exigencias. [S005]
(Dear customer: We congratulate you on your purchase of our product. The COINTRA refrigerator that you have chosen has been carefully planned, manufactured and checked to satisfy your demands.)

In these two cases it seems that the text does not help in any way the performance of the tasks, however, it acts as a brief presentation of the product and its qualities.

It can be drawn from the discussion in the paragraphs above that intentions are related to beliefs and assumptions about the social context, and that they lead to the inclusion of certain types of information. The information that the writer chooses to include in the instruction manual is organised in a particular way. There are two ways in which the information is organised: the first way concerns the types of text or SUB-TEXTS (Ciliberti, 1990, 1992); in addition to this, the message is organised into different parts – as suggested by Ciliberti *et al*. (1992) and Paris and Scott (1994) – which constitute the characteristic structure of instruction manuals. These two ways of organising the message will be explained below.

Ciliberti (1990, 1992) carries out a stylistic analysis of instructional texts in Italian and identifies various component parts which she calls SUB-TEXTS. The SUB-TEXTS "correspond to the different types of information supplied and to the different functions that this information assumes" (Ciliberti, 1990:300). The sub-texts are, therefore, defined as a particular combination of type of information and functions. In other words, the types of sub-texts found within instruction manuals depend on whether the information is – following Ciliberti *et al.* (1992) – procedural (i.e., either operational or non-operational) or non-procedural, and on the functions performed by a particular stretch of language.

According to Ciliberti (1990, 1992), the following functions are potentially carried out by instructional texts: representative, commentative or explanatory, activating,[26] publicising the product, and pleasing the reader.

The functions and different kinds of information potentially conveyed by each of Ciliberti's (1990, 1992) sub-texts are represented in Figure 1 and explained below.

SUB-TEXTS	INFORMATION	FUNCTIONS
directive	procedural (operational) descriptive	activating commentative
cataloguing	procedural (non-operational)	representative
descriptive	non-procedural	representative commentative pleasing publicising

Figure 1. Sub-texts, information and functions (based on Ciliberti, 1990)

[26] She takes Gläser's (1979) term, which refers to the function of getting the user to perform an action. The activating function is, therefore, related to the directive intention described in the present chapter.

The directive sub-text consists mainly of procedural information with an activating function, but it can also include descriptive parts with a commentative or explanatory function. As Ciliberti (1990) puts it, the directive sub-text is oriented towards the task.

The cataloguing sub-text contains procedural information of the non-operational type which has a representative function. Following Ciliberti (1990), this sub-text has an informative orientation.

The descriptive sub-text presents non-procedural information and has either a representative function or a commentative or explanatory function. As pointed out by Ciliberti this sub-text sometimes also has the "laudatory function of advertising" (1990:308), publicising the product and/or pleasing the reader in his choice of product.

The information (expressed through various kinds of sub-texts, as suggested by Ciliberti) is articulated into a characteristic structure that seems to be shared by instructional texts in different languages. My data both in Spanish and in English supports the claim of the characteristic structure of manuals in different languages.

Ciliberti *et al.* (1992:44-49), in their study of Italian instructional texts, suggest that user manuals typically present the following framework:

- identification of the machine;
- description of the parts and/or functions;
- instructions for use, which include instructions for preparing the machine, use and maintenance;
- technical characteristics.

An alternative structure is provided by Paris and Scott's (1994) study of English, French and Portuguese manuals. They suggest that manuals are organised around six main parts:

1. general information about the product, which in its turn tends to contain three types of information:
   a) thanks for buying the product;
   b) description of product, its advantages, and list of parts;
   c) conditions for the warranty (or lack of it)
2. general safety advice, warnings concerning specific actions
3. installation of the device, or preparatory steps
4. use
5. maintenance, direction for care
6. trouble-shooting and potential problems.

The structures proposed by Ciliberti *et al.* (1992) and Paris and Scott (1994) present both similarities and differences: section 1 in Paris and Scott (1994) corresponds to the sections of identification of the machine, description of parts and/or functions, and technical data suggested by Ciliberti *et al.* (1992); the section on instructions for use in the framework proposed by Ciliberti *et al.* (1992) includes the information contained in sections 3 through to 5, and probably also sections 2 and 6, from the structure specified by Paris and Scott (1994). Furthermore, both works suggest that the structure in which manuals are organised is not a fixed one:

> "L'articolazione dei libretti di istruzione è estremamente variabile, poiché dipende in buona misura dal tipo di macchina (si pensi alla complessità di un manuale di istruzione per

> *personal computer*). Non è quindi possibile individuare una struttura fissa delle parti, malgrado il carattere convenzionale del tipo di testo."[27] (Ciliberti *et al.*, 1992:44)

Paris and Scott (1994) reach the same conclusion, as shown in the following quote:

> "Some manuals contain all these parts, each clearly identified. This is not always the case, however, and the information corresponding to these parts might be interleaved, especially when space is a problem and the writers do not want to explicitly have a section for each information-type." (1994:50)

In these two quotes, the following factors are introduced as determining whether to include and/or indicate clearly all the possible sections: space problems (Paris and Scott, 1994), and product complexity (Ciliberti *et al.*, 1992). I would add two other factors closely related to these two: familiarity with the product and location of the text.

The (assumed) familiarity of the reader with the product, for instance, may favour the exclusion of sections such as the description of the product and its parts. On the contrary, if the product is a complex one, the instructions will most probably include a description of its parts and their functions. Finally, the space problem might be related to the location of the instructions. In addition, the location of the instructional text (inside the package, i.e., in a separate leaflet or sheet, or on the outside package) is related to issues such as the reader's familiarity with the product, the information to be included, and memorability. Outside instructions clearly have a space constraint, but these instructions are usually quite simple, memorable and easy to follow. In some cases they might even be unnecessary for the user if he is familiar with the product. They are not instructions to keep for reference in the future, but to be disposed of with the packaging once they have been memorised.

The structure of instructional texts is in itself an interesting area of study and it is maybe worthwhile to explore the interaction between text structure and syntactic realisations. Such an approach is not being pursued systematically in this thesis, although it is touched upon in section 6.1 of Chapter 5. For more details about the most characteristic syntactic forms occurring within each particular section of a user manual, see Paris and Scott (1994).

4. Summary

This chapter aimed at providing a general characterisation of the instructional texts that will be analysed in the remaining chapters.

The social context of these texts was described following Halliday's notions of field, tenor and mode. The relevant features discussed within those three components of the situation type are the following: purpose of instructions, complexity of the product, legal factors involved in the production of instructions, authority relations, time gap between production and interpretation, location of instructions, and the production of good instructions as opposed to bad instructions.

This chapter discussed the influence of contextual factors in motivating the writer's intention and her use of different speech acts and linguistic expressions.

It was shown that beliefs and intentions play an important role in the production of instructional texts. The writer's beliefs about the reader's knowledge have a great influence on the content to be included (and, in particular, on the level of detail), on the reliability of the information, on the likelihood of the reader performing the actions, and on the linguistic forms

[27] Translation: The structure of instruction manuals is extremely variable, since it depends to a great extent on the type of device (think of the complexity of the instruction manual for a personal computer). Therefore, it is not possible to single out a fixed structure of its parts, despite the conventional characteristics of this text type.

chosen. These beliefs trigger a series of intentions in the writer which influence the way the information is organised and expressed in the text.

It was also shown that instructions do not consist only of directions; there are different styles that can be said to be motivated by different intentions or perform different functions. Following Paris and Scott (1994), instructional texts were found to have various intentions: informative, directive, explanatory and eulogising. The context, together with the intention of the writer, gives rise to the organisation of the message into a characteristic structure that is shared by different languages.

Taking into account that users by no means always read instructions right through from start to finish (Wright *et al.*, 1982), the structure of instructional texts, especially the ones for more complex products, is quite important. The headings, for instance, can guide the user in his reading of the manual, directing them exactly to those aspects of the device he wants to know about in a particular moment.

Further research should be done to show whether there are any differences between Spanish and English in the way they relate intentions, structure and linguistic realisation. If there are any differences, it should be explained whether they are simply language-specific or are due to cultural factors or to different assumptions about the reader's knowledge.

Chapter Four: Expressing procedural relations in English and Spanish instructions

After having shown in chapter 3 the macro-textual characteristics of instructional texts, we now turn to the micro-textual level of analysis. In an attempt to identify the factors influencing the choice of linguistic expression, the present chapter addresses the mapping of the semantics of instructions onto grammar. Here, our attention will be devoted, in particular, to the semantic relations holding between particular pairs of actions in the task plan and their linguistic expression.

I will draw upon work on multi-lingual text generation that has shown (i) the relevance of a task plan representation model for characterising the mapping from semantics onto grammar, and (ii) the usefulness of Goldman's (1970) procedural relations for capturing the underlying semantics of actions and their relationships. In view of the positive results reported in Grote (1995) for German and English, and Scott *et al.* (1995) for Portuguese, French and English, a similar analysis was carried out for a set of English and Spanish instructions.

The data analysis whose results are presented in this chapter had two specific aims: (i) to identify the linguistic realisations that map the Generation and Enablement procedural relations onto the grammar of English and Spanish instructions, and (ii) to identify the expressions that signal these relations without ambiguity. The results of the analysis show that there are several expressions in both languages that clearly signal only one of the two relations. These unambiguous realisations, however, have an extremely low frequency of occurrence. Bearing this in mind, this chapter becomes a review of the analysis suggested in Delin *et al.* (1994) and shows both the benefits and shortcomings of the procedural relations approach.

The chapter will be structured as follows. Section 1 will provide the arguments that support the choice of a procedural relations analysis, establishing the influence of Computational Linguistics in this approach and the relevance of the task plan for capturing the semantics of instructional texts. This section will also provide a definition of the procedural relations of Generation and Enablement which is specially tailored to instructional texts. Section 2 will introduce the data (304 tokens of procedural relations rigorously extracted from 23 instructional texts) and the method of analysis used for this particular study. Section 3 will present the results of the analysis, and will address three aspects of the expression of Generation and Enablement: (i) the linguistic forms available for realising each component of the action pair, (ii) the available combinations of linguistic forms, and (iii) the order in which the realisations of action pair components appear. Finally, the results for English and Spanish will be compared in section 4, revealing the illuminating outcome of the study as well as its hindrances. This chapter will conclude by suggesting several steps for complementing the semantic or procedural relations approach.

1. Capturing the underlying semantics: task plan, actions and relations

A frequent problem encountered in the automatic generation of instructional texts is the fact that there are alternate forms of expression for the same user instructions. This problem, which in addition is exceedingly common in a multilingual context (Delin *et al.*, 1993), has

been approached in different ways by the literature on Computational Linguistics. Mann and Thompson's (1988) Rhetorical Structure Theory (RST) has been used by Rösner and Stede (1992a) and Vander Linden (1993), among others, as a flexible tool for organising instructional texts. However, Delin *et al.* (1994) have shown that the same content can be expressed with different RST structures in the same language and manual, as in the following two examples they found in an Apple manual:

(1) *Pull down and remove the white plastic tray that holds the video cable and unpack the cable.* [not in corpus]

(2) *Pull down and remove to unpack the video cable.* [not in corpus]

Example (1) would be represented in RST as a sequence, while example (2) would be represented as a purpose relation. For An RST representation of these two examples, see Delin *et al*. (1994:62). In addition, they claim that each language tends to use different sets of rhetorical relations to structure texts. Taking this into account, Delin *et al.* (1994:62) suggest an alternative approach that "can capture the underlying semantics of actions and their relationships in a way that will prove useful for (...) building multilingual instructional text generation systems". Based on the procedural relations first identified by the philosopher Goldman (1970) and on the formal definitions of Generation and Enablement provided by Pollack (1986b) and Balkanski (1993), Delin *et al.* (1994) define their Generation and Enablement relations in terms of a plan representation model.

Generally speaking, the purpose of instructions is to get the user to perform a series of actions. These actions can be represented as a TASK STRUCTURE consisting of a GOAL and its associated PLAN. A task plan representation model can show that not all the actions are hierarchically similar; there are actions, for instance, that are to be adopted as the user's goal, while others will be necessary to achieve this goal. A formal representation model that specifies the components of plans and actions and establishes the hierarchical position of the actions in instructional texts can constitute the foundation for determining the relations between these actions. It is precisely the possibility to reduce instructions to a task plan that justifies the reliability of an approach based on the procedural relations between actions (cf. Delin *et al.*, 1994; Grote, 1995; and Scott *et al.*, 1995), where it is not the particular actions that matter but the way the more abstract actions - as components of the task plan - are related. The existence of a task plan is, therefore, what allows us to compare instructions for different products, as well as for different languages, with the reassurance that the comparisons are valid.

Taking into account that instructions boil down to the task plan, looking into the task plan seems a good starting point for characterising the mapping from semantics to grammar. As pointed out by Hartley and Paris (1997:8), this characterisation is necessary to determine whether it is sufficient to have task structure, or whether additional control (e.g., genre, other pragmatic information) is required.

The study of the relations between the actions in the task plan has been shown to be a useful way for determining how task structure elements affect the lexico-grammatical resources in different languages. Studies such as Grote (1995) for German and English, and Scott *et al.* (1995) for Portuguese, French and English are particularly interesting because they look at the particular linguistic realisations of each action in the action pair. This methodology allows them to determine not only the linguistic forms characteristic of Generation and Enablement, but also the combinations of action realisations available for expressing these two procedural relations.

The plan formalism used in Delin *et al.* (1994) for the definition of their Generation and Enablement relations is a simple extension of STRIPS-style operators developed by Fikes and

Nilsson (1971) and expanded in the NOAH system (Sacerdoti, 1977). The TASK PLAN COMPONENTS (cf. Delin *et al.*, 1994; Hartley and Paris, 1997) relevant to this particular study of procedural relations can be reduced to the following:

- GOALS: actions that the user will adopt as his goal and which motivate the use of a plan. An example of a user's goal in the data might be the action of *making a call*.
- PRECONDITIONS: states that must hold before a plan can be achieved successfully. These states can be achieved through planning. An example from my data would be *having a dial tone* before dialling to make a call.
- BODY: action or action complex which executes a plan; if these are not primitive they can be achieved through planning. An example from my corpus would be the actions of *lifting the handset*, *listening for the dial tone* and *dialling*.

The minimal requirements for a plan are a body and a goal. With this representation scheme in mind, the basic procedural relations identified by Goldman (1970), Generation and Enablement, hold between pairs of actions, α and β, in a task. These two procedural relations will be defined and illustrated with examples in the following two subsections.

1.1. Definition of Generation

Delin *et al.* (1994:64) define GENERATION, in terms of the plan representation model, as follows: "α *generates* β iff α is the body of a plan ε whose goal is β." That is, the execution of the α action automatically results in the performance of the goal action (β).

Following Grote (1995) and Scott *et al.* (1995), I will refer to the members of the action pair as generatED action or β-GEN, and generatING action or α-GEN. The Generation relation is illustrated in (3) and (4),[28] which are taken from the English and Spanish data respectively. In (3) 'cleaning' is the generatED action; it automatically occurs when performing the generatING action of 'wiping with a damp cloth'. Similarly, in Spanish (4), 'turning from left to right' automatically achieves the 'closing' (*cerrar)*. *Cerrar*, then, is the generatED action and *girar de izquierda a derecha* is the generatING action.

(3) *To clean, wipe with a damp cloth.* [E001]

To clean	*wipe with a damp cloth*
β-GEN or generatED action	α-GEN or generatING action

(4) *Para cerrar hay que girar de izquierda a derecha*. [S006]
(To close it-must-be turned from left to right.)[29]

Para cerrar	*hay que girar de izquierda a derecha*
β-GEN or generatED action	α-GEN or generatING action

1.2. Definition of Enablement

In the case of ENABLEMENT, the two actions or events are in a somewhat looser relation: the execution of the first action (α) does not automatically result in the execution of the other

[28] Note that, although in (3) and (4) the order of the actions is β followed by α (β^α), this is not the only possible ordering of the actions. In fact, the data shows many cases of Generation with α^β ordering.

[29] Spanish examples will be followed by a gloss (rather than a translation).

(ß). Although the α action does not cause the second action, ß could not be performed without the prior completion of α.

In terms of the plan representation model, ENABLEMENT is defined as follows: "α *enables* ß if α is a precondition of a plan ε and ß is the goal of plan ε; or if ß is the body of ε and α is a precondition of ß" (Delin *et al.*, 1994:64).

The Enablement relation is illustrated in (5) and (6). Throughout this chapter, the enablING action will also be referred to as α-ENAB and the enablED action as β-ENAB.

(5) *To keep the soleplate of your iron clean and free of lime, make a paste of mild scouring powder and a little water*. [E003]

To keep the soleplate of your iron clean and free of lime	*make a paste of mild scouring powder and a little water*
β-ENAB or enablED action	α- ENAB or enablING action

(6) *... deslice el selector al lado opuesto, introduciendo en la ranura una punta de tijera o utensilio similar...*" [S020]
(Slide the selector to-the side opposite, introducing in the slot the tip of some scissors or a similar tool.)

deslice el selector al lado opuesto	*introduciendo en la ranura una punta de tijera o utensilio similar*
β-ENAB or enablED action	α- ENAB or enablING action

In (5), for instance, 'making a paste' does not automatically result in a clean soleplate: other actions are required, such as applying the paste. Making the paste, however, does *enable* the keeping clean; it is a necessary pre-condition, although not sufficient, for the task of 'keeping the soleplate clean'.

This section presented the arguments (namely, relevance of the task plan and positive results of analyses of procedural relations for other languages) for following the procedural relations approach. Definitions which consider Generation and Enablement relations as aspects of plans for performing procedures have been provided by other researchers working on text generation, and particularly on the generation of multi-lingual instructions. In view of the positive results obtained by various studies of procedural relations for different languages, a similar study comparing English and Spanish instructions seemed to be an appropriate way to find out the mappings of semantics onto grammar. The following sections will discuss the results of an analysis of Generation and Enablement carried out with a corpus of English and Spanish instructions.

2. Procedural relations in instructions: data and method of analysis

Previous studies of the linguistic expression of these procedural relations in instructions written in different languages include Delin *et al.* (1994) and Scott *et al.* (1995) for English, French and Portuguese instructions; as well as Grote (1995) for English and German. The results of these analyses indicate the preferred mappings from these relations onto language, as well as which expressions are ambiguous and carry unintended implicatures. These findings should be taken into account in order to generate only appropriate expressions for Generation and Enablement, i.e., only those expressions which unambiguously signal a relation.

In this chapter, a similar analysis will be provided for English and Spanish instructional texts, in order to identify the expressions used for mapping Generation and Enablement onto English and Spanish. Before proceeding with the results of the analysis, however, this section

will provide detailed information about the particular set of data used, as well as the steps followed for the data analysis.

2.1. The data

This study of procedural relations was carried out on a subset of the procedural relations found to hold in action pairs in the texts specified in Tables 1 and 2. I ignored those procedural relations where the generatING/enablING action precedes the writing of the instructions manual, as in example (7).

(7) *The main oven door is equipped with a removable glass panel for easy cleaning.* [E010]

The English data totals 201 relations,[30] corresponding to 121 Generation and 80 Enablement relations, extracted from 11 different instructional manuals (specified in table 1) with a total of 27,463 words. The Spanish data includes 103 procedural relations,[31] divided into 53 Generation relations and 50 Enablement relations. The Spanish data tokens were extracted from the 12 different manuals specified in Table 2, which amount to 16,032 words. As it can be observed, there is a great difference in the number of English and Spanish relations in the data. This is mainly due to the difference in length of the texts used for each corpus. This difference in length and number of relations, however, is not a hindrance since the corpus is big and varied enough to provide a wide range of linguistic expressions for both languages.[32]

Code	Item	Brand	Words
E001	telephone	Morphy Richards	2566
E002	hairdryer	Morphy Richards	1035
E003	iron	Morphy Richards	1751
E004	coffee-maker	Morphy Richards	1491
E005	vacuum cleaner	Hoover	3728
E006	kitchen scale	Boots	184
E007	pressure cooker	Prestige	1694
E008	light	Sector	655
E009	shower units	Sector	1566
E010	cooker	Creda	7092
E011	refrigerator	Hotpoint	5701

Table 1. English data source for analysis of procedural relations

[30] The English tokens of procedural relations analysed in this chapter are shown in Appendix 3.

[31] The Spanish tokens of procedural relations analysed here are shown in Appendix 4.

[32] A larger corpus, however, would be desired to collect more examples of those expressions found only once in the data analysed here.

Code	Item	Brand	Words
S001	study-lamp	Acapri	112
S005	refrigerator	Cointra	5115
S006	cooker	Corberó	1751
S008	cooker	Corberó	914
S010	coffee-maker	Fagor	218
S011	telephone	Telefónica	3102
S015	deep-fat fryer	Jata	610
S016	grill	Magefesa	1116
S019	sandwich-maker	Solac	657
S020	iron	Solac	561
S021	travel-iron	Solac	429
S022	wax-melting machine	Sorisa	1447

Table 2. Spanish data source for analysis of procedural relations

2.2. Method of analysis

The examples of Generation and Enablement were extracted from the instructional texts by reading through the manuals indicated in Table 1 and 2, and locating action pairs where one of the actions (or action complex) is necessary for the performance of the other. This brought out instances such as (8) where the performance of an action (*making a call)* is achieved by doing a series of actions (*lifting the handset, listening for the dial tone and pressing the appropriate buttons*).

(8) *To make a call, lift the handset, listen for the dial tone and press the appropriate buttons of the number you wish to dial.* [E001]

In examples such as (8) there are both Generation and Enablement relations. On the one hand, the goal (m*aking a call)* is generated by the performance of a plan body consisting of several actions (*lifting the handset, listening for the dial tone and pressing the appropriate buttons*). On the other hand, some of the actions in the body can be related to each other through an Enablement relation (e.g., *lifting the handset* enables *listening for the dial tone*). In these cases, the body was accounted for as one action in its relationship with the goal (e.g., *making a call*); the actions in the body, however, were considered individually to account for the Enablement relations holding between them.

When collecting the instances of Generation and Enablement relations, negative actions were completely excluded from this study. In these cases, the reader is asked *not* to do something, and "not doing something" cannot be considered to generate or enable another action. Similarly, "not performing an action" cannot be considered a goal. In some cases the "non action" was expressed through a verb with negative meaning (e.g., *avoid*, *prevent*) in a clause with positive polarity; these cases were, nonetheless, excluded from this analysis. Action pairs with negative components are illustrated in examples (9) through to (12).

(9) *Do not disconnect the appliance from the mains supply socket by pulling on the mains flex.* [E004]

(10) *No part of the appliance will operate unless the main control unit is switched On.* [E010]

(11) *Clean the steam nozzle to prevent build up of deposit.* [E004]

(12) *To avoid spillage do not rest the iron on its heel.* [E003]

Finally, examples including an optional action, expressed either through a conditional clause or verbs such as *recommend* and *advise,* were excluded from the analysis, since it is left

up to the reader whether to take the action as his goal. Similarly, those examples with the modals *can* and *poder* 'can, to be able to' that express optionality were excluded. These modal verbs, however, were included when expressing possibility.

Once the instances of procedural relations were collected, they were divided according to the relationship holding between the action pairs. Then, they were marked up for linguistic form.

The approach followed here is the one suggested by Grote (1995) and taken up in Scott *et al.* (1995); instead of looking at the expression of procedural relations as a whole, the analysis starts from the grammatical form of the individual actions which constitute the action pair. This allows us to look at how the choice of a grammatical form for one action might restrict both the expression of the other action in the action pair and the ordering of those actions. Grote (1995:1) claims that an analysis like this "enables one to compare the expressions of *Generation* and *Enablement* more thoroughly and to identify patterns of grammatical forms that do unambiguously signal a particular relation, as is required in the generation of instructional texts." The members of the action pair have, therefore, been divided according to the action they realise into ING and ED components, corresponding to α and β respectively.

In contrast with Scott *et al.* (1995), I will not describe the actions simply according to the syntactic form as imperative, infinitive, etc. This distinction did not seem relevant to me, since in most cases the use of these forms is constrained by the choice of the connector. To give but an example, Spanish *para* (which signals the β or ED action for both Generation and Enablement) requires an infinitive[33] and can never be followed by an imperative. In addition, differentiating the linguistic forms according to whether the action itself is expressed by an infinitive or an imperative, for instance, would not allow us to distinguish between the two infinitives in (13): the infinitive independent clausal realisation (*dejar* 'leave'), and the infinitive (*facilitar* 'facilitate') that depends on the connector (*para*).

(13) *Dejar las puertas entreabiertas para facilitar la circulación del aire.* [S005]
(Leave the doors ajar to facilitate the circulation of-the air.)

It, therefore, seems more reasonable to approach the analysis of the linguistic realisations from another point of view: whether the action is expressed through a clause (verbal realisation) detailing the kind of clause, or through a phrase (a nominalisation, for instance).

In order to identify more easily the possible combinations of the action pair, the linguistic realisations of the ING (α) and ED (ß) components have been identified according to the following grammatical constituents:[34]

1. **Phrases**,[35] which can be divided according to the word classes they contain into the following categories:
   - *nominal* (NP), consisting of at least a noun;
   - *prepositional* (PrepP), consisting of a preposition and a NP;
   - *adverbial* (AdvP), consisting of an adverb and a NP;
   - *verbal* (VP), consisting of at least a verb.
2. **Clauses**, which can be divided into:

[33] Other clausal as well as NP realisations are available, as it will be shown later on.

[34] For further reference, see Halliday (1985, 1994).

[35] Phrases are frequently also called groups. Halliday (1994:180) describes the difference between these two terms as follows "a PHRASE is different from a group in that, whereas a group is an expansion of a word, a phrase is a contraction of a clause." Since we are dealing with actions and these are usually expressed through clauses, the term phrase will be preferred here to capture the 'clausal content' implicit in the elements analysed.

- *independent* clauses. Different types of independent clauses were identified in the data: imperative and declarative[36] clauses for both languages, as well as infinitive[37] for Spanish;
- *dependent* clauses were distinguished according to the verbal form or the conjunction that links them to a main or independent clause.

This classification will enable us to provide the possible combinations of the linguistic realisations of α and β in tokens of Generation and Enablement relations. More importantly, it will allow us to distinguish between syntactic forms which can be constrained by the connector (e.g., the infinitive in *to + infinitive*, and *para + infinitive* expressions) as well as those that can constitute an independent clause in some other cases (e.g., the Spanish infinitive independent clause used as a directive, such as *dejar* 'leave' in (10), which will be discussed in the next chapter).

When discussing in section 3 the combinations available for the expression of procedural relations, the ordering of the actions in the action pair will also be mentioned. As it will be explained, there are cases where the order in which the actions are presented is closely related to the procedural relation expressed. Thus, a particular combination of linguistic forms with α^ß ordering (that is, the α action followed by the ß action) might express one relation, while the combination of linguistic forms with ß^α ordering (i.e., ß followed by α) might realise the other relation. In the current study, only the ordering found in the data for particular combinations of linguistic forms will be presented. However, it must be taken into account that, at times, a different ordering that was not found in the data might be grammatical; these cases will also be indicated when relevant. I will just point out here that the reasons for avoiding a specific grammatical form might be due to any of the following factors: writer's preference, information focus or pragmatic reasons. As for the latter, there are some combinations of linguistic forms that are not pragmatically appropriate for expressing a specific relation with a particular order. These cases will be illustrated with examples in the following sections.

It is important to note that this study is merely descriptive, describing what does appear in the corpus. I do not make any claims about the inappropriacy of forms or combinations of forms on the basis of their absence from the corpus.

This section has summarised important issues relating to the data and the method used for the analysis of procedural relations. The following section will present the results of the data analysis.

---

[36] When talking about declarative clauses, different features are important, though not always relevant, in the linguistic realisation of the actions. On the one hand, declaratives can have either active or passive voice. On the other hand, there is a choice of tense. In instructions, the tense is mainly the present or the future. In addition, the use of modals or any other interpersonal elements expressing modality must also be taken into account. If relevant for the individual realisations of the actions or the combinations expressing the relationships, these features will be alluded to in the presentation of the results.

[37] It is generally agreed that non-finite verbs always constitute subordinate clauses (cf. Real Academia Española, 1973:483). The infinitive in Spanish instructional texts (e.g., *Abrir la puerta* 'open the door'), however, can appear on its own with the illocutionary force of a command. Taking this into account, this kind of infinitive clause – which is not found in English but is, nonetheless, common in other romance languages such as French, Portuguese and Italian – can be considered as an independent or main clause type. Further information on the semantic reasons behind the use of the infinitive will be provided in chapter 5 on directives.

3. Results of the analysis of procedural relations

Once the framework and method of analysis have been set out, the following sections will provide the results of the study of procedural relations in English and Spanish. The aim of this study is to identify those expressions which are used for mapping Generation and Enablement onto English and Spanish, and which signal these relations without ambiguity. The current section will be divided into two main parts: section 3.1 will be devoted to the linguistic forms expressing Generation, and section 3.2 will focus on the linguistic forms signalling Enablement. Each of these two sections will, in turn, be divided into subsections according to the language and will discuss the realisations available for each element of the action pair in isolation. The possible combinations and ordering of linguistic realisations that can be used for expressing Generation and Enablement will also be addressed in this section.

3.1. Expressing Generation

As defined previously, "α generates β iff α is the body of a plan ε whose goal is β" (Delin *et al.*, 1994:64). After reviewing Goldman's definition of the Generation relation, Delin *et al.* (1994) provide the following features characterising this relation: the actions are performed or perceived to be performed by the same human agent; the relation is asymmetric; neither action is subsequent to the other; the actions are not co-temporal; if the agent did not do α, then he would not do ß.

The linguistic expressions available for realising the action components of an action pair in a Generation relation, as well as their possible combinations and ordering will be presented in sections 3.1.1 for English and 3.1.2 for Spanish.

3.1.1. Generation in English

This subsection looks at action pair tokens in English where a Generation relation holds between the action pair components. Each of the action pair component (α-GEN and β-GEN) will be studied in isolation, showing which linguistic forms are used for realising them. The purpose of doing this is to find out whether there are linguistic forms that exclusively realise only one of the two components (that is, either α or β), and whether there are forms which can realise both action components. The results of the analysis are summarised in Table 3 and Table 4. Table 3 shows the English realisations of the generatING action (α-GEN), while Table 4 shows the linguistic forms available for realising the generatED action (β-GEN). These tables show that there are some realisations that can express either component while there are other expressions capable of expressing only one of the Generation relation components.

Grammatical category	Type	Subtype/ realisation	No.	%
phrase	nominal	determiner (*this*)	1	1%
		relative pronoun (*which*)	1	1%
		rankshifted *-ing* clause	1	1%
clause	independent	imperative	69	58%
		declarative	6	5%
	dependent	*-ing*	1	1%
		by + *-ing*	41	34%

Table 3. The generatING action (α-GEN) in English: realisations

Grammatical category	Type	Subtype/ realisation	No.	%
phrase	nominal	nominalisation (title)	1	1%
	prepositional	*for* + nominalisation	3	3%
	verbal		3	3%
clause	independent	imperative	32	27%
		declarative	16	13%
	dependent	*to* + infinitive	65	54%

Table 4. The generatED action (β-GEN) in English: realisations

As it can be seen when comparing these tables, the only realisations common to both components of the Generation relation in English are the independent clausal realisations (*imperative* and *declarative*). The rest of the realisations found are exclusively used for only one of the two components (i.e., either the generatING action or the generatED action).

English can express the generatING action, through phrasal as well as clausal realisations. Phrasal α-GEN, however, has a very low frequency of occurrence and is always nominal (NP), which means that this realisation does not carry an explicit marker for the relation. It was observed in the data that, in some of these cases with a NP realising the generatING component, the action is expressed through an anaphoric element (*this, which*), and it can also be realised through a rankshifted *-ing* clause functioning as grammatical subject. The generatING action, however, is most frequently expressed by a clause, as shown in Table 3; the imperative independent clause is by far the most popular realisation of this component, followed by the dependent clause with *by + -ing*, and much less frequently, declarative clauses and dependent clauses with *-ing* only.

The results for the α-GEN component in English contrast with the ones for the β-GEN component. Table 4 shows that there are three phrasal realisations available for the generatED action (nominal, prepositional and verbal), while there is only one for the generatING action (nominal).

Table 4 also shows that the generatED action is most frequently expressed through *to + infinitive*, followed by the independent realisations (*imperative* and *declarative* clauses). With much less frequency, English expresses the β-GEN component through phrasal realisations: *for + nominalisation*, a VP or a title consisting of a nominalisation.

So far we have had positive results regarding the mapping of the procedural relation of Generation onto English grammar: the two different kinds of actions in the action pair can be identified through linguistic markers. Thus, for instance, the generatED action (or goal) is easily identified through the use of *to + infinitive* or *for + nominalisation*, while one of the linguistic forms characterising the generatING action (that is, the action contributing to the goal) is the *by + -ing* clause. However, the analysis presented so far has shown that the actions are not always so easy to identify. In many cases, α-GEN and β-GEN do not have a characteristic realisation that distinguishes the goal from the action necessary to perform that goal. The results presented so far lead to several questions which will be answered in the following sections: Are both actions linguistically marked in every token of the Generation relation? Or is it only one of the actions that has a specific marker of the action type (i.e., α or β)? Are there any cases where no action at all is linguistically signalled? If so, is there another way to identify the relationship? The following section will provide answer to these questions by looking at the combinations of the possible realisations for the actions. In addition, more questions will be inevitably asked when trying to find out if the results for Enablement are in any way similar to the results discussed so far for the Generation relation.

3.1.1.1. Combinations of α-GEN and β-GEN realisations in English

After having seen the English realisations available for each of the action components in action pairs where a Generation relation holds, this section shows how the realisations of the generatING action combine with the realisations of the generatED action. Particular attention will be paid here to the order in which the action pair components appear. In other words, does the generatED action appear in first position? Or is it the generatING action that is located first? It must be taken into account that the ordering mentioned here is the ordering that appears in the data. Where relevant, it will also be pointed out that a specific ordering would be grammatical but was not found in the data.

The available combinations of realisations and their ordering are indicated in Table 5. In this table, β^α indicates that the realisation of the generatED action appears in first position and is followed by the realisation of the generatING action. The ordering α^β indicates that the generatING action appears before the generatED action.

β-GEN	α-GEN	β^α	α^β
phrase	phrase		✓
phrase	independent clause	✓	✓
independent clause	independent clause	✓	✓
independent clause	dependent clause	✓	✓
dependent clause	independent clause	✓	✓

Table 5. Combinations of α-GEN and β-GEN realisations in English

Only three examples of the combination of phrase with phrase were found in the data, and all of them consist of a NP realising α-GEN and a VP realising the β-GEN component. The ordering found for this combination in the data was always α^ß (that is, the generatING action is followed by the generatED action).[38] The NP+VP combination seems to be used when the intention is informative rather than directive, as in (14) and (15), especially when an anaphoric element such as *this* in (14)[39] is used.

(14) *[Press the button ... ;] <u>this</u> switches the fridge off.* [E011]

(15) *Replacing the receiver <u>will automatically reset the phone to the Pulse dialling mode</u>.* [E001]

The second combination found in the data is the pairing of a β-GEN phrasal realisation with an α-GEN independent clause. In these cases, two options are available: (i) the generatED action is expressed through a title consisting of a nominalisation, which is combined with an imperative clause and β^α ordering, as in (16); and (ii) the generatED action is realised by a *for + nominalisation* phrase, which can combine with an imperative or a declarative clause realising α-GEN, and whose ordering can be either α^ß, as in (17), or ß^α, as in (18).

(16) *<u>Open the bag door</u> by pressing the door release pad H.* [E005]

(17) *Unclip the nozzle <u>for normal use</u>.* [E002]

(18) *<u>For access to the mains terminal block</u>, it is necessary to remove the mains terminal cover.* [E010]

[38] A ß^α ordering in this case would be ungrammatical, since the VP never precedes the NP functioning as Subject in English, except perhaps in literary language.

[39] To enable a quick recognition of the two components of the action pair, the realisation of the ß action will be underlined in the examples of Generation and Enablement provided throughout this chapter.

Two independent clauses can also be paired to express Generation, with both orderings available. However, when the actions are in apposition (i.e., with no links) the ordering is always ß^α, while it is α^ß when they are coordinated by *and*. This ordering of coordinated clauses implies a temporal sequence and is also the logical order; the generatED action (i.e., the goal) cannot take place before the generatING action has been carried out.

As it can be seen in the following examples, the two main clauses can be combined in the following ways: *declarative + imperative*, as in (19); *imperative + declarative*, as in (20); and *imperative + imperative*, as in (21).

(19) *Defrosting is very simple. Just follow these steps: ...* [E011]

(20) *... simply flex the tray and it [refrozen water] will pop out*. [E011]

(21) *Remove lamp: Gently grip lamp at one end and pull ...* [E008]

The most frequent dependent clausal realisation of the generatING action (*by + -ing*) can combine with an *imperative* or a *declarative* realising the generatED action, as illustrated in (22).

(22) *Slacken off the lamp guard, undoing the pozidrive retaining screw by one turn*. [E011]

Some combinations imply a specific intention. The combination of *by + -ing* with a passive declarative to express the Generation relation seems to be due to a more informative intention, rather than directive. (23) is an example of this situation.

(23) *The zero is set by rotating the top of the body*. [E006]

The ordering found in the data for all these combinations of β-GEN dependent clausal realisation with α-GEN independent clausal realisation is always ß^α. However, the combination *by + -ing* with a passive declarative could have α^ß ordering. In other words, α^ß would be grammatical but it was not found in the data. In my opinion the reason for the existence of only ß^α ordering for this combination in the data is related to information focus. If the goal is mentioned first, the instruction will be clearer for the reader, because he can then organise better the information in his mind and create the right mental plan (cf. Dixon, 1982, 1987b; Di Eugenio, 1992, 1993b; and Pollack, 1986b).

Finally, dependent clausal realisations of the generatED action (i.e., *to + infinitive* clauses) can combine with *imperative* or *declarative* realisations of the generatING action. The combination of *to + infinitive* and an *imperative* clause, as in (24), is by far the most frequent realisation of Generation in English. Both α^ß and ß^α orderings are possible, but the combination with ß^α ordering is twice as frequent as the other.

(24) *To open, slide the cover handle to the right*. [E007]

When the *to + infinitive* realisation of β-GEN combines with an α-GEN *declarative* clause, two kinds of declaratives were found in the data for this combination: (i) an active declarative clause with ß^α ordering and – most frequently – with an interpersonal element such as *need* expressing modality, as in (25). For this combination, α^ß ordering would also be pragmatic but no examples were found in the data. And (ii) a declarative clause in the passive voice, as in (26). According to the data, the ordering in this latter case is always α^β. However, once again, it seems that ß^α ordering in *to + infinitive* combinations with type-ii declaratives would be grammatical, and even pragmatic, although no cases were found.

(25) *To ensure that the doors function properly you will need to change the left hand appliance*. [E011]

(26) *The following procedure should be followed to remove the obstruction*. [E005]

If we compare all the tokens of these two possible combinations where the generatED action is realised by a subordinate clause, the results seem to point at voice as the element establishing the constraint on ordering. However, further research with a bigger corpus is needed to show to what extent voice affects the ordering.

In general, it was found that the preferred ordering for the Generation relation in English is ß^α (accounting for 91 out of 110 tokens), while α^ß ordering appeared in only 29 cases.

So far, the approach followed for the analysis of English Generation has shown that there are linguistic forms that enable the easy identification of action pair components. The identification of actions in the action pair through linguistic devices is useful for the purposes of automatic text generation. Nonetheless, the analysis showed that the action pair components are not always easily differentiated through linguistic markers. This, however, should not pose much of a problem as long as one of the actions in the action pair is clearly signalled. By looking at the combinations of action pair components, we saw that not all the possible α-GEN realisations can combine with all β-GEN realisations available. The choice of a particular realisation for one of the actions, then, very frequently constrains the choice of expression for the other action. In addition, there are also constraints as regards the order in which the action realisations appear in a particular combination. Table 6 summarises the results of the analysis by showing the combinations of α-GEN and β-GEN realisations, including also the order in which these realisations appear for each combination. In this table, it is easier to observe the constraints that the grammatical realisations place on the ordering of the actions. Table 6 shows that there are not always constraints on ordering. The combination, for instance, of α-GEN *imperative* with β-GEN *to + infinitive* can have either ordering.

β-GEN \ α-GEN			PHRASE		CLAUSE			
			Nominal		Independent		Dependent	
			anaphoric element	-ing r/s clause	imperat.	declarat.	by + -ing	-ing clause
PHRASE	Nom.	nominalisation (title)			β^α			
	Prep.	for + nominalisation			α^β β^α			
	Adv.	before + nominalisat.						
	Verbal		α^β	α^β				
CLAUSE	Independ.	imperative			β^α		β^α	β^α
		declarative			α^β β^α		β^α	
	Depend.	to + infinitive			α^β β^α	α^β β^α		
		in order to + infinitive						
		for + -ing						
		before + declarative						
		before + -ing						

Table 6. Mapping of Generation in English: linguistic forms and ordering

The positive results obtained so far for English justify the extension of this kind of analysis to the Spanish data. The following section, then, will address the mapping of

Generation onto Spanish grammar. We have to bear in mind, though, that the analysis will not be completely illuminating until the results for Generation can be compared to the results for the Enablement relation.

3.1.2. Generation in Spanish

Similarly to the procedure followed in section 3.1.1, this section studies the action pair tokens in Spanish where a Generation relation holds between the action pair components. The action pair components (α-GEN and β-GEN) will be studied in isolation, showing which linguistic forms are used for realising each of them. As in the case of the Generation relation in English, the results of the analysis will be summarised through tables which present the realisations available for each action pair component. Thus, Table 7 shows the Spanish realisations of the generatING action (α-GEN), and Table 8 shows the linguistic forms available for realising the generatED action (β-GEN) in Spanish. As was the case with English Generation, these tables show that there are some realisations which can express either component while there are also expressions capable of realising only one of the Generation relation components.

Grammatical category	Type	Subtype/ realisation	No.	%
clause	independent	imperative	16	31%
		infinitive	13	25%
		declarative	12	23%
	dependent	*con sólo* + infinitive	1	2%
		-ndo (gerund)	10	19%

Table 7. Expression of generatING action (α-GEN) in Spanish: realisations

Grammatical category	Type	Subtype/ realisation	No.	%
phrase	nominal	nominalisation (title)	3	6%
	prepositional	*para* + pronoun	5	10%
		para + nominalisation	4	8%
clause	independent	imperative	2	4%
		declarative	15	29%
	dependent	*para* + infinitive	20	38%
		para que + subjunctive	2	4%
		other[40]	1	2%

Table 8. Expression of generatED action (β-GEN) in Spanish: realisations

When comparing Table 7 and Table 8, we can see that the generatED action can be expressed in Spanish either through a clause or through a phrase, while only the clausal realisation is available for the generatING action. This contrasts with the results for English, where phrasal realisations are available for both action pair components.

As Table 7 reveals, it was observed in the data that the generatING action is most frequently realised in Spanish through an independent clause, amounting to 80% of the total realisations of the α-GEN component. The number of independent clausal realisations is quite evenly shared among the three subtypes: imperative, infinitive and declarative clauses. The use of dependent clauses that realise the generatING action in Spanish is much less frequent, amounting to only 10% of the total number of realisations. The Spanish results for clausal realisations of the α-GEN component are statistically very similar to the results for English

[40] Other here refers to realisations which depend on the syntax of the previous clause.

shown in section 3.1.1, in that English also prefers the use of independent over dependent clauses for expressing the generatING action.

In contrast with the results for the generatING action, the generatED action in Spanish is slightly more frequently expressed through dependent clauses (e.g., *para + infinitive, para que + subjunctive*) rather than independent clauses. According to the results of the data analysis, Table 8 also shows that, within independent clausal realisations, the infinitive never realises the generatED action in Spanish. The declarative clause (with a total number of 15 cases) is the most frequent independent clausal realisation of the generatED action, while the imperative accounts for only 2 cases.

As for the phrasal realisations of the generatED action, the Spanish data exhibit the use of the preposition *para* followed by either a nominalisation or a pronoun. The use of *para + pronoun* as opposed to *para + nominalisation* or *para + infinitive* was found to convey some implications for optionality as well as intentionality. When *para + pronoun* is used, the intention seems to be informative rather than directive (cf. Paris and Scott, 1994 and discussion in chapter 3 above). For a detailed explanation of optionality in purpose expressions, see Murcia and Delin (1996).

Finally, similarly to English, the Spanish data showed that in a few cases the generatED action is presented through a title consisting of a nominalisation; this title is normally signalled by typographical clues such as colons, as in (27).

(27) *Regulación del termostato gas: Girar a la izquierda el tornillo economizador ...*
[S006]
(Regulation of the gas thermostat: Turn the economising knob to the left...)

To sum up, as shown in tables 7 and 8, and similarly to the English results, the only Spanish realisations common to both components of the relation are the independent imperative and declarative clauses. The two components of the relation are, however, very clearly differentiated when it comes to dependent clausal realisations. The β-GEN component, for instance, is exclusively expressed through *para + infinitive* or *para que + subjunctive*, while the α-GEN component is exclusively realised through the *gerund* form and *con sólo + infinitive.*

The dependent clausal realisations of both components are also structurally similar to their English counterparts. Thus, the Spanish (*-ndo*) *gerund* form expressing the generatING action corresponds to English *-ing* and *by + -ing* forms; and Spanish *para + infinitive* realising the generatED action corresponds to English *to + infinitive.*

3.1.2.1. Combinations of α-GEN and β-GEN realisations in Spanish

After having seen the Spanish realisations available for each of the action components for action pairs where a Generation relation holds, this section shows how the realisations of the generatING action combine with the realisations of the generatED action. As was done with the English results, the ordering of the actions in the action pair will also be indicated.

Table 9 exhibits the combinations of α-GEN and β-GEN realisations available in Spanish, indicating the order in which the components appear.

β-GEN	α-GEN	β^α	α^β
phrase	independent clause	✓	
independent clause	independent clause	✓	✓
independent clause	dependent clause	✓	✓
dependent clause	independent clause	✓	✓

Table 9. Combinations of α-GEN and β-GEN realisations in Spanish

When a phrase and a clause are combined to express Generation in Spanish, it is the phrase that explicitly signals the relation. The data showed that, for this combination, the action expressed through a phrase is always the β-GEN component because, as shown in Table 7, there are no phrasal realisations of the generatING action in the Spanish data.

As was shown in Table 8, two different phrases can realise the generatED action in Spanish. When the generatED action (or β-GEN component) is realised through a nominalisation in a title, the data shows that it combines with an infinitive clause, as in (27) above.

When the generatED action is realised by a prepositional phrase (*para + pronoun*, *para + nominalisation*), it can combine with an imperative or a declarative clause, as in (28) and (29) respectively. Example (28) expresses the Generation through the combination of *para + pronoun* (realising the generatED action) with an *imperative clause* (realising the generatING action). Note that, for a better understanding, the referent of "*ello*" has been included by putting it in square brackets.

(28) *para ello [modificar temperatura] actúe sobre el mando 'A' del termostato.* [S005]
(For this [modify temperature] use the thermostat knob 'A'.)

(29) *Para su encendido basta abrir el grifo y aplicar la cerilla al quemador.* [S006]
(For its lighting it is sufficient to open the tap and apply a match to the burner.)

In addition, β-GEN realised through *para + nominalisation* can combine with an *infinitive clause* realising the α-GEN component. In all these combinations the generatED action always appears in first position. In the case of *para + pronoun* a different order of the components (that is, α^ß ordering) does not seem possible, since the pronoun is an anaphoric element and must appear close to its referent. If β-GEN in this combination appeared after α-GEN, the reader might find it difficult to identify the referent of the pronoun. Therefore, it can be said that α^ß ordering for this combination would not be pragmatic.

When two independent clauses are combined, there is no special marker signalling the relation. If both the α-GEN and β-GEN components are realised by declarative clauses, these are most frequently joined with no links (just a comma or a stop) and the ordering is ß^α (i.e., the generatED action appears in first position).

When the generatING action is realised by an *imperative clause*, it can combine with a *future declarative clause* linked by *y* 'and' as in (30). The ordering found for this combination is α^ß.

(30) *... deslice el selector al lado opuesto ... y aparecerá el otro voltaje.* [S021]
(Slide the selector key to the opposite side ... and the new voltage will appear.)

When the α-GEN and β-GEN components of the relation are realised through clauses with different hierarchy (i.e., one of them is realised by an independent clause and the other by a dependent clause), either of the following three combinations is possible:

- The ING element is explicitly marked through a dependent clause and the ED component is realised by an independent clause. The only dependent clause available for Spanish α-GEN, the *-ndo* gerund form, can combine with either *declarative* (as in (31)) or

imperative clause (as in (32)). The ordering found in the data for most examples with this combination is ß^α.

(31) *Se nivela la cocina, atornillando o aflojando los pies*. [S006]
(It-is-levelled the cooker, tightening or loosening its feet.)

(32) *Será necesario que reajuste el termostato, girando el mando C*. [S005]
(It-will-be necessary that you readjust the thermostat, turning the knob C.)

- The generatED action (β-GEN) is expressed by a dependent clause and the α-GEN component through an independent clause. Notice that it is always the dependent clause that explicitly signals the relation.
- Table 7 showed two dependent clausal realisations of the β-GEN component. When the generatED action is realised by *para + infinitive*, it can combine with different grammatical forms realising the generatING action. In its combination with *imperative, declarative* and *infinitive* clauses, both the α-GEN and β-GEN components can be found in the first position. (33) presents an example with α^β ordering, while (34) has β^α ordering.

(33) *Dejar las puertas entreabiertas para facilitar la circulación del aire*. [S005]
(Leave the doors ajar to facilitate the circulation of-the air.)

(34) *Para fijarlo en su posición vertical proceda simplemente a enderezarlo*. [S021]
(To fix-it in its vertical position simply proceed to straighten-it.)

A few issues must be pointed out with regards the combination of β-GEN realised through *para + infinitive* with an α-GEN *declarative clause* realisation. All the examples in the data with this combination exhibit present tense and a modal verb (as in (35)) or another expression showing modality in the declarative clause (as in (36)). Example (35) illustrates the β^α ordering and (36) illustrates the α^β ordering.

(35) *Para lograr las diversas posiciones puede girarse el mando a derecha o izquierda indistintamente*. [S006]
(For achieving the different positions, the knob can be turned either to the right or the left.)

(36) *es aconsejable limpiar el interior del mismo y los accesorios que le acompañan con agua tibia y jabón neutro para eliminar el característico olor a nuevo*. [S005]
(It is advisable to clean the inside and the accessories that accompany it with lukewarm water and neutral soap in order to eliminate the characteristic new smell.)

When modality is expressed in the declarative through *es necesario* 'it is necessary' or *hay que* 'one has to', the ordering found in the data was always β^α, as illustrated in (37).

(37) *Para cerrar hay que girar de izquierda a derecha*. [S006]
(To close, turn from left to right.)

The second dependent clausal realisation of the generatED action found in the corpus is the *para que* clause. This grammatical form can be combined with an α-GEN *declarative clause*, as in (23) and (24). All the examples found have the modal *deber* and ß^α ordering. The tense can be either present, as in (38), or future, as in (39).

(38) *Para que esta entrada de aire fresco quede garantizada debe colocarse una rejilla de aire o similar*. [S008]
(In order for this entry of fresh air to get guaranteed it-must be-situated a slot of air or similar.)

(39) *<u>Para que esta garantía tenga validez</u>, deberá enviarse cumplimentada la tarjeta inferior a Comercial COINTRA, S.A.* [S005]
(In order for this guarantee be valid, it-should be-sent filled-in the card below to Comercial Cointra.)

α-GEN / β-GEN			PHRASE	CLAUSE			
			Nominal	Independent			Dependent
			nominalisat.	imperat.	infinitive	declarat.	gerund (-ndo)
PHRASE	Nom.	nominalisation (title)			β^α		
	Prep.	para + pronoun		β^α		β^α	
		para+nominalisat.		β^α	β^α	β^α	
	Verbal						
CLAUSE	Independ.	imperative					β^α
		infinitive					
		declarative		α^β β^α		β^α	α^β β^α
	Depend.	para + infinitive		α^β β^α	α^β β^α	α^β β^α	
		para que + subj.				β^α	
		antes de + inf.					
		a fin de + inf.					
		al objeto de + inf.					

Table 10. Mapping of Generation in Spanish: linguistic forms and ordering

This section has shown that, similarly to English, the realisations available for α-GEN and β-GEN often differentiate between the two kinds of action. Thus, β-GEN is usually characterised through the use of *para*. As was the case with English, the actions are not always clearly differentiated; declarative clauses, for instance, can realise any of the two actions. The analysis showed that only specific combinations of realisations can express Generation in Spanish, and that these combinations often have only one specific order for presenting the actions; for instance, combinations of *para* PrepP for the generatED action always present the goal (β) in initial position. These results (summarised in Table 10) are worth considering for the purposes of text generation. When comparing this table with Table 6 (on page 67), we can see that Spanish contrasts with English in that all the combinations available for expressing Generation in Spanish can have β^α ordering, while not all the English ones can have that ordering. The two languages, however, share the possibility of both orderings in specific realisation combinations.

After having shown the positive results of the approach for both English and Spanish Generation, we will go on to study the Enablement relation. By comparing the results of the procedural relations analysis within each language, it will be possible to identify those expressions that unambiguously signal these relations and where the approach falls short.

3.2. Expressing Enablement

This section follows the same procedure as was followed in section 3.1 for the Generation relation. We will look at action pair tokens with an Enablement relationship in order to identify the linguistic forms that map the Enablement relation onto grammar in both languages. This will allow us to identify the expressions that signal Enablement without ambiguity.

As defined above in terms of the plan representation model, "α *enables* β if α is a precondition of a plan ε and β is the goal of plan ε; or if β is the body of ε and α is a precondition of β" (Delin *et al.*, 1994:64). In other words, although performing the α action does not automatically achieve the goal action (β), β could not be performed without the prior completion of α.

The linguistic expressions available for realising the action components of an action pair where an Enablement relation holds, as well as their possible combinations and ordering, will be presented in sections 3.2.1 for English and 3.2.2 for Spanish.

3.2.1. Enablement in English

This subsection looks at English tokens of the Enablement relation. Each action pair component (α-ENAB and β-ENAB) will be studied in isolation, showing which linguistic forms are used for realising them, in order to identify the linguistic forms which realise only one of the two components as opposed to those forms that can express either component. The results of the analysis are presented in Table 11 and Table 12. The English realisations of the enablING action (α-ENAB) are shown in Table 11, while Table 12 provides the realisations of the enablED action (β-ENAB).

Grammatical category	Type	Subtype/ realisation	No.	%
clause	independent	imperative	49	62%
		declarative	15	19%
	dependent	*-ing*	12	15%
		by + *-ing*	3	4%

Table 11. The enablING action (α-ENAB) in English: realisations

Grammatical category	Type	Subtype/ realisation	No.	%
phrase	prepositional	*for* + nominalisation	6	8%
	adverbial	*before* + nominalisation	1	1%
clause	independent	imperative	34	43%
		declarative	12	15%
	dependent	*to* + infinitive	16	20%
		in order to + infinitive	2	3%
		for + *-ing*	4	5%
		before + *can* clause	2	3%
		before + *-ing*	2	3%

Table 12. The enablED action (β-ENAB) in English: realisations

Similarly to what happened with the results for the Generation relation, the analysis shows that independent clausal realisations (*imperative* and *declarative*), can express both the α-ENAB and the β-ENAB components. It is interesting to notice that these realisations of the

action pair components in an Enablement relation account together for more than 50% of the total realisations of either component.

In contrast, phrasal and dependent clausal realisations clearly signal only one of the two components. Thus, phrasal realisations are exclusively used for the β-ENAB component, introducing it either through the preposition *for* or the adverb *before* followed by a nominalisation.

The data analysis also showed that the various dependent clausal realisations explicitly mark only one of the two components. Thus, in the case of Enablement, dependent clauses with *-ing* or *by + -ing* can realise only the enablING action (or α-ENAB component), while dependent clause realisations with *to + infinitive, in order to + infinitive, for + -ing, before + -ing* and *before + can* clause are capable of realising only the enablED action (β-ENAB). The range of dependent clause-types available for realising the β-ENAB component in English is, therefore, much wider than the one for the α-ENAB component.

As regards the ordering in which the action realisations appear, it was found that the English data prefer the α^β ordering in most of the cases realising the Enablement relation.

3.2.1.1. Combinations for Enablement in English

Having seen in section 3.2.1 the English realisations available for each of the action components of action pairs where an Enablement relation holds, this section shows how the realisations of the enablING action are combined with the realisations of the enablED action. The combinatory options for Enablement in English are summarised in Table 13 and explained in detail below.

β-ENAB	α-ENAB	β^α	α^β
phrase	independent clause		✓
independent clause	independent clause	✓	✓
independent clause	dependent clause	✓	✓
dependent clause	independent clause	✓	✓

Table 13. Combinations of α-ENAB and β-ENAB realisations in English

The data showed that any of the β-ENAB phrasal realisations (*for + nominalisation, before + nominalisation*) can combine with either *imperative* or *declarative* dependent clauses realising the α-ENAB component. The ordering in these cases is always α^β, as illustrated in (40) and (41). The other ordering (β^α) for this combination seems to be pragmatic too, though no cases were found.

(40) *Retain this leaflet <u>for future reference</u>.* [E008]

(41) *Remember to reset the knob <u>before use on other types of carpet</u>.* [E005]

Enablement can also be realised in English through the combination of two independent clauses. In these cases, neither the α-ENAB nor the β-ENAB component explicitly marks the relation. It must be noted that, though this combination most frequently consists of two clauses with the same verbal forms (e.g., *imperative + imperative* and *declarative + declarative*) either linked by *and* or without links, it is also possible to combine two independent clauses that have different verbal mood. The ordering for the former combination is always α^ß, as shown in (42). The ß^α ordering for this combination would be grammatical but not pragmatically appropriate, since the action that should be performed first (i.e., the precondition or α-ENAB) must appear in the first place. ß^α ordering here, then, does not convey the Enablement relation and, in addition, it can result in dangerous instructions, as in constructed (43), which would most likely end up with an electrocuted user.

(42) *Replace the plug and switch on*. [E011]

(43) **Switch on and replace the plug**.

In contrast, the *declarative* β-ENAB combined with *imperative* α-ENAB, which is illustrated in (44), can present both orderings.

(44) *lift the lower cord storage clip, the cord can then be wound round the storage clips*. [E005]

The order for this particular combination of α-ENAB and β-ENAB realisations seems to be constrained by the modal operator in the *declarative* clause realising the enablED action. Thus, when the modal is *can* the α^β ordering was found; this order is the logical one for the performance of the actions since the precondition is performed before the goal. Example (44) above illustrates this combination with α^β ordering.

In contrast, when the modal is *should*, the only possible ordering is β^α, as shown in (45). When the modal of the declarative clause is *should*, the α^β ordering would be grammatical, but not pragmatic for expressing Enablement, as illustrated in constructed (46).

(45) *the interior including the door and all removable parts should be wiped out. Use damp cloth wrung out ...* [E011]

(46) **Use a damp cloth wrung out. The interior including the door and all removable parts should be wiped out**.

The analysis of the English data showed that when the enablING action is realised in English by a dependent clause (i.e., an *-ing* clause), it can combine with either an *imperative* or a *declarative* clause realising the enablED action. The combination of an α-ENAB *-ing* clause with an *imperative* β-ENAB allows for either ordering, while only α^β is possible if the enablING *-ing* clause is combined with a *declarative* clause realising the enablED action.

Finally, if it is the enablED action that is realised by a dependent clause, both orderings are generally possible, except for the following cases:

When *in order to + infinitive* is used for realising the enablED action, the data showed only α^β ordering.

If *before + declarative* is used to realise the β-ENAB component, the data showed that it combines only with α-ENAB realised by declarative clauses and this combination can have either ordering.

If the enablED action is realised by *before + -ing*, it can combine with either an *imperative* clause or a *declarative* clause realising α-ENAB. The data showed that α^ß ordering occurs when *before + -ing* is combined with an *imperative* clause, as illustrated in (47), while ß^α ordering occurs when it is combined with a *declarative* clause, as illustrated in (48). However, both orderings for both combinations would be grammatical, and even pragmatic, though no cases were found.

(47) *Refit the check bag connector and tubing assembly to the bag support tube before replacing and securing with the two screws to the bag housing*. [E005]

(48) *Before re-fitting the door, the plug and the top and bottom hinge bushes must be swapped over*. [E011]

The analysis of the Enablement relation in English has also shown positive results. The enablING and enablED actions can be, although not always, clearly distinguished from each other through the linguistic forms that realise them. When comparing the results of Enablement with Generation, it was particularly interesting to notice that there are many more realisations available for expressing the β-ENAB component than there were for the β-GEN component. These results might lead to concluding that linguistic markers such as *in order to,*

for + -ing, and *before clauses* unambiguously signal the Enablement relation in English. These results, however, should be considered as probabilistic due to the low frequency of occurrence of these forms.[41] Further research with a bigger corpus of these particular realisations would be necessary to confirm the positive results of the analysis presented here.

When looking at the combinations of α-ENAB and β-ENAB (summarised in Table 14) we can see that many of the combinations available restrict the order in which the realisations appear. For example, when the enabled action is realised by *for* PrepP or *for + clause*, it always appears in second position (i.e., the order is α^β). There are, however, many other combinations where either ordering can appear.

β-ENAB \ α-ENAB			PHRASE		CLAUSE			
			Nominal		Independent		Dependent	
			anaphoric element	-ing r/s clause	imperat.	declarat.	by + -ing	-ing clause
PHRASE	Nom.	nominalisation (title)						
	Prep.	for + nominalisation			α^β	α^β		
	Adv.	before + nominalisat.			α^β			
	Verbal							
CLAUSE	Independ.	imperative			α^β			α^β β^α
		declarative			α^β β^α	α^β	β^α	β^α
	Depend.	to + infinitive			α^β β^α	α^β β^α		
		in order to + inf.			α^β	α^β		
		for + -ing			α^β	α^β		
		before + declarative				α^β β^α		
		before + -ing			α^β	β^α		

Table 14. Mapping of Enablement in English: linguistic forms and ordering

The next step in the analysis will be the comparison of the results for the Generation relation with those for Enablement. Before that, however, the following section will provide the results of the data analysis for the Enablement relation in Spanish.

3.2.2. Enablement in Spanish

This section examines the action pair tokens found in the Spanish data where an Enablement relation holds. The linguistic forms available for realising the enablING and enablED actions in Spanish are shown in Table 15 and Table 16 respectively.

[41] Notice, however, that *in order to* can also be found to express Generation, as shown in chapter 6. This shows that, a bigger corpus might change the results for the less frequent realisations.

Grammatical category	Type	Subtype/ realisation	No.	%
phrase	nominal	nominalisation	1	2%
clause	independent	imperative	16	31%
		infinitive	13	25%
		declarative	11	21%
	dependent	*-ndo* (gerund)	7	13%

Table 15. The enablING action (α-ENAB) in Spanish: realisations

Grammatical category	Type	Subtype/ realisation	No.	%
phrase	nominal	nominalisation (title)	1	2%
	prepositional	*para* + nominalisation	1	2%
		para + relative pronoun	1	2%
	verbal		1	2%
clause	independent	imperative	8	15%
		infinitive	10	19%
		declarative	8	15%
	dependent	*para* + infinitive	13	25%
		para que + subjunctive	2	4%
		antes de + infinitive	1	2%
		a fin de + infinitive	1	2%
		al objeto de + infinitive	1	2%

Table 16. The enablED action (β-ENAB) in Spanish: realisations

Similarly to English, there are expressions common to both the α-ENAB and β-ENAB components; the independent *imperative*, *infinitive* and *declarative* clauses account together for the highest frequency of occurrence in both components. The data also showed that both phrasal and clausal realisations are available for realising the enablING and the enablED actions. However, with the exception of the independent clauses mentioned above, the α-ENAB and β-ENAB components are clearly differentiated in their linguistic realisations.

The gerund (*-ndo*) form, for instance, is the only dependent clausal realisation for the enablING action in Spanish, while there is a much wider array of dependent clause realisations (*para que + subjunctive, para / antes de / a fin de / al objeto de + infinitive*) available for expressing the enablED action.

The data showed that both the enablING and enablED actions can be realised in Spanish by a nominalisation; nominalisations, however, present a very low frequency of occurrence. It is interesting to notice that the function of the NP in each case is different. When a NP realises the α-ENAB component, it functions as grammatical subject, while it functions as a title when it realises the β-ENAB component. The data exhibit very few cases of prepositional phrases (*para + pronoun / nominalisation*), and these always realise the enablED action.

In contrast with the Generation relation, the order preferred in Spanish for Enablement is α^ß, accounting for 66% of the Enablement relations found in the Spanish data.

3.2.2.1. Combinations for Enablement in Spanish

This section shows how the linguistic forms introduced in the previous section are combined to express the Enablement relation in Spanish. The available combinations and ordering of α-ENAB and β-ENAB realisations are presented in Table 17 and explained in detail below.

β-ENAB	α-ENAB	β^α	α^β
phrase	phrase		✓
phrase	independent clause	✓	
independent clause	independent clause		✓
independent clause	dependent clause	✓	
dependent clause	independent clause	✓	✓

Table 17. Ordering for Enablement in Spanish

As for the first possible combination for Spanish Enablement shown in the table, only one token was found: a nominalisation realising α-ENAB combined with a verbal phrase realising the β-ENAB component. As illustrated in (49), only the α^β ordering is possible for this combination.

(49) *... la actuación de la tecla R <u>le permitirá el acceso a determinadas prestaciones</u>...* [S011]
(... the pressing of the key R will allow you the access to certain services ...)

This example is worth commenting on. There are two reasons for considering the procedural relation holding there as Enablement. On the one hand, the use of the verb *permitir* 'allow' is a give-away of the relation through the meaning of this verb. On the other hand, the definition of Enablement provided in section 1.2 applies here; pressing the key R will not give immediate access to the services mentioned, but is a precondition for that access. A problem, however, can appear when trying to analyse examples like this: should *permitir* 'allow' or *acceso* 'access' be considered as ß? In cases such as (49), we can say that the verb *permitir* 'allow' is an explicit marker of the Enablement relation.

When the enablED action is realised by a prepositional phrase (*para + nominalisation*, *para + pronoun*), it can only be paired with an independent clause realising the enablING component. Since very few cases of this combination were found, it will be difficult to generalise from these results. The data analysis, however, showed the following two facts:

1. *Para + pronoun* combines with a declarative clause and has ß^α ordering.
2. No tokens of β-ENAB realised through *para* PrepP were found to combine with the infinitive realisation of α-ENAB.

In Spanish, Enablement is very frequently expressed through the combination of two independent clauses. The data showed that in these cases the realisation of the enablING and the enablED component exhibit the same verb form (e.g., *imperative*, *infinitive*, *present declarative* clause, or *future declarative* clause). In other words, both components are realised by the imperative form, or both components are realised by an infinitive, and so on. When both α-ENAB and β-ENAB are realised by independent clauses, they can either be linked by *y* 'and' or have no link at all. The only ordering possible with this combination is α^β. An example of this combination is provided in (50).

(50) *... sacar el embudo y <u>llenarlo de café</u>* [S010]
(Take out the funnel and fill-it-up with coffee.)

When the Enablement relation is signalled in Spanish through a dependent gerund clause as realisation of the enablING action, all three types of independent clauses realising the β-ENAB component were found to be able to combine with it. In addition, all these combinations have in common the β^α ordering, as illustrated in (51).

(51) *Deslice el selector al lado opuesto, introduciendo en la ranura una punta de tijera o similar.* [S021]
(Slide the selector to-the side opposite, introducing in the slot the end of some scissors or a similar tool.)

Although the α^β ordering would be grammatical for this combination of α-ENAB and β-ENAB, no examples with that ordering were found in the data. I suggest that the lack of the α^β ordering in these combinations is due to plan recognition issues closely related to information focus. As pointed out by Dixon (1987a), people understand instructions by constructing a mental representation of the task to be performed. Dixon claims that directions are easier to understand when the high level information (the goal) precedes the low level information. If we translate this into syntactic terms we can conclude that instructions are better understood if the goal appears in thematic position. This is particularly true in cases such as (51) above, where the enablING action does not have an immediate goal and is presented as a means of achieving the goal.

The most frequent expression of Enablement in Spanish consists of a dependent clause realising the enablED action combined with an independent clause realising the enablING action, as in (52) and (53). The order in which the realisations for each component can appear depends on the linguistic marker of the enablED action. Thus, β-ENAB realised by *para + infinitive* can combine with any independent clause type and any ordering. In contrast, when the β-ENAB component is realised through *para que + subjunctive* the combination always has α^β ordering, and the enablING action is realised by only *imperative* or *infinitive* forms. Example (52) illustrates the α^β ordering for this combination, and (53) the β^α ordering in an example where β-ENAB is realised by *para + infinitive*.

(52) *... disponga previamente las prendas por grupos de tejidos, para que comenzando con las que requieran temperaturas más bajas ..., termine con las que requieran temperaturas más altas.* [S020]
(Sort first the garments into groups according to the material, so that starting with those that require a lower temperature ..., you finish with those that require higher temperatures.)

(53) *Para cambiar la bombilla debe previamente desenroscarse el ojo de buey que la cubre.* [S006]
(To change the bulb, it-must previously be-unscrewed the washer that covers it.)

Finally, all the combinations with the remaining β-ENAB component realisations present, according to the data, the α^β ordering as illustrated in (54) and (55). Since the frequency of occurrence of these combinations is very low, no further claims can be made about the type of α-ENAB realisations that *antes de + infinitive, a fin de + infinitive* and *al objeto de + infinitive* can combine with. So far, we can only say that *antes de + infinitive* can combine with an *imperative* in the α-ENAB component (as in (54)), and that *a fin de* and *al objeto de* combine with *declarative* clauses realising the enablING action (as in (55)).

(54) *... pliegue nuevamente el mango antes de guardarla.* [S020]
(Fold the handle again before storing-it.)

(55) *... deben desmontarse los dos tornillos que fijan la placa, a fin de tener acceso a la parte interior.* [S006]
(They-must be-unscrewed the two screws that cover the panel, in order to have access to the inside part.)

Section 3.2.2 has shown that the procedural relations approach also provides positive results for the mapping of Enablement onto Spanish. The data analysis showed that the

enablING and enablED actions can be differentiated through specific linguistic forms. However, it was also shown that there are realisations with a very high frequency of occurrence (e.g., *imperative, infinitive* and *declarative* independent clauses) that do not distinguish one action pair component from the other.

When looking at the combinations of the two actions in the action pair, it was observed that Spanish prefers the ordering α^β for the realisation of Enablement. This, however, does not mean that all the linguistic combinations available for expressing Enablement have α^β ordering. In fact, there are several combinations that exhibit only β^α. This can be easily seen in Table 18, which shows the combinations and ordering of realisations found to express Enablement in the Spanish data.

β-ENAB \ α-ENAB			PHRASE	CLAUSE			
			Nominal	Independent			Dependent
			nominalisat.	imperat.	infinitive	declarat.	gerund (-ndo)
PHRASE	Nom.	nominalisation (title)					β^α
	Prep.	para + pronoun				β^α	
		para + nominalisat.		β^α			
	Verbal		α^β				
CLAUSE	Independ.	imperative		α^β			β^α
		infinitive			α^β		β^α
		declarative				α^β	β^α
	Depend.	para + infinitive		α^β β^α	α^β β^α	α^β β^α	
		para que + subj.		α^β	α^β		
		antes de + inf.		α^β			
		a fin de + inf.				α^β	
		al objeto de + inf.				α^β	

Table 18. Mapping of Enablement in Spanish: linguistic forms and ordering

Having presented the results of the analysis of English and Spanish procedural relations in isolation, the following section compares these results in order to establish (i) whether there are combinations that realise Generation or Enablement unambiguously in each language and (ii) whether English and Spanish present similarities in the mapping of the procedural relations onto grammar, as regards both linguistic forms and ordering of the actions.

3.3. Comparing English and Spanish realisations of Generation and Enablement

This section will compare the results discussed in sections 3.1 and 3.2 above and will show the similarities and differences in the realisations of the procedural relations of Generation and Enablement on two fronts. On the one hand, English and Spanish will be compared as regards the linguistic realisations available for expressing these two procedural relations. On the other hand, the linguistic realisations for Generation and Enablement will be

compared within each language. Throughout this section, the most important findings of these comparisons will be highlighted by means of summary boxes.

The data analysis showed that, with very few exceptions, independent clauses can realise any of the two components of the relation (i.e., α and β), both in English and in Spanish and for both the Generation and Enablement relations. These results are summarised in Box 1, which shows the linguistic forms that can be realisations of α **and** β actions (as opposed to **only** α **or** β) in Generation and Enablement relations. As pointed out in section 3.1.2, the infinitive is the only independent clause type that does not realise the β action in the Spanish Generation cases found in the data.

independent clauses:
- imperative
- declarative
- infinitive (only in Spanish)

Box 1. Common realisations for α and β in Generation and Enablement relations

The remaining linguistic forms studied in this chapter can realise only one of the actions in the action pair, as specified in Box 2. These forms that exclusively mark either α or β, are phrasal and dependent clauses.

ENGLISH	SPANISH
α realisation:	**α realisation:**
• *-ing* clause	• *con sólo* + infinitive
• *by* + *-ing*	• *-ndo* clause
β realisation:	**β realisation:**
• Nominalisation (title)	• Nominalisation (title)
• *for* + NP	• *para* + NP
• *for* + *-ing*	• *para* + infinitive
• *to* + infinitive	• *para que* + declarative
• *in order to* + infinitive	• *antes de* + infinitive
• *before* + NP	• *a fin de* + infinitive
• *before* + *-ing*	• *al objeto de* + infinitive
• *before* + declarative	

Box 2. Linguistic forms exclusively realising either α or β

Box 2 shows that, with the exception of independent clausal realisations, α and β actions are clearly distinguished from each other through their realisations. Thus, for instance, all the realisations with *to* + *infinitive* in English and *para* in Spanish exclusively signal the β action. Similarly, expressions with English *by* + *-ing* or the Spanish *gerund* form are only found to realise the α action.

The differences in realisations, however, are not so clearly marked when it comes to distinguishing between the relations themselves. Very few realisations exclusively signal one of the relations, and this is true for both languages. The linguistic forms that, according to the data analysis, are used as explicit markers of only one of the two relations are summarised in Box 3. Most of these forms appear in the realisation of the β action, with the exception of Spanish *con sólo* + *infinitive*, which realises the α component of the action pair.

ENGLISH	SPANISH
Generation:	***Generation:***
nominalisation (title)	*con sólo* + infinitive
Enablement:	***Enablement:***
before + NP	*antes de* + infinitive
before + -ing	*a fin de* + infinitive
in order to + infinitive	*al objeto de* + infinitive
for + *-ing*	

Box 3. Forms exclusively signalling a procedural relation

As shown in Box 3, the Generation relation has, according to the data, only one exclusive marker for each language: a nominalisation as title in English, and *con sólo + infinitive* in Spanish. The Enablement relation, in contrast, is exclusively marked by *in order to*,[42] *for + -ing*, and *before* expressions in English, and *antes de*, *a fin de*, and *al objeto de* in Spanish. However, taking into account that these syntactic markers of the relations have a very low frequency of occurrence in both languages, the picture resulting from the mapping of Generation and Enablement onto grammar is still quite blurry. In other words, the most frequent expressions of procedural relations (e.g., *to + infinitive, for + NP* in English and *para + infinitive, para + NP* in Spanish) do not distinguish between Generation and Enablement. All the linguistic forms capable of expressing both Generation and Enablement are indicated in Box 4.

ENGLISH	SPANISH
to + infinitive	*para* + NP
for + nominalisation	*para* + infinitive
by + *-ing*	*para que* + subjunctive
-ing	*-ndo*
	nominalisation (title)

Box 4. Linguistic forms that can signal either relation

The results summarised in boxes 1 through to 4 show that syntactic markers are not enough to tell Generation from Enablement. It has been shown that the most frequent expressions are ambiguous as regards the procedural relation they realise. It is, therefore, necessary to look at other aspects of the realisations of Generation and Enablement in order to find out what it is that clearly distinguishes one relation from another.

The analysis presented in this chapter, however, did not end in the realisations of each component of the action pair. The data analysis also looked at the combinations of the realisations of the action pair components. The combinations of α and β realisations, and the order in which they appear in the syntax, can bring some more light into expressing and perceiving the Generation and Enablement relations that hold between the actions in the task plan. Table 19 shows the combinations and ordering available for each relation in English and Table 20 does the same for Spanish. Their results are discussed in turn and then compared between both languages.

[42] Notice, however, that *in order to* can also be found to express Generation, as shown in chapter 6. This shows that, a bigger corpus might change the results for the less frequent realisations.

β (ED) \ ING (α)			PHRASE		CLAUSE			
			Nominal		Independent		Dependent	
			anaphoric element	-ing r/s clause	imperat.	declarat.	by + -ing	-ing clause
PHRASE	Nom.	nominalis. (title)			GEN: β^α			
	Prep.	for + nominalisat.			GEN: both ENAB: α^β	GEN: β^α ENAB: α^β		
	Adv.	before + nominalisat.			ENAB: α^β			
	Verbal		GEN: α^β	GEN:α^β				
CLAUSE	Indep.	imperative			GEN:β^α ENAB:α^β		GEN: β^α	GEN: β^α ENAB: both
		declarative			GEN: both ENAB:both	ENAB: α^β	GEN: β^α ENAB: β^α	ENAB: β^α
	Depend.	to + infinitive			GEN: both ENAB:both	GEN: both ENAB:both		
		in order to + infinitive			ENAB: α^β	ENAB: α^β		
		for + -ing			ENAB: α^β	ENAB: α^β		
		before + declarative				ENAB:both		
		before + -ing			ENAB: α^β	ENAB: β^α		

Table 19. Mapping of Generation and Enablement in English

Apart from the points indicated above, it emerges from Table 19 and Table 20 that *nominalisations as titles* only occur as the β component; this holds for both English and Spanish. A title, therefore, always expresses a goal. Differences can be found between English and Spanish as regards this realisation. While a title is only used for Generation relations in English, it can be used for Enablement as well as Generation in Spanish. For the Generation reading in Spanish, the title (realising β) must be paired with an infinitive (as realisation of α); while for the Enablement reading it is paired with the *-ndo* gerund form (realising α).

The combination of an α nominal phrase with a β verbal phrase is used with the same ordering (α^β) in both languages, though for expressing different relations: Enablement in Spanish and Generation in English.

It was found that Spanish *para + pronoun* and *para + nominalisation* always have the same ordering (β^α) for both Generation and Enablement. In contrast, *for + -ing*, which could be considered their English counterpart, expresses Enablement only through α^β ordering, although both orderings can appear for Generation.

β (ED) \ α (ING)			PHRASE	CLAUSE			
			Nominal	Independent			Dependent
			nominalisat.	imperat.	infinitive	declarat.	gerund (-ndo)
PHRASE	Nom.	nominalisation (title)			GEN: β^α		ENAB: β^α
	Prep.	para + pronoun		GEN: β^α		GEN: β^α ENAB: β^α	
		para+nominalisat.		GEN: β^α ENAB: β^α	GEN: β^α	GEN: β^α	
	Verbal		ENAB: α^β				
CLAUSE	Independ.	imperative		ENAB: α^β			GEN: β^α ENAB: β^α
		infinitive			ENAB: α^β		ENAB: β^α
		declarative		GEN: both		GEN: β^α ENAB: α^β	GEN: both ENAB: β^α
	Depend.	para + infinitive		GEN: both ENAB:both	GEN: both ENAB:both	GEN: both ENAB: both	
		para que + subj.		ENAB: α^β	ENAB:α^β	GEN: β^α	
		antes de + inf.		ENAB: α^β			
		a fin de + inf.				ENAB: α^β	
		al objeto de + inf.				ENAB: α^β	

Table 20. Mapping of Generation and Enablement in Spanish

As mentioned above, the data showed that Generation and Enablement are very frequently expressed through independent clauses in both languages. I propose that looking into the particular combinations of these independent clauses and their ordering can throw some light into the reasons for choosing one expression instead of the other. The relation holding between the actions seems to influence the combination of independent clauses realising α and β. Thus, the English analysis shows that *declarative + declarative* is used to express only Enablement, while *imperative + imperative* can realise either relation. This contrasts with the Spanish results, which show that the combinations of *imperative + imperative* and *infinitive + infinitive* express only Enablement, while the combination of *declarative + declarative* can express either relation. However, what is common to both languages in their combination of independent clauses is that the Enablement relation is always characterised by α^β ordering, whilst Generation can present any ordering. The order of the actions in each of the possible combinations of independent clauses, as well as the procedural relations they can realise, are indicated in Box 5.

	ENGLISH		SPANISH	
	Gen.	Enab.	Gen.	Enab.
infinitive + infinitive	N/A.	N/A.		✓
imperative + imperative	✓	✓		✓
declarative + declarative		✓	✓	✓

Box 5. Relations expressed through combinations of independent clauses

The results for other expressions are more enlightening. Spanish β *para que* clauses were found to express Enablement when combined with α *imperative* or *infinitive* clauses and these cases always presented α^β ordering. In contrast, β *para que* clauses were found to express

Generation only when combined with a *declarative* clause realising α, in which case the ordering found is always β^α according to the data.

Although the combinations with *by* + *-ing* (α), are also ambiguous, their ordering is always β^α, and it was shown to realise only Generation when combined with an *imperative* (as realisation of β).

Despite these combinations where ordering is important, the most frequent realisations for both relations (English *to* + *infinitive* and Spanish *para* + *infinitive*) are still totally ambiguous; all their combinations can express Generation and Enablement with both orderings. The reasons for their choice must then be sought either (i) through a more finely-grained analysis distinguishing more detailed categories (e.g., voice, tense, specific verbs) within the various independent clausal realisations, or (ii) by looking at other semantic and pragmatic factors. Such analysis is, however, beyond the scope of this thesis.

4. Conclusions

In an attempt to capture the underlying semantics of instructions, this chapter addressed an issue widely studied in multilingual text generation: the relationships between actions, and in particular Goldman's (1970) procedural relations. The aim of this chapter was, then, to identify those expressions which are commonly used mappings from Generation and Enablement procedural relations onto English and Spanish instructions and which signal these relations without ambiguity.

The framework for this particular analysis was set up in Section 1. Since the actions in instructions have a hierarchical structure and can therefore be reduced to a task plan, it has been suggested (Delin *et al.*, 1994; Scott *et al.*, 1995; Hartley and Paris, 1997) that a plan representation formalism is the most suitable means for capturing the hierarchical status of the actions instructed. The relationships between the actions can be successfully represented in such a formalism. The definitions of Generation and Enablement suggested by Delin *et al.* (1994), after revising previous definitions in the literature and adapting them to their formal representation model, were used for my analysis and are summarised as follows: in the Generation relation one of the actions is the body of a plan and the other the goal; the Enablement relation represents an action pair where the actions are either precondition and goal of a plan, or precondition of the body and body of the plan.

The results of the analysis itself were provided and discussed in section 2. Following Grote (1995), it was considered most appropriate to look at the particular realisations of the individual actions which constitute the action pair, instead of looking at the expression of procedural relations as a whole. This allowed us to show how the choice of a grammatical form for one action restrict both the expression of the other action in the action pair, and the ordering of those actions. The realisations and combinations available for Generation (both in English and Spanish) were shown in section 3.1, while section 3.2 presented the findings for the Enablement relation. The approach taken here has shown positive results for both Spanish and English. There are particular combinations in both languages that do unambiguously signal the relationship between the actions. In addition, there are combinations common to both relations where it is the ordering of the actions that signals a particular procedural relation. Despite these positive results, the picture resulting from the analysis is not a clear-cut one. The mappings of Generation and Enablement for each language (as shown in Table 19 and Table 20) present huge overlaps, not only as regards the realisation of individual actions, but also concerning the combinations available. In what follows, a summary and overall evaluation of the findings are offered.

Although there are linguistic forms (independent clauses) that can express both the ING and ED components, the remaining realisations signal only one of the components. Thus, for instance, English *-ing* and *by + -ing* clauses as well as Spanish *gerund* exclusively realise the α action, while English *to + infinitive*, *for + -ing* and *for + nominalisation* and Spanish *para* constructions are exclusive forms for realising the β component. However, with very few exceptions (generatED English and generatED Spanish) do these explicitly marked realisations together override the frequency of occurrence of independent clausal realisations in either language. In other words, the independent clauses are generally more frequently used for either action component than the range of all other available realisations accounted together.

Overall, the procedural relations themselves are not very clearly distinguished through their realisation. Although there are expressions which clearly signal only one of the relations (e.g., Enablement is exclusively signalled by English *in order to, for + -ing* and *before* expressions and by Spanish *antes de, a fin de,* and *al objeto de*), most realisations can convey either relation. When the frequency of occurrence is taken into account, the results are even more disheartening: those realisations which exclusively signal only one of the relations have an extremely low frequency of occurrence.

More enlightening, though, are the findings about the ordering of the actions, which are more characteristically signalled for each relation. While the β^α ordering is much more frequently chosen for the Generation relation, the α^β ordering is preferred for the expression of Enablement. These facts are true for both English and Spanish and indicate that the ordering of the action pair components is very important in the expression of procedural relations. Furthermore, the results are congruent with the purpose of instructions. The reasons for and effects of placing the goal (or linguistic forms realising a goal) in initial position have been studied among others by Dixon (1982), Di Eugenio (1992, 1993b) and Thompson (1985).

As shown in Table 19 and Table 20, the combinations of the realisations do not very often allow us to tell one relation from the other. To put it another way, Generation and Enablement do not offer much insight into the reasons for the choice of expression. Further research is, therefore, needed on choice of expression. Several pathways can be taken:

- A more finely-grained analysis identifying, for instance, voice and tense might be able to determine further differences among the ambiguous combinations.
- Looking into the factors distinguishing among the most frequent ways for expressing the actions could also explain the preferred realisations. Chapter 5 follows up this path, since it provides reasons for the choice of directive expressions, which are independent clauses expressing actions to be performed; chapter 5, then, complements the findings of the procedural relations analysis.
- In a follow up of Generation and Enablement studies, Scott *et al.* (1995) have suggested that, in order to choose between expressions, perspective has to be taken into account. By PERSPECTIVE they mean the focus on either the intended goal of the action, the conditions, the result, the temporal ordering of the events, the manner, or the instrument. Perspective constrains the discourse relations and therefore their expression through particular linguistic markers. Chapter 6 looks precisely at a perspective-related issue, focusing just on purpose expressions and providing reasons for the choice of a particular expression instead of others.
- An alternative approach establishing how task structure elements are mapped onto grammar has also been offered by Hartley and Paris (1997). They study software manuals in French and English for the purposes of multilingual text generation, and conclude that task structure alone is not sufficient to control the choice of grammatical

realisations available in instructions. They claim that genre influences both text structure and grammatical realisation and has a useful role to play in text generation systems.

It is, however, beyond the scope of this thesis to pursue all these lines of research. Only the second and the third ones will be partly followed within the present work. Thus, the second path is followed in chapter 5, which focuses on one of the most important functions of instructions, the directive function, and shows the factors that influence the choice of directive expressions in instructional texts. In addition, the third line of research suggested here is taken up in chapter 6, which focuses on the explicit expression of the intended goal of the actions.

Chapter Five: Factors influencing the choice of directive expressions in English and Spanish instructional texts

The overall purpose of instructions is to get the addressee to perform the actions in the task plan so that the device works, is properly cleaned or cared for, and can be used in its various functions. As a result, one of the main features of instructional texts is the use of directives. It has been shown in previous research (cf. Paris and Scott, 1994) that, although directives are generally realised by the imperative form, there are many other directive expressions available in instructional texts. The present chapter, therefore, sets out to find the reasons for the wide range of directive realisations. Drawing upon Biber's (1995) register analysis framework, it will be shown that situational features are related to linguistic forms through functional and conventional associations. These will be presented through two semantic networks (one for English and another for Spanish) showing the factors influencing the choice of expression. With these networks I aim (i) to explain the meanings conveyed by each realisation and (ii) to expose the similarities and differences between Spanish and English directives in instructional texts.

This chapter will start by explaining what a directive is, what classifications of directives have been offered in the literature, and where – within those classifications – directives in instructional texts fit. The three subsequent sections will be structured following Biber's framework for register[43] analysis.

According to Biber (1995:10), there are three major components in register studies: "description of the situation in which the register is used; description of the linguistic characteristics of the register; and analysis of the functional or conventional associations between the situational and linguistic features." He schematises these relationships as in Figure 1. The relationships are bi-directional, i.e., situational characteristics influence the choice of linguistic form, and at the same time the choice of linguistic features helps create the situation.[44] In addition, he claims that this "functional association does not entail a one-to-one mapping between form and function. Rather, the mapping across form-function-situation often comprises complex many-to-many kinds of relations" (Biber 1995:10).

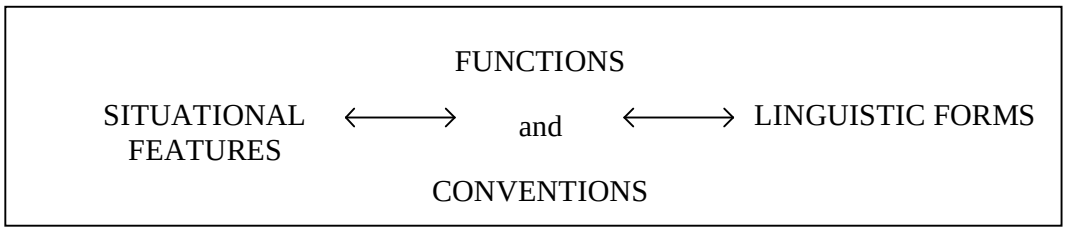

Figure 1. Components in Register Studies (from Biber, 1995:10)

Following this pattern, the results of my analysis will be presented as follows. Section 2 will focus on the linguistic forms and present the directive expressions found in the data. Section 3 will then show that situational features explain the appropriateness of the most

[43] The term *register* in Biber (1995) corresponds to what is frequently described as *genre*.

[44] A similar claim has been made by Halliday (1978:117) and Fairclough (1992:8), among others.

frequent realisations found in the data. Section 4 focuses on the associations between the situation and the form, showing the factors that influence the choice of expression and formalising them in semantic networks that can be useful tools for text generation. The results for both languages will be compared in section 4.5, establishing similarities and differences between English and Spanish.

Section 5 will address the issue of directives with negative polarity and the underlying meanings conveyed by these expressions. Finally, section 6 will discuss other issues involved in the choice of directive realisation.

1. Directives in instructions

Before proceeding to study the particular realisations of directive intention in English and Spanish instructions, it is important to specify what is meant here by "directives". This section will draw upon the literature in order to provide a starting point for a characterisation of directives in instructions.

Directives have been defined in Speech Act Theory (Austin, 1962; Searle, 1969). The notion of speech act is briefly summarised by Crystal (1992:362) as follows:

> "A communicative activity defined with reference to the intentions of a speaker while speaking and the effects achieved on a listener. In this context, the act itself is called a **locutionary act**; the intentional aspect is the act's **illocutionary force**; and the impact on the listener is the act's **perlocutionary effect**."

It is precisely the incorporation of the intentional aspect that makes the notion of speech act especially appealing here. It was mentioned in Chapter 3 that, as noted by Paris and Scott (1994), intentions play an important role in instructional texts and the directive stance or intention is one of the main features of instructions.

Directives are one of the five basic kinds of speech acts proposed by Searle (1976), and are defined as "attempts by the speaker to get the addressee to do something" (Searle, 1976:11). They can be conveyed in many different ways. According to Huddleston (1984:351), for instance, directive "is a term that covers requests, commands, prohibitions, instructions and the like." Longer lists of directive speech acts have been suggested by Searle (1976, 1979); however these lists are not particularly relevant for my purposes. I will rather adopt the classifications in Ross (1968) and Ervin-Tripp (1976), as these take into account situational features.

In order to see what is meant here by directive, two classifications are particularly interesting: both take situational factors into account when establishing their directive categories.

Ross's classification is broader in the sense that it helps to provide a characterisation of directive texts rather than individual directive expressions. Therefore, it is relevant here as a starting point for setting the general features of directives in this particular genre.

Ross (1968) distinguishes among different types of directives according to differences in situation and motivation. His classification can be summarised as follows:[45]

1. *Personal directives*, which have a clearly defined sender (or speaker) and recipient (or hearer). They can be divided into the following types:
   a) *speaker interested*: directives whose aim is that the hearer perform a particular action which is in the speaker's interest. These directives can be of three kinds:

[45] For a detailed explanation of the different categories in Ross's classification, see Ross (1968: 34-60).

i. *sanctioned* directives, such as legal claims and commands under threat, where the action is performed for fear of sanctions;
ii. *authoritative* directives, where the action is performed for respect for authority.
iii. *sympathy-conditioned* directives, such as (courteous) requests, suggestions, invitations, supplications or entreaties, where compliance depends on the kindness of the hearer, that is, on his sympathy for the speaker.

b) *hearer-interested*: directives whose aim is to produce actions which it is in the hearer's interest to perform.
c) *disinterested*: directives which are not specifically in the interest of any party.

2. *Impersonal directives* are those which have no definite sender or recipient. Therefore their motivating force does not depend on the power, authority or wisdom of any individual. There are three kinds of impersonal directives:
   a) *quasi-commands (heteronomous),* such as laws and conventions which appear as a given, existing order imposing itself upon an individual independently of any acceptance or recognition on his part;
   b) *constitutive rules based on mutual agreement (autonomous-heteronomous),* which arise from mutual agreement;
   c) *autonomous directives of morality,* whose motivating force originates from the subject's autonomous recognition of them.

The directives found in the instructional genre belong to Ross's category of personal directives and more specifically to the hearer-interested type. According to Ross (1968:38), a *personal* directive has a clearly defined sender (A) and recipient (B). In the register under study here, A represents the manufacturer and B represents the consumer. Even though these two participants are not always explicitly signalled in the data they can be retrieved from the context, therefore they are clearly identified. The aim of *hearer-interested* directives is "to produce actions which it is in B's interest to perform."[46] According to Ross, the linguistic-contextual manifestations of this directive category are advice, warning, recommendation, and direction. As it will be shown below, these are all found in the data.

Ross's classification is useful because it allows us to differentiate instructions from other directive texts (whether they are spoken or written). It even allows us to tell consumer product instructions from other instructional texts such as rules for games, for example. These would be impersonal directives of the autonomous-heteronomous kind, i.e., they have no sender and recipient as such, but are constitutive rules based on mutual agreement.

The second useful classification links contextual features to types of realisations. Although Ervin-Tripp's (1976) classification was intended for spoken English, it is instructive to apply it to written directives to see the differences with spoken ones. She suggests the following six kinds of directives, ordered approximately according to the relative power of speaker and addressee in conventional usage and the obviousness of the directive (Ervin-Tripp, 1976:29):

Need statements, such as 'I need a match.'
Imperatives, such as 'Gimme a match' and elliptical forms like 'a match.'
Imbedded imperatives, such as 'Could you gimme a match?'
Permission directives, such as 'May I have a match?'
Question directives, like 'Gotta match?'
Hints, such as 'The matches are all gone.'

[46] For further discussion on issues related to hearer-interest refer to the general characterisation of instructional texts in Chapter 3.

Not all the types in Ervin-Tripp's classification of directives occur in written instructional texts: in the corpus specified in Chapter 1 there are no *permission directives*, and *imbedded* (sic) *imperatives* are extremely rare.[47] However, it is possible to find cases of the remaining four types of directives, *imperatives*[48] being by far the most frequent, as will be shown later. Very few cases of *need statements, question directives* and *hints* were found. The differences between the forms seem to lie in the fact that different degrees of reader inference are needed in each case. *Need statements* such as (1) express a necessity and, consequently, imply an obligatory action on the part of the reader. *Question directives* such as (2) are exclusively found in the troubleshooting section, and are obvious directives in the instructional genre. *Hints* such as (3) which are much less frequent, require a greater inference chain; they are more indirect and require considerable knowledge of the situation.

(1) *The authorisation code number will need to be stored into the Mercury memory location.* [E001]

(2) *Does the paper bag need emptying or replacing?* [E005]

(3) *The use of abrasive scouring pads or cleansing powders can mark the surface.* [E007]

Taking into account the definitions and classifications provided in the literature, I will now summarise what is meant here by DIRECTIVE.

- The aim of directives in instructions is to get the reader to do (or not to do) the actions in the task plan, the task plan being a hierarchical representation of the actions for performing a task (Sacerdoti, 1977). Negative directives have been counted together with the ones with positive polarity in the frequency tables provided in section 2. The networks, however, do not reflect negative polarity.[49]
- Since the purpose of instructional texts is to get the reader to use the product "safely, efficiently and correctly" (Delin *et al.*, 1993; Paris and Scott, 1994), the directives in this genre are clearly hearer-interested (Ross, 1968). In other words, the actions directed are of benefit to the addressee.
- Following Ross (1968), the linguistic manifestation of the directives in this genre covers direction, warning, advice and recommendation.
- Indirect directives such as those classified by Ervin-Tripp as question directives and hints have generally been excluded from this study. Even though the context provides all the elements necessary for their interpretation as directives, it was thought more appropriate to leave them out from the networks and focus only on "direct" directives. Only one exception to this was made: hints such as (4) – realised by the present tense in

[47] Only one example of imbedded imperatives such as "We would ask you to ..." in each language was found in the data (in particular, in E004 and S016).

[48] Note that Ervin-Tripp's *imperative* as a kind of directive includes modalised statements as well as imperative forms. According to her, the following two examples would be classified as *imperatives*:

The bowl <u>should</u> be washed and dried after use and before storage. [E006]

Siempre <u>debe</u> cubrir los alimentos a freír. [S015]
(Always you-must cover the food for frying.)

To avoid confusion, from now on every time the term "imperative" is used it will refer to the linguistic realisation rather than the directive type, unless otherwise stated. I, therefore, **do not** use *imperative* in Ervin-Tripp's sense, but rather distinguish between imperative and modalised realisations.

[49] Polarity is an in-built feature of the grammar and it did not seem relevant to indicate it in the networks. However, in view of the discussion in section 5, a specific semantic network for negative directives might be relevant and will require further research.

the passive voice – were included in the data analysis. The reason for their inclusion (explained in section 4.1) is related to the comparison between Spanish and English: Spanish has an impersonal present tense in the passive voice which is unmistakably recognised as a directive.

(4) ... optimum performance is achieved by preheating the grill for about 1 minute. [E010]

- Expressions such as (5), (6) and (7) below, which could be considered potential directives, have been excluded from the frequency tables and the networks for the following reasons:

a) As pointed out in Tsui (1994:54), directives "prospect only compliance." Examples (5), (6) and (7) present an option or possibility to perform an action but do not expect the reader to perform it, therefore they are not directives.

b) They are of no apparent benefit to the addressee, that is, they are not hearer-interested.

(5) *If the plug does not fit your sockets, a new plug can be fitted*. [E011]

(6) *Other parts may be ordered by description and reference to Fig. 4*. [E009]

(7) *Los restos de almidón se pueden quitar mediante un algodón húmedo o con algún producto no abrasivo cuando la base esté todavía tibia.* [S017]
(The remains of starch can-be-removed by-means-of a wet cotton-wool or by a non-abrasive product when the base is still warm.)

Having made clear what is meant here by "directives", the next section will present the results of the analysis, providing the different expressions of directive found in the data.

2. Linguistic forms: directive expressions in the data

The study presented here was performed on the basis of the two corpora of instructional texts specified in Table 1 and Table 2.

All the directives in the corpora were extracted, resulting into two sets of data differentiated according to language. The English data consist of 1,087 directive expressions extracted from 10 different user manuals for household appliances, which amount to a total of 25,897 words. The Spanish data consist of 716 directive expressions extracted from 17 different sets of instructional texts, a total of 21,552 words.

Code	Item	Name	Brand	Lang.	Words
E001	Telephone	TX 194	Morphy Richards	English	2566
E002	Hairdryer		Morphy Richards	English	1035
E003	Iron	Dry, steam & spray	Morphy Richards	English	1751
E004	Coffee-maker	Cappuccino / Espresso	Morphy Richards	English	1491
E005	Vacuum cleaner	Turbopower	Hoover	English	3728
E006	Kitchen scale		Boots	English	184
E007	Pressure cooker		Prestige	English	1694
E009	Shower units	CM7, CM8	Sector	English	1566
E010	Cooker	Concept Solar Plus	Creda	English	7092
E011	Refrigerator	8214, 8215, 8221	Hotpoint	English	5701

Table 1. English corpus used for the analysis of directives

Code	Item	Name	Brand	Lang.	Words
S003	Fan heater	C800/A, 805, 806, 810	Ufesa	Spanish	409
S004	Fan heater	TC-M Monomando & bimando	Cata	Spanish	726
S006	Cooker	450-550-551	Corberó	Spanish	1751
S007	Cooker	Installation regulations	Corberó	Spanish	1495
S008	Cooker	400-3	Corberó	Spanish	914
S009	Refrigerator		Corberó	Spanish	2611
S010	Coffee maker		Fagor	Spanish	218
S011	Telephone	Forma	Telefónica	Spanish	3102
S012	Oven	HE-490/510/610/ TURBO MX/RT-800(ME)	Teka	Spanish	3711
S013	Refrigerator		Ibelsa	Spanish	779
S014	Telephone network	Ibercom	Ibercom	Spanish	1450
S015	Deep fat fryer	Mod. 25/35	Jata	Spanish	610
S016	Grill		Magefesa	Spanish	1116
S017	Steam iron	Mod. 58	Ufesa	Spanish	1013
S019	Sandwich maker	516-518	Solac	Spanish	657
S020	Iron	electrónica-automática bitensión	Solac	Spanish	561
S021	Iron (travel)	automática de viaje	Solac	Spanish	429

Table 2. Spanish corpus used for the analysis of directives

The extraction of the directives was done manually, by selecting all the tokens which prompted an action from the reader in a direct way, i.e., without the need for a long inference chain. The tokens were then divided according to the linguistic expression they contained. This section will present the various expressions of directive found in the data.

Realisations	No.	Percentage
Imperative	862	79. 30 %
Modal '*must*'	76	6. 99 %
Modal '*should*'	84	7.73 %
Appeal to reader	51	4. 69 %
Present tense	11	1. 01 %
Future tense	3	0.28 %
Totals	1087	100 %

Table 3. Directives in English

Realisations	No.	Percentage
Imperative	379	52.93 %
Infinitive	152	21.23 %
Modal '*deber*'	89	12.43%
Appeal to reader	50	6.98 %
Future tense	23	3.21 %
'*se*' Present	23	3.21 %
Totals	716	100 %

Table 4. Directives in Spanish

The imperative clause is generally thought to be the syntactic category that typically realises a directive (cf. Tsui, 1994).[50] It is therefore possible to assume that each time a directive is intended, an imperative will be used, as in (8) and (9).

(8) *Lift the handset.* [E001]

(9) *Descuelgue el microteléfono.* [S011]
(Lift the handset.)

Tables 1 and 2 show that the imperative is indeed the most frequent form used for realising directive intention in instructional texts. However, a wide range of other expressions is also used. My analysis showed the following directive realisations – in addition to the imperative – which are available in English instructions:

- **Modal:** declarative clauses with the modals *must* (as in (10)) and *should*, as in (11).
  (10) *This Instruction Book must be kept handy for reference*. [E011]
  (11) *The bowl should be washed and dried after use and before storage*. [E006]
- **Appeal to reader:** expressions such as "it is + adjective/participle + action" and "we recommend + action", which appeal to the reader to act by presenting the benefits of performing the action, as in (12).
  (12) *It is a good idea to clean the inside of your fridge after defrosting*. [E011]
- **Present tense:** Non-modalised expressions with present tense in the passive voice, as in (13).
  (13) *... optimum performance is achieved by preheating the grill for about 1 minute*. [E010]
- **Future tense:** Non-modalised expressions in the future tense, also in the passive voice, as in (14).
  (14) *The minimum height of the cooker will be set at 900mm to the top of the hob*. [E010]

In turn, the following expressions are available for Spanish directives in addition to the imperative:

- The **infinitive**,[51] as in (15).
  (15) *Limpiar con una esponja o estropajo metálico, utilizando detergentes o jabones ricos en sosa.* [S006]
  (Clean with a sponge or metallic scourer, using detergent or soda-rich soap.)
- **Modal:** declarative clauses with the modal *deber*, as in (16).
  (16) *Siempre debe cubrir los alimentos a freír*. [S015]
  (You must always cover the food when frying.)
- **Appeal to reader:** expressions which appeal to the reader to act, such as (17).
  (17) *Es conveniente limpiar periódicamente los casquetes y quemadores.* [S006]
  (It is convenient to clean frequently the caps and burners.)

[50] Halliday's (1985b:335) statement that, though a clause demanding "goods-and-services" has no real congruent form in the grammar, the imperative can by default be characterised as its "congruent" or unmarked realisation supports this general view of the imperative as "typical" realisation of directive. Notice that a demand of goods-and-services is equivalent to a directive.

[51] Spanish prescriptive grammars such as Real Academia Española (1973) have always rejected the use of the infinitive as a directive. However, in my opinion the infinitive used as directive in instruction manuals is totally grammatical and, as pointed out by Butt and Benjamin (1988:278), its use is spreading. For more details, see footnote 18 on page 109.

- The **future** tense, as in (18).
  (18) *Una vez conectado el aparato, se seleccionará con el interruptor la temperatura de aire deseada.* [S003]
  (Once the device is connected, the required temperature will be selected with the knob.)
- **'Se' present:** present tense in the passive voice with '*se*', as in (19).
  (19) *Se abre el Grill y se coloca el alimento a asar.* [S016]
  (It-is-opened the grill and it-is-placed the food to-be-cooked.)[52]

When looking at the realisations and frequency tables for Spanish and English, some differences between both languages are noticeable at first sight. Firstly, Spanish has a realisation that is not available in English: the infinitive. Secondly, in the data, English can express a directive through two modalised realisations (*must* and *should*), while Spanish has only one modalised realisation available (*deber*), despite its modal system also having a more tentative (or weak) form expressed through the conditional tense (*debería*), which is mainly used in speech for giving advice or making suggestions. Thirdly, the data show that both languages can express direction through the present tense in the passive voice. However, there is a slight difference between Spanish and English: this realisation exclusively signals directive intention in Spanish, while it can express either informative or directive intention in English. This realisation will be further discussed in section 4.1.1. Fourthly, the frequency tables (Table 3 and Table 4) show that the imperative is much more frequent in English (79.30%) than it is in Spanish (52.93%). The difference between Spanish and English imperative frequencies might be due to the existence of the infinitive as a directive – a form unavailable in English. When taken together, the Spanish imperative and infinitive total 74.16%, comparable to the English imperative level of 79.30%. Finally, the frequency of occurrence of the modalised realisations is similar in both languages when the results for the two English modals are counted together: 12.43% of modalised directives for Spanish and an overall frequency of 14.72% for English.

This section has shown the wide range of forms available for expressing directives both in English and in Spanish instructions. The following sections will set out to explain the appropriateness for instructions of certain forms which would be considered inappropriate in other contexts, as well as the reasons for the wide variety of expressions available.

3. Situational features: appropriateness of certain expressions

Directives are inherently face-threatening (cf. Brown and Levinson, 1987), since they impose a demand for behaviour on the addressee. There are different ways of lessening this threat: in speech, for instance, this is done through the use of requests, which leave the addressee the option not to act and are usually realised by modal verbs (e.g., *could, would, might*). My data, however, rarely exhibit any lessening of that "inherent" threat. As the frequency tables show, the imperative – a form frequently considered inappropriate in most contexts for politeness reasons – is by far the most frequent realisation of a directive in instructions in both languages; a high frequency of occurrence is also exhibited by modalised directives with *must* and *should* in English and *deber* in Spanish.

Butler (1988), in his study of the modalised realisations of directives in English, supports the hypothesis that politeness greatly motivates the choice of expression. He claims that, in speech, straight imperatives and modalised statements with *will* and *must* (expressing the

[52] Translation: "Open the grill and place the food for cooking."

imposition of an obligation), leave no option apart from outright refusal to comply and are therefore classified as orders, which tend to be impolite. My data, however, suggest that at least in the case of instructional texts politeness does not play such an important role. Butler's (1988) suggestion that the imperative and the modalised directives with *must* are impolite does not hold for instructional texts, where the beneficiary of the act is the addressee, as discussed in section 3.1.

This section on situational features sets out to explain the appropriateness for instructional texts of those directive expressions that are most frequently considered impolite or inappropriate in other contexts. In order to do that, we need to look at what influences the choice of expression. The following quotation from Biber (1995:10) suggests some factors influencing linguistic form:

> "Associations between form and situation can be motivated either by functional communicative requirements or by simple conventions. Functionally motivated patterns can be related to a number of situational characteristics such as the physical setting, the extent of shared context or background knowledge, the degree of interactiveness, the production circumstances, the primary purposes or communicative goals of participants, and the social relations among participants."

It will be argued in the following that syntactic expressions do not have a fixed politeness level;[53] their degree of politeness, rather, depends on contextual features such as those mentioned in Biber (1995). These features, which in addition characterise the genre of instructions, will be grouped under the following headings:

- Directives in speech and writing: to refer to issues of the production circumstances and the physical setting.
- Authority relations: dealing with shared context or background knowledge, the degree of interactiveness, and the social relations among participants.
- Task-relevance: related to the primary purposes or communicative goals of participants.

3.1. Directives in speech and writing

Directives are interpreted differently depending on the mode of communication, that is, whether they appear in speech or in writing. Directives which, for instance, are polite and taken as advice in a spoken situation would be interpreted in written instructions as strong directives, i.e., as necessary actions. Let us look at the following sentence:[54]

(20) **You must look at these photographs, they're brilliant!**

In spoken discourse between two women who are friends, for example, (20) would be interpreted as a piece of advice, and the hearer would have the option to follow it or not. However, in written instructions the same realisation would be interpreted as a necessary action and the reader would normally do as told without any questioning, as in (21).

(21) *You must read these instructions prior to using the appliance and retain them for future use.* [E010]

In addition, the imperative, which is most frequently perceived as rude in speech, can be perfectly appropriate in written instructions. Observe (22):

(22) **Fill in the form and send it to your local office.**

[53] This has also been argued by Fraser and Nolan (1981), Thomas (1983) and Turner (1996).

[54] It will be normal procedure throughout this thesis too use courier regular font to indicate constructed examples.

Between two students, (22) with no further explanation would sound rude. However, (22) might also be appropriate in a similar speech situation between two students if they both share the knowledge that tomorrow is the deadline for applying for a grant. It is then possible to suggest that the imperative is polite if, and only if, the action it expresses is of any benefit to the addressee. This has already been noted, for instance, by Downing and Locke (1992:198):

> "The more the action is likely to benefit the addressee, the more socially acceptable an imperative will be. Otherwise, an imperative is likely to sound curt or demanding in English."

The sentence in (22) would be perfectly appropriate in a written instruction manual. In the context of instructional texts, performing the actions in the task plan will be of benefit to the instructee, therefore the imperative can be used.

3.2. Authority relations

The relations between the participants are particularly important, as mentioned by Sager *et al.* (1980:27):

> "... in all directive speech acts there is an unequal relationship in that the speaker is in some way superior to, in a position to direct, order, or command the listener, no matter to what extent, tact or social practice modifies the relationship."

As mentioned in Chapter 3, in instructional texts, the writer adopts a position of authority which is acknowledged by the reader. This authority is not given by social status but by the instructor's superior knowledge about the product. The writer instructs a hypothetical reader who does not know how to use the product properly. It is precisely this instructor's superior knowledge that makes it possible to use straight directives and modalised directives with *must*, which are considered impolite in most situations (cf. Butler, 1988).

Despite Butler's (1988) hypothesis that directives classified as orders will be relatively impolite, the imperative in instructions is not considered impolite because, rather than the writer leaving no option and imposing her authority, there is no other option if the product is to be used correctly and without problems. Sager *et al.* (1980:164) claim that the recipient considers instructions as "necessary guides for the performance of his work." The directions are given for the benefit of the reader and are imposed by the circumstances, rather than by an individual's will, therefore they do not call for negative politeness strategies. In other words, they do not need any face-threat lessening strategies.

Therefore, an explanation of the appropriateness of the imperative and its high frequency in my data may be found in the fact that, despite authority relations, instructions are far from being perceived by the reader as face-threatening orders. They are rather considered as advice or guides (cf. Sager *et al.*, 1980:164).

It emerges from this that the power relations involved in written instructions do not have to do with rank or social status – as suggested, for instance, by Ervin-Tripp (1976) for spoken directives – but, rather, with the authority coming from the instructor's superior knowledge, which is acknowledged by the reader because he knows that, as discussed in section 3.1, the instructions are of benefit to the instructee.

3.3. Task-relevance

A further reason for the high frequency of imperatives can be found in Ervin-Tripp (1976:59):

> "Task-relevant and role-appropriate directives are more likely to be direct rather than imbedded or embroidered imperatives since they need to be marked less for attentional purposes."

In other words, texts with a predominantly directive function as in the case of instruction manuals, whose priority is to get the reader to perform the task properly (i.e., texts that are task-relevant), are more likely to avoid the use of embroidered and indirect imperatives such as imbedded imperatives or permission directives, since they would draw the reader's attention away from the task plan (see Dixon, 1982, 1987a, 1987b; Dixon *et al.*, 1988; and Agre and Batali, 1991, for further research on task-relevance issues).

The corpus used in the current study is unquestionably task-relevant. As often stressed by the kind of message found in instruction manual guarantees (as in (23)[55] below), it is necessary to follow the instructions provided in the manual. The instructions accompanying any product are the key to making the most out of it, and therefore it is important that the actions be clearly stated. This is best achieved by using a direct style that draws the reader's attention to the actions in the task plan, rather than by using the sophisticated expressions whose main aim is to lessen the "threat" posed by directives.

(23) *To qualify for the 2 year guarantee the appliance must have been used according to the manufacturer's instructions.* [E004]

To sum up this section, the comparison of directives in speech and writing shows that syntactic expressions do not have a fixed politeness level. A similar claim has been made by Fraser and Nolan (1981:96):

> "No sentence is inherently polite or impolite. We often take certain expressions to be impolite, but it is not the expression themselves but the conditions under which they are used that determines the judgement of politeness."

In the particular case of instructional texts, the degree of politeness and appropriateness of certain realisations (e.g., the imperative), rather depends on content and context features such as authority relations, benefit to addressee and task-relevance.

If genre is defined by what Hasan (1978: 231) calls its "contextual configuration", that is, the combination of field, tenor and mode, the features discussed in this section can be said to be characteristic of the genre of instructions for the following reasons:

- The issues referring to the production circumstances and the physical setting discussed in section 3.1 are related to mode.
- Section 3.2 dealt with shared context or background knowledge, the degree of interactiveness, and the social relations among participants, all of which can be ascribed to the tenor.
- Finally, the issues discussed in section 3.3, that is, the primary purposes or communicative goals of the participants (the task plan), correspond to field.

Having discussed the features that can be considered characteristic of the genre of instructions, the following section will focus on the factors influencing the choice between the wide range of directive expressions available for instructional texts in Spanish and English.

[55] Note that example (23) is not a token of directive.

4. Factors influencing the choice of directive expression. The networks

It will be argued in this section that the wide range of directive realisations that are found in instructional texts is due to the fact that each expression conveys different pragmatic or semantic meanings. Or rather, to use Biber's terminology, the expressions under study here have different functional features (i.e., they perform different discourse tasks and reflect aspects of the communicative situation and production circumstances). This endorses, once more, the close relationship between context and linguistic form. These relationships are represented more clearly in the two semantic networks for choice of directives provided as Figure 2 and Figure 3, corresponding to English and Spanish respectively.

Drawing upon Halliday's Systemic Functional Grammar, the networks present the factors influencing the choice of expression as systems of options which eventually lead to different linguistic realisations. It is important to note that these networks are specially devised as a result of the analysis of a specific genre: instructional texts. This means that the networks for directive choices in other genres will probably be different to the ones presented here, since other contextual features will come into play. My purpose is far from providing a network for directive choices in general; rather, the networks provided here are just for Spanish and English instructional texts of the kind described in Chapter 1.

These networks evolve around the systems of ACTION RELEVANCE, AGENCY, INFORMATION and THEME. These systems, which appear in both languages, represent the following factors that influence the choice of directive expression in instructional texts.

- ACTION-RELEVANCE. This factor, which is related to the situational features, and in particular to the task plan, refers to the fact that not all the actions in the task plan are equally important; some actions are strictly necessary to get the device to work, while others simply help to achieve better performance.
- AGENCY refers to the participants in the act of communication: the relationships between them, how the speaker addresses the reader, etc.
- INFORMATION and THEME, unlike the previous two factors, are not directly related to the situational features, but rather refer to the way in which the speaker organises her message.

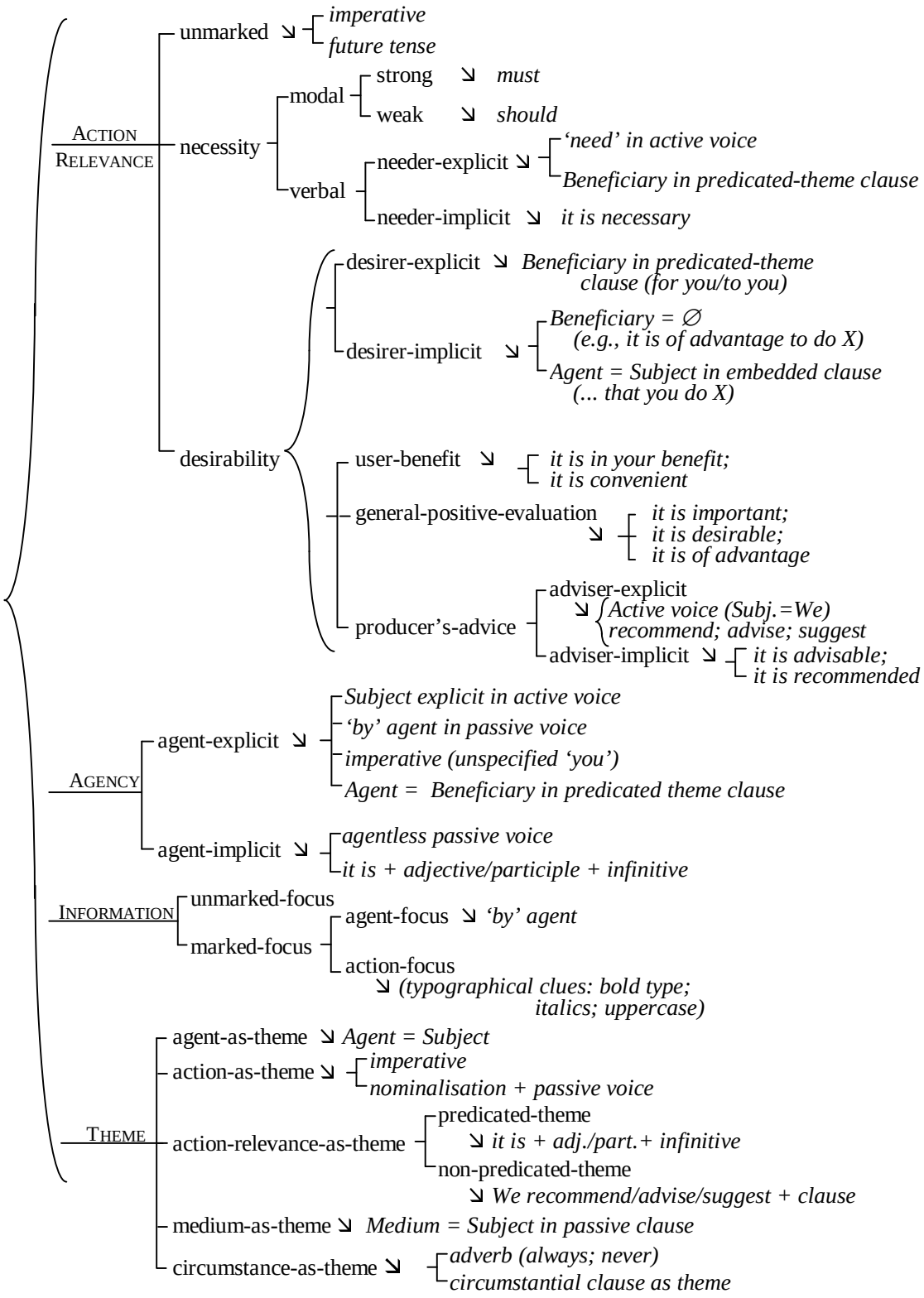

Figure 2. Network for directive realisations in English

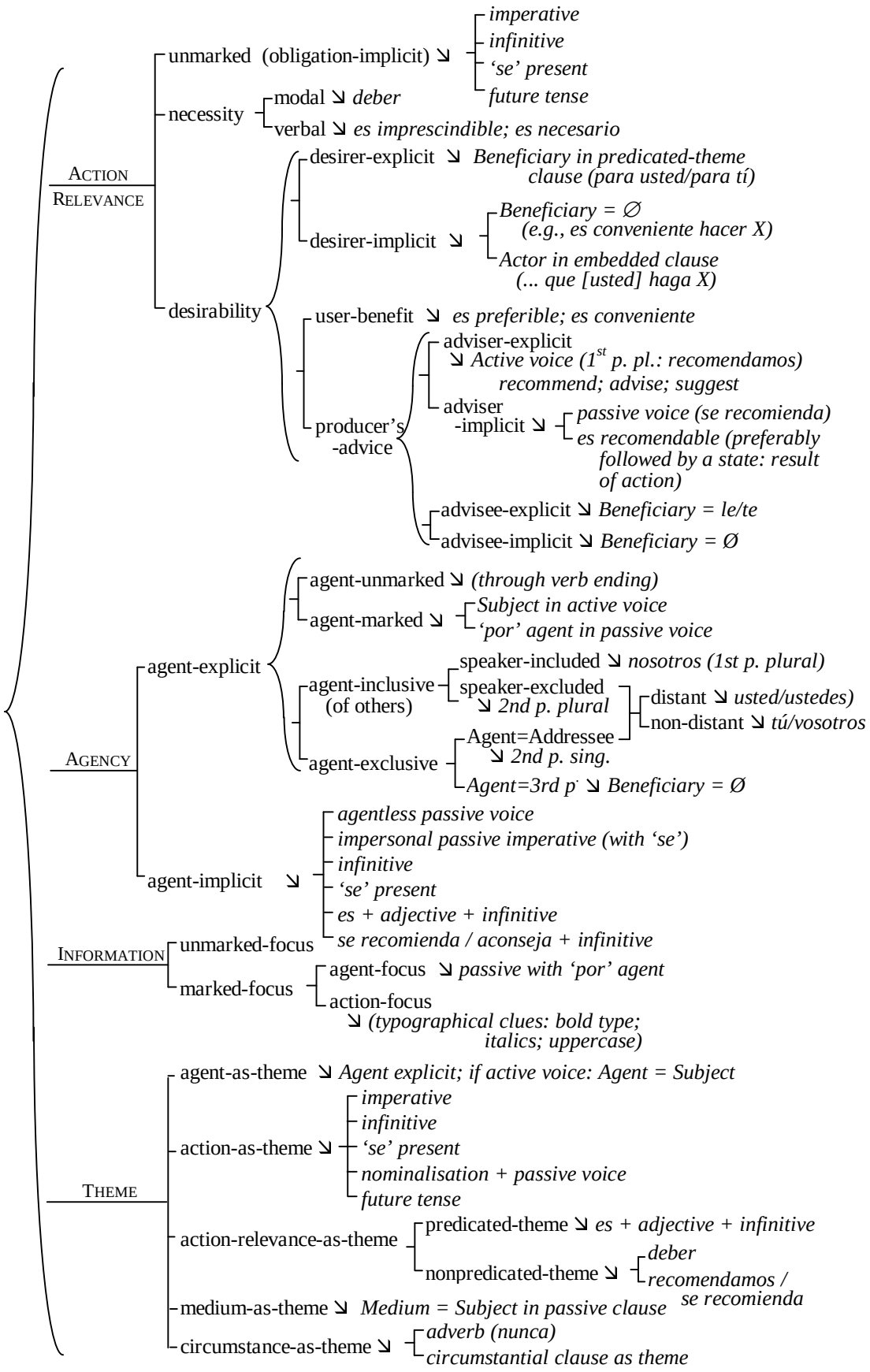
ACTION RELEVANCE
unmarked (obligation-implicit) ↘
imperative
infinitive
'se' present
future tense
necessity
modal ↘ deber
verbal ↘ es imprescindible; es necesario
desirability
desirer-explicit ↘ Beneficiary in predicated-theme clause (para usted/para tí)
desirer-implicit ↘
Beneficiary = ∅ (e.g., es conveniente hacer X)
Actor in embedded clause (... que [usted] haga X)
user-benefit ↘ es preferible; es conveniente
producer's -advice
adviser-explicit ↘ Active voice (1st p. pl.: recomendamos) recommend; advise; suggest
adviser -implicit ↘
passive voice (se recomienda)
es recomendable (preferably followed by a state: result of action)
advisee-explicit ↘ Beneficiary = le/te
advisee-implicit ↘ Beneficiary = Ø
AGENCY
agent-explicit
agent-unmarked ↘ (through verb ending)
agent-marked ↘
Subject in active voice
'por' agent in passive voice
agent-inclusive (of others)
speaker-included ↘ nosotros (1st p. plural)
speaker-excluded ↘ 2nd p. plural
distant ↘ usted/ustedes)
non-distant ↘ tú/vosotros
agent-exclusive
Agent=Addressee ↘ 2nd p. sing.
Agent=3rd p. ↘ Beneficiary = Ø
agent-implicit ↘
agentless passive voice
impersonal passive imperative (with 'se')
infinitive
'se' present
es + adjective + infinitive
se recomienda / aconseja + infinitive
INFORMATION
unmarked-focus
marked-focus
agent-focus ↘ passive with 'por' agent
action-focus ↘ (typographical clues: bold type; italics; uppercase)
THEME
agent-as-theme ↘ Agent explicit; if active voice: Agent = Subject
action-as-theme ↘
imperative
infinitive
'se' present
nominalisation + passive voice
future tense
action-relevance-as-theme
predicated-theme ↘ es + adjective + infinitive
nonpredicated-theme ↘
deber
recomendamos / se recomienda
medium-as-theme ↘ Medium = Subject in passive clause
circumstance-as-theme ↘
adverb (nunca)
circumstantial clause as theme

Figure 3. Network for directive realisations in Spanish

In what follows, the networks will serve as organising elements for a more comprehensive explanation of the factors influencing the choice of directive expression in English and in Spanish. The various options in each system will be explained in more detail, offering as well the linguistic realisations available for each option. In this way, I hope to disclose the underlying meanings conveyed by each expression, which will enable to differentiate amongst them. The comparison of the networks will expose the similarities and differences between English and Spanish directives. Finally, the comparison will also offer insights into the kind of differences that exist between both languages in this particular genre, showing when they are semantic or pragmatic and when they are simply grammatical differences.

Before proceeding to the explanation of the networks, however, it is important to note the following:

1. In regards to notation,
    - Lowercase plain font represents both the factors which constrain directive expression, and the choices made by the speaker in the expression. These are called FEATURES in systemics.
    - These features are organised into sets (called a SYSTEMS) of exclusive options by the square '[' bracketing. Only one feature from each system can be selected.
    - Some systems are explicitly named, using upper case. This is for convenience of reference only.
    - The curly "{" brackets show simultaneous choices, i.e., a choice has to be made from each bracketed system.
    - The linguistic realisations of each feature are represented in italics and preceded by a slanted arrow.
    - Some realisations are also organised as systems, showing that they are alternative realisations of the feature. This is not standard systemic notation, but it simplifies an otherwise complex diagram.
    - In the Spanish network, there is a reversed square bracket, "]", which shows that the system on the right becomes available if all features on the left of the bracket are selected.
2. The four labelled systems – which show links with Halliday's (1985) ideational, interpersonal and textual functions – are simultaneous, i.e., they do not have a hierarchical order. The choices are made at the same time.
3. While presented as simultaneous, there is some interdependency between the systems. This interrelation is clearly visible in the Agency system, where the choice of agent explicitness influences the decisions of Information and Theme. However, the interdependency of the systems is not shown in the networks for reasons of simplicity.

It is difficult to explain what makes the writer choose one option instead of the others. For some systems, the choice is determined by the situational features (e.g., Action-Relevance). Other choices are less clear, perhaps relating to the textual context of the instruction, or stylistic issues. A further explanation is provided by the idea that the relationship between form and function is bi-directional (cf. Biber 1995:10), which on the other hand leads to a conundrum: the situational characteristics influence the choice of linguistic form while the choice of linguistic features in turn helps create the situation. Taking this into account it might be argued that my networks present dimensions of variation rather than factors influencing choice.

The networks specify five different participant roles that should be taken into account when determining the form of a directive, though not all of them are present in both networks. The roles I have identified in my data analysis are the following:

a) *Agent*: the person expected to perform the action.
b) *Needer*: the person needing to do the action.
c) *Desirer*: the person for whom it is desirable that the action is performed.
d) *Advisee*: the person advised to do the action. The data showed that this role is relevant for the Spanish choice of directive, but not for English.
e) *Adviser*: the person advising to do the action, i.e., the writer on behalf of the manufacturing company.

These five different roles refer to only two participants: the writer / manufacturer, and the user. The role of adviser is held by the writer; while the remaining roles are generally conflated in the same person: the user, who is usually the reader. It has to be noted that the user is not always the agent, in which case it has to be specified. For a more detailed explanation of agency specification, refer to section 4.2 below.

4.1. Action-Relevance

One of the factors that clearly influences the choice of directive expression is what I will call Action-Relevance. This factor, which is related to the situational features and in particular to the task plan, refers to the fact that not all the actions in the task plan are equally important; some actions are strictly necessary to get the device to work, while others simply help to achieve better performance.

I will, therefore, argue that the actions in the task plan have different relevance for the goal of getting the device to work and can be represented according to a cline (Figure 4) that includes the categories of necessity and desirability in their positive and negative polarities, thus rendering the following four types of action: necessary actions, desirable actions, undesirable actions and prohibited actions.

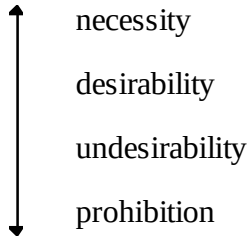

Figure 4. Necessity cline for actions

The top end of the cline in Figure 4 corresponds to those actions with the highest relevance in the task plan (namely, necessary actions). These actions are strictly necessary to achieve the purpose stated beforehand and therefore present no options at all. One clear example of necessary action is 'connecting the device to the mains supply'; without this action the device would not work. The second category in Figure 4 represents those actions in the task plan which are not totally necessary, but present some advantages for the performance of the task and are therefore desirable. The bottom part of the cline, corresponding to actions with negative polarity, will be dealt with in section 6.

In what follows, the network options referring to necessity and desirability will be explained in detail.

4.1.1. Unmarked obligation

It was mentioned above that the obligation to do the actions is imposed by the circumstance of trying to get the device to work. It is therefore possible to assume that, by default, all the actions are necessary or obligatory, unless otherwise stated. This default obligatoriness, which I will refer to as unmarked obligation, is realised in both languages by the imperative forms (as in (24) and (25)) and the future tense (as in (26) and (27)), as well as by the Spanish infinitive (as in (28)), and *se* passive present (as in (29)).

(24) *Lift the handset*. [E001]

(25) *Descuelgue* el microteléfono. [S011]
(Lift the handset.)

(26) *The minimum height of the cooker will be set at 900mm to the top of the hob*. [E010]

(27) *Una vez conectado el aparato, se seleccionará con el interruptor la temperatura de aire deseada.* [S003]
(Once the device is connected, the required temperature will be selected with the knob.)

(28) *Limpiar con una esponja o estropajo metálico, utilizando detergentes o jabones ricos en sosa*. [S006]
(Clean with a sponge or metallic scourer, using detergent or soda-rich soap.)

(29) *Se abre el Grill y se coloca el alimento a asar*. [S016]
(It-is-opened the grill and it-is-placed the food to cook.)[56]

With regards to present tense clauses in the passive voice, it is worth pointing out some differences between Spanish and English. The English corpus exhibits 11 cases of present tense in the passive voice (0.98% of the total amount of directives). However, the passive present as directive is only possible in English instructions with an underspecified verb, such as *do* or *achieve*; and this underspecified verb is followed by an *-ing* form introduced by *by*, that specifies the way the action is to be performed, as in (30).

(30) *... optimum performance is achieved by preheating the grill for about 1 minute*. [E010]

The differences between the Spanish and the English passive present tense used as directive in instructions can be summarised as follows:

The Spanish impersonal passive present can be used on its own (as in (29) above), while English does not allow this use.

The Spanish realisation is clearly interpreted as having directive intention (as in (29)), while the English one (as in (30)) seems to have informative intention and, therefore, requires an inference process on the part of the reader, if it is to be used as a directive.

In Spanish the impersonal passive present tense with '*se*' can also have informative intention, but it can be distinguished from the directive use through the order of the clause elements as follows:

a) Verb (passive) + grammatical subject (Goal) = directive function.

b) Grammatical subject (Goal) + Verb (passive) = informative function.

[56] Translation: "Open the grill and place the food for cooking."

4.1.2. Necessity

Despite the default urgency of the actions in the task plan, necessity marking implies a stronger requirement for an action which might otherwise be overlooked by the reader. As the networks in Figure 2 and Figure 3 show, once necessity marking is chosen, a further option is offered concerning the way to signal the necessity of the actions: through a modal or a verbal realisation. Here some differences between Spanish and English are revealed.

The English data exhibit two modal forms: the strong *must* and the weak *should*; while the Spanish data present only one form (*deber*), despite its modal system also having a more tentative (or weak) form expressed through the conditional tense (*debería*) and mainly used in speech for giving advice.

A further comment about the role of politeness, and hesitancy in particular, has to be made here.[57] Butler (1988) suggests that, for spoken English, politeness plays a crucial role in the choice of modalised directive expressions. My English data exhibit the following contradictory results as regards modals:

a) Though there is a very slight difference in the occurrence of modals *should* (7.48%) and *must* (6.77%), the more tentative and therefore polite form (i.e., *should*) seems to be preferred.

b) The results of the other two modals, however, show that the less polite one (*can*), accounting for 1.96% of directives, is preferred to the more polite *may*, which accounts for only 1.25%.[58]

These differences of occurrence are so little that they cannot be considered significant. However, they do further support the claim that hesitancy does not play such an important role in the choice of modalised directives in English written instructions as it does in spoken language.

The results of my analysis show that the choice of modalised expressions is linked to other kinds of optionality unrelated to politeness. These conclusions are further supported by the fact that in Spanish only two modals appear (*poder* and *deber*, respectively expressing potentiality or optionality and obligation). The more tentative forms of those modals (*podría* and *debería*), which appear with relative frequency in speech, do not occur at all in my data.

All things considered, it seems more plausible to suggest that action relevance, rather than hesitancy or politeness, is what determines the choice of modal in this specific genre. In a systemic network, the system of hesitancy would therefore appear once the system of action relevance has been chosen.

Verbal realisations in both languages include expressions of appeal to the reader such as *need*, *it is necessary* for English (as in (31)); and *es necesario* 'it is necessary', *es imprescindible* 'it is absolutely necessary' (as in (32)), and much less frequently *hay que* 'one has to' for Spanish. The difference between the English and the Spanish verbal choice of necessity lies in the fact that English offers a further option: either specifying the needer or not specifying it. In Spanish this option is not relevant, since the data only shows needer-implicit cases.

---

[57] To show the role of politeness in the choice of modalised realisations possibility modals (which have been excluded from the account of directives) will have to be mentioned here.

[58] It is, however, possible that these results are influenced by the fact that, in instructional texts, these modals express possibility rather than permission. Only when expressing permission do *can* and *may* stand in a politeness cline. When *can* expresses possibility only, politeness is not relevant (cf. Quirk *et al*., 1985).

(31) *IMPORTANT - For access to the mains terminal block, for supply cable connection, it is necessary to remove the mains terminal cover, located at the lower right-hand side of the rear panel*. [E010]

(32) *Es imprescindible la presentación del recibo o factura de compra para que esta garantía sea válida*. [S008]
(It is strictly necessary to produce the purchase receipt in order for this guarantee to be valid.)

Finally, since the roles of the needer and the agent are conflated in the same person (the reader / user), the specification or not of the needer is related to the Agency system, which offers an option between agent-explicit and agent-implicit. Once more, this shows how the various systems are interrelated.

4.1.3. Desirability

The third choice in the Action Relevance system, desirability, refers to those actions in the task plan which are not totally necessary, but present some advantages for the performance of the task and are therefore desirable. Desirable actions have the following effects: on the one hand, the action is presented as optional, leaving its performance up to the reader; on the other hand, though desirable actions do not claim a strong obligation, they are presented as positive and advantageous actions for the correct performance of the task. Consequently, a positive response from the reader is most likely to occur, in view of the advantages that performing the action offers (whether these benefits are specified or not).

The networks show that both English and Spanish offer similar options for marking desirability: there is a simultaneous choice as regards explicitness of desirer and benefit. As in the case of necessity, the specification of the desirer is also related to agency; that is, agent and desirer are conflated in the same participant.

The linguistic realisations of desirability choices are always expressions of appeal to the reader, as in (33) and (34).

(33) *Es conveniente limpiar periódicamente los casquetes y quemadores*. [S006]
(It is convenient to clean frequently the caps and burners.)

(34) *It is a good idea to clean the inside of your fridge after defrosting*. [E011]

As for the specification of the benefits of performing the action, it must be taken into account that the actions marked as desirable are always beneficial, even when this benefit is not made explicit, as in (34) above.

As shown in the networks, when expressing a desirable action two sets of options have to be made. The first one concerns the specification or not of the desirer. The second set of options presents the actions either as explicitly beneficial to the user, as a piece of advice from the manufacturer, or simply as positive in general. This last option, however, was found to be available only for English; therefore, it has not been included in the Spanish network.

When we want to show that the action is beneficial to the user in an explicit way,[59] we can choose between *it is in your interest* and *it is convenient* for English, and *es preferible* 'it is preferable' and *es conveniente* 'it is convenient' for Spanish.

On the contrary, the speaker can decide to explicitly signal that the actions have to be seen as producer's advice. This second option is realised by expressions of appeal to the reader containing (i) verbs such as *advise, recommend* for English and *aconsejar* 'advise',

[59] Remember that, as explained in section 3.2 above and in chapter 3, the actions directed in instructional texts are of benefit to the user.

recomendar 'recommend' for Spanish, or (ii) any of the adjectives derived from them. When presenting the action as producer's advice, a further option is offered: whether to specify the adviser or not to specify it. Once again, it is clear from the context who the adviser is (namely, the writer or the company she represents) and it is not necessary to specify it. However, the options concerning adviser specification have certain effects on the relationship between the participants, as explained in the following.

The option adviser-implicit presents a totally impersonal stance; there is no link between the participants, since neither of them is specified. Notice that when this option is chosen, it is unlikely that the addressee will be specified since its specification would result in a more elaborated sentence which counteracts task relevance (cf. Ervin-Tripp, 1976:59; and section 3.3 above). In other words, it would unnecessarily complicate the primary purpose of instructions: getting the actions in the task plan done.

In general, the option adviser-implicit provides a cold, impartial and objective effect, which is perhaps more professional. This is achieved by the use of adjectival / participial expressions in both languages (such as English *it is advisable* and Spanish *es recomendable* 'it is recommended', for instance), as well as by the Spanish *se* passive with an advice verb (e.g., *se aconseja* 'it is advised'). An English example where the adviser is not specified follows:

(35) *It is advisable to remove all cord from storage clips.* [E005]

On the contrary, specifying the adviser (as in (36)) personalises the manufacturing company, providing it with human characteristics. This option establishes, so to speak, a "friendly" relationship with the addressee and might be chosen in many cases as an element of house-style for image-marketing purposes.

(36) *For best results we recommend the use of good quality saucepans with smooth flat bases.* [E010]

So far, the Spanish and English networks are similar. The Spanish network, however, offers a further choice within the producer's advice option (namely, specifying or not the advisee) which is simultaneous to the adviser-explicitness options. The Spanish advisee-explicit option, then, further strengthens the friendly relationship established by the manufacturer, since it directly addresses the agent. Example (37) illustrates this option.

(37) *Le recomendamos lea atentamente este manual de usuario antes de utilizar su teléfono FORMA- I.* [S011]
(We recommend you to carefully read this user manual before using your phone Forma-I.)

The last difference between English and Spanish as regards desirability signalling lies in the option of evaluating the action in a generally positive way. According to the data this option is only available for English, and would be realised by expressions of appeal to the reader such as *it is important, it is a good idea, it is desirable, it is of advantage, it is best to* and *it is as well to.*

4.1.4. The necessity cline

Taking all this into account, the linguistic forms realising the different degrees of necessity (or Action-Relevance) of the actions in the task plan can be represented along a cline as shown in Figure 5. This necessity cline presents some similarities to the one suggested by Halliday (1994:357) for modulation of obligation type. For instance, if divided into two parts, each part in my necessity cline corresponds to a different kind of Value (High and Median).

Although the necessity cline in Figure 5 represents only those expressions with positive polarity, expressions with negative polarity realising undesirable and prohibited actions do

have a place in this continuum. Further research, however, is needed to find out how negative directives fit in this cline; in this regard, the works of Di Eugenio (1993a; 1993b), and Vander Linden and Di Eugenio (1996a, 1996b) offer an interesting path into the pragmatic factors influencing the choice of negative directives and 'preventative expressions' (Vander Linden and Di Eugenio, 1996a) in general. Section 5 in this chapter will introduce the work by Vander Linden and Di Eugenio on negative directives in English, and will extend this study to Spanish.

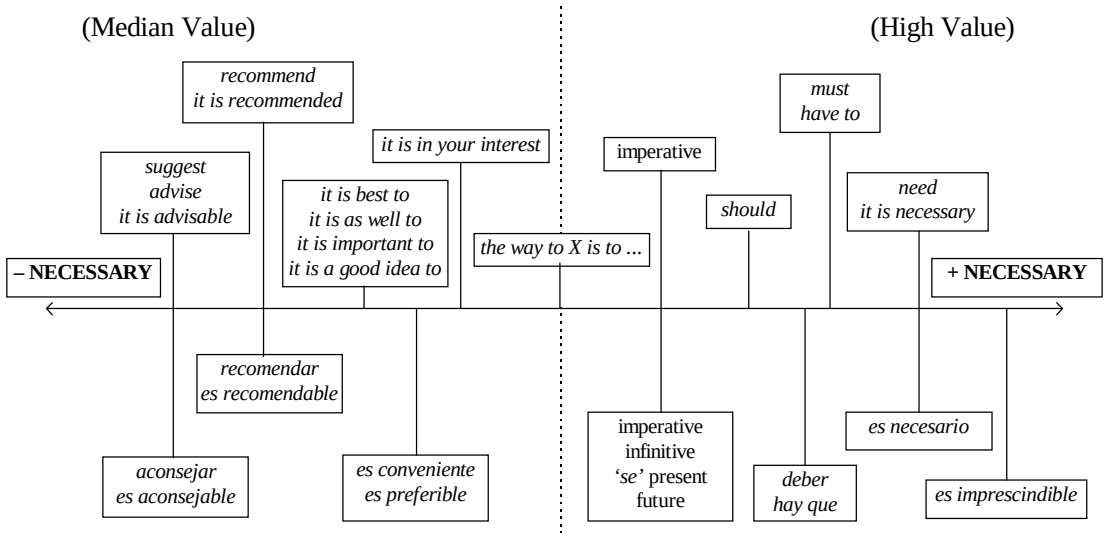

Figure 5. Necessity cline for directive realisations

The necessity cline can be a useful tool for translation and text-generation, but the fact that there are several linguistic expressions in the same box shows that the necessity cline is not self-exhaustive. If we look at the constructed examples (38) and (39) for English, and (40) and (41) for Spanish, we can see that the necessity cline does not distinguish between the expressions in those examples.

(38) **`You must connect the device to the mains`**.

(39) **`The device must be connected to the mains (by you)`**.

(40) **`Conecte el aparato a la red`**.
(Connect [you-formal] the device to the mains.)

(41) **`Conectar el aparato a la red`**.
(To-connect the device to the mains.)

The difference between each pair of examples lies in the specification or absence of the agent. In addition, the two English examples show differences as regards the presentation of the information within the clause. It can then be said that further factors, besides Action-Relevance, influence the choice of directive expression. These additional factors are indicated in the networks as the systems of Agency, and Theme and Information.

4.2. Agency

The Agency system is the one that best shows the connections between the different systems in the network. It was mentioned above that the networks exhibit five participant roles: adviser, advisee, needer, desirer and agent. The role of adviser is held by the writer, who represents the manufacturing company, while the other three roles (advisee, needer, desirer and agent) are by default conflated in only one person (the reader / user). Since the three roles

are realised by the same person, every time a choice about advisee, needer or desirer has to be made, it has to be done in combination with the choices in the Agency system. At the same time, some of the choices in the Agency system are related to the choices in the Theme and Information systems.

It is clear then that the roles of advisee, needer and desirer always correspond, in the case of instructions to the user, as specified in chapter 3. The user is also, by default, the agent of the actions in the directives. However, there are some cases where the actions have to be performed by another person. In these cases, the agent has to be specified, otherwise the reader himself would perform the actions, since he is the default agent. It could be argued that, if the reader is not the intended agent, then the expression does not have a directive function. These cases, however, have been considered as directives here because their aim is to get the reader to do something about it: he has to get the specified agent to do the action, rather than performing it himself.

Since it is clear through the situation who the agent is (the user / reader), it is possible to leave this role unspecified. Here some differences between Spanish and English (mainly due to their respective grammatical systems) can be found.

For English, the only realisations of implicit agency are the imperative forms and the agentless passive voice. In Spanish, however, the imperative forms specify the agent through the morphological ending. The only ways for realising implicit agency in Spanish are then the agentless passive forms and the infinitive. Butt and Benjamin (1994:278) acknowledge this use of the infinitive as "a brief, impersonal imperative, useful for notices and instructions to the reader" and remark that, despite being stylistically controversial,[60] the form is spreading.

When comparing the networks for these two languages, it shows that the Spanish language is much more complex with regard to agency, and in particular as regards the option of explicit agent. The Spanish network is explained in the following.

When it is chosen to make the agent explicit in Spanish, simultaneous choices are offered:

a) whether to identify the agent lexically. It has already been mentioned that the agent is morphologically explicit in the imperative forms; and
b) whether the agent is exclusive or inclusive of others.

When there is only one agent (agent-exclusive), this can be either the default agent (the reader), or a third person, as specified above. When the reader is signalled as exclusive agent, further simultaneous options are offered:

a) the kind of explicit marking, in other words, whether the agent is lexically marked or only morphologically marked;

---

[60] According to Butt and Benjamin (1994:278), "some grammarians reject the use of the infinitive for affirmative commands and admit only negative forms like *No fumar*, *No tocar* ... Such negative forms are nowadays seen everywhere ... although they seem to be a recent development; one used to say ***Prohibido*** *fumar*, etc."

Emilio Lorenzo (1971) also condemns the use of the infinitive (*venir* 'to-come') as a substitute for the imperative plural (*venid* 'come-you-plural'); it must be pointed out, however, that the cases instructional texts exhibit do not belong to this class. Despite Lorenzo's view, it is interesting to notice that when discussing the use of the future as command he mentions – without further comment – one case that I believe can shed some light into the reasons underlying the use of the infinitive as imperative: "el enunciado de los diez mandamientos se hace lo mismo en futuro que en infinitivo" ('the ten commandments can be quoted both in future and in infinitive'). This use of the infinitive as command might have started as the elision of an element of the sentence containing either the verb *ser*, or the verbal forms *hay que* or *tener que*.

b) the way the reader is addressed. This new system, termed 'distance', distinguishes between formal or distant *usted*, and informal or non-distant *tú*. It must be pointed out, however, that my data do not exhibit any of the non-distant forms.

The latter factor was only relevant for Spanish directives, and when the audience is specified. Spanish imperative and modalised realisations in the active voice choose the distant address (*usted*) instead of the informal *tú*. The distant or formal address is generally preferred because it establishes a respectful stance towards the reader. The informal address might, however, appear in the instructions accompanying those products that seek to establish a closer relationship with the user (e.g., haircare products such as shampoos or holding sprays).

(42) *Conectaremos en primer lugar el fundidor a la red.* [S022]
(We-shall-connect firstly the melter to the mains.)

Inclusive agency, as in (42), can be due to two different reasons (or, from another point of view, can have two different effects) depending on the option chosen. Inclusive agency can express either (i) impersonality – in the sense that it does not address the reader individually, but as a member of a 'group' as it were, the system of distance coming into play with this option – or (ii) a friendly working-together stance on the part of the speaker, which could also be interpreted negatively as a patronising style. This latter example was found only in appliances to be used exclusively by women. The use of the inclusive 1st person plural verb ending in these examples could be interpreted as implying that the woman always needs support – but a sociolinguistic study of this kind is beyond the scope of this thesis.

The choices related to Agency can be used (i) for providing an impersonal or detached stance by avoiding the agent (as in constructed (43) as well as (39) and (41) above), and (ii) for drawing attention to the agent, as in the constructed example (44), by using a '*by*' agent.

(43) **It is necessary to connect the device to the mains.**

(44) **The installation must be carried out by a technician**.

4.3. Information and Theme

The options in these two systems reflect features that serve as discourse markers. Unlike the previous systems, Information and Theme are not directly related to the situational features, but rather reflect the way the speaker organises her message.

It is a well known fact that one of the functions of grammar is to arrange the information of utterances. As Bell (1991:119) puts it, this is done by "manipulating the clause-making resources of the grammar to highlight or play down particular pieces of the information presented in the text." This issue has been widely studied by different trends in linguistics such as the Prague School and Functional Sentence Perspective, Halliday's Systemic Functional Grammar, and S.C. Dik's Functional Grammar.

In Systemic Functional Grammar the arranging of information is done through the textual Systems, which involve two particular systems: (i) THEME, which is concerned with the organisation of the message from the speaker's point of view into Theme and Rheme; and (ii) INFORMATION, which depends on what the speaker thinks the addressee has to pay attention to (i.e., it is listener-oriented), and distributes the information into Given and New as well as placing focus on particular pieces of information. Intonation is one way of assigning focus which is not available for written texts. These, then, use other focus-marking strategies such as the order of constituents, which is even more important for Spanish than it is for English (see Martínez Caro (1996) for a detailed study of the order of constituents and pragmatic functions following S.C. Dik's approach). An obvious example of how the structure of the clause is manipulated to allow the focus to be shifted between the various parts of the message is

constituted by the passive, which allows us to focus on and give prominence to the Goal of the Process rather than the Actor.

Information and Theme, then, refer to two informational roles of the clause (focus and theme), which arrange the information around the two prominent positions in the clause: initial and final or end-focus.

Within the Information system, focus allows the writer to give informational prominence to certain elements. The networks show that the writer has to choose between unmarked or marked focus. In an unmarked selection, the reader's attention is not caught in any way by the order in which the clause is organised (Bell, 1991:153). The unmarked realisation would then be the normal ordering of a transitive clause, where the agent is the subject. Marked information prominence can be given to elements such as the agent, by placing it in end-focus position or the action itself, by using typographical clues. Example (45) shows a directive with agent-focus, and (46) illustrates action-focus.

(45) *All repairs of electrical appliances should be carried out by skilled personnel as improper repairs can be dangerous to the user.* [E004]

(46) *En caso contrario, **deslice el selector al lado opuesto**, introduciendo en la ranura una punta de tijera o utensilio similar, y aparecerá el otro voltaje, que corresponderá a la tensión deseada*. [S020]
(In the other case, slide the selector to the opposite side, introducing in the slot the tip of some scissors or a similar tool, and it-will-appear the other voltage, which will correspond to the tension desired.)

Theme allows the instructor to draw attention – as point of departure – to different parts of the message. The data shows that the writer can choose any of the three main components of the clause in its experiential function as point of departure: the Process, the Medium and the Agent (cf. Halliday, 1994). The Process represents the action in the task plan (and is referred to in the networks as 'action'). Halliday (1994:163) describes the Medium as follows:

> "Every process has associated with it one participant that is the key figure in that process; this is the one through which the process is actualized, and without which there would be no process at all. Let us call this element the MEDIUM, since it is the entity through which the process comes into existence."

In addition to the Medium, there may be another participant – the Agent – which functions as an external cause. The following example taken from Halliday illustrates these three components:

Mary	*sailed*	*the boat*
Agent	Process	Medium
Actor	Process	Goal

In a material process – the kind of process most frequently found in instructions – the Medium is equivalent to Actor in an intransitive clause and Goal in a transitive clause.

By using the different options in the THEME system, attention can be drawn to the following parts of the message by placing them in thematic (i.e., initial) position: the agent, the device, the relevance of the action, the action itself, or some special circumstance. The network choices selected when the writer tries to draw attention to any of these elements as point of departure would respectively be:

- Agent as Theme, as in (47).

(47) *You must read these instructions prior to using the appliance*. [E010]

- Medium as Theme, as in (48).
  (48) *The wall should now be drilled and plugged and the screw inserted.* [E009]
- Action Relevance as Theme, as in (49).
  (49) *It is advisable to clean the decorative trims regularly to prevent any build up of soiling.* [E010]
- Action as Theme, as in (50).
  (50) *La limpieza debe realizarse con una esponja o estropajo que no raye utilizando agua jabonosa o algún detergente suave.* [S012]
  (The cleaning must be carried out with a sponge or non-scratch scourer using soapy water or a soft detergent.)
- Circumstance as Theme, as in (51).
  (51) *When filling your iron with tap water always use your beaker*. [E003]

It has to be noted that some states of agent implicitness force Medium-focus, as in (48) above. On the contrary, choosing Medium-focus or Action-focus does not necessarily result in Agent-implicitness. When the agent is a third person instead of the addressee, it then has to be specified. This is always done, in the case of instructions, through a Medium-as-Theme expression with marked agency (realised by the passive voice with the agent introduced by the preposition *by* in English or *por* in Spanish). Action-as-Theme with marked agency would also be possible, but was not found in the data.[61]

The factors in the networks are therefore interrelated, influencing together the choice of the particular directive realisations. As pointed out above, a system of polarity has not been included in the networks. However, the issue of negative directives is important and will be addressed in section 5. Before that, however, we will compare the networks provided in Figure 2 and Figure 3 in order to establish the similarities and differences between English and Spanish as regards the expression of directives. Section 4 will be concluded by showing how the networks can be used as a tool for text generation.

4.4. Comparing the networks

Before proceeding with the comparison between Spanish and English, it must be noted that the networks themselves are based on the expressions found in the data described in Chapter 1. Although I have attempted to generalise wherever possible, other kinds of data might lead to different results and would most likely help to expand the networks. The comparisons made in this section, however, are strictly based on the networks for the directive choices presented in Figure 2 and Figure 3.

The networks for English and Spanish are completely similar in the systems of Information and Theme. Although the other two systems (Action-Relevance and Agency) also show great similarities, the differences are worth noting and will be summarised below.

The system of Action-Relevance presents the following differences between both languages:

- Necessity marking is more complex in English than it is in Spanish. In particular, English presents a choice between two modals, while the Spanish data only has one modal available for expressing directives in instructions.

[61] Notice that, if in examples such as "The installation must be carried out by a technician" (constructed example) the Agent as Theme option were chosen, it would not read as directive intention but simply as informative as in: "A technician must install the device" (constructed example).

- Desirability marking, the producer's advice is more complicated for Spanish than it is for English, allowing both advisor and advisee to be potentially included.[62]

When comparing the networks, however, it can be seen that the main difference between Spanish and English concerns the Agency system, which is much more complex for Spanish. The Spanish network presents options for agent-markedness, agent-inclusion and distance, within the agent-explicit option, while English simply distinguishes between agent-implicit and agent-explicit, without any further options in the latter. The most interesting conclusions that can be drawn from the Agency system are specified in the following. In some situations the instructor will prefer not to address her audience directly, thus leaving the actor unspecified; this is what I will call 'agent defocusing', because it draws the attention away from the agent. The following are choices of agent defocusing available to both Spanish and English:

- Use of passive voice in modalised directives. This has an effect on information structure as well.
- Impersonal expressions of appeal to the reader (e.g., *it is advisable to*).

There are also some ways of agent defocusing exclusive to Spanish:

- The use of the infinitive as a directive.
- Impersonal passive imperative with *se*.
- Use of the plural instead of the singular (e.g., *soliciten* ['you' formal-plural] instead of *solicite* ['you' formal-singular]).[63]
- Finally, a further Spanish mechanism of indirectly addressing the reader is the use of the 1st person plural instead of the 2nd person singular. This is a form of indirect address because the writer involves herself in the action performance.

To finish, one of the most interesting issues is the effect that agency and explicitness of advice can have on the relationship that the writer / manufacturer establishes with the reader: by specifying the advisee or the agent the writer provides a friendly relationship. Agentless expressions in contrast provide a telegraphic style and tend to be interpreted as more distant in tenor.

4.5. The networks as a tool for text generation

If we wanted to generate a directive such as the one in (52), several choices would have to be made in each of the four systems. From the Action-Relevance system, we would choose necessity through a modal, and in particular the strong modal. From the Agency system, we would choose agent-explicit. This latter choice would be closely linked to the choice of Agent-focus within the Information system, which would render a '*by*' agent in final position. Finally, by choosing Medium as Theme from within the THEME system, *the device* would appear in initial position.

(52) **The device must be installed by a technician**.

---

[62] If the networks were extended to cater for directives in other kinds of data, the producer's advice system in English would surely present more similarities with Spanish, since it would be possible to find "*we advise you to ...*" However, since I am following a corpus-based methodology, I resist using constructed examples to inform the network.

[63] In English, the third person plural can also be used impersonally, as in the two examples below taken from Butt and Benjamin (1988:374). English, however, cannot use this form with the imperative.

They say exercise is good for the heart.

It seems that they speak more slowly in the USA than in England.

If we followed the same procedure but varied one of the choices, the outcome would be different. Thus, if we make the same choices as above for Action-Relevance, Agency and Information, but within the Theme system we choose Action as Theme instead of Medium as Theme, the outcome would be (53).

(53) **The installation must be carried out by a technician**.

Finally, if instead of presenting the action as necessary we choose to present it as a desirable action, and in particular as producer's advice without specifying the adviser or the desirer, the outcome would be the directive in (54):

(54) **It is advisable that the installation be carried out by a technician**.

A sample of the various output realisations that the networks can produce are provided for Spanish in Appendix 5. This appendix shows examples for all the possible combinations of network options. It must be pointed out, however, that not all the output realisations would appear in instructional texts. Some of them can unnecessarily complicate the understanding of the task and will, therefore, be avoided (see also section 3.3). Others will not be used because of the tenor involved in instructional texts; to give but an example, the use of the non-distant second person address (*tú*) in Spanish instructional texts is not pragmatically appropriate.[64]

The following section will study the negative directive realisations available in the data, and show whether there are any additional factors taking part in the choice of expression at this other end of the necessity cline shown in section 4.

5. Negative directives

Instructions do not only prescribe the actions to be performed, but they also prevent the reader from executing certain actions that might be inappropriate or potentially dangerous. This second task is achieved through the use of prohibition speech acts (a subclass of directives), which will be called here negative directives. Di Eugenio (1993a:79) suggests that negative directives, "by telling the agent what he should not do, are one explicit way of identifying and pruning the choices an agent is faced with while acting." Since they prevent the reader from performing certain actions, they have also been termed *preventative expressions*. This term was coined by Vander Linden and Di Eugenio (1996a:12), who define preventative expressions[65] as follows:

> "Preventative expressions are used to warn the reader not to perform certain inappropriate or potentially dangerous actions. The reader may be told, for example, 'Do not enter' or 'Take care not to push too hard'."

This section addresses the issue of negative directives in instructional texts and will be divided into several subsections as indicated in the following. Section 5.1 will introduce previous research on English negative directives that has provided (i) a classification of preventative expressions, and (ii) insights into the pragmatic distinctions between the various

[64] However, it is important to notice that, as indicated in chapter 2 (footnote 1), this form of address is starting to appear in some recipe books, and can also appear in instructions or directions for use of certain products such as shampoos.

[65] Notice that "preventative expressions" include more than just negative imperatives. Vander Linden and Di Eugenio (1996a, 1996b) have also included certain *-ing* forms as preventative realisations. The following example taken from their data illustrates these linguistic realisations: "*To book* [*sic*] *the strip, fold the bottom third or more of the strip over the middle of the pane, pasted sides together,* **taking care not to crease the wallpaper sharply at the fold**."

linguistic realisations. Taking into account the findings of the research works mentioned in section 5.1, section 5.2 will show in what ways Spanish negative directives are similar to and differ from English preventative expressions. Finally, section 5.3 will suggest that the classification of preventative expressions that was provided by previous researchers should be revised and extended, so that it includes further realisations of negative directives and can be used for Spanish as well.

It must be pointed out, however, that this section does not intend to be an exhaustive study of negative directives. It should rather be considered as a compilation of ideas that should be developed further in future research, at least with regards to Spanish.

5.1. Negative directives in English: classification and pragmatic distinctions

This section introduces the research on negative directives that has been carried out by Vander Linden and Di Eugenio (1996a, 1996b), who are concerned with the automatic generation of instructions in English.

Merging the descriptions in Vander Linden and Di Eugenio (1996a, 1996b) results in the following categorisation of English preventative expressions:[66]

1. *Explicit preventative expressions*: preventative expressions which contain an explicitly negative form:
   a) *Negative imperatives proper*, which they also call *DONT imperatives* (*sic*), and are characterised by the negative auxiliary *do not* or *don't*, as in (55).
      (55) *Do not immerse the body in water or use abrasive or chemical cleaners ...* [E006]
   b) *NEVER imperatives*, which are used with the negative adverb *never*, as in (56).
      (56) *Never immerse your iron in water or other liquid*. [E003]
   c) *Other preventative imperatives*, which they term *neg-TC imperatives*, and include expressions with *take care* and *be careful* followed by a negative infinitival complement, such as *not to...*, or *to + negative polarity item*, as in examples
   d) (57) and (58) respectively.
      (57) *Take care not to damage internal components*. [E009]
      (58) *Take care to avoid damage to the pipework by keeping it clear of the floor or by laying it on some protective material*. [E011]
2. *Implicit preventative expressions*: preventative expressions which do not contain any explicit negative, e.g., the use of "stay out" instead of "do not enter" to prevent some action. Verbs such as *prevent* or *avoid* are common in such forms (cf. Horn, 1989), as in (59).

(59) *Avoid using electric or rotary beaters or cutting with sharp knives in the cooker*. [E007]

The distinction between *DONT imperatives* and *neg-TC imperatives* was introduced earlier in Di Eugenio (1993a). She also put forward the hypothesis that there are pragmatic distinctions between the usages of both types of negative imperatives. Her hypotheses, also summarised in Vander Linden and Di Eugenio (1996b), are as follows:

[66] The distinction between *implicit* and *explicit* preventative expressions is obtained through a close reading of the works. Only the latter is actually mentioned, and only in 1996b. The distinction clearly arises from Horn's (1989) work, to which they refer, and which discusses the notion of implicit negation.

- A ***DONT imperative*** is used (i) when the writer expects the reader to be *aware* of a certain choice point, but to be likely to choose the *wrong* alternative among many; or (ii) when the consequences of a particular choice (whether the reader is aware of them or not) are extremely important, for example, for personal safety.

  In these situations, either (i) the writer will provide rules of behaviour to be always adopted in certain circumstances, or (ii) she will mention undesirable alternative actions for the goal that the reader/user has to achieve.

  In example (60), taken from Di Eugenio (1993a), the reader/user is aware of the choice of various cleaning methods, but may choose an inappropriate one (i.e., scrubbing or wet-mopping).

  (60) *Dust-mop or vacuum your parquet floor as you would carpeting. Do not scrub or wet-mop the parquet.* [Not in corpus]

- ***Neg-TC imperatives*** are used when the writer expects the reader to *overlook* a certain choice point. Such choice point is often identified through an undesirable side effect that can be caused by choosing the wrong alternative (for example, performing an action in an undesirable way). This is better illustrated with example (60), also taken from Di Eugenio (1993a), which shows that the reader has several choices as regards the exact position where to drill, so the writer constrains him by ruling out the action of drilling through the pattern line.

  (61) *To make a piercing cut, first drill a hole in the waste stock on the interior of the pattern. If you want to save the waste stock for later use, drill the hole near a corner in the pattern. Be careful not to drill through the pattern line.* [Not in corpus]

Di Eugenio's hypothesis is summarised by Vander Linden and Di Eugenio (1996b) in the following words:

> "H's *awareness* of the presence of a certain choice point in executing a set of instructions affects the choice of one preventative expression over another."

Having presented an overview of the findings of previous work on negative directives in English, the following section will present some thoughts about Spanish negative directives, showing the similarities and differences between the two languages.

5.2. A comparison of English and Spanish negative directives

This section follows the work on English negative directives introduced in section 5.1, in order to see how far Spanish is similar or different to English with regard to both linguistic expressions and pragmatic meanings conveyed by the various realisations.

The Spanish data showed that a negative directive realisation similar to the *DONT imperative* studied by Di Eugenio (1993a) and Vander Linden and Di Eugenio (1996a, 1996b) is also available in Spanish. The Spanish negative imperative is formed by *NO* followed by an imperative form and seems to function like its English counterpart. Example (62), for instance, shows that there is a safety risk involved in issuing that negative directive.

(62) *No deje el aparato, en funcionamiento, al alcance de los niños.* [S016]
(Do not leave at the reach of children while switched on.)

Spanish instructions, however, present a further realisation unavailable in English: *NO* followed by the *infinitive*. Similarly to the *NO imperative*, this form can be used in the same situations as the English *DONT imperatives* (for instance, safety or malfunction risk).

(63) *NO UTILIZAR OBJETOS METALICOS PUNZANTES, puede perforarse la placa evaporadora.* [S009]
(Do not use sharp metallic sharp tools; the steam panel might get perforated.)

The Spanish imperative and infinitive convey differences as regards the following issues, which also hold for negative directives:

- **Reference.** The Spanish imperative has the syntactic constraint of always requiring the presence of a direct object (when the verb is an intransitive one); the Spanish infinitive, however, does not necessarily need a direct object. This possibility of avoiding the direct object provides the telegraphic style of the infinitive. (64) illustrates a negative directive with the infinitive and no direct object, while (65) shows that when an imperative form is used, it requires a direct object in order to be grammatical.

  (64) *No cubrir.* [S003]
  (Do not cover.)

  (65) * **No cubra.**
  (Do not cover-[you-distant].)

- **Address.** The Spanish active imperative always addresses the reader directly, while the infinitive addresses him indirectly because it does not specify the audience. The infinitive is, therefore, an impersonal form which provides a more informative impression, as in (66).

  (66) *No desatender la plancha mientras esté conectada a la red.* [S017]
  (Do not leave unattended the iron while connected to the mains.)

The difference in address leads to a further dissimilarity between Spanish *NO directives*. The *NO imperative* is used when the writer **expects** the reader to choose the wrong alternative among many. The *NO infinitive*, however, simply informs about a wrong alternative without making any expectations about the reader's choices, since it does not specify an audience. This seems to be related to intentionality on the part of the actor as well. When the action is unintentional (or (UNC)onscious, to use Vander Linden and Di Eugenio's term and tag), *NO infinitive* seems to be used, as in (66) above and (67).

(67) *No forzar la puerta del horno cuando esté abierta.* [S012]
(Do not force the oven door when it is open.)

In the situations of (66) and (67), where the risk of fire or breaking the door are so obvious, the use of *NO imperative* would imply that the reader is going to do the actions intentionally (i.e., on purpose), and would most likely be perceived as "offensive", since it shows a lack of trust in his ability to tell wrong from right. (68) and (69) would therefore be avoided.

(68) ? **No desatienda la plancha.**
(Do not leave the iron unattended.)

(69) ? **No fuerce la puerta del horno.**
(Do not force the oven door.)

If the reader could respond to (68) and (69), he would most likely say: "I wouldn't do that on purpose... I'm not daft!" In other words, the direct address of the *NO imperatives* in these examples would imply that the reader is bound to do an action, even though it is common sense that it should not be done.

As for *negative-TC directives*, only 3 cases of these verbs were found in the Spanish data. Similarly to English, the Spanish *TC* verbs (*procurar*, *tener cuidado*, *cuidar*) always express unintentional (UNC) actions. As in (70), there is always an unwanted side-effect implicit, which can sometimes be explicitly expressed, as in (71).

(70) *Procure no tapar la salida del timbre, situada en la base del aparato.* [S011]
(Take care not to cover the bell, situated on the bottom of the device.)

(71) *Si el aparato es de placas desmontables, las puede lavar bajo el grifo o en el lavavajillas, cuidando que no se golpeen por efecto de la presión del agua.* [S016]
(If the device has removable panels, you can wash them under a running tap or in the dishwasher, taking care that they do not hit each other as a result of the water pressure.)

Similarly to English, in all the examples with Spanish *neg-TC* directives found in the corpus, it is assumed that the reader is aware of the adverse consequences of a particular choice point.

A further interesting issue about *negative infinitives* is that there seem to be no cases of *negative TC-infinitives* in Spanish. The lack of *negative TC-infinitives* might be due to pragmatic factors concerning the specificity of the audience. As mentioned above, Di Eugenio (1993a:85) suggests that *negative TC-imperatives* in English are used when the writer expects the reader to overlook a choice point, and this also applies for Spanish. Since Spanish allows for a personal (e.g., *imperative*) and an impersonal (e.g., *infinitive*) form of directive, it is plausible to think that the form specifying the audience, as in (72), would more easily get the addressee's attention. The use of the infinitive as a *negative TC* form, as in (73) and (74) below, would miss the point, since it does not specify the audience and it would most probably be interpreted as an instruction to avoid choosing the wrong alternative, rather than to avoid overlooking a choice point.

(72) *Procure no rayar el suelo.* [Not in corpus]
(Take care [you-distant] not to scratch the floor.)

(73) ? **Procurar no rayar el suelo.**
(To-take-care not to scratch the floor.)

(74) **Procurar que el suelo no se raye.**
(To-take-care that the floor is not scratched.)

So far we have discussed the similarities and differences between Spanish and English as far as "explicit negative imperatives" are concerned. As mentioned above, the second main group of expressions is called "implicit negative imperatives" because it involves verbs such as *avoid* and *prevent*, which have an implicit negative meaning. The data showed that implicit negative directives with the verb *evitar* 'avoid' are also available in Spanish instructions. Spanish directives with *evitar* can appear either in the imperative or in the infinitive form. When *evitar* is in the imperative, the action to be avoided can be expressed either through an infinitive, a nominalisation or a noun. However, when *evitar* is in the infinitive form, the prevented action can only be expressed by a noun or a nominalisation. A similar difference is established here between the imperative *evite* and the infinitive *evitar*. When the actions prevented by the negative directive are unintentional (UNC), i.e., when they just happen without an active and conscious involvement of the reader, they tend to be expressed by nouns or nominalisations as in (75). When the prevented action implies a conscious involvement of the reader, then the infinitive form is used, as in (76).

(75) *Evite el contacto con el flujo de vapor caliente, previniendo así quemaduras.* [S003]
(Avoid contact with hot steam, thus preventing burns.)

(76) *Evitar golpes y/o posibles caídas al suelo.* [S011]
(Avoid hitting and/or dropping onto the floor.)

Sometimes Spanish implicit negative directives function in the same way as *NO directives*, as in (75) above. Other times, implicit negative directives behave as *neg-TC directives*, as in (77).

(77) *Debe instalarse la cocina en un lugar que tenga la ventilación suficiente, evitando las corrientes de aire*. [S006]
(The cooker must be installed in a place that has adequate airing, avoiding draughts.)

So far it has been shown that Vander Linden and Di Eugenio's (1996a, 1996b) classification of preventative expressions can be used for the purposes of analysing the Spanish data. In addition, Di Eugenio's (1993a) hypothesis about the pragmatic distinctions between the usages of both types of English negative imperatives seems to hold for Spanish as well. The analysis showed, however, that negative directives in Spanish are not always realised by imperatives. The *negative infinitive* can be used as an alternative to the negative imperative, taking into account that the choice between the two depends on both syntactic (reference) and pragmatic factors (address, intentionality). As for *negative-TC directives*, Spanish does use other forms (e.g., the modal *deber* in future tense) in addition to the imperative.

Though Vander Linden and Di Eugenio (1996a, 1996b) provide a useful categorisation, it does not include all the preventative expressions available. For instance, negative modalised expressions (e.g., X should not be done) are missing from that classification. In addition, the use of only imperative preventatives would add one further loss to the Spanish adaptation of this categorisation: the negative infinitive directive (e.g., *no tocar*), which is not available in English.

5.3. Vander Linden and Di Eugenio's classification revised

All things considered, I would propose the expansion of Vander Linden and Di Eugenio's categorisation to include other forms of preventative expressions apart from the imperative ones. This would provide a place for modalised preventatives, as well as for expressions such as *NO infinitives* which are lacking in English.

I would suggest the expansion of their classification as follows, to allow for its application to other languages in addition to English:

1. explicit negative directives:
   a) negative directives proper:
      i. *don't* followed by imperative for English; *no* followed by imperative or infinitive for Spanish;
      ii. with negative adverbial (*never; nunca* 'never');
   b) modalised negative directives:
      i. with *not* (for English) or *no* (for Spanish);
      ii. with negative adverbial (*never, nunca* 'never');
   c) other negative directives (*neg-TC* for English);
2. implicit negative directives (*prevent, avoid, evitar* 'avoid' *).*

Following this extended classification, then, **modalised negative directives** with *must* or *should* in English and *deber* in Spanish represent one further type of realisations not included in Vander Linden and Di Eugenio's (1996a, 1996b) classification of preventative expressions.

The Spanish modalised directives can either directly or indirectly address the reader, the latter being much more frequent. Indirect address is achieved in this type of negative

directives through the passive voice. As with *NO infinitives*, negative modalised directives in the passive voice make no expectations about the reader at all, but just inform about a wrong alternative. This form is used when the actor is not necessarily the reader, as in installation instructions such as (78).

(78) *No deben ser instalados: proyectando el calor sobre muebles, demasiado cerca o cubiertos con cortinas durante el funcionamiento y en general en cualquier caso que pueda privar la correcta circulación de aire*. [S004]
(They should not be installed: projecting the heat on furniture; too close to or covered with curtains while it is on; and, in general, in any other case when the correct air circulation can be hindered.)

It is interesting to notice that direct address in Spanish modalised negative directives is used when safety is at stake. This is emphasised either by typographical clues (e.g., *MUY IMPORTANTE* before the preventative expression) or by the adverb *nunca* 'never', which shows that the preventative directive always holds, and is frequently emphasised by its thematic position.

(79) *¡MUY IMPORTANTE! No debe sumergir ni humedecer el aparato.* [S019]
(VERY IMPORTANT! You must not submerge or wet the device.)

Almost all *NO imperatives* and *NO infinitives* can be successfully replaced by a negative modalised expression. However, example (80) would not be felicitously replaced by *deber*, as in (81).

(80) *No planche in deslice la plancha sobre partes metálicas como cremalleras, corchetes, etc., para evitar que se raye la suela.* [S020]
(Do not iron nor slide the iron over metallic parts such as zips, hooks and eyes, etc. to avoid scratching the soleplate.)

(81) ?**No debe planchar ni deslizar la plancha sobre partes metálicas como cremalleras.**

The reason for the infelicitous (81) seems to be that the *NO imperative* in (80) implies unawareness – on the reader's part – of an unwanted side-effect, while the modalised negative directive implies awareness of the bad consequences. Observe, for instance, (79) above, where the reader is normally expected to be aware of the bad consequences of the water in the electrical component.

An interesting point has to be made here regarding the strength of Spanish modalised directives. Notice that, in the necessity cline in Figure 5, *deber* expresses the necessity of performing the action more strongly than the *imperative* does. It would be logical to assume that this strength of obligation could be transferred to the negative polarity without any change, that is, that *no + deber* would express a stronger prohibition than *no + imperative*. This assumption, however, would be wrong. Modalised negative directives (with *deber*) do not seem to claim the obligatoriness of not doing the action as strongly as the negative imperative does. Therefore, the Spanish modal with negative polarity does not express so strong an obligation as the same modal with positive polarity. While *debe* could be translated into English as 'you must', the negative expression *no debe* seems to be more appropriately paraphrased in English as 'you shouldn't' rather than 'you mustn't'. It could then be said that, although still a prohibition, *no + deber* sounds more like a suggestion. The prohibition in Spanish modalised negative directives, however, can be strengthened through the use of the time adverb *nunca* 'never', as in (82).

(82) *Cuando limpie su freidora, nunca debe mojar la parte eléctrica del aparato.* [S015]
(When cleaning your fryer, never must-you wet the electrical part of the device.)

It is perhaps the weak degree of prohibition expressed by *no* + *deber* that triggers the placement of the adverb *nunca* 'never' in initial or thematic position, so that the prohibition can be expressed more strongly. Similarly, the use of *nunca* 'never' with the imperative results in a stronger prohibition than the same form without this adverb. In English, the same effect is achieved through the use of the following expressions:

a) under no circumstances + modal should / must;
b) on no account + modal should; or
c) never + imperative.

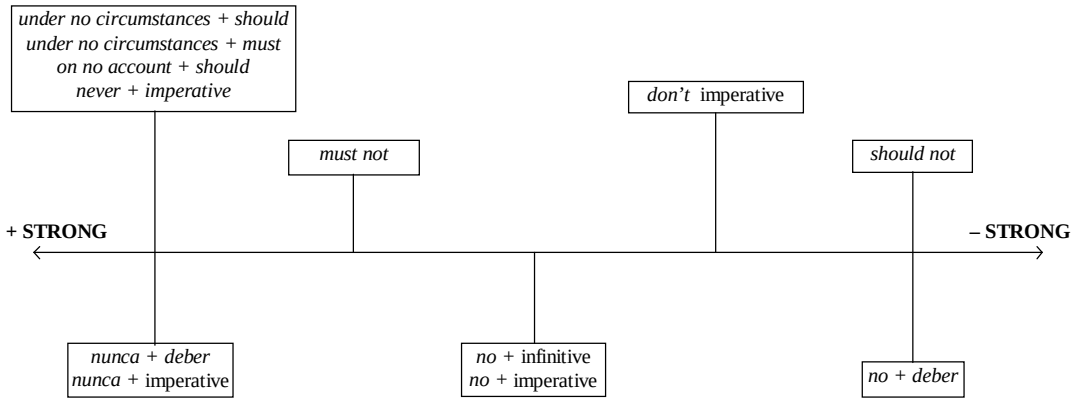

Figure 6. Strength of prohibition in explicit negative directive realisations

As it was done with directive realisations with positive polarity, the different degrees of prohibition conveyed by each of the negative directive realisations can be represented along a cline, as shown in Figure 6 for English and Spanish.

Further research with a wider corpus of negative directives and a survey with native informants are needed to confirm and develop the ideas presented in this section. For the purposes of text generation, it would be desirable to represent through a network the issues involved in the choice of negative directives which have been mentioned here. Future research areas can be provided, for instance, by politeness or hesitancy issues, as well as by the assumptions involved in the use of the passive voice (which might, in addition, be related to politeness). As regards the latter, it is worth mentioning here that, in my data, the English strong modal is always in the passive voice when used with negative polarity, as in (83).

(83) *WARNING - THIS APPLIANCE ... MUST NOT BE EARTHED.* [E005]

It is also important to remark that there are some directive expressions which, although having negative polarity, do in fact demand a positive action (as in (84) and (85)).

(84) *Do not forget to complete the guarantee registration card and post it to Hoover plc to register your guarantee.* [E005]

(85) *No olvide limpiar la cubeta recogeaguas al menos una o dos veces por año.* [S013] (Do not forget to clean the drip-tray at least once or twice a year.)

It seems to me that the function of expressions such as *do not forget* is in fact to emphasise the action to be performed by drawing the reader's attention to it. Taking into account that these directives expect an action, rather than a non-action, these realisations might need to be included among the directives with positive polarity instead of preventative expressions.

To sum up this section, it has been shown that Vander Linden and Di Eugenio's (1996a, 1996b) categorisation of preventative expressions is valid, although with some revision, for Spanish negative directives. We also saw that factors such as awareness of unwanted side-

effects, and the writer's expectations about the reader – both of which were shown to be influential in the choice of English negative directive expression (cf. Di Eugenio, 1993a) – are also involved in the choice of negative directives in Spanish.

The following section will show further factors involved in the choice of directive expressions (both with positive and negative polarity) in English and in Spanish.

6. Other issues related to directive choices

Two further issues concerning directive realisations will be discussed in this section: the relationship between directives and text structure, and reference issues. The first one further supports Biber's (1995:10) suggestion that the situational characteristics influence the choice of linguistic form, and at the same time the choice of linguistic features helps create the situation. The second issue refers to some differences between the Spanish imperative and the infinitive realisations of directive.

6.1. Text structure and directives

It was explained in chapter 3 that, though the length of consumer-product instructions varies, all of them organise their messages in a characteristic structure that seems to be shared by different languages. Paris and Scott (1994) suggest that manuals are organised around six main parts, which I will call sections:

- general information about the product (section 1);
- safety advice, and warnings (section 2);
- use (section 3);
- care and maintenance (section 4); and
- troubleshooting and potential problems (section 5).

The analysis of my directive data showed that, depending on the intention behind each section and the specific kind of information to be included, directive realisations marking necessity, and conveying meanings of impersonality are preferred in the following cases.

Directive realisations signalling necessity will be predominant in instruction manual sections such as the following:

- Section 1: to express the actions necessary for making the guarantee valid. The data analysed showed a high frequency of modals marking necessity in both languages.
- Section 2: for safety regulations and warnings, particularly prohibitions. Imperatives and modals marking necessity were found in this section.
- Section 3: installation and preparatory steps instructions involve the actions necessary before using the product. This is the section that presented the highest percentage of obligatory modals in both languages. This is due, apart from the obligation feature of the actions in this section, to the fact that the actions in this section are not always to be performed by the reader, but rather by a technician. Many directives will, therefore, need to be chosen for their ability of defocusing the actor either through the use of modals in the passive voice or other impersonal directives such as the infinitive.
- Section 4, the section on instructions for use, does – as expected – have a relatively high frequency of modals marking necessity in both languages.

The most frequent impersonal expression in Spanish – the infinitive – appears very frequently in the section on safety advice and warnings. This is so, because a form specifying the audience would imply that the writer expects the reader to choose the wrong alternative;

this is what the negative imperative expresses (cf. Di Eugenio, 1993a). In contrast, the negative infinitive – thanks to its impersonality feature which does not address anyone in particular – simply presents the wrong alternative without making any expectations about the reader.

6.2. Syntactic issues

A syntactic difference regarding reference constraints was found between Spanish imperative and infinitive directive expressions. While the active imperative always requires an explicit direct object – either in its full form or pronominalised – the infinitive does not need it. In this respect, the Spanish infinitive is closer to the English imperative than the Spanish imperative itself. The lack of direct object is what provides the telegraphic style achieved by the Spanish infinitive and the English imperative.

Differences as regards the referents of the pronouns in the Spanish passive imperative and the infinitive also exist: the *la, lo* direct object pronouns that sometimes accompany the infinitive are recoverable from the linguistic context and it can, therefore, be ambiguous to use them in those situations where the referent is not recoverable from the co-text. The *se* of the passive imperative is however inferable from the context of situation and presents no ambiguity.

7. Conclusions

This chapter addressed one of the main linguistic features of the instructional genre: directive expressions. The imperative clause is thought to be the syntactic category that typically realises a directive (Tsui, 1994), however, it was shown that a wide range of other expressions is also used. The aim of this chapter, then, was to explain the availability of so many different directive expressions in instructional texts.

Taking into account the definitions and classifications of directives in the literature, section 1 offered a description of what is meant by *directives* in instructions: expressions aimed at getting the reader to do (or not to do) the actions in the task plan. It was also discussed that directives in this particular genre are hearer-interested in the sense that the actions directed are of benefit to the addressee. Only direct directives were considered in this chapter, though the existence of indirect directives (e.g., hints, question directives, etc.) and potential directives (with the modals *can, may* and *poder* 'can') in the data was acknowledged.

The chapter drew upon the well-known claim that situational features are related to linguistic forms through functional and conventional associations (cf. Biber, 1995; Fairclough, 1992; Halliday, 1978). Section 3, therefore, showed that situational features explain the appropriateness for instructions of directive expressions which are considered impolite in other contexts. It was argued that syntactic expressions do not have a fixed politeness level, but their degree of politeness rather depends on contextual features such as mode of communication, authority relations and task-relevance in the following ways:

- The same directive expression is interpreted in different ways in speech and writing. It was argued that the imperative, which is usually perceived as rude in speech, is considered appropriate in instructions because the action it expresses is of benefit to the addressee.
- The power relations involved in written instructions do not have to do with rank or social status, but rather with the authority coming from the instructor's superior knowledge. This is what enables the writer to use straight directives and modalised directives with *must*, which would be considered impolite in other situations.

- Instructions are task-relevant and therefore allow for the use of direct directives, avoiding the use of embroidered directives that would draw the reader's attention away from the task plan.

It was argued that the wide range of expressions is due to the fact that each expression conveys different pragmatic and semantic meanings. The factors influencing the choice of directive expression in English and Spanish were presented graphically through two networks (Figure 2 and Figure 3), which reveal the close relationship between context and linguistic form. The networks identify four simultaneous and intertwined systems of options (Action-Relevance, Agency, Information and Theme) which influence the choice of expression. The networks can be a useful tool for automatic generation of instructional texts.

It is obvious that not all the actions in the task plan are equally important: there are actions which are strictly necessary; other actions, though not necessary, are particularly beneficial to the addressee, and therefore they are desirable. It can be said that the actions in the task plan present a hierarchy depending on their role in the goal of the task plan itself (i.e., using the product efficiently). The actual form of directive used conveys information about the relevance in the task plan of the action it introduces. This is marked through the system of Action-Relevance. Taking into account that unmarked actions such as the ones realised by the imperative are obligatory, it was argued that directive expressions can be explicitly marked for one of the following categories: necessity, desirability, undesirability, and prohibition.

The system of Agency involves the explicit mentioning of the agent of the actions. The agent in instructions is by default the reader and, since it can be recovered from the context, it is not always necessary to specify the agent. The ways of agent defocusing and the effect they have in the relationship established between the writer and the reader were also shown in section 4.4.

Closely linked to agency are the systems of Theme and Information. These systems reflect the way the writer organises her message taking into account the prominent locations in the clause. Thus, the writer can draw the addressee's attention to either the action itself or the Medium (most generally the device or one of its parts) by placing them in thematic position. Focus, on the other hand, allows the writer to draw attention to the agent, when this is not the reader himself but a third person, by locating it in the end-focus position.

Section 5 was devoted to negative directives. Although these were not included in the network, it seemed relevant to address a few issues concerning these expressions at the other end of the necessity cline (i.e., realising prohibitions). Following Di Eugenio (1993a; 1993b), this section studied the different kinds of negative directives and the factors influencing their choice. Her suggestions that there are pragmatic distinctions between the usages of *DONT imperatives* and *neg-TC imperatives* seems to hold between Spanish *NO imperatives* and *neg-TC imperatives*. However, it was shown that imperatives are not the only forms used for prohibitions. There are also modalised negative directives, implicit negative directives (*evitar* 'avoid', *avoid*) in both languages, as well as *NO infinitives* in Spanish. Vander Linden and Di Eugenio's (1996a, 1996b) categorisation of "preventative expressions" was revised and extended to make it applicable to Spanish and to include realisations that they did not deal with. Taking their work as a starting point and model, the following factors were found to influence the choice of negative directives in Spanish:

- **Writer's expectations about the reader**. Di Eugenio's suggestion that English *DONT imperative* is used when the speaker / writer expects the reader / listener to choose the wrong alternative also holds for Spanish *NO imperatives*. On the contrary, a *NO infinitive* simply informs about the wrong choices without making any expectations about the reader. This is due to the impersonal feature of the infinitive, which does not

specify the audience and therefore cannot make any expectations about the reader. Negative modalised directives in passive voice do not imply any expectations about the reader either.

- **Intentionality** was suggested by Vander Linden and Di Eugenio (1996a, 1996b) to influence English negative directives. In Spanish a *NO infinitive* is chosen when the action is unintentional or unconscious(UNC), while *NO imperative* is preferred when the action is intentional or conscious (CON). Unintentional actions also influence the choice of *negative-TC imperative* in Spanish.
- **Address**. In Spanish modalised negative directives, direct address is used when safety is at stake.
- **Strength of prohibition**. Not all negative directives claim the obligatoriness of not doing the action as strongly as the negative imperative does. There are adverbial elements such as *nunca* 'never', *never* and *under no circumstances* that reinforce the strength of the prohibition in both languages. A difference was found between Spanish and English in the strength of prohibition achieved by modals; in English, negative directives with the modal *must* provide a stronger prohibition than the *NO imperative*, while in Spanish the *NO imperative* is stronger than the modalised negative directive (*no + deber*).

Finally, section 6 addressed the relationship between text structure and linguistic forms. It is difficult to know whether it is text structure that influences Action-Relevance or vice versa. What is clear is that certain sections of the text present a much higher frequency of obligatory actions than others. A further issue discussed in section 6 was the reference constraints distinguishing between the Spanish imperative and infinitive. These reference constraints are linked to the telegraphic style achieved by some instructions.

To sum up, this chapter has focused on the most characteristic function of instructions, the directive function, showing its various linguistic realisations and the factors involved in the choice of expression. The next chapter will address another characteristic feature of the language of instructional texts: purpose expressions, which explicitly signal the goal of the actions in the task plan.

Chapter Six: Purpose expressions in English and Spanish instructions

The previous chapter focused on the most characteristic function of instructions – the directive function – or, in other words, on how instructional texts get the user to perform a series of actions. Instructions, however, do not just tell people to do things: they provide additional supporting information that will tell the user *why* a certain action (or set of actions) is required and *how* it should be done (cf. Di Eugenio, 1992). In addition, instructions should also indicate in some way *whether* the action is necessary or not. These functions are often achieved through the use of purpose expressions, such as the one in (1)[67] below: expressions that contribute to the understanding of instructions by conveying to the user the **goal** of a particular action or set of actions (cf. Di Eugenio, 1992). In (1), the goal or purpose of sliding the clip over the folds is ensuring a tight fit.

(1) *Refold the bottom of the bag on the lines shown, and slide the clip over the folds <u>to ensure a tight fit</u>.* [E005]

The notion of goal has already been mentioned in previous chapters. Chapter 1 showed that the actions to be performed have a hierarchical structure (task structure) which can be represented in a task plan: basically, a goal (β) and a body (consisting of one or several actions called α actions). In (1) above, for instance, sliding the clip illustrates the α action or body of the task, while ensuring a tight fit illustrates the β or goal action. There are two well-known relations holding between pairs of actions (α and β) in the task plan: as Di Eugenio (1992) pointed out, one of the actions (β) constitutes a goal to which the other action (α) contributes through either a Generation or an Enablement relation. Chapter 4 was devoted to the mapping of these two procedural relations onto the grammar of English and Spanish instructions in an attempt to see how far Generation and Enablement influence the choice of expression. The number of linguistic realisations the writer can choose from is narrowed down depending on the procedural relation that holds between the actions in a particular action pair. The most frequent realisations, however, are ambiguous as regards semantic relations (i.e., they can express either Generation or Enablement) and are yet to be accounted for. It is the purpose of this chapter to complement the findings in chapter 4 and studies of the kind (Delin *et al.*, 1994; Grote, 1995) by following the path suggested by Scott *et al.* (1995) and looking into the notion of discourse PERSPECTIVE, i.e., the focus on either the intended goal of the action, the conditions, the result, the temporal ordering of the events, the manner or the instruments.

Scott *et al.* (1995) claim that perspective constrains the rhetorical structure of the discourse – as might be captured by Mann and Thompson's (1988) Rhetorical Structure Theory (RST) – and, therefore, their expression through particular linguistic markers, as follows. Taking into account that instructions can take any of the following six perspectives (Scott *et al.*, 1995:19):

a) the intended goal of the action the user is being directed to perform;
b) the conditions under which it would be sensible to carry out the action;
c) the result one can achieve by carrying out the action;

[67] Throughout this chapter, the purpose expression in each example from the corpus will be underlined.

d) an emphasis on the required temporal ordering of the events;

e) the manner in which a goal action is to be performed;

f) the instrument to be used to carry out the action.

Each of these perspectives are expressed by the following discourse relations, as indicated by the letter in brackets: (a) PURPOSE, (b) CONDITION, (c) RESULT, (d) SEQUENCE, (e) MEANS, (f) INSTRUMENT. In turn, these rhetorical relations are explicitly signalled by discourse markers (e.g., *so that* introducing the β action).

This chapter will focus on one particular perspective, namely purpose or the intended goal of the action(s), as illustrated through the underlined expression in the following English example.

(2) *To make a phone call, lift the handset, listen for the dial tone and press the appropriate buttons of the number you wish to dial*. [E001]

It is important to emphasise that a goal can be "buried" in the syntax; in other words, it can be difficult to recognise a goal through the particular syntax used to express it (e.g., in an imperative, or in a conditional clause). This chapter, however, will look exclusively at those cases where the goal is explicitly signalled as such, i.e., cases where the goal is realised through PURPOSE expressions. There is a wide range of linguistic forms, in both English and Spanish, that can be used for conveying the notion of purpose. Two of the possibilities are illustrated in constructed examples (3) and (4).

(3) **For access to the mains terminal block, remove the mains terminal cover.**

(4) **Remove the mains terminal cover so that you can have access to the mains terminal block**.

We can see that the goal is realised by different purpose expressions (underlined) in (3) and (4), and that these appear in different locations within the sentence. But, are there any other differences between the two examples? In what situations would the use of *for NP* be more appropriate than using a *so that* clause to express the goal? It is the aim of this chapter to identify the factors that influence the choice of one particular purpose expression instead of others, as well as their placement in relation to the main clause.

This chapter contributes to the thesis in several ways. It complements the study of semantic relations presented in chapter 4 by offering a more detailed analysis of a specific set of goal-action realisations (namely, purpose expressions). This chapter, therefore, covers a feature of instructions which is extremely relevant for the understanding of the task(s) to be performed. Finally, the study presented in this chapter provides further insights into how the semantics of instructions is mapped onto the grammar and how contextual features are reflected in the choice of linguistic expression.

The chapter will be divided into the following sections. Section 1 will draw upon research work on syntax, semantics and pragmatics to explain what is meant by purpose in instructions. The data on which the study is based will be introduced in section 2, and section 0 will be devoted to the methodology used for the data analysis. The remaining two sections will present the actual results of the data analysis. Based on a systemic network designed for the coding of purpose expressions, section 4 will address the factors that seem to have an influence in the choice of expression. Section 5 will reverse the presentation of the results by focusing on each of the linguistic forms available for expressing purpose in English and in Spanish and will, therefore, provide the semantics of each of those expressions.

1. The notion of purpose

Before proceeding to examine the realisations of purpose available in instructions and the factors that influence the choice of a particular expression instead of another, it is important to specify what is meant here by purpose.

Several definitions of purpose have been provided in the literature through the terms *purpose clause* and *purpose expression*. Some of these definitions are based on syntactic criteria, however, they all have a functional notion of 'purpose' associated with them (cf. Huettner *et al.*, 1987; and Balkanski, 1993, *inter alia*). The term *purpose clause* usually describes adjunct clauses introduced by *to + infinitive* (*to INF*) constructions. Huettner *et al.* (1987:208) describe purpose clauses as those that express "the purpose or intended use of a particular object which the main clause is in some sense 'about'". Syntactically, purpose clauses have one obligatory gap in either subject position, as in (a);[68] direct object position, as in (b); or prepositional object position, as in (c). The gap is represented in each example as e_i and the indexing indicates the element from the main clause that is missing in the purpose clause.

a) *I bought the shelf$_i$ [e$_i$ to hold my cookbooks]*

b) *I bought the cookies$_i$ [for Mary to eat e$_i$]*

c) *I bought the cushion$_i$ [for Mary to sit on e$_i$]*

Purpose clauses are easily confused with *rationale clauses*, which express the intention of an action rather than an object. Rationale clauses permit only subject gaps, although the subject gap is optional (i.e., it can be filled), as in the following example taken from Huettner *et al.* (1987):

(5) *Elroy killed Oscar in order for Sylvia to escape.* [Not in corpus]

Both Thompson (1985), in her study of the meaning differences between initial and final purpose clauses, and Di Eugenio (1992), in her analysis of the role of purpose clauses in understanding instructions, use the term 'purpose clause' rather more narrowly than Huettner *et al.* (1987), including only rationale clauses within this category. Furthermore, Di Eugenio (1992) restricts the range of purpose clauses even more, since she deals only with rationale clauses that are adjoined to the matrix clause and that contain a gap in subject position, as in the following example that she provides:

(6) *Vacuum or dust-mop your parquet to clean it.* [Not in corpus]

However, these syntactic definitions of purpose which consider only rationale clauses are not suitable for cross-linguistic studies like the one intended here. Instead of comparing syntactic structures, I am mainly concerned with comparing functions and the ways meaning is expressed. It is for this reason that the function-to-form approach taken by Vander Linden (1993) is of interest here. Vander Linden, whose study is concerned with the computer generation of various types of expressions in instructional texts, adapts the rhetorical relation of purpose described in Mann and Thompson's (1988) Rhetorical Structure Theory and presents it in terms of the task plan: a purpose is likely to be signalled if one action stands in a Generation relation with a set of other actions (Vander Linden, 1993:89).

As pointed out in Murcia and Delin (1996) this rhetorically-based notion of purpose, although useful, also presents problems for cross-linguistic studies: if the aim is to look at the influence of rhetorical and pragmatic factors on syntactic choice, it would be circular to begin with a notion of purpose that is rhetorically-based. A further problem of Vander Linden's model is posed by the fact that the differences between the languages might lie precisely in the

[68] The examples and numbering are taken from Huettner *et al.* (1987).

rhetorical decisions about conveying particular *semantic* information. The notion of purpose taken here, instead, is the one provided in Murcia and Delin (1996:2): "a purely semantic definition of purpose, which captures the main syntactic constructions that are conventionally and intuitively held to express some notion of purpose." This notion of purpose presents some similarities with Vander Linden's and is based on Balkanski's (1991) stipulation – followed up in Di Eugenio (1992, 1993b) – that purpose expressions express the semantic relations of Generation and Enablement. For a definition and detailed study of these procedural relations, refer to chapter 4.

Unlike Balkanski (1991), Di Eugenio (1992) and Thompson (1985), the study presented in this chapter covers more syntactic realisations than just rationale clauses. The range of expressions examined here, however, is less broad than that of Vander Linden (1993), who considers examples such as (7)[69] that cross sentence boundaries. In this example, removing the telephone is the goal.

(7) *Remove the phone. Grasp the top of the handset, and pull it.* [Not in corpus]

To finish this section, it is interesting to point out that purpose expressions can perform various functions in instructional texts. Purpose expressions are used in these texts to provide the following different kinds of information. They tell the reader why he should perform a particular action, as in (8).

(8) *Turn the water container lid anticlockwise to remove it*. [E004]

They also provide information about why a particular action was performed by the manufacturer, as in (9).

(9) *The main oven door is equipped with a removable glass panel for easy cleaning*. [E010]

They can inform the reader about why the device (or part of it) has a particular feature or quality, as the detachable pan handle in (10).

(10) *The grill pan handle is detachable from the pan to facilitate cleaning and storage*. [E010]

Purpose expressions also provide information to the reader about whether he should perform the actions or not, that is, it provides information on the optionality or obligatoriness of the task. In (11), for instance, the user would not need to wipe with a damp cloth if he is not interested in cleaning at that particular moment.

(11) *To clean, wipe with a damp cloth*. [E001]

Finally, purpose expressions can inform the reader that the action needs to be performed in a specific way, that is, purpose expressions can provide information about how to perform the actions, as in (12).

(12) *You will need to change the left hand appliance so that its door hinges on the left hand side*. [E011]

Having established what is meant here by purpose and the function of purpose expressions in instructional texts, the following section will provide information about the data (i.e., the tokens of the various purpose expressions), explaining how they were collected and what realisations of purpose were found.

[69] This example is taken from Vander Linden (1993).

2. The Data

An initial study was carried out by extracting all the purpose expressions in the instructional texts in the corpus as specified in chapter 1 (Tables 1 and 2). All 11 English texts were included, and 22 of the 23 Spanish texts, [S018] was not included as it was added late. The extraction resulted in a total of 422 tokens (228 for English and 194 for Spanish). The extraction was carried out through the following steps:

1. Various grammar books (cf. Quirk *et al.*, 1985; Butt and Benjamin, 1988; and Real Academia Española, 1973) were consulted in order to find all the documented realisations of purpose in English and in Spanish.
2. A concordancer (MicroConcord, see Scott and Johns, 1993) was used to search the strings of the purpose realisations suggested by the grammars consulted for each language. Needless to say that not all the purpose realisations indicated in the grammar books appear in instructional texts. The expressions found in the corpus, together with their frequencies of occurrence, are detailed in Tables 1 and 2 and discussed below.
3. The results of the concordancer were thoroughly checked against the definition of purpose provided above. This led to the exclusion of cases such as (13) and (14) where the purpose expressions refer to an object (a hole and fridge compartments, respectively) instead of an eventuality.

   (13) *... expose the lower location hole for the large screw*. [E005]

   (14) *En los frigoríficos con compartimentos para congelados, la temperatura ... puede ser variada ... girando la aleta*. [S013]
   (In refrigerators with compartments for freezing, the temperature ...can be varied turning the knob.)

Tables 1 and 2 describe the breakdown of the extracted data. The tables show that, in both languages, purpose is most frequently realised by only one expression: *to INF* in English and *para INF* in Spanish, both of which account for more than 50% of the tokens in each language. The remaining realisations have a much lower frequency of occurrence, although English *for NP* and *for ING*, as well as Spanish *para NP* and *para que*, still have a relatively high frequency of occurrence when compared to other purpose realisations.

Expression	No.	Percentage
to INF	147	64.5%
for NP	44	19.3%
for ING	24	10.5%
so that	10	4.4%
in order to	3	1.3%
Totals	228	100%

Table 1. Purpose expressions in English

Expression	No.	Percentage
para INF	104	53.6%
para NP	52	26.8%
para que	24	12.4%
de manera que	4	2.1%
de forma que	4	2.1%
a fin de	3	1.5%
con el fin de	1	0.5%
al objeto de	1	0.5%
de modo que	1	0.5%
Totals	194	100%

Table 2. Purpose expressions in Spanish

These data, however, did not contain enough tokens of the less common forms. In order to provide a more comprehensive study, it seemed plausible to analyse at least a minimum of 30 tokens of each of the most popular expressions. I thus added supplementary tokens taken at random from instructional texts not included in the corpus (see Appendices 8 and 9).[70] This resulted in a total of 256 English purpose expressions (147 *to INF*, 44 *for NP*, 32 *for ING*, 30 *so that*, and 3 *in order to*), and 200 Spanish purpose expressions (104 *para INF*; 52 *para NP*; 30 *para que*; 4 *de manera que* and *de forma que*; 3 *a fin de*; and 1 each of *al objeto de, con el fin de* and *de modo que)*.

Given the low number of tokens of the minor purpose expressions (those that occur with a very low frequency), the suggested semantics of these forms, provided here, should be taken with caution.

Examples of each of the purpose expressions available in each language, according to the data, are provided in sections 2.1 and 2.2.

2.1. Expressions of purpose in English

The English data, which consists of 228 tokens, revealed the following five forms for the expression of purpose:

- **To INF:** expressions with *to* followed by an infinitive, as in (15).
  (15) *To make a call, lift the handset, listen for the dial tone, and press the appropriate buttons of the number you wish to dial*. [E001]
- **For NP:** expressions with *for* followed by a noun phrase (NP), as in (16).
  (16) *For address see separate leaflet*. [E010]
- **For ING:** expressions with *for* followed by a non-finite *-ing* form,[71] as in (17).
  (17) *Refer to the instructions below for cleaning the following 'Credaclean' panels*. [E010]
- **So that:** clauses introduced by *so that*, as in (18).
  (18) *You will need to change the left hand appliance so that its door hinges on the left hand side*. [E011]

[70] Examples drawn from this supplementary corpus will be indicated with [Supplem.].

[71] *For ING* forms where the *-ing* element functions as an NP have been coded as *for ING* and not as *for NP* (see Table 1). However, the network in Figure 1 distinguishes between these two cases, as this may prove useful in later studies. In the network, for-ing-n indicates that the *-ing* element functions as an NP.

- **In order to:** adjunct clauses introduced by *in order to* and followed by an infinitive, as in (19).
  (19) *Your fridge is operated by a compressor which switches on and off in order to maintain the fridge's temperature.* [E011]

Purpose expressions such as *so as to* have been reported in previous research work on instructional texts (cf. Di Eugenio, 1993b). These linguistic forms, however, were not found in my data.

The following subsection presents the various realisations of purpose which were found in the Spanish data.

2.2. Expressions of purpose in Spanish

The Spanish data, which consist of a total of 194 tokens, revealed the following nine different expressions of purpose:

- **Para INF:** *para*[72] followed by an infinitive, as in (20).
  (20) *Para cerrar hay que girar de izquierda a derecha*. [S006]
  (To close it is necessary to turn from left to right.)
- **Para NP:** *para* followed by a noun phrase, as in (21).
  (21) *Para el montaje proceder en sentido inverso al expuesto anteriormente*. [S012]
  (For assembly proceed in the reverse order as above.)
- **Para que**: clauses introduced by *para que* with the verb in the subjunctive form, as in (22).
  (22) *Cuando haya terminado de freír, cuelgue la cesta en el soporte de la tapa para que los alimentos escurran el aceite.* [S015]
  (When you have finished frying, hang the basket from the hook on the lid so that the food drains the oil.)
- **A fin de:** non-finite clauses introduced by *a fin de* followed by an infinitive, as in (23).
  (23) *Prepare los alimentos que piense congelar en raciones separadas, a fin de poderlos luego consumir sucesivamente.* [S009]
  (Prepare the food that you are planning to freeze in different batches, in order to be able to use them successively in the future.)
- **Con el fin de:** non-finite clauses introduced by *con el fin de*, followed by an infinitive, as in (24).
  (24) *Esta plancha tiene la ventaja de llevar incorporada una aguja desmontable con el fin de permitir la limpieza de los residuos o de partículas que el agua deposite*. [S017]
  (This iron has the advantage of being equipped with a detachable needle in order to allow cleaning the residue or particles that the water leaves.)
- **Al objeto de:** clauses introduced by *al objeto de* followed by an infinitive, as in (25).

[72] Grammar books (see, for example, Butt and Benjamin (1988:369)) sometimes suggest the use of expressions with *por*, such as *porque*, as expressions of purpose. Informants agree that this expression has been supplanted almost entirely by *para*, and no examples of *por* appeared in my data. For a discussion of the different functions of *para* and *por*, see Bolinger (1991).

(25) *Cuando se transforme para gas butano, debe roscarse en el extremo de la boquilla el suplemento, al objeto de poder conectar el tubo.* [S006]
(When adapting for gas, the extra part must be screwed into the end of the nozzle, in order to be able to connect the tube.)

Note that *a fin de, con el fin de* and *al objeto de* can also introduce finite clauses where the verb is in the subjunctive, instead of the infinitive form; however, no cases of finite clauses with these linguistic markers were found in the data.

- **De manera que:** finite clauses introduced by *de manera que* and followed by the subjunctive,[73] as in (26).

(26) *...puede colocar la tapa, dejándola suelta en el brazo, de manera que cubra en parte los alimentos tratados.* [S023]
(You can put the lid, leaving it loose on the handle, so that it partly covers the food processed.)

- **De modo que:** finite clauses introduced by *de modo que* and followed by the subjunctive, as in (27).

(27) *La salida debe disponerse de modo que ningún elemento móvil de la construcción pueda obstruirla.* [S007]
(The exit must be located in such a way that no moveable object in the building can obstruct it.)

- **De forma que:** clauses introduced by *de forma que* followed by a verb in the subjunctive form, as in (28).

(28) *Repártalos de forma que el aire pueda circular libremente por su entorno.* [S009]
(Divide them so that the air can freely circulate around them.)

Having shown the linguistic forms available for expressing purpose in English and in Spanish, section 2.3 will briefly introduce the issue of location of these expressions within the clause and section 2.4 will point at some translation-related issues that support the case for the study presented in this chapter.

2.3. Placement of purpose expressions

It can be observed in the examples provided in sections 2.1 and 2.2 that purpose expressions can appear either before or after the main clause. It is also the concern of this chapter to explain what it is that determines the location of the purpose expression within the clause. The placement of purpose clauses has already been addressed by Sandra Thompson's (1985) work. She argues that initial and final purpose clauses in English have different

[73] Real Academia Española (1973) includes *de manera que, de modo que* and *de forma que* only among subordinators expressing result. However, they are also expressions of purpose, as suggested in other Spanish grammar books. Butt and Benjamin (1988) show that the distinction between the purpose and result meant by these subordinators is indicated by the verb form they take. When *de manera que, de modo que* and *de forma que* are followed by the indicative they express result, while they express aim (or purpose, as it has been termed here) when they are followed by the subjunctive. According to Butt and Benjamin, the fact that English no longer systematically clarifies this difference poses problems when trying to translate from Spanish into English. They explain the differences between the purpose and result interpretations as follows:

> "the sentences *Lo hizo de modo que nadie se enteró* and *Lo hizo de modo que nadie se enterase* may both be translated 'he did it so no one realized' despite the fact that they mean entirely different things in Spanish. Strictly speaking the first means 'he did it and no one realized' and the second means 'he did it in such a way that no one should realize'." (Butt and Benjamin, 1988:341-342)

functions: initial purpose clauses function as a marker of discourse structure, guiding the reader's attention, while final purpose clauses do not perform this function. The claim that initial purpose clauses help in the understanding of instructions is further supported by psychological studies such as Dixon (1987b), which suggests that instructions are better understood if they take into account the hierarchical plan organisation, that is, if they make the goals explicit through, for instance, the use of purpose expressions. More detailed information about Thompson's (1985) views and other related works (e.g., Vander Linden, 1993) will be provided in section 4.1, when introducing the potential factors influencing form and placement.

2.4. Translatability of purpose expressions

When comparing Table 1 and Table 2, it can be observed that several purpose realisations in one language look like realisations in the other language. Thus, for instance, the grammatical constituents in English *for NP* are the same as those in Spanish *para NP*. Similarly, English *to INF* and *so that* can be seen to correspond grammatically to Spanish *para INF* and *para que* respectively. Furthermore, the correspondences between these forms do not only appear at the surface grammatical level, as illustrated in the glosses for the Spanish examples (29), (30) and (31), repeated here for convenience. These glosses show that *to INF*, *for NP* and *so that* are plausible translation equivalents of *para INF*, *para NP* and *para que*, respectively.

(29) *Para cerrar hay que girar de izquierda a derecha*. [S006]
(To close it is necessary to turn from left to right.)

(30) *Para el montaje proceder en sentido inverso al expuesto anteriormente*. [S012]
(For assembly proceed in the reverse order as above.)

(31) *Cuando haya terminado de freír, cuelgue la cesta en el soporte de la tapa para que los alimentos escurran el aceite*. [S015]
(When you have finished frying, hang the basket from the hook on the lid so that the food drains the oil.)

Nevertheless, these forms that at first sight look like translation equivalents are not always appropriate translations. A simple exercise carried out with a small group of native speakers showed that the speakers did not always choose the apparent translation equivalent, as illustrated in the examples below.

(32) (a) *Foaming is done by positioning the milk jug beneath the steam cone, so that the cone's opening is below the surface level*. [E004]

(b) ? **La espuma se consigue colocando la jarra de leche debajo de la campana de vapor para que la abertura de la campana quede por debajo del nivel de la superficie (de la leche).**

(c) **La espuma se consigue colocando la jarra de leche debajo de la campana de vapor de manera que la abertura de la campana quede por debajo del nivel de la superficie (de la leche).**

In (32), *para que* is not a suitable translation of *so that*. For this example, an expression such as *de manera que* would be preferable. Similarly, in example (33), *to INF* is not a good translation for *para INF*. In this particular context, an English native speaker would use *for NP* instead.

(33) (a) **Para obtener temperaturas más frías, gire el mando hacia la derecha.** [Not in corpus]

(b) ?**To obtain lower temperatures, turn the knob to the right.**

(c) **For lower temperatures, turn the knob to the right.**

The fact that these purpose expressions do not always translate into their apparent translation equivalents indicates that, despite their similar grammatical constituents, they convey different meanings in English and in Spanish. A close analysis, therefore, is needed in order to provide an overview of the semantic meanings conveyed by each expression. This chapter will present the results of such analysis.

The next section will show how the purpose expressions described in section 2 were analysed in order to identify the factors that influence the choice of one expression instead of another, as well as their placement in relation to the main clause.

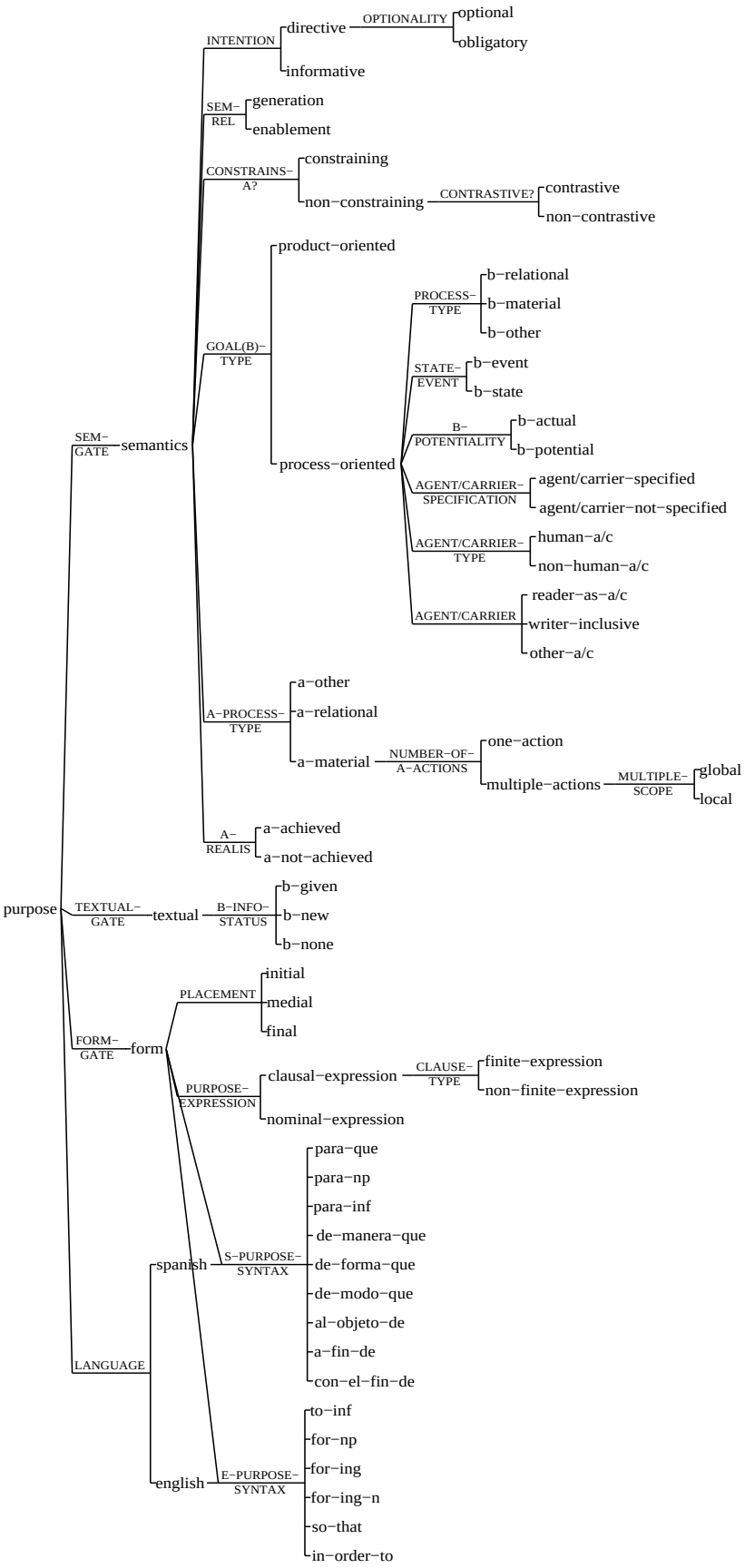

Figure 1. **Coding network for purpose expressions**

3. Method of Analysis

This section will show the methodology used to carry out the data analysis.

The data were coded and analysed in both languages using O'Donnell's (1995) Workbench for Analysis and Generation (WAG) on the Macintosh. WAG is a semi-automatic coding tool based on a systemic network designed for the purpose by the analyst. The program also supports the analysis with statistics. The network designed for the analysis of purpose expressions is reproduced in Figure 1. Following this network, each token of purpose was coded for a range of features (described in section 4) which represent a series of factors that could potentially play a role in the choice of syntactic expression. Some of these features were chosen taking into account the issues discussed in the literature on purpose clauses and instructional texts. The frequencies and other statistics used in the following sections are those generated by WAG.

The coding network was based on three main components: a syntactic component which includes form and placement (FORM-GATE in the network); a semantic component (SEMANTIC-GATE), which includes the semantic factors that potentially influence the choice of form and placement; and a textual component (TEXTUAL-GATE), which was used only for Spanish for the reasons that will be explained in section 4.2.7 below.

Many of the factors mentioned here have been the concern of previous studies, either in relation to purpose expressions or in cross-linguistic descriptions.

As it was noted in section 1, the relevance of SEMANTIC RELATION for purpose expressions has been addressed by Balkanski (1991, 1993), Di Eugenio (1992, 1993b), and Vander Linden (1993). In addition, a close analysis of the role of the two semantic relations of Generation and Enablement in multilingual syntactic choice appears in Delin *et al.* (1993, 1994, 1996a, 1996b) and Grote (1995). Di Eugenio (1992) has also argued that *to infinitive* rationale clauses are capable of expressing information that CONSTRAINS the way that the user actually does the task. Thompson (1985) investigates how the number of actions over which the purpose expression has scope influences decisions about the PLACEMENT of the purpose expression before or after the main clause. She argues that English initial and final *to infinitival* adjunct purpose clauses such as (34) and (35) (her examples) perform different functions.

(34) *To reach it one crosses bog country marked by clumps of brown peat stacked for drying and occasional tiny fields rimmed with walls of loose rock.* [Not in corpus]

(35) *We all lined up to watch.* [Not in corpus]

She argues that initial clauses function as a marker of discourse structure, guiding the reader's attention to the purpose clause as a 'marked theme'. The initial purpose clause names a problem resulting from a set of assumptions that the reader makes during his processing of the text, and it offers a description of the solution in the clause (or clauses) following the purpose one. The initial purpose clause often introduces long or numerous main clauses, and is thus termed by Thompson GLOBAL in scope. In contrast, the final purpose clause simply describes the purpose of the eventuality described in the previous clause and is, therefore, LOCAL in scope. Thompson claims that it is this functional difference that determines the placement of these adjuncts. She also notes that, although initial placement is generally rarer in English than final placement, there is a much larger proportion of initial purpose clauses in instructional texts than in other types of texts. This, she suggests, is due to the fact that

> "procedural texts are more strongly organized in terms of the type of expectation chains which give rise to initial purpose clauses ... when one is describing the method for accomplishing a certain end, a convenient way to do this is to state at the outset what the goal is, and then describe how one reaches it." (Thompson, 1985:78-79)

Vander Linden (1993) takes on Thompson's generalisation about placement being determined by scope, and extends it beyond *to infinitive* adjuncts to any purpose expression. He also shows other two important factors that influence the choice and placement of purpose expressions: the OPTIONALITY of the goal expressed, and whether the purpose expression establishes a CONTRAST with a previous goal. He suggests that, in the automatic generation of purpose expressions, final placement is the default option, but initial is chosen in the following three situations: when the scope of the purpose is global; when the purpose is considered optional; and when the purpose is contrastive. In the study presented here, the data were coded for placement, scope and contrastiveness separately, in order to test these various claims for both languages.

Finally, Paris and Scott (1994) have pointed out the importance of utterance INTENTION – for example, the directive or informative function of the utterance as a whole – in syntactic analysis. The remaining factors included in the study, such as the ability (or requirement) to make an agent or object explicit, the process type of both the goal action and the action in the main clause (or matrix action), and whether information status such as Given or New could or must be marked on the purpose expression, were included in the study on a common-sense basis.

Having introduced the various issues that, as shown in the literature, convey meaning differences between purpose expressions, the next section will provide an overview of the various factors that the data were coded for (section 4.1) and will explain how some of these factors influence the choice of form and placement.

4. Factors influencing choice of expression

As it was mentioned in section 0, the data were coded for a range of semantic, syntactic and pragmatic features conveyed by the various purpose expressions available in instructional texts. The whole range of factors against which the data were coded will be introduced in section 4.1, dividing them into two groups: factors which were found to be particularly relevant for the choice of expression; and minor factors which do not seem to play such an important role in the choice of linguistic realisation. Section 4.2 will look at the results for the relevant factors individually; it will also show how far each factor limits the linguistic choices available and whether these factors influence the choice of placement too. It will be shown that some choices are narrowed down by one individual factor in isolation, but that the combination of one factor with other factors can reduce the choices even further. When examining each of the individual factors, a comparison between English and Spanish will be made, presenting the similarities and differences between both languages with regard to each factor and their influence on the linguistic realisation chosen to convey a specific feature.

4.1. Potential factors in choice of expression

This section will introduce the whole range of factors against which the data were coded. As it was pointed out in the previous section, some of these factors have been identified in the literature, while others were included on a common-sense basis. The factors identified in the literature include semantic relation, action constraint, scope of purpose expression, contrast, intention and optionality. The factors included by common-sense are goal type, agency, information status, process type (for both goal action and matrix action), realis vs. irrealis nature of the α action, and potentiality of the goal. The results of the coding showed that not all of these factors play an important role in the choice of purpose expression. It is for this reason that the factors are divided into two groups. On the one hand, the factors which were found to be relevant for the linguistic choice or the placement of the purpose expression will

be summarised under the heading "relevant factors". On the other hand, the heading "minor factors" comprises the factors that the analysis showed as having very little or no relevance for the choice or placement of expression.

4.1.1. Relevant factors

The factors that according to the data analysis influence the choice of purpose expression, and at times its placement, are summarised below:

- SEMANTIC RELATION. The nature of the relationship that holds between the actions described by the purpose expression and that of the adjoining main clause.
- ACTION CONSTRAINT. Whether the purpose expression is intended to supply information constraining the understanding of how the matrix action (i.e., the action in the main clause) should be performed.
- SCOPE OF PURPOSE EXPRESSION. The number of actions in adjoining clauses that the purpose expression is intended to modify.
- CONTRAST. Whether the goal is contrastive with some preceding possible goal, or even an inferable goal.
- GOAL TYPE. Whether the goal described in the purpose expression is a process or the product of a process. In other words, whether the result of the action is more important than the action itself.
- AGENCY. This factor refers to whether the agent (Agent or Carrier, depending on the type of process) of the action in the purpose expression needs to be specified; and whether it is human or non-human.
- INFORMATION STATUS. Whether the goal conveyed by the purpose expression is signalled as Given or New information. This is a textual factor that was only found to be of interest for distinguishing between the two most frequent expressions of purpose in Spanish (*para INF* and *para NP*). Consequently, only the Spanish data were coded for information status.

It will be shown that these factors play an important role not only in the choice of expression, but also in determining the location of that expression. Placement then will be mentioned when discussing the combinations of factors and their effect, that is, how certain combinations of factors affect the choice and placement of linguistic expressions of purpose.

4.1.2. Minor factors

The factors summarised below were found to be of little relevance (at least on their own) for the choice of linguistic expression. Although they will not be studied in detail in section 4.2 below, they will sometimes be mentioned when discussing the effects of the combinations of a particular relevant factor with other factors.

- UTTERANCE INTENTION. Whether the utterance as a whole is intended as directive or informative.
- OPTIONALITY. Whether the state of affairs described by the purpose expression is intended to be interpreted as an optional goal by the user, or whether it is obligatory.
- GOAL ACTION PROCESS TYPE. Whether the action in the purpose expression is a relational, material or other process type (e.g., verbal, behavioural, existential).
- POTENTIALITY OF THE GOAL. Whether the goal action is expressed as a potential action or not. This semantic feature is realised in the grammar through modal auxiliary verbs.

- REALIS VS. IRREALIS NATURE OF THE α ACTION. Whether the action in the main clause has already been performed or achieved, as opposed to being an action that is yet to be performed (α-not-achieved).
- MATRIX ACTION PROCESS TYPE (α process type). Whether the action in the main clause is expressed as a relational, material or other process type (verbal, behavioural, existential).

The following section will address each of the factors that seemed to be relevant for the choice of expression, showing how the linguistic forms available can be narrowed down depending on the semantic features (both in isolation or in combination) to be conveyed by the goal action.

4.2. Relevant factors: their influence on linguistic choice and placement

This section will examine each of the factors that the data analysis showed as having a relevant influence on choice of purpose expression. The factors will be examined individually, establishing the similarities and differences between Spanish and English with respect to each factor. Where appropriate, the ways in which the choices of expression are narrowed down will also be shown.

4.2.1. Semantic relation

This factor refers to the nature of the relationship that holds between the action described by the purpose expression and the action described by the adjoining main clause; this relationship can be either one of Generation or of Enablement.[74] The Generation relation is illustrated in (36) and (37).

(36) *To make a call, lift the handset, listen for the dial tone and press the appropriate buttons of the number you wish to dial*. [E001]

(37) *Para cerrar hay que girar de izquierda a derecha*. [S006]
(To close it is necessary to turn from left to right.)

In (36), performing a whole set of actions (e.g., lifting the handset, listening for the dial tone and pressing the appropriate buttons) automatically results in the performance of the goal action (i.e., making a call). Similarly, in (37), turning from left to right achieves the goal action of closing.

Examples of the Enablement relation for each language are provided in (38) and (39) below.

(38) *To keep the soleplate of your iron clean and free of lime, make a paste of mild scouring powder and a little water*. [E003]

(39) *Para cambiar la bombilla debe previamente desenroscarse el ojo de buey que la cubre*. [S006]
(To change the light bulb one must previously unscrew the washer that covers it.)

In (38), making a paste as indicated does not automatically result in the performance of the goal action (keeping the soleplate clean), but it is a necessary step to achieve it. In the Spanish example (39), unscrewing the washer contributes to the process of changing the bulb but, on its own, it does not automatically achieve the goal.

The data were coded for the semantic relations of Generation and Enablement, with the results shown in Table 3 for English and

[74] For a definition of Generation and Enablement, see chapter 4.

Table 4 for Spanish, which show that this factor can narrow down some of the choices of purpose expression in Spanish but not in English.[75] Purpose expressions in English then are ambiguous with regard to the semantic relation they can express. However, as it was shown in chapter 4, sometimes this ambiguity within linguistic realisations can disappear when we look at placement; in other words, a particular form can express both Generation and Enablement, but it might only express Generation when it appears in initial position, while it expresses Enablement in final position.

	Generation	Enablement
to INF	86%	14%
for NP	73%	27%
for ING	31%	69%
so that	73%	27%
in order to	33%	67%

Table 3. Results for semantic relation in English

	Generation	Enablement
para INF	62%	38%
para NP	69%	31%
para que	77%	23%
de manera que	100%	0%
de forma que	75%	25%
a fin de	33%	67%
con el fin de	0%	100%
al objeto de	0%	100%
de modo que	0%	100%

Table 4. Results for semantic relation in Spanish

Table 3 shows that both Generation and Enablement can be realised by any of the five purpose expressions found in the English data. However, not all these expressions realise Generation and Enablement with the same frequency of occurrence. The table, based on statistics drawn by WAG coder, shows that *so that, for NP* and *to INF* express Generation much more frequently than they express Enablement. These results contrast with those for *for ING* and *in order to*, which express Enablement more frequently than Generation.

When comparing Table 3 and

Table 4, the most remarkable difference between Spanish and English with regard to the factor of semantic relation is the fact that Spanish restricts the choice of purpose expression depending on the type of relationship holding between the actions in the action pair, whereas English does not narrow down the choices. Thus, according to the data, *de manera que* does not express Enablement, while linguistic forms such as *con el fin de, al objeto de* and *de modo que* do not express Generation. It must be pointed out, however, that these four Spanish expressions whose choice is restricted depending on the semantic relation to be expressed have a very low frequency of occurrence (see Table 2 on page 130), and that a bigger sample

[75] Note that in the analysis presented in chapter 4 it was said that English *in order to* did not realise Generation, while the study in the present chapter shows it does. The reason for this apparent clash lies in the fact that only expressions for tasks to be performed were considered in chapter 4, while the present chapter studied both goals already performed and goals to be performed by the reader.

might provide different results. A further difference between the two languages lies in the fact that Spanish does not have a counterpart for the results of English *for ING*, which expresses Enablement much more frequently than Generation.

Interesting similarities between Spanish and English with regard to semantic relation can also be found, as detailed in the following. Spanish *para que* and *para NP* express Generation more frequently than Enablement, with frequencies of occurrence which are very similar to those of their English counterparts *so that* and *for NP*. In addition, and similarly to the results for English *to INF*, Spanish *para INF* is more frequently used for Generation than for Enablement, although the difference of frequency between the two semantic relations is slightly less marked in the Spanish case.

The way the choices for semantic relation combine with other factors is also worth noticing, since they can further narrow down the number of expressions available. However, to avoid unnecessary repetitions, these combinations will be dealt with in turn, when discussing the influence of each of the remaining factors.

A summary of the similarities and differences between Spanish and English according to semantic relation is provided in Summary Table 1.

SIMILARITIES	DIFFERENCES
♦ Frequencies of occurrence • English *so that*, *for NP*, *to INF* more frequently used for Generation. • Spanish *para que*, *para NP*, *para INF* more frequently used for Generation.	♦ English does not restrict choices, while Spanish does, as follows: • *de manera que* expresses only Generation; • *de modo que*, *al objeto de*, *con el fin de* express only Enablement. ♦ English *for ING* has no Spanish clear-cut counterpart: no Spanish purpose realisation expresses Enablement more frequently than Generation.

Summary Table 1. Semantic relation

4.2.2. Action Constraint

Taking as point of departure Di Eugenio's (1992) argument that *to INF* rationale clauses are capable of expressing information that constrains the way that the user actually does the task, this study extends the analysis of the constraining factor beyond *to INF* to the whole range of purpose expressions found in the data. The notion of action constraint appears to be relevant for a variety of English and Spanish expressions and, since it does not apply to all expressions, it is a further factor in limiting the number of syntactic expressions to be chosen from.

A distinction between constraining and non-constraining actions was made depending on whether the purpose expression is intended to supply information constraining the way the action in the main clause (or matrix action) should be performed. Purpose expressions such as those in (40) and (41) involve a non-constraining action as goal, while the ones in (42) and (43) introduce goals which constrain the way the action in the main clause is to be performed.

(40) *Remove the wire shelves to make access easier.* [E011]

(41) *Marque un 2 para volver a la comunicación original*. [S014]
(Dial number 2 in order to return to the original connection.)

(42) *Tighten the screws so that they are just gripping the hinge*. [E011]

(43) *Situar el mando del conmutador para que funcione la resistencia deseada*. [S012]
(Place the commuter knob so that the desired voltage works.)

Since, as shown in Table 5 and Table 6, all purpose expressions (both in Spanish and in English) are capable of expressing non-constraining actions, I will focus here on the linguistic realisations available for action constraint. This will allow me to establish further similarities and differences between the two languages.

	constraining	non-constraining
to INF	14%	86%
for NP	0%	100%
for ING	3%	97%
so that	37%	63%
in order to	0%	100%

Table 5. Results for action constraint in English

	constraining	non-constraining
para INF	2%	98%
para NP	0%	100%
para que	37%	63%
de manera que	100%	0%
de forma que	100%	0%
a fin de	0%	100%
con el fin de	0%	100%
al objeto de	0%	100%
de modo que	100%	0%

Table 6. Results for action constraint in Spanish

The choice of linguistic realisations for action constraint in English is limited to mainly two expressions: *so that* and *to INF*. In addition, Table 5 shows that *for ING* is also capable of expressing a constraining action; this, however, occurs very rarely, since only one case of constraining *for ING* was found in the data. In its turn, and similarly to English, Spanish has a limited, but wider, number of purpose expressions realising action constraint: *para que, para INF*, *de manera que*, *de modo que*, and *de forma que*. These results, without taking into account the frequency of occurrence, seem to suggest that English *so that* and *to INF* would be most likely translated as *para que* and *para INF* respectively. Table 5, however, shows that constraining *to INF* is by far much more frequent than its Spanish counterpart *(para INF*), and a closer examination of the data leads to conclude that constraining *to INF* is unlikely to be translated by *para INF*. Murcia and Delin (1996:46-48) illustrate this same point with a translation exercise of Di Eugenio's (1992) canonical example, repeated here as (44a).

(44) a. *Cut the square to create two triangles*. [Not in corpus]

b. ?**Corte el cuadrado para formar dos triángulos**.

Although the Spanish example (44b) is grammatical, it sounds incomplete; the reason for this, they argue, seems to be that Spanish *para INF* does not perform the constraining function of *to INF*, and the sentence would need to be made more explicit, perhaps by including the adverb *diagonalmente* 'diagonally' as in (45). The result, however, is not a constraining purpose expression, since the required action is now fully expressed in the main clause:

(45) **Corte el cuadrado diagonalmente para formar dos triángulos**.

It draws from these examples that when *to INF* expresses action constraint it is more acceptable to translate it as *de manera que, de forma que* or *de modo que*, rather than *para INF*. This is illustrated in (46).

(46) a. *Cut the square to create two triangles*. [Not in corpus]

b. ? **Corte el cuadrado para formar dos triángulos**.

c. **Corte el cuadrado de manera que se formen dos triángulos**.

A closer examination of the data, and in particular the combination of the action constraint and the semantic relation factors, seems to provide further explanations for the unlikelyhood of *para INF* as an appropriate translation for constraining *to INF*.

The data shows that Spanish only uses *para INF* in just a couple of exceptional cases which, in addition, are the only cases of constraining + Enablement in Spanish. Besides, Spanish constraining expressions of purpose were found to realise an Enablement relationship if the matrix action is presented as already achieved as in (47) – as opposed to being an action to be performed in the future – or if the matrix action involves an underspecified verb such as *servir* 'to be (used) for' in (48).

(47) *... ha sido proyectado y fabricado con esmero por nuestros especialistas y comprobado cuidadosamente para satisfacer todas sus exigencias*. [S005]
(... it has been designed and manufactured with care by our specialists, and [it has been] carefully checked in order to satisfy all your demands.)

(48) *Pulverizador-spray. Este dispositivo sirve para humedecer y así facilitar tejidos secos y de planchado difícil*. [S017]
(Spray. This feature is used for humidifying and therefore making it easier to iron materials which are dry and difficult to iron.)

The combination of action constraint with other factors also shows similarities between the two languages. On the one hand, the vast majority of constraining purpose expressions in both languages realise the semantic relation of Generation rather than Enablement, and the very few cases of Enablement + action constraint have in common the use of an underspecified verb in the main clause, such as *use* in the English example (41) above or *servir* 'to be (used) for' in the Spanish example (49).

(49) *Use plain and serrated flow rings (supplied) in the recommended combination as shown to achieve the desired flow*. [E009]

A further interesting similarity between Spanish and English is exposed when studying the relationship between action constraint and placement. It was observed that all constraining purpose expressions are placed finally, i.e., after the matrix clause. This ordering seems to be based on common-sense; constraining actions *add* some information about the matrix action, and this cannot be done unless the preliminary information (what the matrix action consists of) has already been given.

The combinations of action constraint with optionality show slight differences between Spanish and English. All constraining purposes in directive utterances[76] were found to express obligatory actions in Spanish, while there were a couple of optional constraining actions in English, as the one in (50) below.

[76] Only utterances with directive intention were coded for optionality. The distinction between obligatory and optional actions was not relevant in cases with informative intention or where the purpose expression had scope over a dependent clause instead of an independent one.

(50) *The setting lotion should be applied to wet hair prior to the drying process, gel or mousse on dry hair to shape and texturise*. [E002]

Finally, it must be pointed out that purpose expressions that constrain the matrix action were not coded for contrast. The reason for this has to do with the relationship between contrast and optionality and will be further discussed in section 4.2.6 below.

Summary Table 2 below summarises the similarities and differences between Spanish and English with regard to action constraint.

SIMILARITIES	DIFFERENCES
♦ Action constraint restricts the choice of expression to: • English *so that* and *to INF*; and • Spanish *para que, para INF, de manera que, de modo que* and *de forma que*. ♦ Constraining purpose is always placed finally. ♦ Action constraint realisations express Generation rather than Enablement. However, they express Enablement only in special cases with underspecified verbs in matrix clause, or when matrix action is achieved (i.e., it has realis nature).	♦ Spanish *para INF* very rarely expresses constraint (and it is only used when constraining + Enablement), while English *to INF* is a frequent expression of constraint.

Summary Table 2. Action constraint

4.2.3. Goal Type

This factor involves the kind of goal described by the purpose expression: whether it is a process or the product of a process. In other words, it refers to whether the goal is an action itself or whether it is a state of affairs or object achieved as a result of the action. Since the ability of the user to recognise a goal when one is presented is crucial for the correct understanding and performance of instructions, most purpose expressions will specify the goal as a process through the use of a verb or a nominalisation derived from a verb, such as *adjustment* in (51).

(51) *For easy adjustment of the nozzle height tilt the cleaner forwards or backwards and slide the Height-Right knob*. [E005]

There are, however, cases where the result of the action seems more important than the procedure itself; these will normally use an expression of what I have coded as product-oriented, also known as "goal metonymy" (Vander Linden, 1993). Examples (52) and (53) illustrate this type of goal in each language.

(52) *For healthy shining hair it is necessary to follow a basic haircare routine*. [E002]

(53) *Para las instrucciones de limpieza y conservación de estos hornos consultar lo expuesto en las páginas...* [S012]
(For instructions on cleaning and maintenance of these ovens, consult pages ...)

In these cases where the goal action is not made explicit, the 'transparency of the goal' (Murcia and Delin, 1996:14) – i.e., whether the reader can recognise a particular expression as the expression of a goal – is critical to the execution of the user's task. This is so because some combinations of expression and placement of the purpose expression in relation to the main clause tend to obscure the goal reading, lending other interpretations instead.

Spanish and English present similarities in the possible realisations of goal type: all linguistic forms are capable of expressing a process-oriented goal, while a product-oriented

goal restricts the choice of expression to only one in each language (*for NP* in English and *para NP* in Spanish). At first sight, Spanish and English might appear quite similar with regards to this factor. However, the frequencies of occurrence of the product-oriented goal feature show that Spanish and English do in fact differ greatly in this respect.

The feature of product-oriented goal accounts for 57% of the English uses of *for NP*, while this same feature is realised by only 12% of the overall uses of Spanish *para NP*. The reason behind this great difference in frequency of occurrence is no other than goal transparency: "while for an English native speaker *for NP* clearly expresses a goal in most situations, a Spanish speaker almost always adopts the interpretation that the NP is not a goal, but a pre-existing state of affairs when the NP is a common noun" (Murcia and Delin, 1996:54). In these cases, then, Spanish seems to prefer the use of *para INF* instead of *para NP* as the most suitable translation of *for NP*. This point is illustrated by the following two examples taken from Murcia and Delin (1996), and based on a translation exercise:

(54) a. *For healthy shining hair it is necessary to follow a basic haircare routine.* [E002]

b. **Para conseguir un cabello sano y brillante es necesario seguir una rutina básica de cuidado diario del cabello**.

c. **? Para un cabello sano y brillante es necesario seguir una rutina básica de cuidado diario del cabello...**

(55) a. **Para obtener temperaturas más frías, gire el mando hacia la derecha**. [Not in corpus]

b. **? To obtain lower temperatures, turn the knob to the right**.

c. **For lower temperatures, turn the knob to the right**.

These two examples show that English *for NP* is totally goal transparent, while in Spanish goal metonymy with *para NP* is rather ambiguous and tends to be avoided. In addition, Spanish cases of product-oriented goal consist of set expressions that are well known to convey goals (e.g., *para mayor comodidad* 'for more comfort', *para las instrucciones* 'for instructions', and also the translationally constructed *para más información* 'for more information' and *para su propia seguridad* 'for your own safety').

An interesting similarity between Spanish and English, which provides some kind of understanding of the semantics of the goal type factor, was found when looking at the combination of the product-oriented feature with semantic relation; the data analysis showed that most product-oriented goals in both languages also express Generation,[77] although there are some exceptions.

Surprisingly, the data showed that product-orientation is not particularly related to contrastive goals. Although at first sight it might be thought that contrast could be a reason for using *for NP* to express product-oriented goals, the results of the coding showed that only 2 out of 27 cases in English (and only 1 out of 18 cases of product-orientation in Spanish) were found to be contrastive. It must be taken into account, however, that those cases where a contrast might be inferred through the use of a comparative adjective were coded as non-

[77] A total of 25 out of 27 cases of English product-oriented goals realise a Generation relation. With similar frequency, Spanish presents 16 out of 18 product-oriented goals which at the same time realise Generation.

contrastive rather than contrastive. The only cases of product-orientation which also express contrast are given below as examples (56) and (57).

(56) *The handle can be either detachable from or fixed to the pan. For a fixed handle remove the screw and ... For a detachable handle remove screw and washers from the grill pan and discard*. [E010]

(57) *La utilización del frigorífico puede ser doble: congelador - refrigerador y congelador. Para una prestación mixta: congelador -refrigerador, escoja la temperatura deseada ...* [S009]
(The use of the fridge can be double: freezer-refrigerator and freezer. For a mixed function freezer-refrigerator, choose the desired temperature ...)

The most interesting issues about this factor of goal type (and, in particular, product-oriented goals) are summarised in Summary Table 3.

SIMILARITIES	DIFFERENCES
♦ Product-oriented goals narrow down the choices available to the following: • *for NP* in English; • *para NP* in Spanish. ♦ Product-oriented goals express mainly Generation.	♦ Goal metonymy is ambiguous in Spanish: • Spanish product-orientation involves mainly fixed expressions. • English has a high percentage of product-oriented goals, while Spanish has a very low percentage.

Summary Table 3. Goal type (product- vs. process-oriented goals)

4.2.4. Agency

This factor involves two issues: whether the agent[78] of a purpose expression needs to be specified, and whether that agent is human or non-human. Clausal and phrasal purpose expressions in Spanish and English imply the existence of an agent. Although the agent is not specified, it is usually inferred from the context. The agent can be left unspecified in any of the three following cases: (i) when the agent is not relevant, (ii) when it is the default agent in instructions, i.e., the reader himself, and (iii) when it is the same as the agent of the matrix action. It is quite often difficult to identify exactly the reason for not specifying the agent, since any two or all three situations above can be conflated in one token. The following examples illustrate these reasons for not specifying the agent: the agent in (58) is not relevant, in (59) it is irrelevant and/or the default agent, and in (60) the agent is the same as the one in the matrix clause. Unspecified agency in Spanish is illustrated in (61).

(58) *If the supply cord is damaged, the complete product with supply cord must be returned to Morphy Richards returns department as special purpose tools are required in order to replace the cord*. [E002]

(59) *Close the bag door to latch securely*. [E005]

(60) *The chiller tray must be pulled out of the fridge in order to adjust the flaps*. [E011]

(61) *Para cerrar hay que girar de izquierda a derecha*. [S006]
(To close it is necessary to turn from left to right.)

In my English corpus, the agent is not specified in the purpose expression *so that* when used with passive voice or when it expresses an event; in addition, there is no specified agent in the expressions *to INF*, *for NP* or *for ING* when they express events. Similarly, in my Spanish

[78] *Agent* here is used as a general term to refer to what in Systemic Functional Grammar is known as Actor or Carrier, depending on the type of process.

data, the agent is not specified in *para que* clauses which express events or are in the passive voice, or in *para INF* and *para NP* realisations of events.

Taking into account that agent non-specification seems to be the most frequent procedure in purpose expressions, it is more important to notice *when* the agent is (or needs to be) specified. It is now necessary to turn to agency type in order to identify the reasons behind agent specification.

It draws from a close examination of the data that the agent needs to be specified if it is a non-human agent or if it is different to the agent in the matrix action, as illustrated in examples (62) through to (64) below, where the agent appears in boldface. As regards linguistic realisations of this feature, English *so that* and Spanish *para que*, and exceptionally *para NP* (when the NP is modified by a possessive adjective), specify the agent.

(62) *... you will need to change the left hand appliance so that **its door** hinges on the left hand side*. [E011]

(63) *Girar **el conmutador** para que accione el motor giratorio y la resistencia de bóveda-Grill*. [S012]
(Turn the commuter so that it makes the engine and the grill work.)

(64) *Este tiro se provocará practicando una abertura para entrada directa de **aire exterior** en la parte baja de dicho patio*. [S007]
(This draught will be built by making an opening for direct entry of air from outside into the lower part of the courtyard.)

Some differences exist between Spanish and English as regards the type of agent and their specification. In English, purpose expressions do not need to specify human agency, unless they refer to a state of affairs (such as the state of possibility in (65)) or the agent is different to the default one. However, in Spanish, there are cases where there is no need to make the agent explicit but it is still specified in the verb ending when a *para que* clause is used, as illustrated in (66). Agency is also signalled in boldface in these two examples.

(65) *Before using the machine read this section carefully and make sure you understand each of the controls, so that **you** can achieve the best washing results*. [Supplem.]

(66) *disponga previamente las prendas por grupos de tejidos, para que comenzando con las que requieran temperatura más baja, como nylón y rayón, termine con las que requieran temperaturas más altas*. [S020]
(Sort first the garments into groups according to the material, so that starting with those that require a lower temperature, such as nylon and rayon, you finish with those that require higher temperatures.)

Summary Table 4 summarises the most interesting issues related to the factor of agency.

SIMILARITIES	DIFFERENCES
♦ Agency is implicit in most cases. ♦ An agent needs to be specified if: • agent in purpose clause is different to agent in matrix clause; • non-human agent. ♦ If necessary to specify agent, use: • *so that* in English; • *para que* in Spanish.	♦ Spanish does specify human agent through verb ending, even when the agent is not necessary. ♦ This is done using a *para que* clause.

Summary Table 4: Agency

4.2.5. Scope of Purpose Expression

This factor refers to the number of actions in adjoining clauses that the purpose expression is intended to modify. Matrix clauses whose goal is realised by a purpose expression do not always contain one single action. Sometimes the matrix clause can have more than one action. In these cases with various actions in the matrix (multiple scope), the goal described by the purpose expression can refer to either (i) all the actions in the matrix clause (global scope), or (ii) only one action in the matrix clause (local scope), usually the action closest to the linguistic realisation of purpose. Global scope in each language is illustrated in (67) and (68) below, while the purpose expressions in (69) and (70) have local scope.

(67) *To make a call, lift the handset, listen for the dial tone and press the appropriate buttons of the number ...* [E001]

(68) *Para la repetición automática del último número marcado levante el microteléfono, espere tono de invitación a marcar ...* [S011]
(For the automatic repetition of the last number dialled, lift the handset, wait for the dial tone, ...)

(69) *Shampoo and condition hair, towel dry to remove excess moisture*. [E002]

(70) *Utilizando la empuñadura de baquelita retirar el espadín levantándole [sic] levemente para sacarle del gancho*. [S012]
(By using the baquelite handle, remove the skewer lifting it slightly in order to unhook it.)

The data showed a limited number of purpose expressions preceded or followed by more than one matrix action (i.e., with potential multiple scope). With the only exception of *in order to*, all English expressions can appear next to several actions in the matrix clause (that is, they all can have multiple scope), while this feature restricts the Spanish linguistic choices available to *para INF*, *para NP*, *para que* and *de manera que*.

Once the expressions than can be accompanied by several actions in the matrix clause(s) have been identified, a distinction has to be made between expressions which modify only one of those multiple actions (local scope) and expressions which modify all the actions (global scope). The data showed that English *so that* and Spanish *para NP* and *para que* express global scope exclusively, in other words, they are not capable of realising local scope. In addition, Spanish *de manera que* can only realise local scope. Finally, English *for ING*, *for NP* and *to INF*, as well as Spanish *para INF* can have both global and local scope. In general, these expressions realise global scope more frequently than local scope, with the only exception of English *for ING*, which seems to prefer local scope. Finally, the only case of *de manera que* with multiple actions in the adjoining clause has local scope.

When looking at the combinations of scope with other factors, there are several points worth noticing. Purpose expressions with global scope tend to appear in initial position in both Spanish and English. The reasons for this have already been suggested by Thompson (1985) in her claim that initial purpose clauses mark the discourse structure, guiding the reader's attention to the goal before describing how to achieve it. Very often final purpose expressions with global scope are considered as bad instructions (cf. Dixon *et al.,* 1988), and initial placement is chosen as the default option in text generation programmes such as IMAGENE (Vander Linden, 1993). Despite Vander Linden's formula, my data showed that global purpose expressions in final position are also possible.

Finally, purpose expressions having global scope tend to realise the semantic relation of Generation both in Spanish and English, though there are exceptions showing global scope

and Enablement. The results for scope, and in particular multiple scope, are summarised in Summary Table 5 below. Notice that Spanish and English are similar as regards this factor.

SIMILARITIES
♦ Multiple scope restricts choices, and can be expressed only by: • English *to INF*, *for NP*, *for ING*, and *so that.* • Spanish *para INF*, *para NP*, *para que*, and *de manera que*. ♦ Global scope tends to be initial in both languages. ♦ Global scope tends to be Generation. ♦ There are linguistic forms that can express both global and local scope: • English *for ING*, *for NP*, *to INF*. • Spanish *para INF*. ♦ There are linguistic forms that can express only local scope: • English *so that.* • Spanish *para NP, para que, de manera que.*

Summary Table 5: Scope of purpose expression

4.2.6. Contrast

This factor refers to whether the goal in the purpose expression is presented as contrastive with a previous goal, as in (71), repeated here for convenience.

(71) *The handle can be either detachable from or fixed to the pan. For a fixed handle remove the screw and ... For a detachable handle remove screw and washers from the grill pan and discard*. [E010]

There are expressions such as (72), (73) and (74), with either an adverb or an adjective modifying the goal, that seem to establish a contrast. These expressions, however, have been considered as non-contrastive, because they can only be interpreted as contrastive if a previous goal is inferred. The goal in (72) is modified by an adjective, while the goals in (73) and (74) are modified by adverbs.

(72) *For easy adjustment of the nozzle height tilt the cleaner forwards or backwards and slide the Height-Right knob*. [E005]

(73) *For further information telephone your local Hoover Service Office listed overleaf*. [E005]

(74) *Para mayor comodidad, recomendamos efectuar esta operación durante la noche*. [S009]
(For more comfort, we recommend doing this procedure during the night.)

Before discussing the results revealed by the data analysis, it has to be pointed out that only non-constraining expressions were coded for contrast. Taking into account that linguistic realisations with the feature "action-constraint" provide information constraining the way the action has to be performed, it would be paradoxical if at the same time they established a contrast. Action constraint gives the reader, as it were, no other option than the one indicated by the purpose expression, while contrast seems to indicate that the contrastive goal is one option which might be desirable to the reader in a specific case, but which he might decide to overlook in other cases and replace it instead with the other goal it contrasts with. This relationship between contrast and optionality is confirmed by the results of the data, which

showed that, with only one exception for each language, contrastive purpose is optional in both Spanish and English.[79]

The comparison of the combinations of contrast with other factors also provides interesting results. On the one hand, Spanish and English share their preference for Generation rather than Enablement relations when the purpose expression realises a contrastive goal. On the other hand, slight differences can be found in the placement of contrastive purposes in Spanish and English.

The link between contrast and placement has been addressed by Vander Linden (1993), who suggests an algorithm for the syntactic choice of purpose expression and its position in relation to the matrix action. In Vander Linden's IMAGENE program, the clause defaults to final position unless one of the following three conditions exists: the purpose is global, the purpose is optional, or the purpose is contrastive. Despite the preferences in Vander Linden's algorithm, my data analysis shows that both English and Spanish contrastive purpose expressions can appear in both final and initial position. There is, however, a slight difference between both languages: contrastive purpose in English tends to appear in initial position more often than in final position, while Spanish contrastive realisations of purpose seem to prefer final rather than initial position.

When looking at the linguistic forms capable of realising a contrastive goal, it appears that contrast is also an important factor restricting the choice of expression. According to my data, the only linguistic forms available for expressing a contrastive goal are: English *to INF*, *for NP* and, less frequently, *for ING*; and Spanish *para INF*, *para NP* and *para que*. It can be noticed that English and Spanish differ in the availability (although infrequent) of *para que* for realising a contrastive goal, while its English counterpart *so that* never expresses contrast in my data. Since only one case of contrastive *para que* was found, it is not possible to draw any conclusions about the situations in which a contrastive goal can be realised by *para que*.

A summary of the similarities and differences between Spanish and English as regards contrast is provided in Summary Table 6.

SIMILARITIES	DIFFERENCES
♦ Contrast restricts choice of expression to: • *for NP*, *to INF*, and *for ING* in English; and • *para INF*, *para NP*, *para que* in Spanish. ♦ Only non-constraining actions can be contrastive. ♦ All contrastive is optional. ♦ Contrast is mainly Generation.	♦ Contrast can be expressed by *para que* in Spanish, but not by English *so that*. ♦ In English, contrast is most frequently initial, while in Spanish there is a slight preference for final position.

Summary Table 6: Contrast

4.2.7. Information status

This feature refers to the cognitive status given to the goal in the purpose expression, i.e., whether the goal conveyed by the purpose expression is signalled as given or new information. Cognitive or information status is provided through the use of definite or indefinite determiners to express given and new information respectively, as it will be shown below.

[79] Notice, however, that not all the cases of contrast were coded for optionality, since the networks designed for the coding consider optionality/obligatoriness as a system choice available only for cases with directive intention.

Obviously, this feature only applies to those cases where the goal is realised through a phrasal expression, such as English *for NP* and Spanish *para NP*; when the goal is expressed by a verb (as in clausal realisations of purpose, including *for ING*) there is no possibility of marking information status. If the writer wants to indicate the information status of a goal, then, the number of expressions she can choose from will be narrowed down to only phrasal realisations of purpose.

This syntactic marking of information as given or new through reference opens up a series of related questions about its semantic content. Why would it be desirable to mark information status? What meanings are conveyed by information marking? What effect does it have on the understanding and interpretation of the instructions? Is the marking of information status equally desirable in both languages? The discussion that follows will, I hope, provide answer to these questions.

The salience or cognitive status of a nominal has been related to its referent in the discourse (cf. Prince, 1981; Gundel *et al.* (1993), *inter alia*) in the ways indicated below. Pronominal forms indicate that the referent is either physically present, or has been introduced recently in the previous discourse. Definite referring expressions (e.g., English *the* and Spanish *el/la* articles) indicate that the referent is either 'on the shelf', to use Prince's term (i.e., the referent is known to the participants and therefore inferable), or it has been explicitly introduced in the discourse. On the other hand, indefinite articles (e.g., English *a* and Spanish *un/una*) are commonly used for introducing a new referent, and are likely to contain significant descriptive content. In brief, the general rule is that definite expressions provide the referent with the status of given information, while indefinite expressions signal new information. It is, however, possible for definite referents to introduce new elements in the discourse, in which case the reader has to accommodate (cf. Lewis, 1979) by creating a referent for the expression and treating it as if it were already shared.

The first difference between English and Spanish with regard to this factor can be found in its combination with goal type (i.e., product vs. process orientation). The English purpose expressions in the data provide the marking for cognitive or information status when the goal is oriented towards the product, as in (75), and very rarely when the goal is a nominalised process, as illustrated through examples (76) and (77). In addition, it seems that when a nominalised process is provided with some kind of cognitive status in English, it is usually introduced as new information through indefinite reference, as in (78).

(75) *For a detachable handle remove screw and washers from the grill pan and discard.* [E010]

(76) *For access to the mains terminal block it is necessary to remove the mains terminal cover.* [E010]

(77) * **For the access to the mains terminal block it is necessary to remove the mains terminal cover**...

(78) *... apply more for a slightly wet or gelled look.* [E002]

The only cases where a nominalised goal can be marked as given or new are those where it is modified by an adjective. In some cases, the adjective is a positive one, and has a specific effect on the reader: he sees the goal as desirable or beneficial and is, therefore, more likely to take it on as his own goal. One further reason for the information marking in these cases (as in (78) above) might be the fact that they seem to imply an inferable type of contrast, through the use of an adjective in either neutral, comparative or superlative form.[80]

[80] Note that, as explained in section 4.2.6 above, these cases were coded as non-contrastive.

In contrast with English, the data showed that Spanish can indicate the information status as given or new in cases of nominalised process-oriented goals, as well as in product-oriented goals, as illustrated in (79) and (80) respectively.

(79) *Para el montaje proceder en sentido inverso al expuesto anteriormente*. [S012]
(For the assembly proceed in the reverse order to that mentioned above.)

(80) *Para las instrucciones de limpieza y conservación de estos hornos consultar lo expuesto en las páginas* ... [S012]
(For the instructions on cleaning and maintenance of these ovens refer to pages ...)

In (79) the goal is formulated as a nominalisation of the action and presented as known to the reader (i.e., given information). I will argue that definite reference in nominalised processes in Spanish seems to be linked to optionality and that accommodation (Lewis, 1979) takes place in some cases. For the moment, and in comparison to English, it is worth noticing that nominalised processes in Spanish can also be introduced by an indefinite article when the nominalisation is modified by a comparative adjective, as in (81).

(81) *Para una mejor colocación de pequeños paquetes* ... [S005]
(For a better placing of small parcels ...)

However, Spanish prefers the use of *para INF* instead of *para NP* where English marks a product-oriented goal as new information, as shown in Murcia and Delin (1996:53) through the translated examples of (82a) reproduced in (82b) to (82d) below.

(82) a. *For a detachable handle remove screw and washers from the grill pan and discard.* [E010]

b. ? **para un mango desmontable quite el tornillo y los discos de la parrilla**.

c. **Para desmontar el mango quite el tornillo y los discos de la parrilla**.

d. **Para obtener un mango desmontable quite el tornillo y los discos de la parrilla**.

The Spanish data also showed a tendency to express goals through the pronominalisation of actions previously mentioned in the discourse. Expressions such as *ello* and *lo cual*, in (83) and (84) below, are what Prince (1981) refers to as textually evoked referents, and introduce actions which have been mentioned in the previously preceding text.

(83) *Desmonte el panel de mandos y sepárelo del aparato. Para ello basta con desplazar suavemente el panel hacia arriba*. [S015]
(Dismantle the command panel and dettach it from the device. For this it is sufficient to slide the panel slightly upwards.)

(84) *Ya podemos poner en funcionamiento el fundidor, para lo cual sólo tenemos que pulsar el interruptor pulsador*. [S022]
(We can now switch the meter on, for which we only have to push the push button.)

In Spanish it seems there is a link between information status and optionality (and perhaps even action relevance), when the goal is process-oriented rather than product-oriented. Murcia and Delin (1996) point out that there are differences between English and Spanish in the way they express optionality and in the kind of optionality expressed. They suggest that English only distinguishes between optional and obligatory, while Spanish seems to provide two different kinds of optionality: task-level optionality and general optionality. Task level optionality appears when "the user is already engaged on a major task section", and "is at the level of sets of actions that could potentially make up a task that the user is already in some way committed to" (Murcia and Delin, 1996:31). The difference between these two kinds of

optionality is better illustrated through the constructed examples (85) and (86): if the goal is cleaning the oven, task level optionality can be glossed as *when you have to clean the oven*, and would be expressed by *para NP* (as in (85)). General optionality is more likely to be expressed by *para INF* and would be glossed as *if you wish to clean the oven* (as in (86)).

(85) **Para la limpieza del horno proceder como sigue**.
(For the cleaning of the oven proceed as follows...)

(86) **Para limpiar el horno proceder como sigue**.
(To clean the oven proceed as follows.)

I will argue for Spanish that, when the process is realised by an NP, the distinction between task plan optionality and general optionality can be related to the marking of information status. Pronominalised purpose expressions, such as (87), introduce their referent as given information, which implies that the reader is committed to doing the task. Even when definites (as in (88)) might in fact be introducing a new piece of information, the use of the definite expression forces accommodation (cf. Lewis, 1979) on the reader's side and he will treat it as shared information, understanding that he is supposed to achieve the goal and therefore making it his own goal.

(87) *Desmonte el panel de mandos y sepárelo del aparato. Para ello basta con desplazar suavemente el panel hacia arriba*. [S015]
(Dismantle the command panel and dettach it from the device. For this it is sufficient to slide the panel slightly upwards.)

(88) *para el montaje* ... [S012]
(for the assembly ...)

(89) *Para una congelación rápida* ... [S005]
(for a fast freezing ...)

On the other hand, when the *para NP* is marked by an indefinite as new information (as in (89)), the reader will see it as an optional goal. Many of these optional goals, however, are modified by a positive adjective, turning the goal into a beneficial and, therefore, desirable one. These actions, then, are more likely to be taken on as a goal by the user than if the positive comment were not added. It can be said, then, that the marking of information status in Spanish *para NP* cases expressing a process-oriented rather than product-oriented goal, also adds information about the action relevance (see chapter 5 on directives) of the goal itself: marking the process as given information makes it a necessary goal, in a loose way; marking the process as new information and at the same time adding a positive comment makes it a desirable goal; and finally, marking the process as new information without any further comments makes it a goal with unmarked obligation.

The similarities and differences between Spanish and English as regards information status are summarised in Summary Table 7.

SIMILARITIES	DIFFERENCES
♦ Both Spanish and English can provide information status when goal expressed through an NP construction. This is achieved by using: • English *for NP* • Spanish *para NP*	♦ Only Spanish provides information status of goal as process. • This is achieved through the use of *para NP*, where the NP is a deverbal nominalisation. ♦ Spanish given/new marking differentiates two kinds of optionality: • general optionality = new information; • task plan optionality = given information. ♦ Info status of Spanish nominalisations might be related to action relevance, as follows: • given info = loosely obligatory goal; • new info (+ adj.) = desirable goal.

Summary Table 7: Information status

To sum up, it has been shown in section 4 that purpose expressions can convey many different meanings. These meanings have been represented as features of a system network (Figure 1) that was used for the coding and analysis of the data. The data analysis showed that the range of realisations available for each feature is limited in most cases. In other words, the number of purpose expressions a writer can choose from is narrowed down depending on the meanings she wants to convey. Taking this into account, it can be said that the whole range of meanings to be conveyed can be grouped as factors influencing the choice of purpose expression. Finally, it was shown that these factors do not only influence linguistic choices, but they also determine the location of the purpose expression in relation to the main clause.

The following section will present the results of the data analysis from a different point of view: instead of looking at how semantics influences linguistic choices, it will show the different meanings conveyed by each of the most frequent purpose expressions.

5. The semantics of purpose expressions in Spanish and English

Section 4 showed that there are several factors that narrow down the number of linguistic forms available for expressing purpose. However, it was shown that individual factors, on their own, do not serve to fully constrain syntactic choice. The only way to find what it is that narrows down the most frequent choices of purpose expression is the study of those same factors in their possible combinations. These combinations of features can offer insights into the semantics of each individual expression. It is precisely the aim of this section to identify the semantic features of each of the purpose expressions available in instructions. In order to do that, the presentation procedure used in section 4 will be reversed by taking the grammatical forms as point of departure and working up to the semantics of each purpose realisation. In other words, instead of focusing on the semantic features and their effect on the form (both expression and placement) as section 4 did, the current section will focus on each individual purpose realisation, showing the meanings that it conveys.

5.1. The semantics of purpose expressions in English

This section will examine each of the linguistic forms which, according to the results of the data analysis, express purpose in English instructions. The aim of this section is to identify the semantic features conveyed by each of the purpose expressions available in English instructions. This section is based on a detailed analysis of 256 purpose expressions: 147 tokens of *to INF*, 44 tokens of *for NP*, 32 tokens of *for ING*, 30 tokens of *so that*, and 3 tokens of *in order to*. The number of tokens studied makes it possible to establish reasonably reliable conclusions for most English expressions of purpose found in instructions. The linguistic form

in order to is the only purpose expression found in the data whose results can be considered as tentative or not completely reliable, due to the small number of tokens examined. The most interesting results here concern the expressions *so that* and *for NP*, which convey information that no other purpose realisations in the data can convey. The results, however, are not so enlightening for expressions such as *to INF* and *for ING*. These two expressions which have a high frequency of occurrence, do not convey meanings that differentiate them from other purpose realisations in English.

5.1.1. The semantics of 'so that'

The most interesting results about the semantics of *so that* concern the factors of agency (including both agency type and agent specification), action constraint, and contrast.

- Agency. According to the data, *so that* is the only English purpose expression that specifies the agent, and this happens when the agent is not human (as in (90) below).

  (90) *Adjust the position of the top hinge so that **the door** fits evenly*. [E011]

  When the agent is human, an agentless passive voice form is used. The only exception for this would be when the human agent is different to the default agent, in which case the passive voice would still be used but the agent would be specified through a *by* phrase. However, no examples of this agentive passive voice were found in the data analysed for this study of purpose expressions.
- β-process type. The data showed that, in instructions, the goal introduced by *so that* is either a state (frequently introduced by the modal verb *can*, which expresses a state of possibility) or an event, as in (81) above. When looking at the kind of action described by the purpose expression and agency, it can be noticed that, according to the data, only states have an explicit human agent. Example (91) below illustrates this point.

  (91) *Before using the machine read this section carefully and make sure you understand each of the controls, so that you can achieve the best washing results*. [Supplem.]
- Action constraint. The data showed that *so that* is one of the linguistic forms available for expressing action constraint. This, however, does not mean that it always expresses constraint.
- Contrast. The data showed that *so that* is always non-contrastive.
- Placement. Although one odd case of *so that* appears in initial position, this expression is most frequently placed in final position.

The meanings conveyed by *so that* are summarised briefly in Summary Table 8.

- *So that* is never contrastive.
- *So that* specifies agent (non-human).
  In turn, a human agent is specified when *so that* introduces a state (e.g., state of possibility).
- *So that* expresses constraint.

Summary Table 8: The semantics of '*so that*'

5.1.2. The semantics of 'for NP'

The exclusive meanings conveyed by *for NP* are not as clear-cut as those conveyed by *so that*. Goal type is the only factor that establishes the difference between *for NP* and the remaining purpose expressions. The only other insights that can be offered into the semantics of this expression involve the combination of goal type with semantic relation, and the

location of the expression depending on the semantic relation. However, the results of the data analysis show preferred combinations rather than exclusive ones.

- Goal type. The data showed that *for NP* is the only expression capable of realising a product-oriented goal (or goal metonymy, to use Vander Linden's (1993) terms). Therefore, *for NP* is used when the result or the effect of the action is more important than the procedure itself.
- Goal type & semantic relation. The data analysis showed that most cases (89%) of product-oriented goals establish a Generation relation with the matrix action. This contrasts with the results for the combination of *for NP* as process and semantic relation, where Enablement (11 tokens) is preferred to Generation (6 tokens).
- Semantic relation & placement. When *for NP* is Generation, the purpose expression appears with equal frequency in initial and final position. However, when *for NP* expresses Enablement, final position is preferred (in 10 out of 13 cases).

The issues mentioned in this subsection are summarised in Summary Table 9.

♦ *For NP* is the only expression for product-oriented goals. ♦ Product-oriented *for NP* prefers Generation, while process-oriented *for NP* prefers Enablement. ♦ When *for NP* is Generation, it can indistinctly appear in initial or final position. However, when *for NP* is Enablement, final position is preferred.

Summary Table 9: The semantics of '*for NP*'

5.1.3. The semantics of 'for ING'

Although no factor was found to be realised exclusively by *for ING*, some generalisations can be drawn from the data analysis. These generalisations about the semantics of *for ING*, however, present the odd exception.

- β-process type. The data analysis showed that 97% of goals realised by *for ING* tend to be material processes.
- Action constraint. *For ING* tends to be non-constraining, with 97% tokens of non-constraining, as opposed to 3% cases of constraining goals.
- Contrast & optionality. All contrastive cases of *for ING* are optional.
- Semantic relation. Apart from *in order to* (of which we have very few tokens), the data showed that *for ING* is the English expression of purpose realising an Enablement relation more frequently than a Generation one. See Table 3 on page 140.
- Placement. Goals introduced by *for ING* are most frequently placed in final position (in a total of 88% of *for ING* tokens), although there are a couple of cases in initial and medial position.
- Optionality. Only two cases of obligatory goal realised by *for ING* were found in the data, and both of them are placed finally and establish an Enablement relation with the action in the matrix clause. It seems, therefore, that there is a link between goal obligatoriness, semantic relation and placement as far as *for ING* is concerned.
- Agency. It was mentioned in section 4.2.4 that human agency does not need to be specified if it can be inferred from the situation or if it is the same agent as the one for the matrix action. In the case of *for ING*, the data showed that human agency is always inferable and, therefore, is not specified. When discussing the agency factor in section 4.2.4 above, it was said that non-human agents need to be specified. My data, however,

showed that *for ING* does not always specify non-human agency. The data analysis also showed that when the goal realised by *for ING* involves a non-human agent, the purpose expression is never placed in initial position.

- Multiple scope. Very few cases of *for ING* having scope over several actions were found, but a link can be established between scope and semantic relation. The only case of *for ING* with global scope establishes a Generation relation, while the only 2 cases of local scope establish an Enablement relation.

Summary Table 10 summarises the semantic meanings conveyed by English *for ING*.

- *For ING* expresses a material-process.
- *For ING* is non-constraining.
- Contrastive *for ING* introduces an optional goal.
- *For ING* is the only expression that prefers Enablement to Generation.
- *For ING* prefers final position.
- *For ING* + obligatory realises Enablement relation in final position.
- Non-human agent is not always specified by *for ING*.
- *For ING* + non-human agent never appears in initial position.
- When *for ING* accompanies multiple actions in the matrix clause, global scope is related to Generation and local scope to Enablement.

Summary Table 10: The semantics of '*for ING*'

5.1.4. The semantics of 'to INF'

It is difficult to identify what it is that differentiates *to INF* from the other English purpose expressions. *To INF*, apart from being the most frequent expression in English, seems to be available for all factors and combinations of factors. I will provide here some generalisations which might be useful for text generation, and which concern mainly the combinations of semantic relation with other factors, as well as the combination of contrast with scope.

- Semantic relation & action constraint. The data showed that, when the goal realised by *to INF* constrains the matrix action, a relationship of Generation holds between both actions. Only one exception to this was found, and this sole case of Enablement with constraining *to INF* used an underspecified verb in the matrix clause.
- Semantic relation & scope. With very few exceptions, *to INF* establishes a Generation relation with the matrix when the latter contains several actions (i.e., when the purpose expression has multiple scope).
- Semantic relation & placement. When *to INF* is placed initially and at the same time realises an enabled action, this often involves underspecified verbs such as *determine, use* and *remove.*
- Scope & contrast. Only one token was found of contrastive *to INF* with several actions in the matrix clause, and this was found to be local in scope.

The meanings conveyed by *to INF* are summarised in Summary Table 11.

- *to INF* + constraint expresses a Generation relation.
- *to INF* + multiple actions also involves a Generation relation.
- When an Enablement relation expressed by *to INF* appears in initial position it involves underspecified verbs.
- If there are multiple actions in the matrix clause and *to INF* is contrastive, it has local scope.

Summary Table 11: The semantics of '*to INF*'

5.1.5. The semantics of 'in order to'

The data showed that this expression is not capable of constraining the matrix action, and that it does not express contrast either. According to the data, *in order to* appears only in final position.[81] Its final positioning might be related to the functions that Murcia and Delin (1996:25-26) suggest for this expression: (i) to explain why something is happening, therefore serving a descriptive rather than a directive role, as illustrated in (92); and (ii) to explain why an obligatory action has to be performed, as in (93).

(92) *Your fridge is operated by a compressor which switches on and off in order to maintain the fridge's temperature.* [E011]

(93) *The chiller tray must be pulled out of the fridge in order to adjust the flaps.* [E011]

Finally, it was noticed that all 3 cases of *in order to* purposes in the data are preceded by an agentive matrix action, in other words, the process in the matrix clause can be either material or other, but never a relational one.

The semantic meanings conveyed by *in order to* are provided more briefly in Summary Table 12.

- *In order to* is not capable of expressing constraint.
- *In order to* is not capable of expressing contrast.
- *In order to* is always final.
- The matrix clause is never relational (i.e., it is always agentive).

Summary Table 12: The semantics of '*in order to*'

5.2. The semantics of purpose expressions in Spanish

Based on the results of the data analysis, this section will examine the linguistic forms used to express purpose in Spanish instructions, in order to identify the semantic features that each of those linguistic forms convey. The results presented here are based on the detailed analysis of an overall number of 200 purpose expressions, divided as follows: 104 tokens of *para INF*; 52 tokens of *para NP*; 30 tokens of *para que*; 4 tokens of *de manera que* and *de forma que*; 3 tokens of *a fin de*; and 1 token of *al objeto de, con el fin de* and *de modo que*. Taking this into account, the results presented for *para INF*, *para NP* and *para que* can be considered to be reliable, since they are based on a reasonably wide number of tokens. The conclusions offered for the less frequent expressions must be taken tentatively.

5.2.1. The semantics of 'para que'

The most interesting results for this linguistic form of purpose concern the ability of *para que* to constrain the matrix action. Other interesting results are provided by agency and the combination of action constraint with semantic relation and placement factors.

[81] Note, however, that other corpora may include instances of *in order to* in initial position.

- Action constraint. *Para que* is the most frequent purpose expression used for constraining the action in the matrix clause. As it was shown in the previous section, action constraint is closely linked to semantic relation and placement factors. In accordance with what was said in section 4.2.2, constraining *para que* is always placed in final position and it most frequently establishes a Generation relation between the actions in the purpose and the matrix clauses.
- Agency. *Para que* can introduce any kind of process (relational, material or other). It was also interesting to notice that, when the goal is a material process, this expression always involves a human agent, which is most frequently specified in the clause, but can be left unspecified through an agentless passive clause.
- Contrast. The data showed that *para que* is an expression that hardly ever expresses contrast. Most cases of non-constraining *para que* were found to be non-contrastive, although one exception was found (1 contrastive *para que*).

The meanings conveyed by Spanish *para que* are summarised in Summary Table 13.

- *Para que* is capable of constraining the matrix action.
- If constraining, *para que* is placed finally and establishes a Generation relation with the matrix action.
- If *para que* introduces a material process as goal, its agent is human and specified, although agentless passive can also be used.
- *Para que* is unlikely to express contrast.

Summary Table 13: The Semantics of *'para que'*

5.2.2. The semantics of 'para NP'

The most interesting conclusions about *para NP* that can be drawn from the data analysis concern the factors of goal type and information status. The results for these two factors show some differences with the English counterpart of *para NP*, which proves that what looks like a syntactic equivalent is not always a semantic and pragmatic equivalent.

- Goal type. *Para NP* is the only Spanish purpose realisation that can express product-oriented goals, i.e., it allows us to indicate that the result of the action is more important than the procedure to achieve that result. When comparing this expression to English *for NP*, it can be noticed that they are not completely equivalent; there are differences not only in their frequency of occurrence, but in the kind of NP being used. In the Spanish expression the NP is often used with an anaphoric pronoun (e.g., *ello, lo cual*), while the English NP is always nominal and never pronominal. In addition, when Spanish uses a nominal NP, it is always a fixed expression (e.g., *para información* 'for information') or a contrastive one (*para una prestación mixta* 'for a double function'). This is due to the fact that Spanish *para NP* with a nominal NP is ambiguous, i.e., the goal is not transparent, and it would be more naturally interpreted as condition rather than purpose.

  When the goal realised by a *para NP* expression is the process or action itself rather than the result achieved by an action, or a process referred to anaphorically through a pronoun, the NP is always a nominalisation derived from a verb.
- Goal type & contrast. The data showed that when *para NP* introduces a process-oriented goal, it is most frequently non-contrastive (25 tokens) than contrastive (9 tokens).
- Goal type & semantic relation. Non-contrastive *para NP* expressions whose NP realises a process rather than an entity tend to establish a Generation relation (16 tokens) more frequently than an Enablement one (9 tokens). On the other hand, if the goal is

contrastive, the results for Generation and Enablement are quite similar, although Enablement (5 tokens) is slightly more frequent than Generation (4 tokens).

Independently of whether the goal is contrastive or not, when *para NP* expresses Generation it appears most frequently in initial position, while final position is preferred when *para NP* expresses Enablement.

- Information status. *Para NP* is the only Spanish purpose expression capable of conveying information status for the goal, given that the goal in such expression is nominalised, allowing the inclusion of a determiner. This is true for both product- and process-oriented goals. *Para NP* expressions, then, can present the goal as given or new information and this seems to have certain effects on the interpretation of the degree of goal optionality. At least in cases where *para NP* expresses the goal through a process nominalisation, information status marking is related to optionality; when the NP is marked as given information through the use of a definite article or a pronoun, it expresses task-level optionality and could be glossed as 'when you need to do X', while an indefinite article marking new information expresses a more general kind of optionality.
- Intention & goal type. The data analysis showed that when *para NP* introduces a product-oriented goal, the intention is more frequently directive (12 tokens) than informative (6 tokens).

To finish, it is worth mentioning that Spanish *para NP* showed many more cases of process-oriented goals (34 tokens) than product-oriented goals (18 tokens). This contrasts with English, which has a higher percentage of *for NP* + product-oriented goal than *for NP* + process-oriented goal.

Summary Table 14 summarises the meanings conveyed by *para NP*.

- *Para NP* can express both product- and process-oriented goals.
- *Para NP* is not goal transparent, except for fixed expressions.
- *Para NP* expressions that establish a Generation relation tend to appear in initial position, while *para NP* + Enablement tends to appear in final position.
- *Para NP* can signal the information status of the goal. This is related to optionality and might even be related to action relevance.
  - *para NP* as given = task plan optionality = (loosely) necessary action.
  - *para NP* as new = general optionality = either unmarked or desirable action.

Summary Table 14: The semantics of 'para NP'

5.2.3. The semantics of 'para INF'

The most interesting meanings conveyed by *para INF* concern the factors of contrast, scope, constraint, agency type and optionality. These factors will be discussed below.

- Contrast. *Para INF* was found to realise most frequently non-contrastive goals, but it also expresses contrastive goals. The relationship between contrast and semantic relation is particularly interesting, since contrastive *para INF* only involves a Generation relation. In other words, contrastive *para INF* was never found to express Enablement in the data.
- Scope. The data showed that, although *para INF* most frequently presents the goal of one single action, it is the Spanish expression preferred when the goal has scope over multiple actions. The data also showed that in these cases the goal is most frequently non-contrastive, but this does not rule out the possibility of contrastive purpose with multiple scope.

When looking at the combinations of scope with other factors, the data showed no cases of *para INF* exhibiting the combination of factors initial + Enablement + multiple actions; and the data showed that *para INF* never expresses the combination of multiple scope + constraining goal.

- Constraint. Only 2 cases of constraining *para INF* were found, both of which show the combination of factors final + Enablement + α-relational + informative, and have either of the following two features in the matrix action:
  i. an underspecified verb, as in (94);
  ii. the action in the matrix clause is achieved (i.e., it has realis nature), as in (95).

  (94) *este dispositivo sirve para humedecer* ... [S017]

  (95) ... *ha sido proyectado y fabricado con esmero y comprobado para satisfacer* ... [S005]
- Agency type. It was noticed that most agentive cases of *para INF* have human-agent (77 tokens) while only 15 tokens have non-human agent. The data analysis also showed that *para INF* with human agent prefers Generation, while *para INF* with non-human agent prefers Enablement.
- Optionality. Optional is mainly initial (31 out of 36 cases), and 4 out of the 5 cases of *para INF* in final position are Generation.

The semantics of Spanish *para INF* are provided in a more schematic way in Summary Table 15.

- Contrastive *para INF* is always Generation.
- *Para INF* can have scope over multiple actions.
- *Para INF* can express constraint, but only in very special cases.
- Optional *para INF* is mainly initial, and if final it is mainly Generation.

Summary Table 15: The semantics of '*para INF*'

5.2.4. The semantics of less frequent expressions of purpose in Spanish

The less frequent realisations of purpose in Spanish instructions, each of them accounting to less than 5 tokens, can be described in two groups. The linguistic forms within each group share a series of semantic features, as it will be explained below. Before explaining the similarities and differences within each group, it is interesting to notice that, as pointed out by Murcia and Delin (1996:43) neither of them can introduce vague actions such as those described by the verbs *usar* 'use' and *utilizar* 'use'.

5.2.4.1. Group 1: *a fin de, al objeto de* and *con el fin de*

The purpose expressions *a fin de, al objeto de* and *con el fin de* share the following characteristics. They are all placed finally and introduce a non-constraining and non-contrastive action which can establish either a Generation or an Enablement relation with the matrix action. Usually, when the purpose expression includes the verb *poder* 'can' or *permitir* 'allow', the relationship is one of Enablement (as was shown by those few cases with *al objeto de* and *con el fin de*). The agent in all these three expressions is mainly human and it is never specified. Finally, as regards intention, both *a fin de* and *al objeto de* give reasons for obligatory user actions in directive contexts, while *con el fin de* expresses states of affairs that arise as a result of actions or states of the equipment in descriptive rather than directive contexts.

5.2.4.2. Group 2: *de forma que, de manera que* and *de modo que*

The second group of minor expressions of purpose in Spanish comprises the ones that introduce a constraining action. As expected from all constraining actions, these expressions are also placed in final position. The data showed that *de forma que* and *de manera que* establish a Generation relation with the matrix clause, while the only case of *de modo que* establishes an Enablement relation; this latter expression, however, includes the modal *poder* 'be able to'. A clear difference between the expressions in this group seems to be the intention of the utterances in which they appear: *de forma que* and *de modo que* tend to appear in directive contexts, while *de manera que* tends to be used in informative contexts.

It has been shown in sections 4 and 5 that the individual factors, when taken into account on their own, restrict few of the choices of expression available for the realisation of purpose, and that when these factors are combined with other factors the choices can be narrowed down a bit further.

6. Conclusions

In an attempt to complement the study of semantic relations presented in chapter 4, the current chapter followed Scott *et al.*'s (1995) suggestion that the perspective taken to present the actions constrains the discourse relations and their expression through particular linguistic markers. Purpose expressions were analysed as the linguistic realisations focusing on the intended goal of the action. The goal perspective was chosen for the importance of the explicit identification of the goal in aiding the user to create a mental plan of the task (Di Eugenio, 1992; Dixon *et al.*, 1988; Balkanski, 1991) as well as providing information about the way the action is to be performed (Di Eugenio, 1992). Taking all this into account, the present chapter set out to identify the semantic and syntactic factors influencing the choice of the linguistic expression of purpose.

In order to establish what range of linguistic forms would be examined, a survey of the different notions of purpose in the literature was presented in section 1. A purely semantic notion of purpose, already used in Murcia and Delin (1996:2-3), and based on the stipulations of Balkanski (1991), Di Eugenio (1992) and Vander Linden (1993), was adopted for this study: purpose consists in a relationship between two actions; one of them is a goal (β) and the other (α) contributes to the goal through either an Enablement or a Generation relation. Following this definition of purpose, the range of syntactic expressions includes the linguistic forms presented in section 2: *to INF*, *for NP*, *for ING*, *so that* and *in order to* for English, as well as *para INF*, *para NP*, *para que*, *de manera que*, *de forma que*, *a fin de*, *con el fin de*, *al objeto de* and *de modo que* for Spanish. These expressions were extracted from the data in the way indicated in section 0 and were coded with WAG (Workbench for Analysis and Generation), which uses a systemic network for the coding and is supported by statistic analysis of the results.

The data were coded for the range of factors shown in section 4.1, some of which had been identified in the literature. The coding showed that not all the factors included in the coding network are equally relevant for the choice of expression, and they were therefore divided into two groups: relevant factors and minor factors. Relevant factors (i.e., those that influence, on their own, the linguistic choices or their placement) include semantic relation, action constraint, goal type (or product- vs. process-orientation), agency (type and specification), scope of purpose expression, contrast, and information status. The group of minor factors (i.e., those which were not found to narrow down the linguistic choices in any particular way, but only in their combination with other factors) include utterance intention, object specification, and process type for both the goal and matrix action. Each of the relevant

factors were examined in detail in section 4.2, showing how they restrict the range of linguistic expressions available in both languages, and establishing comparisons (both similarities and differences) between English and Spanish. The results are summarised as follows:

- **Semantic relation**. It was shown that while semantic relation does not narrow down the range of expressions available for English, it does for Spanish: *de manera que* was found to express only Generation, while *de modo que, al objeto de*, and *con el fin de* were found to express only Enablement. However, it must be noticed that these four expressions have a very low frequency of occurrence and that a bigger sample of these expressions may prove those results wrong. Some interesting similarities were found in the frequencies of occurrence: English *so that*, *for NP* and *to INF* and their Spanish counterparts *para que*, *para NP* and *para INF* express Generation more frequently than Enablement. Only *for ING* was found, amongst the most frequent expressions, to realise Enablement in preference to Generation.
- **Action constraint** (Di Eugenio, 1992) refers to the ability of some purpose expressions to constrain the way the action in the matrix clause is to be performed. This factor was shown to restrict the choices as follows: only *so that* and *to INF* can express constraint in English, while there is a wider range of options in Spanish (*para que*, *de manera que*, *de modo que*, *de forma que*, and *para INF* in special cases). The factor of action constraint was found to be closely linked to placement and semantic relation. Thus, constraining purposes are always placed after the matrix clause, and although they can realise both semantic relations, they express Generation rather than Enablement.
- **Goal type** involves the kind of goal (whether it is process-oriented or product-oriented) described by the purpose expression, and is related to notions such as goal metonymy (Vander Linden, 1993), i.e., the result of the action is more important than the action itself, and goal transparency (Murcia and Delin, 1996), referring to whether the goal is clearly identified as such by the reader. It was shown that only those cases where the result of the action is more important than the procedure can be realised by expressions with the feature of product-orientation (English *for NP* and Spanish *para NP*). The relationship of goal type with other factors showed the following interesting results: product-oriented goals are mainly Generation in both languages; goal metonymy (or product-oriented goal) is ambiguous in Spanish and is limited to fixed expressions because it might otherwise be interpreted as condition instead of goal. This is probably the reason why Spanish presents a very low frequency of product-oriented goals when compared to English; *for NP* is totally goal transparent.
- **Agency** involves two issues: whether the agent of the action in the purpose expression needs to be specified, and whether it is a human or a non-human agent. Although agency is implicit in most cases, it was argued that the agent of the goal action needs to be specified if it is different to the agent of the matrix action and if it is a non-human agent. It was shown that only English *so that* and Spanish *para que* (and the less frequent expressions *de manera que, de modo que, de forma que*) are capable of specifying the agent. The only difference between English and Spanish with regard to this factor has a morphological reason: the ability for Spanish to specify the agent through the verb ending.
- **Scope of purpose expression** is the factor that refers to the number of actions in adjoining clauses that the purpose expression might potentially modify, and to whether the goal in fact has scope over only one (local scope) or several of those actions (global scope). The data analysis showed that multiple scope (i.e., the potential ability to scope

over more than one matrix actions) restricts the choices in both languages: with the only exception of *de manera que*, none of the minor expressions of purpose can have multiple scope in any of the two languages studied. In addition, of all the expressions available for multiple scope, English *so that* and Spanish *para NP*, *para que* and *de manera que* are incapable of expressing global purpose, i.e., they are always local in scope.

- **Contrast**, which was coded only in non-constraining goals, also restricts the range of expressions available: none of the minor expressions in English or in Spanish are capable of expressing contrast. In addition, English *so that* can only realise non-contrastive goals, while Spanish *para que* was found to be able to express contrast, although very rarely. The most interesting results as regards contrast concern its combination with other factors: goals constraining the matrix action do not show contrast and therefore were not coded for it; goals which are contrastive are optional and realise mainly a Generation relation. An interesting difference between English and Spanish was found in the preferences for placement of contrastive purposes: in English contrast is most frequently initial, while in Spanish there is a slight preference for final location with respect to the matrix clause.
- **Information status** marking was found only in expressions where the goal is realised by an NP. Interesting observations were made about the combinations of this factor with goal type and optionality. While English is capable of expressing information status when *for NP* realises a product-oriented goal, Spanish *para NP* can provide information status when the NP realises any goal type (either product-oriented, or process-oriented through a nominalisation or pronominalisation). In addition, Spanish signalling of given or new information where the goal is a process seems to be related to two different kinds of optionality: an NP marked as new information expresses general optionality, while NPs marked as given information express what Murcia and Delin (1996) called 'task plan optionality'. It was also argued that these combinations of optionality and information status, as well as the involvement of adjectives modifying the NP, might be a mechanism for explicit signalling of the goal action relevance according to two of the categories identified in the directives chapter (namely, necessary and desirable). Thus, when an NP which is a nominalised process is marked as given information, it expresses a loosely necessary or obligatory action (since it also expresses task plan optionality, it shows that the reader is in some way committed to doing the actions); on the other hand, when the nominalisation is marked as new information and accompanied by an adjective, it expresses a desirable goal.

Finally, section 5 reversed the presentation of the results of the data analysis and took a bottom-up approach. It focused on each linguistic form in turn and showed the semantic content expressed by each of the purpose expressions available in English and in Spanish.

Chapter Seven: Conclusions

Different languages make different choices about how to present similar information (cf. Kaplan, 1966). This well-known claim within contrastive rhetoric was the starting point for the research presented here. This thesis offered a comparative corpus-based study of English and Spanish instructional texts, in order to tease out some of the factors influencing the choice of expression.

Although the texts collected for each language did not always refer to the same products, their comparability was guaranteed by the following two facts: (i) the situation in which all the texts appear is the same and, therefore, they are parallel texts (cf. Hartmann, 1980), and (ii) the ability to represent the actions instructed through a task plan allows us to capture the hierarchical status of the actions and the relationship between them (cf. Delin *et al*., 1994).

The corpus-based study presented here supports the claim that context plays an important role in the shaping of any text (cf. Halliday *et al*., 1964; Halliday, 1978; Fairclough, 1992; Biber, 1995). Through the analysis of the corpus at the macro-textual and the micro-textual levels, it was shown that the particular context of instructional texts influences multiple aspects of the text: from the information to be included, through the way it is organised or structured in the manual, to the particular linguistic realisations used for expressing the actions that have to be performed.

At the macro-textual level, the analysis discussed the features of the context in which instructional texts are produced, the stylistic variation within these texts and the characteristic structure of the manuals.

At the micro-textual level, the attention was focused on the mapping of the task plan (i.e., the actions to be performed) onto the grammatical level. This part addressed, in particular, the relationships between the actions in the task plan and covered two of the most relevant functions of instructional texts: giving an order and expressing a goal.

This final chapter provides a summary of the various issues discussed throughout the thesis and the findings of the data analysis. It will also highlight the contributions made by this research study and will suggest directions for future research.

1. Summary of chapters

The body of this thesis was divided into several chapters which will be summarised in the following.

Chapter 1 provided a general introduction to the reasons behind this study, the corpus, the framework, and the methodology used. Taking into account that instructional texts of all sorts play an important part in everyday life, and that everybody has come across (mainly translated) manuals which are difficult to understand, this study is relevant not only for linguists, but also for the community in general. The corpus used for the study involves manuals for household appliances which were written by native companies in each language.

Before presenting the analysis itself, chapter 2 provided an overview of previous work on language comparisons and on instructions. This thesis is informed in particular by Contrastive Rhetoric, Contrastive Textology and studies in Computational Linguistics, and has also used the systemic functional framework and terminology to formalise the findings of the analysis.

The analysis as such is presented in chapters 3 through 6, and comprises two levels of analysis: the macro-textual analysis (in chapter 3) and the micro-textual analysis (in chapters 4, 5 and 6).

Since, as it has been argued in the literature, the linguistic forms chosen to express the information in a text are closely related to its context (cf. Halliday, 1978; Biber, 1995), it was felt necessary to start with an overview of the context in which instructional texts come to life. Chapter 3, then, provided a general characterisation of instructional texts in terms of the communicative situation in which they occur and showed that the social context influences the information to be included, the way it is organised and the linguistic forms chosen. Taking into account that there is a time gap between the production and interpretation of instructional texts, I argued for the relevance of the distinction between the context of production and the context of interpretation. Intentions and beliefs play a very important role in the production of instructional texts and in the performance of the actions instructed; both the writer and the reader make a series of assumptions and have certain beliefs about the need for instruction manuals and what they must offer. On the production side, these beliefs greatly influence the content to be included (and, in particular, the level of detail) and the reliability of the information, as well as the linguistic forms chosen. In relation to the context of interpretation, the text changes the reader's initial beliefs; it is this change of beliefs that guarantees the reader's performance of the actions instructed, since it fulfils the preparatory conditions for this particular communication event (e.g., that the reader accepts both the writer's superiority in knowledge and willingness to help and his own ability to operate the device with the help of the instructions).

The biggest part of instructional texts consists of a series of actions that have to be performed by the user in order to get the product to work safely and efficiently. These actions have a hierarchical structure that can be represented in a task plan (cf. Sacerdoti, 1977). Taking this into account, the micro-linguistic analysis addressed the linguistic realisation of two main action categories in the task plan: goal of a plan and body of a plan. The way the goal is expressed plays a very important role in the understanding of the task plan (cf. Di Eugenio, 1992; Dixon; 1987b). At the same time, the actions in the body of the task plan are what makes it possible to fulfil the goal.

The micro-textual analysis was presented in chapters 4, 5 and 6 which correspond, respectively, to the following three issues: the linguistic forms used to express the semantic relations holding between the actions, the factors influencing the choice of directive expressions, and the factors influencing the choice of purpose expressions. Chapter 4, then, is concerned with the various linguistic realisations of both goal and body actions. Chapter 5 goes deeper into directive expressions, which are the most frequent realisation of body actions, although they are also used for goal actions. Finally, chapter 6 looked into the explicit realisation of goal actions as such, i.e., through the use of a linguistic marker that explicitly signals the action as a goal. These three chapters, therefore, overlap slightly. This overlap shows, once more, that the mapping of semantics onto grammar is not a clear-cut one consisting of one-to-one relations, but it consists of one-to-many relations. For example, a goal action can be realised linguistically through a directive expression, a purpose expression and even conditional and temporal expressions.

The approach taken for the micro-linguistic analysis combined two procedures: top-down and bottom-up. A top-down analysis starting from the higher functional and semantic levels of representation was used to provide the range of linguistic realisations available for expressing directive, purpose and the semantic relations holding between the actions. Once the grammatical expressions were identified, a bottom-up procedure was followed for the study of

directive and purpose expressions in order to identify the factors influencing the choice of linguistic form and explain why certain expressions are preferred to others.

Chapter 4 studied the semantic relations holding between action pairs in the task plan and how they are expressed linguistically. The literature has shown two procedural relations that can hold between action pairs: Generation and Enablement. A Generation relation holds between two actions (α and β, also called ING action and ED action respectively) when the performance of one of the actions (α) automatically achieves the performance of the other action (β). An Enablement relation holds between two actions when the performance of α does not automatically result in the performance of β, but helps to achieve it.

Following Grote (1995), the particular realisations of the individual actions which constitute the action pair were identified in turn, allowing us to show how the choice of a grammatical form for one action restricts both the expression of the other action in the action pair, and the ordering of those actions. The positive results of this approach are summarised in the following.

There are linguistic realisations that can express only one of the two actions (either α or β). For example, Spanish gerund (*-ndo*) and English *-ing* and *by + -ing* clauses exclusively realise the ING action, while Spanish *para* constructions and English *to + infinitive*, and *for + -ing* or *for + nominalisation* are exclusive forms for realising the ED component.

There are linguistic realisations that signal only one of the two relations. Enablement is exclusively marked by the Spanish expressions *antes de, a fin de, al objeto de,* and by the English expressions *in order to, for + -ing*[82] and *before*.

There are combinations of α and β realisations that unambiguously express either Generation or Enablement, as shown in tables 19 and 20 in chapter 4.

Despite these positive results, the distinction between Generation and Enablement is not always clearly signalled. There are huge overlaps as regards the realisations of individual actions and the combinations available. The most frequent action realisations (i.e., independent clauses) can express either action in both languages; most realisations can also signal any relation and the realisations that exclusively signal only one of the relations have an extremely low frequency.

The ordering of the actions, however, throws some light onto these cases of ambiguity (although it does not provide answer to all of them). While the ED^ING ordering is much more frequently chosen for the Generation relation, the ING^ED ordering is preferred for the expression of Enablement. These facts are true for both Spanish and English and indicate that ordering is very important in the expression of procedural relations.

Having shown how the relationships between actions in the task plan are expressed grammatically, the study then turned to single actions and their realisations in an attempt to tease out the factors influencing the choice of two of the most common linguistic features of instructions: directives and purpose expressions. The two studies presented in chapters 5 and 6, then, partly overlap with the study of Generation and Enablement in chapter 4. On the one hand, in any action pair where a Generation or Enablement relation holds, one of the actions is always realised by a directive expression. Sometimes even both actions are realised by directives (e.g., some sequences of imperatives). However, it is important to note that not all directives are necessarily linked to other actions through Generation or Enablement relations.

[82] Notice that the study of purpose expressions presented in chapter 6, which includes more tokens of *in order to* and *for + -ing*, showed that these two forms can also express Generation.

On the other hand, some of the goal actions studied in chapter 4 are realised by purpose expressions, which were the topic of chapter 6.

Chapter 5 addressed one of the most important functions of instructional texts, namely the directive function, and its linguistic expression. There is a wide range of directive expressions that include the imperative, modalised realisations, expressions of appeal to the reader (e.g., *it is necessary*), as well as the infinitive and impersonal passive *se* Present in Spanish. However, not all of these realisations are used in the same ways; each realisation conveys meanings that differentiate it from the rest. The aim of chapter 5, then, was to identify the factors that influence the choice of one expression instead of another.

Some of the contextual features discussed in chapter 3 were shown to have an influence on the choice of directive expression in the following ways:

The high frequency and appropriateness for instructions of direct directives (e.g., the imperative and modalised expressions with *must*) which are considered impolite in other contexts is due to several situational features of instructional texts: the actions directed are of benefit to the addressee; the authority comes from the instructor's superior knowledge and not from rank or social status; and task-relevance issues result in the avoidance of embroidered directives that would draw the reader's attention away from the task plan.

The wide range of expressions is due to the fact that each of them conveys different pragmatic and semantic meanings. The factors influencing the choice of directive expression in Spanish and English were presented graphically through two networks, which reveal the close relationship between context and linguistic form. The networks identify four main simultaneous and intertwined systems of options (ACTION-RELEVANCE, AGENCY, INFORMATION and THEME) which influence the choice of expression and are summarised below.

The actual form of directive used conveys information about the relevance in the task plan of the action it introduces. This is marked through the system of ACTION-RELEVANCE, which formalises the fact that not all the actions in the task plan are equally important. There are actions which are strictly necessary; other actions, though not necessary, are particularly beneficial to the addressee and therefore desirable. The actions in the task plan present a hierarchy depending on their role in achieving the goal of the task plan itself (i.e., on using the product efficiently), and so do the directive expressions used to realise these actions. Directive expressions then can explicitly signal one of the following four categories: necessity, desirability, undesirability, and prohibition. The networks referred only to actions with positive polarity, but extensive attention was given to negative directives in the final part of chapter 5 as summarised further below.

The system of AGENCY involves the explicit mentioning of the agent of the actions. The agent in instructions is by default the reader and, since it can be recovered from the context, it is not always necessary to specify the agent. Chapter 5 also addressed the ways of agent defocusing and the effect they have in the relationship established between the writer and the reader.

Closely linked to agency are the systems of INFORMATION and THEME. These systems reflect the way the writer organises her message taking into account the prominent locations in the clause. Thus, the writer can draw the addressee's attention to either the action itself or the Medium (most generally the device or one of its parts) by placing them in thematic position. Information focus, on the other hand, allows the writer to draw attention to the agent, when this is not the reader himself but a third person, by locating it in the end-focus position.

The final part of chapter 5 examined the ways of expressing prohibition, and the factors influencing the choice of expression. Di Eugenio's (1993a) suggestions that there are

pragmatic distinctions between the usage of *DONT imperatives* and *neg-TC imperatives* were found to hold for Spanish *NO imperatives* and *neg-TC imperatives*. However, it was shown that imperatives are not the only forms used for prohibitions. There are also *modalised negative directives* and *implicit negative directives* in both languages (with the verb *evitar* 'avoid' for Spanish or *avoid* in English), as well as *NO infinitives* in Spanish.

The main contribution of this part of the thesis concerns the factors involved in the choice of negative directives in Spanish, which are summarised in the following:

- **Writer's expectations about the reader**. Di Eugenio suggests that English *DONT imperative* is used when the writer expects the reader to choose the wrong alternative. This suggestion also holds for Spanish *NO imperatives*. However, a *NO infinitive* simply informs about the wrong choices without making any expectations about the reader. This is due to the impersonal feature of the infinitive, which does not specify the audience and therefore cannot make any expectations about the reader.

  Negative modalised directives in passive voice do not imply any expectations about the reader either.
- **Intentionality** was suggested by Di Eugenio (1993b) and Vander Linden and Di Eugenio (1996a, 1996b) to influence English negative directives. In Spanish a *NO infinitive* is chosen when the action is unintentional, while *NO imperative* is preferred when the action is intentional. Unintentional actions also influence the choice of *neg-TC imperative* in Spanish.
- **Direct address**. In Spanish modalised negative directives, direct address is used when safety is at stake.
- **Strength of prohibition**. Not all negative directives claim the obligatoriness of not doing the action as strongly as the negative imperative does. There are adverbial elements, such as *nunca* 'never' in Spanish and *never* and *under no circumstances* in English, that reinforce the strength of the prohibition. A difference was found between Spanish and English in the strength of prohibition achieved by modals; in English the modal provides a stronger prohibition than the imperative, while in Spanish negative directives the imperative is stronger than the modal.

Chapter 6 followed Scott *et al.*'s (1995) suggestion that the perspective taken to present the actions constrains the discourse relations and their expression through particular linguistic markers, and set out to identify the semantic factors influencing the choice of purpose expressions, i.e., the linguistic realisations focusing on the intended goal of one or more actions. Chapter 6, therefore, complements the study of semantic relations presented in chapter 4 by offering a more detailed analysis of a specific set of goal-action realisations, namely, purpose expressions.

The data were coded for a wide range of semantic and syntactic features. The analysis revealed that the choice and/or placement (in relation to other actions represented in the clause) of purpose expressions is influenced by the following set of factors: semantic relation, action constraint, goal type (i.e., product- vs. process- orientation), agency, scope of purpose expression, contrast, and information status.

- **Semantic relation**. This factor narrows down the range of expressions available only for Spanish. However, the Spanish expressions that are capable of realising only one of the relations have a very low frequency of occurrence. Some interesting similarities were found between Spanish and English in the frequencies of occurrence: English *so that, for NP* and *to INF* and their Spanish counterparts *para que, para NP* and *para INF* express Generation more frequently than Enablement. In contrast, English *for ING* tends to realise Enablement rather than Generation.

- **Action constraint** (cf. Di Eugenio, 1992) refers to whether the goal action constrains the way the action in the matrix clause is to be performed. This factor was found to restrict both the choices and the placement of purpose expressions. Only *so that* and *to INF* can express constraint in English, while there is a wider range of options in Spanish (*para que, de manera que, de modo que, de forma* que, and *para INF* in special cases). As regards placement (i.e., the location of the purpose expression within the clause), constraining purposes are always placed after the main clause.
- **Goal type** involves the kind of goal (whether it is process-oriented or product-oriented) described by the purpose expression. The product-orientation feature depends on two factors: (i) whether the result of the action is more important than the procedure itself (see Vander Linden's (1993) notion of goal metonymy); and (ii) whether the goal is clearly identified as such by the reader (cf. Murcia and Delin's (1996) notion of goal transparency). Product-orientation considerably restricts the number of choices available down to English *for NP* and Spanish *para NP*. A very interesting difference between Spanish and English was found here: product-oriented goals are ambiguous in Spanish and are, therefore, limited to fixed expressions such as *para información* 'for information'.
- **Agency**. Although agency is implicit in most cases, the agent of the goal action needs to be specified if it is different to the agent of the matrix action and if it is a non-human agent. It was shown that only English *so that* and Spanish *para que* – as well as the minor realisations *de manera que, de modo que* and *de forma que* – are capable of specifying the agent.
- **Scope of purpose expression** refers to the number of actions in adjoining clauses over which the purpose expression might potentially have scope and to whether the goal in fact modifies only one (local scope) or several of those actions (global scope). The data analysis showed that multiple scope (i.e., the potential ability to scope over more than one matrix actions) restricts the choices in both languages: with the only exception of *de manera que*, none of the minor expressions of purpose has multiple scope in any of the two languages studied. In addition, of all the expressions available for multiple scope, English *so that* and Spanish *para NP*, *para que* and *de manera que* are incapable of expressing global purpose, i.e., they are always local in scope.
- **Contrast**. None of the minor expressions in English or in Spanish are capable of expressing contrast. The most interesting results as regards contrast concern its combinations with other factors: goals constraining the matrix action do not show contrast and therefore were not coded for it; goals which are contrastive are optional and realise mainly a Generation relation. An interesting difference between English and Spanish was found in the preferences for placement of contrastive purposes: in English contrast is most frequently initial, while in Spanish there is a slight preference for final location with respect to the main clause.
- **Information status** marking was found only in expressions where the goal is realised by an NP. Interesting observations were made about the combinations of this factor with goal type and optionality. While English is capable of expressing information status when *for NP* realises a product-oriented goal, Spanish *para NP* can provide information status when the NP realises either a product-oriented or a process-oriented goal. In addition, Spanish marking of given or new information where the goal is a process (i.e., realised through a nominalisation or pronominalisation) seems to be related to two different kinds of optionality: an NP marked as new information expresses general optionality, while NPs marked as given information express what Murcia and Delin

(1996) called task plan optionality. It was also argued that these combinations of optionality and information status, as well as the involvement of adjectives modifying the NP, might be a mechanism for explicitly signalling the action relevance of the goal according to two of the categories identified in chapter 5, namely, necessary and desirable. Thus, when an NP which includes a nominalised process is marked as given information, it expresses a loosely necessary or obligatory action (since it also expresses task plan optionality, it shows that the reader is in some way committed to doing the actions); on the other hand, when the nominalisation is marked as new information and accompanied by an adjective, it expresses a desirable goal.

To sum up, this thesis has provided a general characterisation of instructional texts and the context in which they are produced. The analysis presented here has covered some of the most characteristic functions of instructional texts and the ways in which they are expressed linguistically. This analysis has also shown that there is a close relationship between text and context. At the macro-textual level, this is reflected in the detail and organisation of the information contained in the manual, which depends on the writer's assumptions about the potential context of interpretation (e.g., assumptions about the knowledge and needs of the potential reader). At the micro-textual level, the choice of particular linguistic expressions is often a direct result of the situation in which the text is created. For instance, the different roles (e.g., desirer, needer, agent) that the writer assigns to the reader greatly depend on the situation in which the instructional text occurs and on the kind of relationship between the manufacturer and the user.

2. Contributions

Having summarised the results of the thesis, the following contributions of this thesis can be noted:

- Contribution to general understanding of instructions in Spanish. Instructional texts are reasonably well studied in English. However, Spanish instructions are not so well researched and this thesis fills that gap.
- Contribution to relationship between English and Spanish in regards to instructions. By adopting a language-independent semantics (i.e., the task plan) it has been possible to show the commonalities and differences in how English and Spanish map this semantics onto grammar, and thus which syntactic forms semantically correspond in each language.
- Contribution to existing work on directive and purpose expressions. This thesis brings together existing work on directive and purpose expressions in English, and offers an integrated and formalised account of the factors determining these expressions. Some novel factors were also added (e.g., action relevance for directives and product/process orientation for purpose expressions, among others).
- Extension of this largely English-based account to Spanish directives and purpose expressions. This includes the extension of existing accounts of English negative directives (Di Eugenio, 1993a, 1993b; Vander Linden and Di Eugenio, 1996a, 1996b) to Spanish.
- Statistical verification of the importance of the factors influencing purpose expression.
- Cross-linguistic comparison of directive expressions according to a necessity cline, which facilitates the translation of statements of necessity from one language into another.

- Cross-linguistic comparison of negative directive expressions according to a cline based on strength of prohibition. This cline facilitates the translation of statements of prohibition from one language to another.
- Insights into the use of the Spanish infinitive as a directive. The use of the Spanish infinitive for giving orders has always been condemned by prescriptive grammars (cf. Real Academia Española, 1973) without paying attention to the contexts in which it is used; more recently, descriptive grammars such as Butt and Benjamin (1988) have recorded the use of the directive infinitive in examples of recipes. My study of directives investigates the accepted use of the Spanish infinitive in instructions, and establishes pragmatic and semantic differences between the imperative and the infinitive in its directive use.

In general, a comparative research study of this kind offers a better understanding of the two languages concerned with regards to the specific meanings behind syntactic forms such as purpose and directive expressions.

Since the research presented here established a comparison between two languages, this thesis also offers a valuable contribution to foreign language (FL) teaching, and more specifically to the teaching of languages for specific purposes (LSP). The communicative approach to FL teaching evolves around functions of language, and this thesis studies two particular functions of language in a specific context: giving an order and expressing a goal or a purpose. Further issues discussed here (e.g., the characteristic structure of instruction manuals, the linguistic forms commonly used and the reasons for their use, and the various ways to express the relevance of the actions) would definitely be useful for those trying to write or translate manuals. The study, in fact, tried to formalise and explain what translators often do intuitively when choosing between one expression instead of another.

Finally, the issues addressed in this thesis will hopefully contribute to the area of natural language generation and, in particular, multi-lingual text generation. This research was greatly influenced by several studies of instructions carried out for the purposes of text generation, and hopefully complements some of these studies in two ways: through the formalisation into semantic networks of the factors influencing the choice of directive and purpose expressions, and by adding a study of Spanish to the already existing studies of instructions in English, French, German, Portuguese and Italian.

The study of instructions in Spanish and English, however, is far from complete, but the present study has opened up several directions for future investigations which will be outlined in the following section.

3. Further research

The current study has given rise to a number of topics that should be addressed in order to contribute to the complete picture of instructions in English and Spanish.

When dealing with negative directives in chapter 5, only preventative expressions containing a *take care* verb (*neg-TC imperatives*) or the negative polarity marker *don't* for English (*DONT imperatives*) and *no* for Spanish (*NO imperative, NO infinitive*) were examined in detail. It was mentioned that prohibitions can also be realised through two other linguistic forms: adverbial elements such as *nunca* 'never', *never* and *under no circumstances*, and verbs, such as *evitar* 'avoid' and *avoid* which implicitly carry the negative polarity. These linguistic realisations of negative directives, however, were not analysed in detail in this thesis due to, among other things, the limited number of tokens found in the data. A further direction for future research, therefore, would be to develop the analysis of negative directives to include these other two realisations. This should be done by expanding the data to include a

wider number of preventative expressions of all kinds, which would enable both a close investigation of the factors influencing the choice of these other two realisations of implicit prohibition, and the comparison of these factors with the ones involved in the choice of the negative directives studied in chapter 5.

In addition to the potential development of the analysis of negative directives, further research is required to add the results for negative directives to the semantic network formalising the factors that influence directive choices. This natural extension to the study presented here would provide the whole picture of factors involved in directive choices, both in their positive and negative polarity, in a way that can be implemented for purposes of natural language generation.

A follow up to the findings of this thesis would be provided by the implementation of the semantic networks suggested here for both directive and purpose expressions. Trying to generate instructions with the help of these networks would help refine the networks.

Following up from the issues discussed in chapter 4, it was concluded that Generation and Enablement do not offer much insight into the reasons for the choice of expression. Several other lines of research were suggested to complement the findings for the procedural relations analysis:

a) A more finely-grained analysis identifying, for instance, voice and tense might be able to determine further differences among the ambiguous combinations.

b) Looking into the factors distinguishing among the most frequent ways of expressing the actions. Although this has been partly done in this thesis through the analysis of directives (which are in fact independent clauses expressing actions that have to be performed) and purpose expressions (which realise goal actions), further research is needed to cover for other ways of expressing the actions in the task plan. The Generation and Enablement analysis showed that sometimes the actions in the action pair are realised, for instance, by an -ING clause. It seems that Scott *et al.*'s (1995) notion of perspective, which was taken up for the analysis of purpose expressions presented in chapter 6, would offer a good framework for looking at the possible linguistic realisations of the actions in the task plan. Further research is needed to account for the linguistic markers focusing on the conditions, the result, the temporal ordering of the events, the manner and the instrument.

Finally, as a follow up from some of the issues discussed in chapters 3 and 4, it would also be interesting to research into the relationships between text structure and language functions and/or linguistic forms. Although most sections of user manuals contain directives, a detailed analysis would show which functions and which linguistic forms are predominant or lacking in each section, and whether it is the same for both languages.

References

Agre, P.E. and Batali, J. (1991) "Collaborative Instructional Use in Furniture Assembly". In N. Gilbert (ed.) *Proceedings of the AAAI Workshop on Complex Systems, Ethnomethodology and Interaction Analysis*. Boston, 1991; pp. 1-16.

Austin, J.L. (1962) *How to Do Things with Words*. Oxford, Clarendon Press (2nd edition).

Austin, J.L. (1975) *How to Do Things with Words.* Harvard Univ. William James Lectures 1955 (2nd ed. edited by J.O. Urmson and Marina Sbisa). Oxford, Clarendon Press.

Bach, E. (1986) "The Algebra of Events". *Linguistics and Philosophy*, 9; pp. 5-16.

Balkanski, C.T. (1991) "Logical form of complex sentences in task oriented dialogues". *Proceedings of the 29th Annual Meeting of the ACL, Student Session, 1991*.

Balkanski, C.T. (1993) *Actions, Beliefs and Intentions in Multi-Action Utterances.* PhD Thesis Dept. of Applied Sciences. Harvard University, Cambridge (MA), May 1993.

Beaugrande, R. de and Dressler, W. (1981) *Introduction to Text Linguistics*. London, Longman.

Bell, R.T. (1991) *Translation and Translating: Theory and Practice*. Harlow, Longman.

Bennet, A. and Royle, N. (1995) *An Introduction to Literature, Criticism and Theory. Key Critical Concepts.* London, Prentice Hall.

Bernstein, B. (1971) *Class, codes and control 1: theoretical studies towards a sociology of language.* (Primary Socialization, Language and Education). London, Routledge & Kegan Paul.

Berrettoni, P. (1992) "Per una caratterizzazione linguistica del genere procedurale". In C. Serra Borneto (ed.) *Testi e macchine*. Milan, Franco Angeli, 1992.

Biber, D. (1988) *Variation across Speech and Writing*. Cambridge, CUP.

Biber, D. (1995) *Dimensions of Register Variation: A cross-linguistic comparison*. Cambridge, CUP.

Bloomfield, L. (1933) *Language*. Chicago, University of Chicago Press.

Brown, P. and Levinson, S. (1987) *Politeness. Some universals in language usage*. Cambridge, CUP.

Bühler, K. (1934) *Sprachtheorie: die Darstellungsfunktion der Sprache*. Jena, Gustav Fischer.

Butler, C.S. (1988) "Politeness and the semantics of modalised directives in English". In J.D. Benson, M.J. Cummings, and W.S. Greaves (eds.) *Linguistics in a Systemic Perspective*. Amsterdam, John Benjamins; pp.119-153.

Butt, J. and Benjamin, C. (1988) *A New Reference Grammar of Modern Spanish*. London, Edward Arnold.

Butt, J. and Benjamin, C. (1994) *A New Reference Grammar of Modern Spanish*. London, Edward Arnold (2nd edition).

Carroll, T. and Delin, J. (1998) "Written Instructions in Japanese and English: a Comparative Analysis". *Pragmatics*, 8 (3); pp.339-385.

Chomsky, N. (1965) *Aspects of the Theory of Syntax*. Cambridge, MIT Press.

Ciliberti, A. (1990) "Instructions for Use: A Macrotextual and Stylistic Analysis". In Halliday *et al*. (eds.) *Learning, Keeping and Using Language. Selected Papers from the 8th World Congress of Applied Linguistics. Sydney, 16-21 August 1987*, (vol. II). Amsterdam, John Benjamins, 1990; pp. 299-313.

Ciliberti, A., Giuliani, M.V., Puglielli, A. and Serra Borneto, C. (1992) "Per un modello del manuale di istruzioni per l'uso". In C. Serra Borneto (ed.) *Testi e macchine*. Milan, Franco Angeli, 1992; pp. 21-52.

Ciliberti, A. (1992) "Analisi stilistica dei sub-testi constituenti". In C. Serra Borneto (ed.) *Testi e macchine*. Milan, Franco Angeli, 1992; pp. 107-134.

Cohen, P.R.. and Levesque, H.J. (1990) "Rational Interaction as the Basis for Communication". In Cohen *et al*. (eds.) *Intentions in Communication*. Cambridge (MA), MIT Press, 1990; pp. 221-255.

Cohen, P.R., Morgan, J. and Pollack, M.E. (eds.) (1990) *Intentions in Communication*. Cambridge (MA), MIT Press.

Connor, U. (1996) *Contrastive Rhetoric: Cross-cultural aspects of second-language writing*. Cambridge, CUP.

Coulthard, M. (1977) *An Introduction to Discourse Analysis*. Harlow, Longman.

Crystal, D. (1992) *An Encyclopaedic Dictionary of Language and Languages.* Oxford, Blackwell.

Crystal, D. and Davy, D. (1969) *Investigating English Style*. Harlow, Longman, 1992.

Delin, J., Scott, D. and Hartley, A. (1993) "Knowledge, Intention, Rhetoric: Levels of Variation in Multilingual Instructions". In O. Rambow (ed.) *Intentionality and Structure in Discourse Relations. Proceedings of a Workshop sponsored by the Special Interest Group on Generation of the Association for Computational Linguistics. 21 June 1993*. Ohio State University, Columbus, Ohio; pp. 7-10.

Delin, J., Hartley, A., Paris, C., Scott, D. and Vander Linden, K. (1994) "Expressing Procedural Relationships in Multilingual Instructions". *Proceedings of 7th International Workshop on Natural Language Generation*. Kennebunkport, Maine, June 1994; pp. 61-70.

Delin, J., Hartley, A. and Scott, D. (1996a) "Towards a Contrastive Pragmatics: Syntactic Choice in English and French Instructions". *Language Sciences*, 18 (3-4); pp. 897-931.

Delin, J., Scott, D. and Hartley, A. (1996b) "Language-Specific Mappings from Semantics to Syntax". *Proceedings of COLING-96: The 16th International Conference on Computational Linguistics. Copenhagen, Denmark*; pp. 292-297.

Derrida, J. (1988) *Limited Inc.* Evanston, Northwestern University Press.

Di Eugenio, B. (1992) "Understanding natural language instructions: The case of purpose clauses". *Proceedings of the 30th Annual Meeting of Association for Computational Linguistics.* Newark, Delaware; pp. 120-127.

Di Eugenio, B. (1993a) "Speakers' Intentions and Beliefs in Negative Imperatives". In O. Rambow (ed.) *Intentionality and Structure in Discourse Relations. Proceedings of a Workshop Sponsored by the Special Interest Group on Generation of the Association for Computational Linguistics. 21 June 1993.* Ohio, State University, Columbus, Ohio; pp. 11-14.

Di Eugenio, B. (1993b) *Understanding Natural Language Instructions: A Computational Approach to Purpose Clauses.* Ph.D. thesis, Dept. of Computer and Information Science, University of Pennsylvania, December. Technical Report MS-CIS-93-91. (Also Institute of Research in Cognitive Science report IRCS-93-52).

Di Eugenio, B. and White, M. (1992) "On the Interpretation of Natural Language Instructions". *Proceedings of COLING-92, Nantes, August 23-28, 1992, vol. 4*; pp. 1147-1151.

Di Pietro, R.J. (1971) *Language Structures in Contrast*. Rowley (Massachusetts), Newbury House, 1978 (revised edition).

Dixon, P. (1982) "Plans and Written Directions for Complex Tasks". *Journal of Verbal Language and Verbal Behavior*, 21; pp. 70-84.

Dixon, P. (1987a) "Actions and Procedural Directions". In R. Tomlin (ed.) *Coherence and Grounding in Discourse*. Amsterdam, John Benjamins; pp. 69-89.

Dixon, P. (1987b) "The Structure of Mental Plans for Following Directions". *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 13, (1); pp. 18-26.

Dixon, P., Faries, J. and Gabrys, G. (1988) "The Role of Explicit Action Statements in Understanding and Using Written Directions". *Journal of Memory and Language*, 27; pp. 649-667.

Downing, A. and Locke, P. (1992) *A University Course in English Grammar*. Hemel Hempstead, Prentice Hall.

Ellis, J. and Ure, J. (1974) "The contrastive analysis of language registers". (Unpublished manuscript).

Ervin-Tripp, S. (1976) "Is Sybil there? the structure of some American English directives". *Language in Society* 5 (1); pp. 25-66.

Fairclough, N. (ed.) (1992) *Critical Language Awareness*. London, Longman.

Fikes, R.E. and Nilsson, N. (1971) "STRIPS: a new approach to the application of theorem proving to problem solving". *Artificial Intelligence*, 2; pp.189-208.

Firbas, J. (1992) *Functional Sentence Perspective in Written and Spoken Communication*. Cambridge, CUP.

Firth, J.R. (1957) "A Synopsis of Linguistic Theory, 1930-1955". In *Special volume of the Philological Society*. Oxford, Basil Blackwell, 1968.

Fraser, B. and Nolan, W. (1981) "The association of deference with linguistic form". *International Journal of the Sociology of Language*, 27; pp. 93-109.

Gläser, R. (1979) *Fachstile des Englischen*. Leipzig, Enziclopädie.

Goldman, A.I. (1970) *A Theory of Human Action*. Englewood Cliffs (NJ), Prentice Hall.

Grice, H.P. (1957) "Meaning". *Philosophical Review*, 66; pp. 377-388.

Grote, B. (1995) "Expressing procedural relationships in German instructional texts". Technical Report, Information Technology Research Institute, University of Brighton, ITRI-95-6, Brighton.

Gundel, J.K., Hedberg, N. and Zacharski, R. (1993). "Cognitive status and the form of referring expressions in discourse". *Language*, 69; pp. 274-307.

Halliday, M.A.K. (1978) *Language as Social Semiotic. The social interpretation of language and meaning*. London, Edward Arnold.

Halliday, M.A.K. (1985) *An Introduction to Functional Grammar*. London, Edward Arnold.

Halliday, M.A.K. (1994) *An Introduction to Functional Grammar*. London, Edward Arnold (2nd edition).

Halliday, M.A.K. and Hasan, R. (1989) *Language, Context, and Text: Aspects of language in a social-semiotic perspective*. Oxford, OUP (2nd edition).

Halliday, M.A.K., McIntosh, A. and Strevens, P. (1964) *The Linguistic Sciences and Language Teaching*. London, Longman.

Harris, B. (1988) "Bi-text, a new concept in translation theory". *Language Monthly*, 54; pp. 8-10.

Hartley, A. and Paris, C. (1997) "Towards an Empirical Characterisation of the Discourse of Software Instructions". (Unpublished manuscript).

Hartmann, R.R.K. (1980) *Contrastive Textology: Comparative Discourse Analysis in Applied Linguistics*. Heidelberg, Julius Groos Verlag.

Hartmann, R.R.K. (1996) "Contrastive Textology and Corpus Linguistics: On the Value of Parallel Texts". *Language Sciences*, 18 (3-4); pp. 947-957.

Hasan, R. (1978). "Text in the Systemic-Functional Model". In W. Dressler (ed.) *Current Trends in Text Linguistics*. Berlin, de Gruyter.

Hatim, B. and Mason, I. (1990) *Discourse and the Translator*. London, Longman.

Horn, L. (1989) *A Natural History of Negation*. Chicago, University of Chicago Press.

Huddleston, R.D. (1984) *Introduction to the Grammar of English*. Cambridge, CUP.

Huettner, A.K., Vaughan, M. and McDonald, D. (1987) "Constraints on the generation of adjunct clauses". *Proceedings of the 25th Annual Meeting of the Association for Computational Linguistics*. Stanford, California; pp. 207-214.

Hymes, D. (1972) "On communicative competence". In J.B. Pride and J. Holmes (eds.) *Sociolinguistics*. Harmondsworth, Penguin; pp. 269-293.

Innis, R.E. (1982) *Karl Bühler. Semiotic Foundations of Language Theory*. New York, Plenum Press.

Jakobson, R. (1960) "Closing statement: linguistics and poetics". In T.A. Sebeok (ed.) *Style in Language*. Cambridge (MA), MIT Press; pp. 350-377.

Jakobson, R. (1987) *Language in Literature*. (Edited by K. Pomorska and S. Rudy). Harvard, Belknap Press.

James, C. (1980) *Contrastive Analysis*. Harlow, Longman.

Johansson, S. and Hofland, K. (1994) "Towards an English-Norwegian parallel corpus". In U. Fries *et al.* (eds.) *Creating and Using English Language Corpora*. Amsterdam, Rodopi; pp. 25-37.

Jones, A.J.I. (1990) "Toward a Formal Theory of Communication and Speech Acts". In Cohen *et al.* (eds.) *Intentions in Communication*. Cambridge (MA), MIT Press; pp. 141-160.

Kaplan, R.B. (1966) "Cultural Thought Patterns in Intercultural Education". *Language Learning*, 16; pp. 1-20.

Kaplan, R.B. (1987) "Cultural Thought Patterns Revisited". In U. Connor and R.B. Kaplan (eds.) *Writing Across Languages: Analysis of L2 Text*. Reading (MA), Addison-Wesley; pp. 9-21.

Kaplan, R.B. (1988) "Contrastive Rhetoric and Second Language Learning: Notes Toward a Theory of Contrastive Rhetoric". In A.C. Purves (ed.) *Writing Across Languages and Cultures: Issues in Contrastive Rhetoric*. Newbury Park (CA), Sage; pp. 274-205.

Kaplan, R.B. (1983) "Contrastive rhetorics: some implications for the writing process". In A. Freedman, I. Pringle and J. Yalden (eds.) *Learning to Write: First Language / Second Language. (Selected Papers from the 1979 CCTE Conference, Ottawa, Canada)*. London, Longman.

Kittredge, R. and Lehrberger, J. (eds.) (1982) *Sublanguage: Studies of language in restricted semantic domains*. Berlin, de Gruyter.

Lavid, J. (1995) "Thematic Progression and Realization in Multilingual Administrative Forms". GIST (LRE Project 062-09) Deliverable TST-3, Universidad Complutense de Madrid.

Leech, G. and Short, M. (1981) *Style in Fiction: a linguistic introduction to English fictional prose*. London, Longman.

Levelt, W. (1989) *Speaking. From Intention to Articulation.* Cambridge (MA), MIT Press.

Levinson, S.C. (1983) *Pragmatics*. Cambridge, CUP.

Lewis, D. (1979). "Score-keeping in a language game". *Journal of Philosophical Logic*, 8; pp. 339-359.

Lodge, D. (ed.) (1972) *20th Century Literary Criticism*. Harlow, Longman.

Lorenzo, E. (1971) "La expresión de ruego y de mandato en español". In E. Lorenzo. *El español de hoy, lengua en ebullición* (2nd edition). Madrid, Gredos; pp. 94-107.

Mann, W. and Thompson, S. (1988) "Rhetorical Structure Theory: Toward a functional theory of text organization". *Text*, 8 (3); pp. 243-281.

Martin, J.R. (1985) "Process and text: two aspects of human semiosis". In J.D. Benson and W.S. Greaves (eds.) *Systemic Perspectives in Discourse*, vol. I. Norwood (NJ), Ablex; pp. 248-274.

Martín, J. (1995) "Antología de la prosa electrodoméstica". *El País*, 13 February 1995.

Martínez Caro, E. (1996) *Funciones pragmáticas, orden de constituyentes y acentuación en inglés y en español. Estudio de corpus.* PhD thesis, Departamento de Filología Inglesa, Facultad de Filología. Madrid, Universidad Complutense, 1996.

Moens, M. and Steedman, M. (1988) "Temporal Ontology and Temporal Reference". *Computational Linguistics*, 14 (2); pp. 15-28.

Moore, J.D. and Paris, C.L. (1993) "Planning Text for Advisory Dialogues: Capturing Intentional and Rhetorical Information". *Computational Linguistics*, 19 (4); pp. 651-694.

Murcia-Bielsa, S. and Delin, J. (1996) "Factors in Syntactic Choice: Expressions of Purpose in English and Spanish Instructions". Department of English Studies. University of Stirling. Departmental Working Paper WP-3-96.

Myhill, J. (1992) *Typological Discourse Analysis. Quantitative Approaches to the Study of Linguistic Function*. Oxford, Blackwell, 1992.

Nida, E. (1964) *Towards a Science of Translating with Special Reference to Principles and Procedures Involved in Bible Translating*. Leiden, E.J. Brill.

O'Donnell, M. (1995) "From Corpus to Codings: Semi-Automating the Acquisition of Linguistic Features". *Proceedings of the AAAI Spring Symposium on Empirical Methods in Discourse Interpretation and Generation*, March 27-29, 1995. Stanford University, California.

Oleksy, W. (ed.) (1989) *Contrastive Pragmatics.* Amsterdam, John Benjamins.

Paris, C. and Scott, D. (1994) "Stylistic Variation in Multilingual Instructions". *Proceedings of the 7th International Workshop on Natural Language Generation*, Kennebunkport, Maine, June 1994; pp. 45-52.

Paris, C., Vander Linden, K., Fischer, M., Hartley, A., Pemberton, L., Power, R. and Scott, D. (1995) *A Support Tool for Writing Multilingual Instructions*. Paper submitted to IJCAI'95, Montreal, Canada.

Patterson, A. (1990) "Intention". In F. Lentricchia and T. McLaughlin. *Critical Terms for Literary Study*. Chicago, University of Chicago Press.

Perrault, C.R. (1990) "An Application of Default Logic to Speech Act Theory". In Cohen *et al.* (eds.) *Intentions in Communication*. Cambridge (MA), MIT Press; pp. 161-185.

Péry-Woodley, M.P. (1990) "Contrasting Discourses: Contrastive Analysis and a Discourse Approach to Writing". *Language Teaching*, 23 (3); pp. 143-151.

Pollack, M.E. (1986a) "A Model of Plan Inference that Distinguishes between the Beliefs of Actors and Observers". *Proceedings 24th Annual Meeting of the Association for Computational Linguistics*. New York, Columbia University, June 1986.

Pollack, M.E. (1986b) *Inferring Domain Plans in Question-Answering*. PhD thesis, University of Pennsylvania. SRI Technical Report SRIN-403.

Pollack, M.E. (1990) "Plans as Complex Mental Attitudes". In Cohen *et al.* (eds.) *Intentions in Communication*; pp. 77-103.

Prince, E. (1981). "Toward a taxonomy of given-new information". In P. Cole (ed.) *Radical Pragmatics.* New York, Academic Press; pp. 223-256.

Puglielli, A. (1990) "Instructions for Use: From Macro to Microlinguistic Analysis". In M.A.K. Halliday, J. Gibbons and H. Nicholas (eds.) *Learning, Keeping and Using Language. Selected Papers from the 8th World Congress of Applied Linguistics. Sydney, 16-21 August 1987*, (vol. II). Amsterdam, John Benjamins, 1990; pp. 315-332.

Puglielli, A. (1992) "Dall'analisi macrolinguistica all'analisi microlinguistica". In C. Serra Borneto (ed.) *Testi e macchine*. Milan, Franco Angeli, 1992.

Quirk, R., Greenbaum, S., Leech, G. and Svartvik, J. (1985) *A Comprehensive Grammar of the English Language*. London, Longman.

Real Academia Española (1973) *Esbozo de una nueva gramática de la lengua española*. Madrid, Espasa-Calpe.

Rösner, D. and Stede, M. (1992a) "Customizing RST for the Automatic Production of Technical Manuals". In R. Dale, E. Hovy, D. Rösner and O. Stock (eds.) *Aspects of*

Automated Natural Language Generation (Proceedings of the 6th International Workshop on Natural Language Generation. Trento, Italy, April 1992). Berlin, Springer-Verlag.

Rösner, D. and Stede, M. (1992b) "TECHDOC: A system for the automatic production of multilingual technical documents". In G. Gorz (ed.) *KONVENS 92 - Proceedings of the First German Conference on Natural Language Processing*. Berlin/Heidelberg, Springer.

Ross, A. (1968) *Directives and Norms*. London, Routledge & Kegan Paul.

Sacerdoti, E.D. (1977) *A Structure for Plans and Behavior*. New York, Elsevier North-Holland.

Sager, J.C., Dungworth, D. and McDonald, P.F. (1980) *English Special Languages. Principles and Practice in Science and Technology*. Wiesbaden, Brandstetter Verlag.

Saussure, F. de (1916) *Course in General Linguistics* (transl. Wade Baskin). New York, McGraw-Hill, 1966 (transl. of 1916).

Scott, D., Delin, J. and Hartley, A. (1995) "Modelling the Interactions between Semantics, Syntax and Local Discourse in Instructional Texts". (Unpublished manuscript).

Scott, M. and Johns, T. (1993) *MicroConcord*. Oxford, OUP (Software publication).

Searle, J.R. (1969) *Speech Acts: An essay in the Philosophy of Language*. Cambridge, CUP.

Searle, J.R. (1976) "The classification of illocutionary acts". *Language in Society*, 5 (1); pp. 1-24.

Searle, J.R. (1979) *Expression and Meaning*. Cambridge, CUP.

Serra Borneto, C. (ed.) (1992a) *Testi e macchine. Una ricerca sui manuali di istrizioni per l'uso*. Milan, Franco Angeli.

Serra Borneto, C. (1992b) "Caratteri della procedura". In Carlo Serra Borneto (ed.) *Testi e macchine*. Milan, Franco Angeli, 1992; pp. 53-106.

Simons, I.P. (1992) "El difícil arte de dar una orden. Caracterización pragmática de discursos directivos oficiales en el área educacional". *Estudios Filológicos*, 27; pp. 5-28.

Stockwell, R.P., Bowen, J.D., and Martin, J.W. (1975) *The Grammatical Structures of English and Spanish*. Chicago, University of Chicago Press.

Stubbs, M. (1983) *Discourse Analysis. The Sociolinguistic Analysis of Natural Language*. Oxford, Blackwell.

Swales, J. (1990) Genre Analysis: English in Academic and Research Settings. New York, CUP.

Thomas, J. (1983) "Cross-cultural pragmatic failure". *Applied Linguistics*, 4; pp. 91-112.

Thomas, R.L. (1990) "Dynamic Equivalence: A Method of Translation or a System of Hermeneutics?". *The Master's Seminary Journal*, 1 (1) ; pp. 149-176.

Thomason, R.H. (1990) "Accommodation, Meaning, and Implicature: Interdisciplinary Foundations for Pragmatics". In Cohen *et al*. (eds.) *Intentions in Communication*. Cambridge (MA), MIT Press; pp. 325-363.

Thompson, S.A. (1985). "Grammar and written discourse: Initial vs. final purpose clauses in English". *Text*, 5 (1-2); pp. 55-84.

Trimble, L. (1985) *English for Science and Technology: A discourse approach*. Cambridge, CUP.

Tsui, A.B.M. (1994) *English Conversation*. Oxford, OUP.

Turner, K. (1996) "The principal principles of pragmatic inferences: politeness". *Language Teaching*, 29; pp. 1-13.

Vander Linden, K. (1993) *Speaking of Actions: Choosing Rhetorical Status and Gramatical Form in Instuctional Text Generation*. PhD thesis, University of Colorado at Boulder. Technical Report CU-CS-654-93.

Vander Linden, K. and Di Eugenio, B (1996a) "Learning Micro-Planning Rules for Preventative Expressions". *Proceedings of the Eighth International Workshop on Natural Language Generation, INLG'96.* Hertsmonceux, England; pp.11-20.

Vander Linden, K. and Di Eugenio, B (1996b). "A Corpus Study of Negative Imperatives in Natural Language Instructions". *Proceedings of the 16th International Conference on Computational Linguistics, COLING96.* Copenhagen, Denmark; pp. 346-351.

Vanderveken, D. (1990) "On the Unification of Speech Act Theory and Formal Semantics". In Cohen *et al.* (eds.) *Intentions in Communication*; pp. 195-220.

Ventola, E. (1984) "Orientation to social semiotics in foreign language teaching". *Applied Linguistics*, 5; pp. 275-286.

Vinay, J.P. and Darbelnet, J.L. (1958) *Stylistique comparée du français et de l'anglais. Méthode de traduction.* Paris, Didier.

Waard, J. de and Nida, E.A. (1986) *From One Language to Another, Functional Equivalence in Bible Translating*. Nashville, Nelson.

Wimsatt, W.K. and Beardsley, M.C. (1946) "The intentional fallacy". In D. Lodge (ed.) (1972) *20th Century Literary Criticism*. Harlow, Longman; pp. 334-345.

Wright, P., Crighton, P., and Threlfall, S.M. (1982) "Some factors determining when instructions will be read". *Ergonomics*, 25 (3); pp. 225-237.