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L2 Acquisition of Spanish Compounds by native speakers of Finnish

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2000
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ABSTRACT

En esta tesis se investiga la adquisición de las palabras compuestas del español por hablantes del finés La investigación se centra en dos tipos de compuestos, i.e. los compuestos N-N (coche cama) y los deverbales (matamoscas), empezando por un análisis comparativo de estos compuestos del español y del finés. En el caso de los compuestos N-N, la productividad mínima de los compuestos del español en comparación con los del finés se explica a partir del 'Parámetro de los compuestos' (Snyder, 1995), mientras que la direccionalidad opuesta del núcleo y del modificador se basa en la propuesta del 'Marcador de palabra'(Harris,1991; Piera, 1995). Las diferencias más importantes entre los compuestos deverbales en las dos lenguas son la direccionalidad y la estrategia de formación, las cuales se explican con el modelo LMBM de Beard (1995). Las hipótesis se basan en la influencia del L1 en la adquisición de las diferencias mencionadas.

La parte empírica de la tesis consiste en un estudio con 19 hablantes de finés, 13 de nivel intermedio y 6 de nivel avanzado. Los compuestos se obtuvieron a partir de dos pruebas, una de dibujos y otra de paráfrasis para las que los apréndices debian proporcionar el compuesto correspondienete. Los resultados confirman la influencia del L1 tanto en el cas o de los compuestos N-N como de los deverbales. La variación en la productividad de los compuestos N-N se explica con la propuesta de Snyder. Por lo que se refiere al 'Marcador de palabra' los resultados indican que no parece formar parte de la representación mental del la Interlengua de los sujetos. Por lo que se refiere a la direccionalidad de los deverbales, ademas de ser más problematica su adquisición, lo cual puede explicarse por el hecho de que la opción del finés -como la del inglés- represente una estructura marcada.

ACKNOWLEDGEMENTS

I would like to thank the following people and institutions for their great help during the time I have been working on this thesis.

First, thanks go to my thesis supervisor, Professor Juana Liceras, for endless patience and continuous encouragement and also for including her students so closely in her work and research.

Second, I would like to thank the thesis examiners, Professor Helmut Zobl and Professor Daniel Castillo-Durante, for their valuable comments on the thesis.

Third, thanks are due to my family - Ron, Alexander and Zoë , as well as Anita - for moral and technical support over the course of my studies.

Fourth, I want to express my gratitude to Director Helena Eerola and the teachers as well as students at Helsingin Työväenopisto in Helsinki for their interest and logistical support in data gathering.

Finally, I would like to thank the Department of Modern Languages and Literatures for the Master's program scholarship, which made it possible for me to continue my studies for the M.A.

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INTRODUCTION

Morphology has become a central focus of interest in SLA research over the past decade, securing a place with phonology as interesting approaches to linguistic studies. This shift from syntax oriented studies is due to the fact that morphology carries cross-linguistic differences and may be the locus of parameterization, with lexical parameters operating at the level of word-formation. To date there are still few L2 applied studies on lexical parameters and such topics as compounding.

This thesis is a study of parametric syntax in relation to morphology and the constraints of prior language knowledge in L2 acquisition. The theoretical background is based on three learnability issues which are related to compounding (i.e. the 'compounding parameter'(Snyder, 1995), the 'Word Marker'(Harris, 1991, Piera, 1995) and the Lexeme /Morpheme Base Model (Beard, 1996)), and to what the role of the L1 setting of the related parameters may be. There are two main parts to the study, one dealing with Spanish deverbal compounds and the other with Noun-Noun compounds (N-N compounds) and their respective acquisition by native speakers of Finnish. In order to carry out this research, data from native speakers of Finnish will be analyzed within the theoretical background provided by present linguistic theory.

There are no previous studies with the Spanish-Finnish language combination. The 19 subjects in the present study are all native speakers of Finnish, with almost exclusively English and Swedish as L2s. These two languages coincide with Finnish in the case of features that are studied in this thesis, and thus the L2 cross-influence is minimized. In other words, the data should be very 'pure'. The present study also presents a comparative study of N-N and deverbal compounding in Spanish and Finnish, touching on both syntactical and morphological aspects. In addition, on a more practical level, the discussion around the topic of compounds can offer insights to ways of approaching the teaching of this subject in institutional settings.

Chapter 1 is a comparative look at compounding in Spanish and Finnish. The first section discusses general issues in Spanish compounding, namely the definition of a compound, differences between words and phrases, compounds and derivations as well as the order of head and modifier. The following section describes the analytical approaches to Spanish deverbal and N-N compounds, the two types that are within the scope of this thesis.

The second part of Chapter 1 is a comparative analysis of the formation of these type of compounds in Spanish and Finnish. The main differences between N-N compounds are productivity and head directionality as Spanish N-N compounds are infinitely less productive than Finnish ones and the head-modifier order is reversed. The theoretical base pertaining to N-N compounds is based partly on a proposition by Snyder (1995), the 'compounding parameter' which links the L1 acquisition of complex predicates to the acquisition of compounds. Also, a theoretical proposition made by Harris (1991) and developed by Piera (1995), which we will call the Word Marker, has consequences concerning the internal ordering of compound components. Deverbal Spanish compounds differ from their Finnish counterparts mainly in directionality. The

theoretical base used for analyzing deverbal compounds is the Lexeme/Morpheme Base Model suggested by Beard (1996). This model relates the compound constituents as having a parametric relationship of head-modifier, which then is reflected in their ordering. The comparisons are rounded with a more specific account of the visible morphological differences and compounding strategies of Spanish and Finnish compounds.

Chapter 2 reviews the relevant L2 research that has been published on Spanish compounding to date. Among previous studies that relate to the present study are a study by Valenzuela (1999) which deals with L1 influence of English and French speakers in their L2 Spanish in relation to the proposed 'compounding parameter'. Valenzuela finds positive L1 transfer of the parameter in the case of the English subjects, although neither group shows a predicted relationship between the acquisition of N-N compounds and complex predicates. Slabakova (1998) investigates the same subject from a similar angle, not finding a strong link either. Liceras and Diaz's study (1999), with L2 Spanish students from a variety of Indo-European and non-Indo-European L1, in addition investigates the proposed Word Marker as a possible trigger for acquisition of compounds. The findings of the study do not support the Word Marker as a trigger for the acquisition of N-N compounds.

The L2 acquisition of deverbal compounds has been studied by Lardiere (1998) with data from Spanish NL learners of English L2. Lardiere compares a syntactical and a lexical approach for deverbal compound formation and finds her results do not perfectly fit either in all aspects. On the other hand she finds definite L1 influence in the morphology of the L2 compounds.

The third part of Chapter 2 contains the hypotheses concerning L1 influence of

native speakers of Finnish on Spanish L2 compounding. In the case of N-N compounds the predictions concern productivity and head-directionality and in the case of deverbal compounds head-directionality and morphology.

Chapter 3 describes the subjects and the design of the tasks that were used for data elicitation. The subjects were adult students at an institute in Helsinki, Finland. They are all native speakers of Finnish, mostly with Swedish and English as their other L2s. As these languages coincide with Finnish in the features that were studied in this thesis, the other L2 influence should not bias the results.

The two tests used for N-N compounds and deverbal compounds were both of the same type. The first part is a picture task, asking the subject to identify and name an object or a person in a picture. The second part is a paraphrasing task in which the subject reads a descriptive sentence and then names the object or person described. All solicited answers were pure N-N or deverbal compounds. The tests were done in a class setting with virtually no time limit and all answers were recorded in writing.

The results are presented in the last two sections of Chapter 3. In the case of the N-N compounds the results show the predicted drop in productivity at mid-level, as well as a predicted re-distribution of directionality once productivity increased again at the higher level. However, the switch to correct directionality cannot be shown as being attributed to the Word Marker feature.

Concerning the deverbal compounds, the directionality follows the competence level and once established seems to hold firmly. Compound internal infinitives are produced on all levels, even when the directionality is correct. The last feature to be used correctly is the compound final plural -s.

CHAPTER 1

A comparative look at compounding: Spanish versus Finnish and English

There are three ways of forming new words in a language, Spanish and Finnish being no exception. First, creating new free morphemes or words, second, deriving from existing morphemes and, third, compounding (Koski, 1982; Laaksonen-Lieko, 1998; Matthews, 1980; Varela, 1993). Both Finnish and Spanish use compounding for the purpose of forming new words, although compounding in Spanish is a far less productive process than in Finnish or the Germanic languages, including English. There are differences in the ways compounding is realized in these languages, both at the syntactic level (phrase order) and at the morphological level (use of derivatives and case markers). This chapter focuses on a comparison of compounding in Spanish and Finnish. The first part, 1.1, concentrates on some of the basic general issues involved in compounding, and the three following parts, 1.2, 1.3, and 1.4, provide an analysis of N-N and deverbal compounding in Spanish and Finnish. Since the target language in this thesis is Spanish, the emphasis is on the formation of Spanish compounds and Spanish is the starting point of the comparison.

1.1. General issues about compounding in Spanish

1.1.1 Definition of a compound

It is not an altogether clear question what constitutes a compound. There is agreement on certain traditionally accepted criteria for compoundhood (Rainer and Varela, 1992), among which the most important are

(1) a. a semantic criterion, i.e. that compounds denote a unitary concept
b. a syntactic criterion, i.e. that compounds are "syntactic islands"
c. a morphological criterion, i.e. that compounds are made up of free forms

The first two criteria, mainly (b) but (a) as a consequence, exclude phrases from the definition, since they define a compound as a separate unit which is inseparable and inaccessible for syntactic rules. The third criterion (c) requires a compound to be more than a derivation of one single lexical unit, which on the other hand does not exclude derivations from being a part of a compound. This definition works well for ordinary prototypical compounds, although it may leave some borderline cases out of the bounds of an absolute definition[1]. The objective of this thesis is not to explore unusual or debatable compounds, but the acquisition of ordinary prototypical ones and therefore the above definition is sufficient for our purposes.

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1 The borderline cases include those N-N compounds that could be analyzed as phrasal, including appositions, prepositional and adjective phrases, as for example in *un clérigo poeta autor de libros*, 'a cleric-poet author of books', where the first two form a compound but the rest has the status of an apposition, and *tren mercancías*, 'freight train', and *media luna*, 'half moon'(Rainer-Varela, 1992). Equally, the border between compounds and derivatives with pre-suffixes is not totally clear, compare *autoescuela*, 'driving school' with **camionescuela*, * 'truck school', where *auto-* could be considered a prefix (Rainer-Varela, 1992).See also section 1.1.2.1 and 1.1.2.2.

1.1. General issues about compounding in Spanish

1.1.1 Definition of a compound

Although the empirical parts of this thesis deal with two types of ordinary compounds, it is useful to explore the make-up of a compound a bit further in order to better be able explain the directionality and morphology of the ordinary compounds.

1.1.2.1 Difference between words and phrases

Spanish compounds can be divided into true compounds such as *pelirrojo*, 'redhead', and syntactic compounds, which require a reinterpretation of a syntactic structure in order to form a new word, such as for example *fin de semana*, 'week end' or *hombre rana*, 'frog man' or *sacacorchos*, 'corkscrew'.

Bustos (1986) uses phonetic, morphological, syntactic and semantic criteria to define compounds as words as opposed to phrases. However, none of the criteria traditionally used for defining words can shed definite light on the issue as many compounds do not behave as traditional words. Such criteria as accentual unity does not always hold, as in for example *barco pirata*, ' pirate ship', which is a compound with two accentuated constituents. It also allows internal morphological changes, such as plural ending, *barcos pirata*, 'pirate ships'. On the other hand this type of word behaves as a 'syntactical island', moving as a unit within the syntax and can only be replaced as a unit. Also, internal modification is not possible, for example a form like **barco peligroso pirata*, [ship dangerous pirate] not being acceptable. The correct modification

is *[barco pirata] peligroso* , 'dangerous pirate ship', and *muy peligroso*, 'very dangerous', where the modifier does not break up the compound.

In the case of deverbal compounds they have been described as 'phrases re-analyzed as words' by DiScullio and Williams (1987) or in other words as lexical versions of syntactic Verb Phrases, as in *comemoscas* [eats flies] for 'fly eater'. An alternative approach is offered by Beard (1995) in a model which distinguishes between lexical and syntactical derivation and treats deverbal compounding as a lexical derivation process in which the compound constituents stand in a modifier-head relation to each other. Within this approach deverbal compounds are not formed in syntax, but in the generative lexicon.

Without venturing further into the subject at this point, may it by these few comments be understood that the borderline between compounds and phrases is all but clear. As Val Alvaro (1999) concludes, compounds are not necessarily mini-syntaxes, but could be seen as a syntactical combination of lexical elements on the word level.

1.1.2.2 Compounds versus derivations

Another interesting question is what should be considered the borderline between a compound and a derivation. The question is of importance as derivations of course do not follow the same rules as compounds. Val Alvaro (1999) suggests that many compounds can be analyzed as a [preposition + lexical category X (Noun etc)], for example ***encerrar*** and ***sobre****volar*. On the other hand, should the prepositional component be seen as a freestanding homophone of the preposition, the compound must be classified as a case of prefixation, i.e. a derivation.[2]

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[2] As for a borderline case, Bustos (1986) mentions the example of *boca*, 'mouth' in Spanish, which appears in many compounds with the meaning 'entrance, beginning of', for example *bocamanga*,

Rainer and Varela (1992) base their division of compounds versus derivations on what they call system adequacy, i.e. to what extent they resemble similar existing structures. Thus *sobrevolar* , 'overfly', would be classified as a derivation because of its resemblance to the derivation *sobreactuar*,'overact'. This classification places some compounds that are traditionally classified as right-headed into the category of derivations. Examples of these are *cineclub* ,'cinema club', and *ecosonda*, 'echo sounder', where the first component, despite being a free form, can be compared to prefixes such as for example *ferro-* or *bio-*. According to this approach very few Spanish compounds are genuinely right-headed, and left-headedness is is the general rule in Spanish.[3]

1.1.2.3 Word-order: head and modifier

The products of nominal composition are traditionally grouped into endocentric and exocentric compounds: complex words where the head is one or more of the constituents are called endocentric, while those with no such hyperonymic relationship, i.e. where the meaning of the word is not directly related to the components, are called exocentric. Typical endocentric compounds are for example coche cama , 'sleeping car' and *mujer araña*, 'spider woman', whereas an example of an exocentric compound is *gallocresta* [cock crest](a type of a flower). The deverbal compounds, such as *sacacorchos*, 'corkscrew', are also traditionally classified as exocentric (Val Alvaro,

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bocamina. Although the morpheme *boca* cannot be claimed to be an actual prefix, it is on its way to acquiring an additional meaning as such, argues Bustos. The same could be stated for the originally Greek word *tele-* in such combinations as *teletienda* and *teleclub*, or even *video-* in *video club*, *video tienda*.

3 To illustrate this strong preference for left-headedness, take the example of *carta bomba*, 'letter bomb', which is perceived as a class of letter by native Spanish speakers, in other words as a left-headed compound, while speakers of languages with right-headed compounds perceive it as a class of bomb. (Liceras, 1999)

1999), for lacking a head in the sense that neither component describes the object: a *sacacorchos* does not describe a type of cork nor a way to extract corks, but a separate instrument.[4]

There are various approaches to defining the head of a compound (see Val Alvaro, 1999). The traditional approach defines the head as the constituent whose lexical denotation includes the groups of head and the compound as a whole, i.e. in *pez espada*, 'swordfish', the head is *pez*, 'fish', since it is a class of fish. In this approach exocentric compounds lack a head, which on the other hand does not imply that they would lack an internal structure for that reason, as in the case of deverbal compounds such as *sacacorchos* for example. This brings us to another possible approach, which presents the head as the constituent from which the argument-structure is defined. In this case the deverbal part can be seen as the head, retaining its original phrasal argument. For further comment on the structure of deverbal compounds see section 1.1.3.2.

The head generally has the same syntactic category, gender and other features as the whole compound, although there are some exceptions. In the case of N-N compounds they are rare, although they do exist, as for example in *el bocacaz* , 'spillway' and *el madreclavo*, [mother clove] or 'a clove seedpod' (Bustos, 1986)[5]. Deverbal compounds are masculine as a rule, masculine being the default gender in Spanish (Rainer and Varela, 1992).There are of course some exceptions to this in the case of compounds that can refer to either men or women, such as *sabelotodo*, 'know-all', which can be either feminine or masculine, and others that are socially conditioned and refer mostly to

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4 This definition may not be very convincing though, because the compound does express its purpose.

5 Even Bustos (1986) points out that these two compounds could be analyzed as determiner + head from a semantic point of view.

women or men, for example *la atropellaplatos* [knocks down plates] or 'clumsy person or sort' and *el buscapleitos* [looks for quarrel] or 'troublemaker' (Bustos, 1986)[6].

The head is also the part of the compound that undergoes the morphological operations. Concerning these operations, inflection can be internal, marginal or double. Double inflection is unusual (in coordinative N-N -compounding: *actores directores*, 'actor-directors'), internal inflection is restricted to certain types of compounds (N-N: *cartas bomba*, 'letter bombs'), the most usual being marginal inflection (*trabajoadictos*, 'workaholics'; *sacacorchos*, 'corkscrews' (unchanged from singular) as well as *cortahierbas*, 'lawn mowers'.

Combining two elements into a compound establishes a relationship between them which can be either subordinative or coordinative. Out of those two, the subordinative relationship can be either governing or modifying. Val Alvaro (1999) gives the following examples.

a. the head governs the secondary constituent,
(N-**N**: *vasodilatación*, 'vesseldilation'; N-**A**: *trabajoadicta*, 'workaholic'; N-**V**: *maniatar*, 'tie the hands of')

b. the head is modified or complemented by the secondary constituent of the compound (**N**-N: *telaraña*, 'spider web'; *carta bomba*, 'letter bomb'; **N**-A: *aguaardiente*, '[burning water], 'liquor'; A-**N**: *altiplanicie*; 'high planes'; Av-**V**: *malgastar*; 'misspend'; Av-**A**: *malsano*, 'unhealthy').

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6 However, any Spanish speaker would easily accept and understand the opposite gender for either; this comment by Bustos must refer to usage as opposed to competence, the latter being the specific interest of this thesis.

In the case of coordinative compounds, there is no head, but both elements have equal value in the compound. For example: N-N: *aguamiel*, 'honeywater', *coliflor*, 'cauliflower' and *suroeste*, 'southwest'.

1.1.3 Types of compounds

The table below lists the different kinds of Spanish compounds according to the syntactic categories of the constituents.

Table 1.1 Types of compounds[7]
(As in Rainer and Varela, 1990)

	N	V	A
N	**N**-**N**: poeta-pintor **N**-N: año-luz (N-N): castroestalinismo (N-i-N): sopicaldo V-N: sacacorchos	(N-i-**V**): maniatar (V-V): bullebulle	(N-**A**): drogadicto N-i-**A**: pelirrojo
A	(A-i-N): altiplanicie		A-**A**: ético-moral A-i-**A**: rojiblanco
Adv		(Adv-**V**): malgastar	

The ones of interest to us in this thesis are the left-headed subordinative N-N compounds (*año luz*) and the deverbal V-N compounds (*sacacorchos*).

7 Bold type indicates the head; exocentric compounds show no bold type. Brackets indicate low productivity.

1.1.3.1 N-N compounding in Spanish

The N-N compounds can be grouped according to endo- or exocentricity, subordinative or coordinative structure, position of head (first or second component) and whether they are true or synthetic compounds. There are two types of N-N compounds as shown in Table 1: those produced by combining two nouns freely (N-N) and those with a binding vowel (N-i -N). Further, within the first group, the freely formed N-N compounds, there are two types: true and synthetic ones. The first type is those that are phonetically fused into one word, for example *pelirrojo*, 'redhead' and *telaraña*, 'spiderweb'. The synthetic group consists of compounds which are not phonetically solidly fused into one word. Examples of these are *hombre rana*, 'frog man', which is subordinative and *café teatro*, 'theatre cafe', which can be seen as coordinative. This type of compound is marginally productive in Spanish, although not anywhere as productive as in other languages, such as Finnish or English.

The typical one is the endocentric subordinative compound where the left constituent is the head, which type is the one of interest in this thesis. The inflection is normally on the head, i. e. internal, which coincides with the double stress of the word and the spelling with the two constituents apart. An example of this type of compound is *año luz - años luz*, 'light year - light years'.

Within this group of compounds there are two types of modification. In the first case, the modifying element specifies the head component classifying it, as in *fútbol-sala*, 'football hall' or in *artículos viaje*, 'travel items'. The compound can be paraphrased with a preposition according to the model 'a N1 for N2', as in *artículos **para** viaje*. In the second case, the modifying element describes it adding characteristics of it, in other words it is qualifying, as in *hombre rana*, 'frog man'.

The right-headed subordinative compounds are not very productive, and within that group some are now considered as derivations, as mentioned in section 1.1.2.2 above.

1.1.3.2 V-N deverbal compounding in Spanish

The deverbal compounds present the single most productive group of compounds in Spanish, despite their theoretically exocentric nature. There are two main types of deverbal compounds: denominative or those that name an object or instrument, such as *sacacorchos*, 'corkscrew', for example, and those that describe or qualify, *metepatas*, [puts foot] or 'one who puts his foot in his mouth'. A third usage, quite rare in comparison with the ones mentioned, is in combination with the preposition *a*, as in *a matacaballos*, [at kill horses] or 'at breakneck speed'.

Both the nature of the first component and the structure of the compound are still being debated. There are different views on the verbal element of the compound, some seeing it as a verbal element and others as a noun, i.e. a derivative of a verb (Rainer and Varela, 1992, and Val Alvaro, 1999).

There are also different views within the verbalist league. Some consider the first element to be an imperative, some see it as an inflected verb form (third person singular). Also, there is a suggested structure such as the one in (2) proposed by Contreras (1985).

(2) $[[\text{DET N'}]_{np}\ [\text{V NP}]_{vp}]_{np}$

Another is the 'marked' phrase structure rule proposed by DiScullio and Williams (1987), shown in (3).

(3) N → VP

The nominalists on the other hand consider the first constituent to be an agentive nominal. Both a deleted agentive suffix and a zero derivational morpheme have been suggested. Varela (1990) re-analyzes the final *-a/-e* of the first constituent as derivational agentive suffixes and Val Alvaro (1999) seems to favor this approach since he lists various reasons for adopting it.

Deverbal compounds generally denote instruments or agents. The ones referring to instruments are usually a combination of the verb which denotes the activity being performed on an object, for example *abrecartas*, [opens letters] or 'letter opener'. The agent form is applied to professions such as *aparcacoches*, [parks cars] or 'valet' or to descriptive compounds, such as *lameplatos*, [licks plates] for 'glutton'.[8]

Concerning the argument structure, the noun has to satisfy the internal argument position of the verb. The verbs are mostly agentives, and the internal argument is normally a theme, given that the agent-verb-theme is the standard in Spanish. Sometimes the second constituent can be a locative, as in *saltamontes*, [hop mountains] or 'grasshopper' (Rainer and Varela, 1992).

The second constituent of these compounds is often plural. This plural does not mark the quantity, but is, especially in Peninsular Spanish, used systematically. It has been suggested that this plural captures the habitual and reiterative aspect of the meaning of the compound, giving it a partitive or non-specific interpretation. The plural -s is used even in cases where it is not semantically plausible, as in *quitapelos*, [remove hairs] or

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[8] Some of these agentives have humorous or derogatory connotations for example *rascatripas*, [scrapes guts] for 'violin player'.

'barber', to the point where Rainer and Varela (1992) suggest that this plural -s may end up being a constitutive morpheme of this type of compound.

There are also some cases where the second constituent appears in singular. This happens if there is a different meaning for the alternate form, as in *catavinos* referring to a person who likes tasting wine, and *catavino* referring to an instrument for tasting wine, although this categorization is seen as artificial by some native speakers of Spanish. Secondly, in cases where the noun does not refer to a class of things but rather an individual entity, such as *girasol*, [turn sun] or 'sunflower', it is singular. Thirdly, in the case of non-countable nouns, it can also appear as singular, as in for example *matafuego*, [kill fire] or 'fire extinguisher'.

The grammatical gender of deverbal compounds is predominantly masculine, perhaps because of the exocentric nature of these compounds and because, as was noted above, masculine is the default gender in Spanish. On the other hand, words denoting persons of feminine gender are grammatically feminine. The noun constituent does not in any instance decide the gender of the compound, as is evident from the examples given by Val Alvaro (1999): *la trotaconventos,* [trot conferences] where *conventos* is masculine (a parallel form *el trotaconventos* also exists) and, conversely, *el limpiaventanas,* [clean windows] or 'window cleaner' where *ventanas* is feminine.

1.2 N-N compounds in Spanish and Finnish

Spanish compounds differ significantly from compounds in languages like Finnish and English in mainly two aspects, namely productivity as well as recursivity, and the ordering of head and modifier. In addition, between Spanish and Finnish there are morphological structure differences which arise from the compounding strategies and

from differences in case and gender markers.

Firstly, the productivity of Spanish N-N compounds is nowhere nearly as high as that of Finnish and English or other Germanic languages. There are only around three hundred compounds of this type attested by usage in Spanish and they are not formed with the same ease as in the other languages mentioned above. Also, they are not favored in children's language (Liceras, 1999), which would show that they are not a salient phenomenon. In Finnish, as in Germanic languages, N-N compounds are considered the most productive form of compounding (Laaksonen and Lieko, 1998).

Secondly, Spanish compounds are mostly left-headed, as discussed in section 1.1.2.3. above, with the exception of the coordinative ones, which, of course, have two heads. In Finnish, as in English, the compounds are right-headed as a rule (Laaksonen-Lieko, 1998; Piera, 1995). This is illustrated in (4), (5) and (6) below.

(4) perro policía [dog police]
(5) police dog
(6) poliisikoira [police dog]

As Piera (1995) has indicated, the lack of recursivity in Spanish as opposed to Finnish or English is evident in the examples (7), (8) and (9).

(7) * perro policía aduana
(8) customs police dog
(9) tullipoliisikoira [customs police dog]

Whereas in Finnish the recursivity is unlimited - not only theoretically but in actual

practice as well - the Spanish compound is maximally binary, as is evident from (7).

We will contemplate two possible explanations for the above mentioned differences. The first concerns the so-called 'compounding parameter', suggested by Snyder (1995). The second is a Word Marker hypothesis proposed by Piera (1995).

The compounding parameter

The compounding parameter intends to capture the typological differences between the productivity of N-N compounding in Spanish-type languages and other language-types, including Finnish. This binary parameter concerns not only compounds, but also complex predicates, classifying a language as affixal or non-affixal according to whether its referential categories (Nouns, Adjectives, Adverbs and Prepositions) can be used as affixes or not. A language that allows N-N compounds allows complex predication and, vice versa, if N-N compounds do not exist then neither does complex predication as such. The different types of complex predication are shown in the English examples in (10) to (13).

(10)	She thought the thing through.	[Verb Particle]
(11)	Mary wiped the windows clean.	[Resultative]
(12)	Renata made him laugh.	[Causative]
(13)	Elizabeth gave Anna flowers.	[Dative Movement]

In these complex predicate constructions there are two syntactic predicates that jointly characterize one single event argument or the Theme. Thus the heads of the two predicates, i.e. 'thought...through'; 'wiped...clean'; 'made...laugh';'gave...flowers', have to form one single word at the point of semantic interpretation.

Finnish is a language with a positive value for this parameter, i.e. it allows both complex predication and N-N compounding (see for example Hakulinen and Karlsson, 1988). The corresponding examples of (10) to (13) in Finnish are (14) to (16).

(14) Hän ajatteli asian läpi. [Verb particle]
[He thought the thing through.]

(15) Marja pyyhki ikkunat puhtaiksi. [Resultative]
[Marja wiped the windows clean[transitive]]

(16) Renata nauratti häntä. [Causative]
[Renata laugh-made her.]

(14) to (16) are structures with double predication, while (17) uses a case (allative **-lle** indicating 'to') instead of dative movement.

(17) Isabella antoi Annalle kukkia.
[Isabella gave Anna-to flowers.]

Only one of these structures is possible or grammatical in Spanish, as can be seen in the examples (18) to (21).

(18) *El pensó el asunto através.
[He thought the thing through]

(19) *María lavó las ventanas limpias.
[María washed the windows clean.]

(20) Renata le hizo reir.
[Renata her made laugh.]

(21) *Isabel dió Anna flores.

[Isabel gave Anna flowers.]

The causative in (20) is the only translation that is grammatical in Spanish[9]. The correct ways of expressing (18), (20) and (21) would be through periphrastic expressions as in examples (22) to (24).

(22) El consideró el asunto detalladamente.
[He reflected on/considered the thing carefully]

(23) María lavó las ventanas hasta dejarlas limpias.
[María washed the windows until they were clean.]

(24) Isabel (le) dió flores a Anna.
[Isabel gave flowers to Anna.]

In other words this compounding parameter would explain the difference between the productivity and recursivity of Spanish and Finnish compounds on a syntactical level, whereas it does not explain the differences in directionality.

The Word Marker

Another corroborating explanation for the same phenomena is provided by Piera (1995) in a syntactic analysis of a morphological proposal by Harris (1991), the Word Marker (WM). In addition to productivity and recursivity, it also deals with directionality of N-N compounds.

Piera maintains that N-N compounds are the result of a lexical insertion. That is

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9 However, *'le'* is a clitic pronoun - the corresponding strong pronoun - *a ella* - would not undergo the same process as it does in English and cannot appear without the dative marker *'a'*.

to say that a compound is the result of the features of the two nouns that form it, as in for example the structure in (25).

(25) $[_N [_N$ perro$] [_N$ policía$]]$

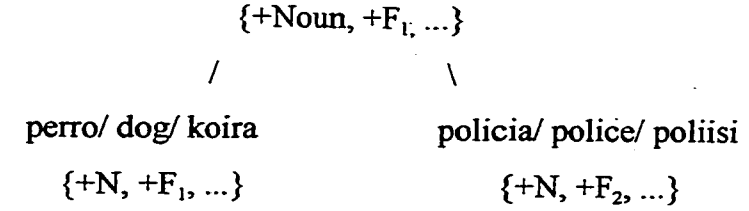
or in English as well as in Finnish (26).

(26) $[_N [_N$ police$] [_N$ dog$]]$
$[_N [_N$ poliisi$] [_N$ koira$]]$

The features that are projected are those of the head as they need to be available for the compound as a whole. The features of the other component need not be projected as they can be recovered from the constituent itself. Thus in the case of (25), the compound has the functional features of $_N$[perro] as indicated in (27) and the features of the compound are accordingly as in (28).

(27) {perro, {grammatical features}, {semantic features}}
where {grammatical features} = {+Noun, +Countable, etc.}

(28)



In order to account for the virtual absence of right-headed structures in Spanish, Piera (1995) then addresses the directionality by means of the WM (word marker), referring to Harris (1991). Piera, following Harris, maintains that Spanish nouns,

adjectives and adverbs have a morphological feature, called the WM, which is responsible for the right hand insertion, in other words, the left-headedness of Spanish compounds. The formal presentation of the WM is the double barrier in these words, as in the example of (29):

(29) $_{N}$ [[perr] WM]

The existence of the WM causes a double bracket on the left side of the noun, which formally makes right hand insertion impossible. This double barrier restriction makes right-headed compounds ungrammatical in Spanish, whereas in Finnish and English, where no WM exist, right-headed compounds are possible, as can be seen in (30) and (31).

(30) *[$_{N}$ [[policí]a] [[perr]o]

(31) [$_{N}$ [police] [dog]]
[$_{N}$ [poliisi] [koira]]

In Spanish the order has to be the reverse, since the insertion can only take place where there is no double bracket, namely after [o], as in (32).

(32) [$_{N}$ [[perr[o] [[policí[a]]

According to Piera, the morphological structure of nouns, adjectives and adverbs in Spanish includes a WM.

This 'double barrier restriction' not only explains the directionality of the Spanish compounds, but also the intrinsic lack of recursivity, which was shown in (7) to (9). The

underlying explanation is that in Finnish, and as in English, there are no double barriers, whereas Spanish nouns systematically have them, whether phonologically realized or not, to the left of the head. Therefore Spanish compounds are predicted to be maximally binary, i.e. have maximally two constituents, since the insertion of further nouns is restricted by the double barrier, while Finnish and English compounds are infinitely recursive in principle.

1.3 Deverbal compounds in Spanish and Finnish

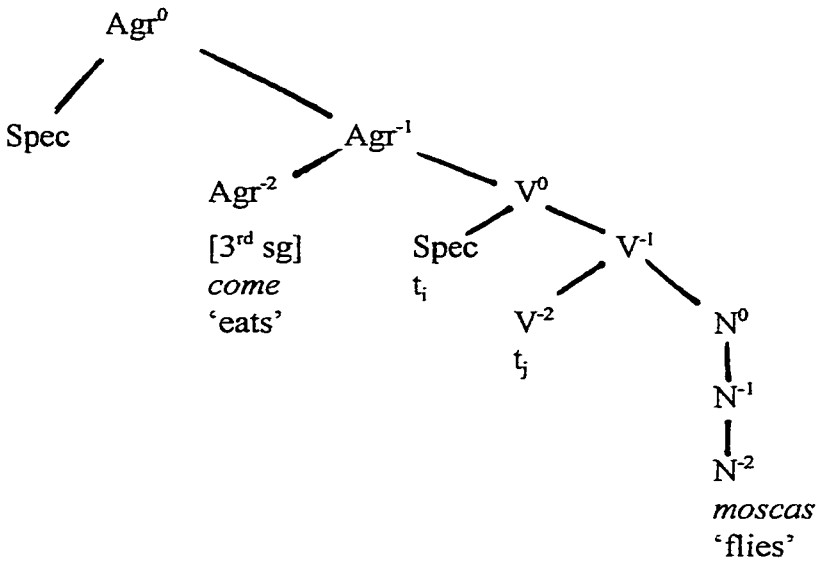
Deverbal compounds are the most productive of all Spanish compounds, and the Finnish equivalent is an equally productive structure. The directionality of the compound in the two languages is reversed, just as is the case for the Spanish compound being left-headed (deverbal component on the left), while right-headed in Finnish and in English.

For the comparison of deverbal compounds in the two types of languages, Spanish versus Finnish and English, we are going to use two models: Beard's (1995) model of Lexeme/Morpheme Base Morphology (LMBM) compared to a morphological model called the word-syntax approach (DiSciullo, 1992) as used by Lardiere (1994) and Lardiere and Schwartz (1997).

As mentioned above, the model used by Lardiere and Schwartz (1997) presents the deverbal compounds within a word-syntax approach. The thematic relation within a compound such as '*fly-eater*', or '*kärpässyöjä*' [fly-eater] in Finnish, is 'inherited' from the relationship between a verb and its internal argument, and thus the interpretation of the compound is restricted: the theme and the agent are clearly stated ('fly' in 'flyeater' being the theme, not the agent). In Spanish the deverbal compounds resemble lexical versions of syntactic Verb Phrases or VPs, '*comemoscas*' or 'eat flies', and have been

called 'phrases re-analyzed as words' by DiSciullo and Williams (1987). The structure of the model for Spanish deverbal compounds as presented by Lardiere and Schwartz (1997) is as in tree (33) as follows:

(33)

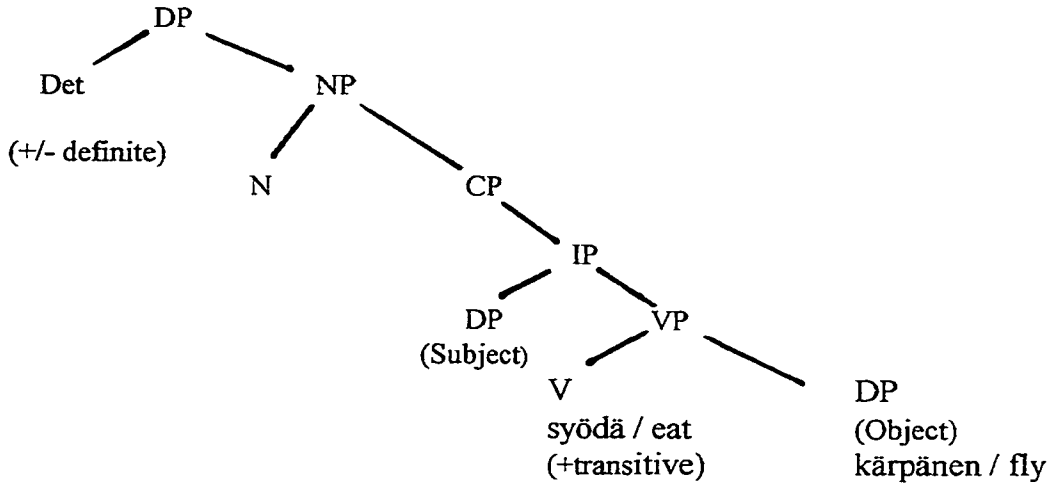


The nominal features associated with a word-internal *pro* are supposed to impart the traces of person, number and gender to the compound through the head (V), which leaves a trace when it moves up to Agreement (Agr). The internal structure is opaque and is the reason why the compound internal inflections do not engage syntactically. What here is called the third-person feature of the Spanish compound is invariant and the plural marking on the object does not require any compound- internal nor compound-external agreement. The compound is invariable in singular and plural, 'un comemoscas', 'dos comemoscas'. As well, the form 3rd person plural 'comenmoscas' is not possible.

The LMBM model proposed by Beard (1995) is not based on a word-syntax approach, but treats the deverbal compounding as a lexical derivation process in which

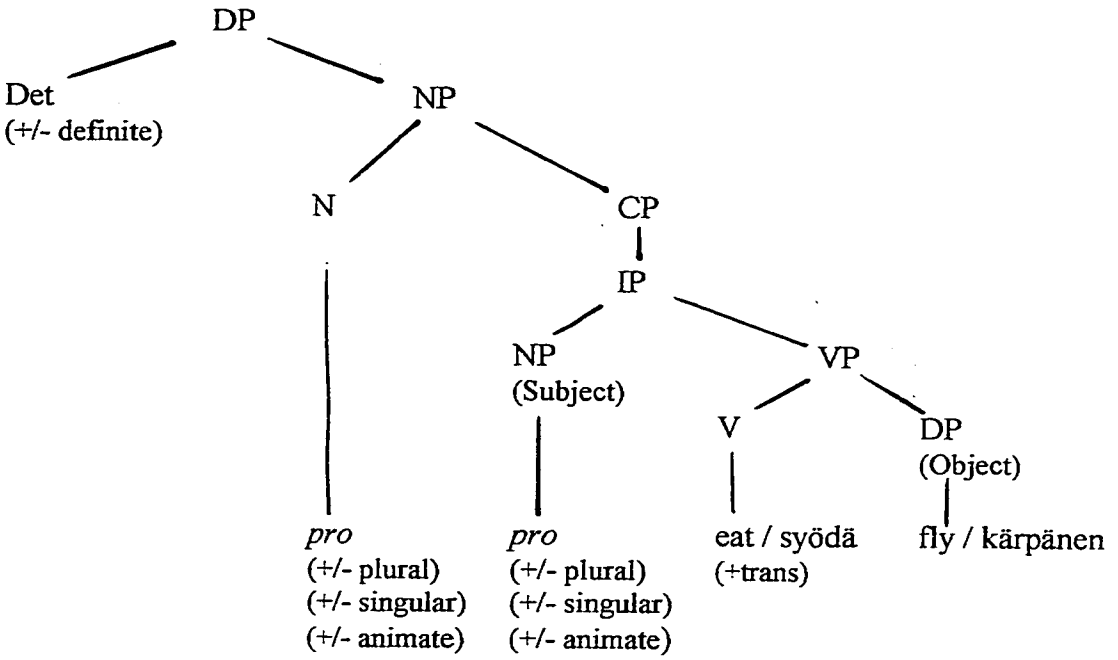
the compound constituents stand in a modifier-head relation to each other. Compounds are not formed in the syntax but rather in the generative lexicon, yet the lexical derivations ('fly-eater'; 'eater of flies') and the syntactical ones ('he who eats flies') share the same base for different expressions. The base structure can be represented as follows in tree (34).

(34)

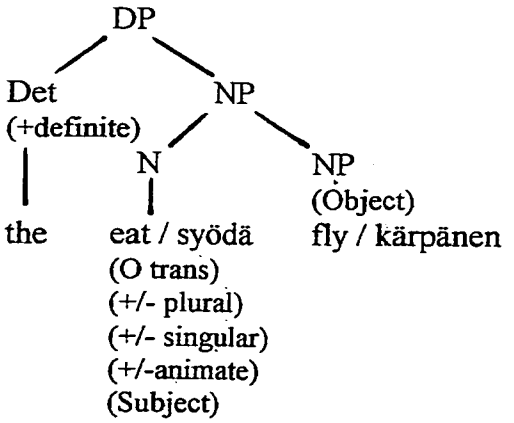


The derivation then takes form either as lexical ('fly-eater' or 'eater of flies'or in Finnish 'kärpässyöjä' or 'kärpästen syöjä') or as syntactic ('one who eats flies' or in Finnish 'hän joka syö kärpäsiä') as in the tree representations in (35)a, (35)b and (36).

(35)a



(35)b

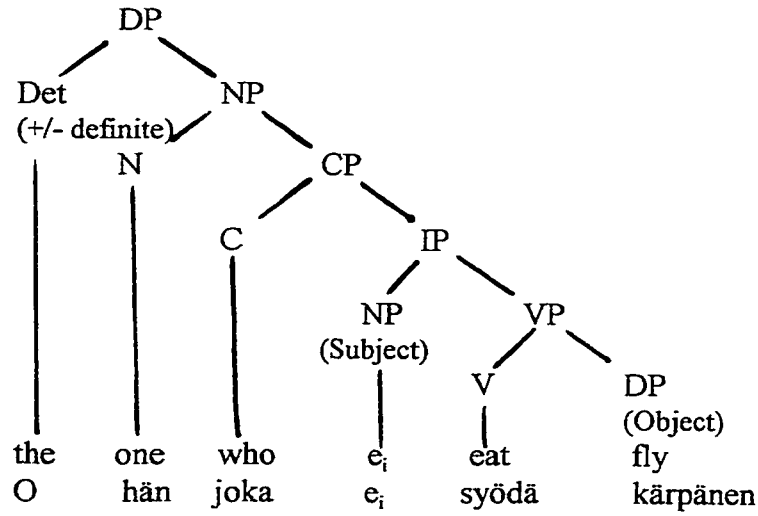


What happens in the derivations in 35(a) and 35(b) is that (a) the object (fly) gets

incorporated in the verbal element (eat)[10]; (b) the subject gets incorporated in the VP (through the affixation of a suffix *-er* in English, *-jä* in Finnish, whereas it is not the case in Spanish); (c) raising (via bracket erasure) of the incorporated VN complex to a higher N (the lexical deverbal nominalization operation which neutralizes the verbal transitivity feature); (d) incorporation of the object (fly) into the head (derived) deverbal noun (eat); and (e) the correct ordering of the modifier and head.

If the derivation is syntactic and not lexical, the result will be as represented in (36) below:

(36)



The final operation of this derivation, that is to say the correct ordering of the modifier and head, is the focus of interest. The correct ordering of the constituents follows a principle formulated by Beard (1996) in (37) below.

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10 Sometimes the object in a compound takes a special case in Finnish, called *Casus Componens*, which is unlike the cases used in ordinary Finnish syntax with free forms (Laaksonen and Lieko, 1998). Hence the morphological changes to this constituent: 'kärpänen' is shortened to 'kärpäs-'.

(37) The Base Rule Ordering Principle (parameterized):
The subordinate constituent of a compound [of category] X assumes the default position, before or after the head, of the adjunct [or complement] in the correlate X Phrase (XP).

More specifically for nominal compounds, Beard (1996) puts forward the proposition in (38).

(38) The subordinate constituent of a compound N assumes a position identical with the default position of a single, unmodified, lexical adjective in a Noun Phrase (NP).

Beard (1995) suggests that the constituents of a derived compound must be ordered in a principled way for the correct semantic interpretation to take place and, subsequently, for the morphological changes to take place correctly. For Beard, the ordering in compounds follows either that of the input or the output category, determined parametrically by language. In Finnish, English and Spanish (as in all Romance languages) the derivational output category will determine the compound order. In the case of the deverbal compounds the input category is verbal but the output category is nominal and as a result, the compound constituents are ordered in the way they would be ordered in the canonical order of head and modifier of a Noun Phrase. In Finnish and in English this order is modifier-head ('valkoinen talo' or 'white house') and in Spanish it is head-modifier ('casa blanca').

This difference can be seen in examples (39) below, where both Spanish, Finnish and English start off with the head-initial order for the base Verb Phrase from which the compound is derived (PL denotes plural).

(39) $[_{VP}$ com-$[_{N}{}^{0}$ mosca-PL]]
$[_{VP}$ syö $[_{N}{}^{0}$ kärpänen-PL]]
$[_{VP}$ eat $[_{N}{}^{0}$ fly-PL]]

Since the parametric order for both Spanish and Finnish as well as English is set for the output category, the order of the final product, i.e. the compound, in both Finnish and English reflects the canonical order of their NPs, that is modifier-head, as in (40) below.

(40) kärpässyöjä
fly-eater

In Spanish, though, the parametric output order is the opposite, head-modifier, as seen in (41) below.

(41) comemoscas [eats flies]

Thus in Spanish the input and the output order of deverbal compounds remains unchanged.

There is a universal restriction to the affixation that constrains the morphological operations to the head of complex category changing derivations in the unmarked (default) case. This rule is called the Head-Application Default (Stump, 1992). In practice this means that the head undergoes the change, i.e. receives the suffix, as for example in 'kärpässyö***jä***' and 'kärpässyö***vä***' in Finnish, 'fly-eat***er***' and 'fly-eat***ing***' in English. Spanish, however, is a language in which the head is placed before the modifier and the suffix would have to fit in the middle of the two constituents, as in for example *come***dor**moscas or *comi***endo**moscas. This arrangement is not possible, both examples

being ungrammatical, and in this case the Base Rule Ordering Principle and the Head-Application Default can not be applied at the same time. There are two possible ways to solve the problem in Spanish: either to forego compounding and revert to a phrasal derivation with a possible nominalizing suffix *-dor* in combination with a genitive *de*, as in example (42), or by using a deverbal method without suffixes, as in example (43).

(42) 'abri-dor de latas'
[open-er of cans]

(43) 'abrelatas'
open[3sg]-can[PL]
[can-opener]

Both are acceptable and productive strategies which are used in the living language.

1.4 Additional aspects in the comparison of Spanish and Finnish compounds

The general strategies for compounding as well as the case, gender and plural markers differ in Spanish and Finnish. Although some of these issues have been touched on in the passages above, they merit a systematic description which is presented in this section.

1.4.1 Compounding strategies

Finnish favors N-N compounds, as do the Germanic languages, which are the largest and most productive group of compounds (Laaksonen and Lieko, 1998). Spanish N-N compounds have an N-N translation in Finnish, whereas many of the deverbal

compounds, more productive in Spanish, have an N-N equivalent, although deverbal compounds are commonly formed and used in Finnish as well.[11] Examples of the two possible types of Finnish translations for Spanish deverbal compounds can be seen in (44) to (47).

(44)	*portaplumas*	V-N
	'kynäteline'	N-N
	[pen stand]	
(45)	*mataratas*	V-N
	'rotanmyrkky'	N-N
	[rat's poison]	
(46)	*espantapájaros*	V-N
	'linnunpelä**tin**'	N-V
	[bird's scare**r**]	
(47)	*abrelatas*	V-N
	'purkinavaa**ja**'	N-V
	[can's opene**r**]	

1.4.2 Gender markers

Spanish classifies nouns into feminine and masculine, with the morphemes *-o* or zero marker for masculine and *-a* for feminine (-e being possible for both) (Alcina and Blecua, 1988) and subsequently requires appropriate agreement in the syntax. These morphemes are added directly to the lexical morpheme, as discussed above. Using Piera's example (1995), we have *perr-**o*** , dog, which becomes *perr-**a*** to describe a 'female dog'

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[11] In Finnish there are three agentive derivational suffixes(nomina agentis) *-jA, -las, -(U)ri* and four instrumental suffixes (nomina instrumenti) *-in, -e, -O,-(U)ri* (Laaksonen and Lieko, 1998). All of these can be found in compound elements.

or 'bitch'. Finnish does not have this gender division and uses no article nor gender marker for nouns, a derivational suffix being the only way to differentiate between male and female. In Finnish *koira*, 'dog' refers to both male and female dogs, just as in English (although in both languages there is a separate word for female dog). The genderlessness extends to the personal pronoun: *hän* refers to both man as well as woman, *he*,'they', referring to both genders in plural.

1.4.3 Case markers

Where Spanish uses free morphemes or prepositions to mark case in Nouns or strong Pronouns, Finnish uses bound ones (Karlsson, 1991). All fourteen cases (genitive, partitive, accusative, essive, translative, comitative and instructive as well as all locatives) are expressed with bound morphemes as case markers in Finnish.

In Spanish, the NN compounds have nominative components as in *pez espada*, 'sword fish', while the preposition *de* (genitive marker) is a also a productive strategy for forming syntactic compounds, as for example in *estrella de mar*, 'starfish'. The occasional compound *en* (locative) can be found in Spanish, as in *jamón en dulce*, a class of ham (Bustos, 1986), whereas other prepositions are not used in Spanish compounds. In Finnish as well, the modifying element of the compound is normally a nominative, for example *kynsileikkuri*, 'nail clipper', or a genitive, *pullo-**n**-avaaja* , [bottle-**of** opener] or 'bottle opener'. However, it can take any other case as well. The most usual oblique case would be a locative, as for example in *kaupungi-**ssa**-kävijä* [town-**in** goers] for 'town-goers' or *käde-**stä**-lukija* [hand-**from** reader] for 'palm reader' (Laaksonen-Lieko, 1998). These compounds are inflected as any other noun, all markers and suffixes added to the end of the word, for example genitive *pullonavaaja-**n***, 'the bottle opener'**s**' or *kädestälukija-**n*** , 'the palm reader'**s**'.

1.4.4 Plural markers

Spanish subordinative compounds normally have an internal plural marker (for example *barcos pirata*, 'pirate ships'), whereas the deverbal compounds have a marginal plural marker in the rare cases where the generic morpheme-marker **-s** is not used, as for example in *un cortahierba - dos cortahierbas*, 'two lawn mowers'. In Finnish the generic plural marker for deverbal compounds does not exist and all compounds get the ordinary plural marker, as in *pullonavaajat*, 'bottle openers' for example.

1.5 Conclusion

Spanish compounds differ from Finnish and Germanic language compounds in several respects. First, N-N compounds are far less productive in Spanish than in the other languages whereas deverbal compounds are comparable in their productivity. Second, Spanish compounds are maximally binary while Finnish , like English, is endlessly recursive. Third, the directionality is reversed, i.e. Spanish has left-headed compounds as a rule, while Finnish has right-headed compounds. Fourth, there are differences in morphology when it comes to gender, plural and case markers. These differences constitute the starting point for our study of L1 influence on L2 learners of Spanish.

CHAPTER 2

L2 acquisition of compounding: the state of the art

The pure syntax studies as they were known from the 1960's through the 1990's have begun to give way to morphology and phonology as interesting approaches to linguistic studies, and morphology and word formation are now studied as a possible locus of parameterization. However, there are not many applied studies related to compounding, and even fewer on L2 acquisition of compounding.

Among previous studies that relate to the present one are a study by Valenzuela (1999) which deals with L1 influence of English and French speakers in their L2 Spanish in relation to the proposed 'compounding parameter' (Snyder, 1995). Slabakova (1998) investigates the same subject from a similar angle while Liceras and Diaz's study (1999), with L2 Spanish students from a variety of Indo-European and non-Indo-European L1s, in addition investigates the proposed Word Marker (Harris, 1991; Piera, 1995) as a possible trigger for acquisition of compounds.

The L2 acquisition of deverbal compounds has been studied by Lardiere (1998), exploring a theoretical model for deverbal compounding (Beard, 1996), which purports to explain the internal ordering of the compound elements.

2.1 N-N compounds

2.1.1 L1 related studies

Snyder (1995) argues that the appearance of various complex predicate constructions and N-N compounding are significantly correlated in the grammar of children acquiring English as their L1. Snyder claims that the moment a child produces its first non-lexical N-N is the moment when that child will also start producing complex predicates. He suggests a parameter named the 'compounding parameter' (Snyder, 1995) which would be responsible for this. As was explained in Chapter 1 above, this parameter differentiates languages according to whether their substantive categories (Nouns, Adjectives, Verbs, Prepositions) are [+affixal] or [-affixal]. This implies that in languages which are [+affixal], like English, both complex predication and N-N compounding are productive grammatical constructions, whereas this is not the case in languages like French or Spanish, whose referential categories are [-affixal]. Languages like English or Finnish represent the superset, i.e. they have both options available, whereas French and Spanish are of the subset, i.e. only have the [-affixal] default option available. In languages with the superset option, L1 learners would have to fix the marked [+affixal] option based on positive evidence (input). The theory suggests that productive NN compounds would act as a trigger for learning complex predicates in the L1 input data.

2.1.2 The 'compounding parameter' and the role of L1 transfer in L2 acquisition

The 'compounding parameter' has been studied in L2 research in terms of L1 transfer of the parameter and productivity of N-N compounding. As mentioned above, N-N compounding represents the superset [+affixal] value that has to be learned through positive input. Based on this, and assuming that there is no L1 transfer, it can be

hypothesized that N-N compounding in Spanish L2 will be difficult to acquire since it is a marked construction and the students have insufficient evidence to trigger the marked option. If, however, there is L1 transfer and the superset option is transferred, there would be differences between French L1 students and other language groups, since French and Spanish are equal in this respect. Only at higher levels of proficiency would the exceptional grammatical cases of N-N compounds and complex predication be accepted, once input has been sufficient to acquire them.

There are two previous studies that test this hypothesis: Valenzuela (1999) and Liceras and Diaz (1999). Neither study unequivocally confirms nor rejects the L1 transfer hypothesis. On one hand both studies show high productivity in N-N compounding indicating L1 transfer, but on the other hand, the French groups do not clearly and consistently score as expected, producing fewer compounds than the English, which should be the case if there was L1 transfer.

Both studies compare subjects from different language groups, French and English in the case of Valenzuela, and in Liceras and Diaz's study a group of Indo-European (French, English, German, Russian, Polish, Danish, Swedish) as well as Non-Indo-European (Chinese, Japanese and Korean). In both cases the subjects were divided into three levels: beginners, intermediate and advanced, although the highest level in Valenzuela's study was labeled as 'near-native', which must be seen as a higher level than the ordinary 'advanced' subject. The subjects were all adult learners of Spanish. All subjects in Valenzuela's study were studying Spanish in an institutional setting (University of Ottawa). Half of Liceras and Diaz's subjects were Canadian university students as well, the other half were students in Barcelona in a natural setting. The subjects in the present study compare well to the subjects in these previous studies in that they are adult students, albeit older on average, in an institutional setting on intermediate

and advanced levels, although not at a university.

The tasks in Valenzuela's study were designed to determine the connection between N-N compounding and complex predication structures. For this purpose she used a translation task and a grammaticality judgement task. Valenzuela's translation task, which consisted of 20 grammatical English sentences - five of which contained N-N compounds - to be translated into Spanish, was included in order to assess the degree of L1 interference. All subjects scored near-perfect in the N-N part of this task, which would indicate no L1 transfer of directionality at all.

Nevertheless, the English beginners had poor results in the N-N grammaticality judgement task, which proved to be a far more difficult task overall and differentiated the subjects and groups. The task consisted of 40 grammatical as well as ungrammatical Spanish sentences whose correctness had to be judged by the subjects. Apart from being a different type of task (not a production task), the actual types of N-N compounds differ from those used in Liceras and Diaz's study and in the present study. Whereas these only include true left-headed N-N compounds, Valenzuela includes both grammatical and ungrammatical versions of three types of compounds (1) - (3):

(1) *tarta de manzana* (left-headed synthetic)
[pie apple]
apple pie

(2) *perro salchicha* (left-headed)
[dog sausage]
sausage dog/dachshund

(3) *video juegos* (right-headed)
video games

The fact that all subjects produced N-N compounds in translation would indicate that the compounding option is not marked and there is L1 transfer. Even though the grammaticality judgement task measures not only productivity as such, but also compounding strategies, it is revealing that only a fifth of the subjects (5 out of 24) rejected more than 50% of the grammatical compounds. This would equally indicate that compounding on the whole is seen as a productive process.

Neither do Liceras and Diaz's (1999) findings confirm the hypothesis that N-N compounding is a marked option. A test was specifically designed to measure whether the subjects were aware of the low productivity of Spanish N-N compounds. The test consisted of a picture task, much like the one in the present study, with pictures of beings and objects which would normally be left-headed N-N compounds, for example as in (4) and (5):

(4) *hombre araña*
[man spider]
spider man

(5) *barco pirata*
[ship pirate]
pirate ship

There were also pictures of objects that would normally not be described by N-N compounds in Spanish, such as in (6) to (8).

(6) *manzano*
apple tree

(7) *caja de herramientas*

[box of tools]
toolbox

(8) *vaca lechera*
[cow milky]
dairy cow

The subjects were asked to name the creatures and objects in the pictures. All Spanish equivalents of English compounds, as presented in (6) to (8) above, were accepted as correct and thus the overall command of vocabulary and production strategies were taken into consideration, not only the N-N compounds.

The results show a substantial amount of compound production in all groups, over 60 %, except for the beginners in Spain (29%). In another test, designed to elicit production strategies, the same subjects also show high levels of production attempts in general with values over 60%, except for the beginners in Spain (20%). A possible interpretation for the low productivity of the beginners in Spain could be that in a natural setting they have already had enough input to realize that compounding is not a productive strategy in Spanish in general, but, on the other hand, not enough to learn the grammatically correct exceptions. In other words, they would already be 'de-learning' the [+affixal] value of their L1 and opting for the predicted low production. Interestingly enough, in the other groups the production percentage does not vary much between the proficiency levels.

Summing up, the two studies do not strongly support the hypothesis that compounding is a marked strategy because a considerable amount of N-N compounds are systematically produced and compounding is seen as a productive strategy on all levels and by all language groups.

2.1.3 The un-marked option: the N-N as a trigger for complex predicates

As proposed by Snyder (1995), N-N compounding would act as a trigger for producing complex predicates in L1. Studies by Valenzuela (1999) and Slabakova (1998) apply this to L2 learners, hypothesizing that if N-N compounding indeed triggers complex predication, then the use of the two should co-occur in L2 learners as well. Learners from a superset L1, in other words languages with the [+affixal] value such as English and Finnish, will have to 'de-learn' this value based on the input they receive. It is therefore expected that learners from a superset language would initially transfer the L1 value of the parameter. At a later stage they will have had enough input of the target language Spanish to know that the [+affixal] option is not available and they should neither produce nor accept N-N compounds nor complex predicates. On the other hand, learners from languages with [-affixal] value, such as French, do not have to let go of an option, and they will neither accept nor produce N-N compounds and complex predicates, neither at the early stage nor at later stages. The few cases of exceptional compounds will have to be learnt through positive input, and this would only happen at an advanced stage.

Slabakova (1998) tests 28 intermediate Spanish students, 14 English L1 and 14 French L1 from universities in Montreal. Her subjects are all at the same level in their Spanish L2, unlike the other studies which compare subjects with different L1s on different proficiency levels as well. There are three tasks altogether. The first one is a grammaticality judgement task with 10 grammatical and 10 ungrammatical sentences with complex predication, the second an elicited production task for N-N compounds, and the third one a forced choice task with series of complex NPs to choose from to complete a sentence. Valenzuela's study uses the same subjects and tasks as above, i.e. a translation task and a grammaticality judgement task for N-N compounds and resultative structures.

The results in Slabakova's study show that the grammatical complex predication constructions are generally well accepted by all in the grammaticality judgement task, whereas the ungrammatical complex predication constructions show an expected difference between the English and the French group. This would indicate L1 transfer. Yet, the French group does not refuse all as predicted. The elicited production task shows less than 4% faults in both groups, indicating that all subjects have mastered N-N compounding. The elicited compounds are synthetic, i.e. an N-P-N structure as for example in *comida de gato,* 'cat food', and not exceptional pure N-N compounds, which seem to be harder to produce. The forced choice task for N-N compounds also showed high levels of correct answers, the French group choosing correct 90% of the time as opposed 80% in the English. Both groups chose forms without the preposition, the English 10 % more often, as well as both left- and right-headed forms. Summing up, the compounding is seemingly not a problem for either group, all the while there is some evidence of L1 influence in the complex predication structures. Contrary to Slabakova's conclusion, we maintain that these results suggest that the N-N compounding does not act as a trigger for complex predication, as we otherwise would expect similar results for both constructions.

Valenzuela's (1999) results do not show any evidence of a relationship between the L2 acquisition of N-N compounds and resultative structures either. As mentioned in the section above, the translation task is near perfect for all groups which disconfirms any L1 transfer of the [+affixal] option in the translation of compounds. On the other hand the resultative translations do show L1 transfer, with only 50% correct answers by the English beginners. The grammaticality judgement task does not show any real differences either between the two language groups. The ungrammatical N-N compounds show very similar levels for all groups except English beginners, who chose ungrammatical options more often than the rest. The ungrammatical resultatives were

accepted as often or more often by the French groups, which contradicts the trigger hypothesis, since if they accept the Spanish compound type they should reject the English predicate type, or vice versa. The exceptional grammatical cases of compounding were accepted twice as often by English beginners (60%) as by advanced (33%), which could indicate a 'delearning effect' of the [+affixal] option. However, the grammatical resultatives were all accepted by the English advanced group, thus disproving the trigger effect, but maybe as evidence that sufficient input had made the subjects aware of the exceptional cases.

Although the author questions some of the tests, and the subject sample was limited and all subjects were bilingual to some extent, there still is no evidence of the triggering effect of N-N compounds on resultative structures in these results.

2.1.4 The Word Marker as a trigger for directionality

As was mentioned above in the previous chapter, Piera (1995) suggests that it is in fact the actual structure of the Spanish Noun which is at the root of the differences between the productivity, recursivity and head directionality of compounding in Spanish and in languages such as English. According to Piera's analysis, it can be assumed that the Word Marker would trigger the acquisition of N-N compounds and that the head directionality will depend on the realization or non-realization of the same.

Liceras and Diaz (1999) hypothesize that if the Word Marker is a trigger for adult L2 acquisition of Spanish N-N compounds, there will be limited production of Spanish N-N compounds until learners are exposed to a considerable amount of positive input. If compounds are produced they will be left-headed as required by the Word Marker and there will be gender marking only on the head of the compound. If the Word Marker does

not act as a trigger and the production depends on the role of the L1, the prediction is that only subjects from languages with productive compounding will produce N-N compounds at the early stages. These compounds would be right-headed and gender marking will not follow the Spanish pattern.

The subjects and the test are the same as are described above in section 2.1.2; a total of 68 students from different language groups in Canada and Spain did two picture tasks designed to elicit N-N compounds. Whereas the first test measured productivity (possible and not possible N-N compounds), the second test measured the compounding strategies with possible N-N compounds paired as masculine and feminine, as in (14) and (15).

(14) *hombre pulpo*
octopus man

(15) *mujer pulpo*
octopus woman

The results indicate that the Word Marker does not act as a trigger for N-N compounding. The English beginners group in Canada produced 72% of compounds against the expectation of none at all. All groups produced around that amount of compounds, except the beginners group in a natural setting in Spain (29%). Their low production may be due to them already having learnt that compounding is not a productive strategy in Spanish, a pattern which is evident in Valenzuela's study as well.

This finding is in line with the results which show that, despite low productivity, the head directionality in that group is most often correct. The Canadian beginners on the other hand, who had not had the input of naturalistic environment, showed more L1

influence and produced more right-headed compounds (un-Spanish like) than left-headed ones. The right-headed word order diminishes as the proficiency level rises, although for some learners the word order remains a problem up until the highest levels.

Compounding strategies follow the same pattern as in the other studies. N-P-N type compounds appear at lower levels, especially among Non-Indoeuropean students, while pure N-N compounds start replacing them at intermediate levels (*carta bomba* as opposed to *carta **de** bomba*). N-P-N compounds disappear altogether on the highest levels.

As to gender options (for example *mujer pulpa* instead of *mujer pulpo),* there are very few non-Spanish options generally and they are not related to level. Since even the subjects on the advanced level produce gender marked compounds, it seems that the Word Marker does not act as a trigger for compounding.

In conclusion, the fact that beginners produce substantial amounts of compounds together with the fact that the gender marking, although infrequent, continues on the highest level, indicate that the Word Marker does not act as a trigger for compounding. The findings point to an alternative explanation, which could be that the directionality or word order acts as a trigger in the acquisition of Spanish N-N compounds, as has been suggested for the deverbal compounds (Beard, 1995).

2.2 Deverbal Compounds

2.2.1 L1 related studies

There are not many L1 studies on the acquisition of compounding, and none with

Spanish L1 nor Finnish L1. Clark, Hecht and Mulford (1986) and Gordon (1985) have studied some aspects of synthetic English L1 compounding, while Clahsen (1991) has studied L1 compounding in German.

The findings in English L1 show that deverbal compounding is learnt later than N-N compounding. Also, children show a stage of reversing the deverbal constituent order (Clark, Hecht and Mulford, 1986), such as in *eater fly* for 'fly eater', before learning the correct ordering.

Concerning endings, Clark, Hecht and Mulford (1986) found in their results that inflections are stripped off verbs and almost always off nouns as well. Gordon's study (1985) coincides with Clark et al. (1986) in that there are no regular plural endings in L1 compounds. In addition Gordon, in accordance with the level-ordering principle, found irregular plurals were used within compounds, for example *mice eater* would appear, whereas *rat's eater* would not (Clark and Barron, 1988).

Children exhibit a stage at which deverbal compound constituent order is reversed, for example *eater-fly*, before acquiring the final state English order. These children are already using the correct modifier-head order of English NPs. This finding does not support the thought that phrasal word order triggers compound internal word order, as Beard's theory suggests.

2.2.2 Lardiere's (1998) study

Lardiere's study on synthetic compounding (1998), compares two theoretical approaches, a syntactic and a lexical one, both described in the previous chapter, concentrating on the compound-internal word-order.

In an earlier study Lardiere and Schwartz (1997) found L1 influence in L2 compounding in that the compound-internal features often carried over into native Spanish speakers' representations of English synthetic compounding at early stages of English L2 acquisition. This showed for example in the ways the verb was nominalized through inflection[12], the typical pluralization, and moreover in the word order, as for example in 'catcher-mice', 'catcher-mouses' and 'catching-mice' for 'mouse catcher'.

In the 1998 study, Lardiere tries an alternative approach to explaining the workings of the evident L1 influence in compounding, namely Beard's model known as the Lexeme/Morpheme Base Morphology -model (LMBM model) (Beard, 1995, 1996) which treats deverbal compounding as a lexical derivation process in which the compound constituents stand in a modifier-head relation to each other. The model is presented in Chapter 1.

In terms of L2 acquisition, the hypothesis for Lardiere's study is that if there is L1 transfer, the Spanish learners of English would transfer the Spanish word order into their English compounding producing left-headed compounds, as long as they had not acquired the proper head-modifier order in their IL English. According to the Head Application Default all derivational affixes will be added to the head of the compound.

In Lardiere's study the L2 studied was English, as opposed to Spanish in the present study. The data was obtained in a previous study done on the word-syntax model of compounding and now re-analyzed against the LMBM model. The subjects were 34 native adult speakers of Spanish, divided into three groups based on their competence level: 10 beginners, 12 intermediate and 12 advanced subjects. There was also a control

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[12] Whether this should be called inflection or derivation is a matter being debated. See for example Lardiere and Schwartz (1997) or Beard (1995).

group of 12 adult native speakers of English. The data collection consisted in eliciting novel English synthetic compounds in a picture task by asking each subject to respond to 16 drawings, each representing a cartoon-like creature doing something with or to an object. The subjects were asked to first describe the action presented and then to name the creature, such as 'fly-catcher'. The name of the object, was then recorded as the synthetic compound.

The results show that the most frequent errors occur in the pluralization of the objects and the second most frequent in the inverted word order ('eater-flies', 'eating-flies'). There is a significant difference between the various levels, the errors virtually disappearing at the highest level. The lowest five performers for the word-ordering were consistently the weakest in their performance (no responses, answers which were not compounds etc).The results above would be consistent with the assumption that the L1 word order does interfere with the L2 (the head-modifier order of Spanish transferring into English).

However, a second task concerning attributive compounds presented to the same subjects as above provided contradicting results. The task consisted in describing a person with one odd characteristic drawn on a card, for example a person with red feet, purple hands, cube shaped ears, etc. The assumption was that those who had problems with the compounds' word order would have the same type of problem with the attributive compounds, placing the modifier after the head and producing such combinations as 'person nose-squared' or 'person with nose square'. Surprisingly, all subjects produced the correct canonical order for English compounds and NPs (that is modifier-head) even if the morphology was faulty at times (for example the attributive suffix *-d* was hardly ever produced, as in 'nose-square person').

Both English and Spanish have been described as [+output] in the case of the Base Rule Ordering Principle, ordering the head-modifier according to the output category, which in the case of deverbal compounds is nominal. Five of the subjects set the parameter for the 'input' (verbal) category, but did so only in the case of the deverbal compounds and not for the attributive compounds. If this is considered an application of the parameter value, the subjects would be applying the setting [-output] for the L2 which contradicts the original assumption of both Spanish and English being [+output] languages.

Another way to explain the results is by L1 transfer and simply that the actual Spanish [+output] value is reproduced in the English interlanguage. The universal constraint on affixation known as the Head-Application Default, stating that all suffixes are added to the head of a compound, was respected by the subjects and forms like 'catch-micer' do not appear. The fact that forms with the suffix *-er* affixed to the head in head-initial forms ('catcher-mice') were produced causes some questions. Lardiere suggests that the affixed form is mimicking a verbal inflection such as produced in Spanish. The fact that this also occurs in a L1 developmental stage could mean that the basis for the analysis is incorrect and a syntactical analysis, such as Discullio and Williams' (1987), would fare better.

Lardiere entertains the thought that Spanish could be changing into a parametric setting of a [-output], that is a [+input] language. This possibility it discussed, but not substantiated.

2.3 The Hypotheses

Spanish and Finnish N-N and deverbal compounding differ in productivity, head directionality and treatment of gender and plural markers. The present thesis concentrates on these three aspects of the acquisition of Spanish compounding by native speakers of

Finnish. Because of the differences in N-N and deverbal compounding, the two sets of hypotheses are formulated separately in the two following sections.

2.3.1 Hypotheses for N-N compounding

N-N compounding is not a productive strategy in Spanish, whereas in Finnish it is the single most productive type. As was described above, this difference has been ascribed to a proposed 'compounding parameter' (Snyder, 1995) which separates languages between [+affixal] and [-affixal] according to whether their substantive categories (Nouns, Verbs, Adjective and Prepositions) allow affixation or not. In a [-affixal] language, such as Spanish, N-N compounding is not a productive option. There are few N-N compounds in Spanish and they are not readily formed in daily language. Finnish on the other hand represents a [+affixal] language, with the option of productive N-N compounding available.

Assuming that the L1 parametric value is transferred to the initial stage of the Spanish L2 of the Finnish L1 students, the hypotheses are as follows:

(N 1a) The native speakers of Finnish will not hesitate to produce N-N compounds.

At later stages, when the low productivity of Spanish compounding has been realized through sufficient exposure to the language, fewer pure N-N compounds will be formed. At the most advanced level the rare exceptional cases of N-N compounds will have been learnt through positive input.

(N 1b) The productivity will diminish at intermediate level as N-N compounding is

realized to be a non-productive process, and again increase at the highest levels when the exceptional cases have been learnt through input.

The proposed Word Marker poses a restriction to compounding in Spanish (Piera, 1995). An assumed Word Marker makes adjunction possible only to the right where no Double Bracket impedes it. Because of this peculiar character of the Spanish Noun, all Spanish N-N compounds would have to be left-headed. Finnish Nouns do not have a Word Marker and the compounds are regularly right-headed. Thus the Word Marker feature would have to become part of the learner's grammar through awareness of this substantial difference between Spanish and Finnish words. This in its turn will trigger the correct directionality in the Spanish L2.

Again assuming direct L1 transfer to the target language, based on the triggering effect of the Word Marker, the compound-internal directionality can be predicted as follows:

(N 2a) Native speakers of Finnish will tend to produce right-headed compounds in Spanish, opposite to the canonical order, because of the lack of a representation like double bracketing.

(N 2b) This tendency will be reduced and subside altogether when moving to intermediate and higher levels as the Word Marker feature has become part of the learner's grammar.

It is only the compound head that carries gender and plural marking morphemes, i.e. they are compound-internal in Spanish. Finnish nouns do not have gender markers and being right-headed, get the plural marker on the end of the compound. Assuming

initial L1 transfer, based on the Word Marker we can make the following prediction concerning the gender marker:

> (N 3) No gender markers will appear, i.e. simultaneously with the correct internal ordering. When they do appear, they should invariably appear on the compound head.

2.3.2 The Hypotheses for Deverbal Compounding

Deverbal compounds represent the single most productive form of compounding in Spanish. In Finnish deverbal compounding is equally productive, although using a different strategy. In Finnish the head of a deverbal compound is a verb nominalized with an agentive suffix, and the modifier is a Noun most often in nominative or genitive. The Spanish productive deverbal compound has what seems like an inflected verbal head with all the features of 3rd person singular. The Noun modifier as a rule has a plural marker -s. An optional Spanish strategy is a prepositional structure with a verb with an agentive suffix as a head and a modifier preceded by the preposition '*de*'. Either way the head-modifier directionality is the opposite in Finnish and Spanish.

As was shown above, the LMBM model (Beard, 1995) provides a common base for the comparison of the deverbal compounds. Within that framework The Base Rule Order Principle (Beard, 1996; Botha, 1981), as adjusted for compounds, predicts that the subordinate constituent of a compound N assumes a position identical with the default position of a single, unmodified, lexical adjective in a Noun Phrase. This order is the reverse in Spanish and Finnish. Thus, assuming initial L1 transfer, we can make the following prediction for head directionality:

(D 1) Native speakers of Finnish will start off by producing deverbal compounds with inverted head-directionality. On higher proficiency levels the order will be corrected.

The Spanish deverbal compound head has the form of an inflected verb (3rd person singular). Given that verb inflection is not mastered at beginner's level (Prévost and White, in press) we can make the following prediction:

(D 2) Compounds with infinitive forms, such as ***abrir****latas* for example, or with other inflection, such as *abrolatas*, will be produced at lower levels of proficiency. They will subside on higher levels.

The Spanish deverbal compound typically has a plural -s on the modifier at the end of the compound, whose interpretation is not entirely clear. However, this plural feature is compound-internal and does not extend itself to the phrasal syntax. Finnish compounds have no such feature. Therefore, assuming initial L1 transfer, it can be presumed as follows:

(D 3a)Native speakers of Finnish will not add the compound-internal plural -s on Spanish compounds until this feature has been learnt through sufficient input.

However, some native Spanish speakers seem to make a distinction between count nouns and mass nouns, not placing the final *-s* in deverbal compounds with mass nouns. In Finnish there is no distinction between these two categories of noun in deverbal compounds. Therefore it can be predicted as follows:

(D 3b) No distinction as to the plural -s will be made between the count nouns and mass nouns used in the deverbal compounds.

CHAPTER 3
The Study

In order to test the predictions that were formulated in the previous chapter, four tests were designed and administered to 19 native speakers of Finnish. The subjects are profiled in section 3.1, while the tests and their design process are described in section 3.2. Section 3.2.1.6 is a description of the test situation.

3.1 The subjects

There were altogether 19 subjects, all adult students between second and fourth year of Spanish studies at an institute (Helsingin Työväenopisto) in Helsinki, Finland. Also, as a control group there are five adult Spanish L1 subjects from Valladolid, Spain.

In order to establish the proficiency of the subjects and rank them accordingly, they all completed a language test (Appendix 1) before the actual compounding tasks. The test that was used is a modified version of a Cloze test used by Montrul (1997) and Slabakova (1997). It consists of a text with gaps for every seven words and a multiple choice (four choices in this case) of words or structures to fill these gaps. The subjects

were rated on the total of correct answers out of 20 possible, the only acceptable answer being the form of the original text. This test is crude and unforgiving but relatively fast, and given that all subjects completed the same test under the same conditions and within the same amount of time, the score can be used as a guideline for ranking the language proficiency of the subjects.

In addition, a questionnaire (in Finnish) was filled out by each subject outlining their personal, educational and language background. The questions centered on their language development, L1s and L2s, outlining languages used in childhood, in school and education as well as languages currently employed in daily life. Any longtime or important exposure to a naturalistic Spanish speaking environment was also screened for (see the English version of the questionnaire in Appendix 2).

Table 3.1 below profiles each subject according to the questionnaire and the internal ordering within the groups is according to an ascending order of the Cloze test results. The first group, consisting of 13 students, were in their fourth term of Spanish studies and the second one of six students were in their third or fourth year. Each term consists of twelve weeks of classes, each class lasts for an hour and a half.

Table 3.1 The subjects[13]

	Questionnaire information, Helsinki 1999, subjects ordered in intermediate and advanced groups								
#	name	age	L1	language spoken in school, if not Finnish	language at work	L2s in order of importance	Cloze test score	Other exposure to Spanish	tourism in Spain
	Intermediate								
M1	Tiina	26+	Fi		Fi, En	Sw En Ge Fr	4		X
M2	Into	40+	Fi			-	5		X
M3	Päivi	26+	Fi		Fi, Sw, En	Sw En Ge Fr	5		X
M4	Heikki	40+	Fi	Sw (1 yr)		Sw Ge En	7		X
M5	Aulis	40+	Fi (Sw)			Sw En Ge	7		X
M6	Ritva	40+	Fi		Fi, En	Sw Ge En Lat	7		X
M7	AL	26+	Fi, Ru			Ge Sw En Ge	8		X
M8	Lea	40+	Fi			En	8		X
M9	Pentti	40+	Fi			En Sw	8		X
M10	Peter	26+	Fi			Sw En	-4		
M11	Arja	26+	Fi		Fi, Sw, En	En Sw Ge	10		X
M12	Gunvor	40+	Sw, (Fi)	Sw, Fi at home	Fi	Ge En It	13		X
M13	Aini	40+	Fi		En, Sw	En Swe	15		XX
	Advanced								
A14	Antero	40+	Fi			Sw En Ge	8		X
A15	Kaisa	26+	Fi		Fi Sw Sp	Sw En Ge	8		X
A16	Ulla	26+	Fi		Fi Sw En Ge Sp	En Sw Ge	10		X
A17	Minna	26+	Fi			Sw En Ge Fr	10	Member of Spanish club	XX
A18	OJ	40+	Fi			Sp	11	Speaks with friends	X
A19	Jorma	26+	Fi		En Sw Sp Po	En Sw Po	13	Studied in Spain one year	
	Control group								
C1	Ruben	17+	Sp		En, Fr, Ge		18		
C2	Laura	17+	Sp		En, Ge		20		
C3	Roberto	17+	Sp		En		17		
C4	Narciso	17+	Sp		En, Fr, Ge		20		
C5	Elena	17+	Sp		En		20		

[13] En = English, Fi=Finnish, Fr =French, Ge =German, It = Italian, Lat = Latin, Po =Portuguese, Ru =Russian, Sp=Spanish, Sw =Swedish.

All participants are over 25 years of age, the average age being around 40. The majority of the students study Spanish for personal reasons, only two for professional reasons and no-one for university credits. The questionnaire further shows that all subjects have Finnish as their L1 and school language, except for one bilingual subject with Swedish and Finnish as her L1s (number M12, Gunvor). The subjects are taught by native Finnish teachers.

In fact, as Finnish law required until some years ago, all students have studied Swedish as a second language starting at an early age and, living in a bilingual environment, are constantly exposed to it, albeit they are not necessarily frequent nor fluent speakers. All subjects, except for one (M2, Into), have also studied English, in addition to which there has been an ever-increasing daily exposure to English during the post-war period, mostly due to electronic media sources. As Swedish and English coincide with Finnish in the features that are being investigated, the answers can be analyzed as a group, without fear of L2 interference.[14]

The third most frequent L2 is German, which 12 out of 19 of the students have studied, independent of age group. Three of the subjects have studied some French and one some Italian. Exposure to spoken German, French and Italian is minimal in contemporary Finland.

Two of the subjects use Spanish daily to some extent at work, and only one of the

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[14] Finnish, Swedish and English all behave in a similar manner in compounding. They are [+affixal] languages and reinforce each other in this aspect. There is no Word Marker in any of them, neither do they have gender markers on Nouns, making them distinct from Spanish in this respect as well. Swedish determinants do show gender, but they are classified as utrum and neutrum, thus differing from the Spanish feminine and masculine. The canonical head-modifier order in all is the opposite of Spanish. Therefore there should be no contradictory L1/ L2 interference as to the aspects studied in the present thesis, as there would be for example in the case of L2 French or Italian, which resemble Spanish in compounding.

subjects (number A19, Jorma) has spent any significant time in a Spanish speaking environment while studying Spanish at a university in Spain for two terms.

3.2 Data elicitation

Specific tests were designed in order to test the hypotheses. The objective of the tests was to elicit compounds in Spanish. There were four separate tests: two intended to elicit N-N compounds (a picture task and a paraphrasing task) and two intended to elicit deverbal compounds (a picture task and a paraphrasing task). The picture task consists of naming objects and persons that appear in drawings, such as for example *abrebotellas*, 'bottle opener', or *barco pirata*, 'pirate ship'. The paraphrasing task requires naming an object or a person that is described in a sentence. The following sections will clarify how we arrived at this test structure, what type of information was sought, what type of words were included and in which order, as well as a description of the final version of the test and the test situation.

3.2.1 The deverbal compound tests

3.2.1.1 Experimental tasks

The objective of the test was to elicit compounds from subjects in the most spontaneous way possible. Three ways of extracting data were specifically experimented with. These were a translation task, a paraphrasing task with descriptive sentences to complete with a compound, and a task with direct questions to name an object. These are all methods commonly used in similar types of tests (Liceras, 1987, 1993; Bruhn de Garavito, 1999). A first pilot test tried on native Spanish speakers in an informal environment gave some suggestions about their respective usefulness. Notably

all tasks yielded compounds at equal frequency. However, a discussion with the subjects concluded that a picture test (as used in Montrul,1997; McDaniel, 1996) might serve as a better way to elicit data than the translation task. Further, that the paraphrasing task and the direct questions, already quite similar to begin with, should be fused into a single task.

The translation task was exchanged for a task of naming objects and persons in pictures. The picture task has the advantage of being straightforward and fast, and can be given to students at any level. Also, a picture does not hamper the creation of words in a way that a translation might, since naming an object in a picture gives room for independent creations whereas a translation might produce a word association directly from the NL. Also, the same picture test can be used in any language - simultaneously in multilingual groups or sequentially- without any changes, which is a consideration if later using the same test for comparative purposes.

The pilot tests showed that some subjects at first had a hard time grasping the picture task for the deverbal compounds. In order to make the task easier to understand, a question was added before the actual question. This way, there is an initial question: 'What do you do with the object in the picture or what is the person doing?', followed by 'How would you call this object or person?'. The preliminary question served no other purpose than to aid in finding adequate words to form the compounds.

3.2.1.2 Type of words included in the test

In the first pilot test the following general observations were made concerning the compounds to be included in the tasks: first, the object should be something concrete, i.e. something that can be easily imagined and is not an abstraction or a 'rebus' type play-on-

words. Unfamiliar words cause no confusion, and invented and imaginary compounds work quite well as long as the object denoted by the compound is easily imaginable. For example *un comesandías* [eats melons] or 'melon eater' is possible whereas *un cantamañanas* [sings mornings] or 'complainer' cannot be used. Second, the compound should not have any close synonyms that consist of a single noun, which could detract from compound formation. Third, whether the compound denotes an animate or inanimate object does not have any notable influence on the answers. For example, there is no difference between forming a compound as *un cortauñas* or 'nailclipper' and *un limpiacalles* or 'streetcleaner'.

Further pilot tests tried each deverbal compound on both native Spanish speakers and Spanish L2 speakers. Any compounds that indicated difficulties of comprehension or elicited a single noun synonym were replaced. Also compounds with close derivational forms were avoided, such as *secapelos*, 'hair drier', which by many Spanish speakers is called '*secador*'.

As was noted earlier, the test was designed to be given to speakers of any L1 language and is therefore totally built up around the target language, Spanish. The possibility of taking into account the production strategy in the L1, in this case Finnish, was not used in the designing of the test and the compounds were not chosen to reflect the different compound types in Finnish.

3.2.1.3 The ordering of the compounds in the test

Lexicalization is a concern in a test for forming words. Since the objective of the test is for the subject to form compounds, the exercise would be useless if the words were picked straight out of memory. Also, should this be the case, a pattern for forming the

compounds might be established through familiar examples and carried over to the less familiar compounds, amounting to learning during the test.

In order to eliminate, or at least minimize, this effect, the compounds that were included in the tests were organized into three categories based on their degree of lexicalization and some invented compounds were included. The categorization is of course arbitrary to a certain degree, but the underlying idea was to isolate the categories so that the first part of each test consists of the less lexicalized compounds, i.e. words that figure in dictionaries but are scarcely used (for example *pisauvas*, 'grape crusher'), the middle part to be made up of possible but non-existent invented compounds (such as *tragapantallas*, 'screen addict'), and the last part to list the most familiar everyday compounds (for example *abrelatas*, 'can opener', etc). The desired effect from this ordering was to force the subjects to actually form compounds, not write them out of memory.

As it turned out, this concern was not firmly founded, since most subjects clearly manifested no 'learning' during the exercises.

3.2.1.4 The deverbal compound elicitation tests

The objective of the test is to analyze compounding strategies, compound internal word order and morphology. The test consists of two parts, a picture task and a paraphrasing task, with a total of 45 items. Both parts contain deverbal compounds describing both animate and inanimate objects. All deverbal compounds are of the same type as those in examples (1) to (3), i.e. not using the prepositional *de* strategy.

(1) *un salvavidas*
'lifesaver'

(2) *un matarratas*
'rat poison'

(3) *un besapescados*
'fish kisser'

The picture task (see Appendix 3) has 25 items in all, 20 lexical items and five novel (invented) compounds. Illustrations 1, 2, and 3 in Table 3.2 are examples of the pictures that were used in the test, corresponding to the examples in (1) to (3) above.

Table 3.2 Examples of pictures in the deverbal picture task

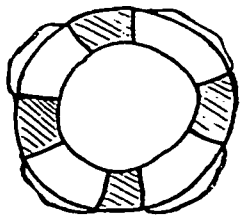


Illustration 1. *Salvavidas*

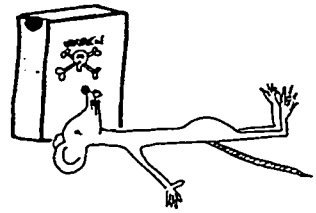
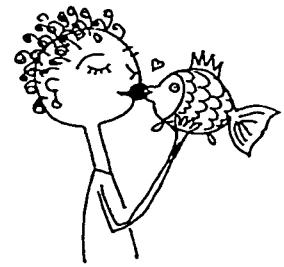


Illustration 2. *Matarratas*



Ilustration 3.*Besapescados*

The solicited answers are as in (1), (2) and (3).

The paraphrasing task (see Appendix 4) consists of sentences which each have to be filled by a missing compound, such as in (4), and direct questions that have to be answered, as in (5).

(4) *Un utensilio que sirve para rascarse la espalda se llama ... (un rascaespaldas).*
'An instrument used for scratching your back is called....(a backscratcher)'

(5) *¿Cómo se llama la parte de los vehículos (coches, camiones, etc.) que evita que el barro se distribuya por todo el exterior? (un guardabarros)*
How would you call the part of a vehicle (car, truck, etc.) which stops the mud from soiling the exterior of the vehicle? (a mudguard)'

There were 20 items in total, 17 lexical and three novel (invented) ones.

The plural -s is an idiosyncratic feature of Spanish deverbal compounds, although its usage vacillates even among Spanish speakers. Sometimes mass nouns could be perceived as not requiring a plural marker. Examples (6) and (7) show countable versus mass nouns as modifiers.

(6)	*matamoscas*	*mosca*	(countable noun)
	'flyswatter'	'fly'	
(7)	*quitanieves*	*nieve*	(mass noun, two possible versions)
	quitanieve		
	'snowplow'	'snow'	

In order to elicit differences in the production of this feature, some mass nouns were included in the tests. There were eight items altogether with a mass noun as modifier. The only lexical exception to the plural rule that was included in the test is *portavoz* or 'spokesperson' which appears in the singular form as a rule.

The objective of the tests is to form compounds, not test previous knowledge of

lexicon. In order to avoid failures for the wrong reason, i.e. the subjects not being able to form compounds because of lack of lexicon, word lists were compiled and distributed with each test separately. These short lists were provided to speed up the completing of the task and to make it less frustrating. The lists are shown in Appendix 5.

3.2.1.5 The N-N compound tests

The objective of the test was to analyze strategies for N-N compound formation, compound internal word order (head-modifier order) and the treatment of the morphology of gender. Most of the compounds used in this test are picked from a more comprehensive test, designed by Liceras in 1999 and modified for the present use.[15]

The N-N compound tests have 10 items in the picture task and 10 in the paraphrasing task, a total of 20 compounds. The compounds are all left-headed N-N compounds of the type shown in (8).

(8) *perro policía*
[dog police]
police dog

There were three lexical compounds of the type in (8) in the picture task and nine in the paraphrasing task. The remaining seven and three respectively were imaginary objects and creatures, such as in (9) and (10).

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15 Designed for a pilot study for a project called 'The role of morphology in the acquisition of syntactic knowledge' at the University of Ottawa and Universitat Pompeu Fabra (1998 and 1999).

(9) *bicicleta pirata*
[bicycle pirate]
pirate bicycle

(10) *hombre pulpo*
[man octopus]
octopus man

In order to gather data for the gender marker analysis, five sets of the N-N compounds are paired in such a way that there are both a masculine and a feminine head and thus the modifier - incorrectly - could be given also another than the default form. The compounds in (11) and (12) show examples of ungrammatical items paired with (9) and (10).

(11) ***barco pirato***
[ship pirate[masc]]

(12) ***mujer pulpa***
[woman octopus[fem]]

The picture task consisted of 12 pictures such as the examples in Table 3.3.

Table 3.3 Examples of pictures in the N-N picture task

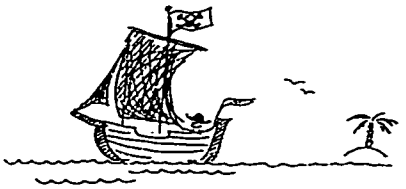


Illustration 4. *barco pirata*

Illustration 5. *mujer pulpo*

An almost unavoidable drawback to N-N pictures is that the compound head is not specified, leaving room for interpretation. This is true especially for fantasy figures, such as for example *gato policía*, a 'cat who is a policeman' which could equally well be interpreted as a 'policeman who is a cat'. This matter is of primary importance when it comes to judging directionality. All pictures were tried on several control subjects before being included in the test and found to elicit the intended head.

The paraphrasing task consisted of 12 sentences to be completed with an N-N compound as for example in (13).

(13) *A un personaje ficticio con apariencia de hormiga pero que es una mujer se le llama ...(mujer hormiga).*
'A fictive character who has the appearance of an ant, but is a woman is called..(an ant woman)'

The head-modifier ambiguity does not apply to the paraphrasing tasks. The paraphrasis defines the parameters of the compound more precisely and therefore the head is defined, the only task left being to form the actual compound. Since the sentence states that she is primarily a woman, 'woman' will be interpreted as the compound head.

The drawback to this task is that, on the whole, it requires a higher level of comprehension, i.e. a higher level of proficiency, of the target language in order to understand the paraphrased sentence. Consequentially, this task favors subjects with a higher level of proficiency.

As above in the deverbal tests, word lists were compiled and distributed with each test separately.

3.2.1.6 The test situation

The tests were done in two groups in their regular weekly night class in an ordinary classroom. The tests were given in the same order in both classes, starting with the deverbal picture task and followed by the periphrastic task. After a short pause, the N-N tests were done in the same order. Time was not included as a factor in judging performance. Although the tests proceeded swiftly, no-one was rushed and no subject complained about lack of time to complete the tasks. The subjects were given extra time if they asked for it.

The instructions for the picture tasks were to describe and name the object or person in a picture, which was shown on an overhead projector. In order to encourage the creation of answers, the subjects were told that no answer would be considered 'wrong'. These were the only instructions and no examples nor explanations were given to the subjects, except for a word list (see Appendix 5) for each test separately with the mention that these were an aid only, and not the only possible words to use and they did not by any means all have to be used. The pictures were shown for an average of 30 seconds each. All answers were recorded in writing on distributed answer sheets. Questions, such as the meaning of single words, were allowed and answered to the extent that they did not concern the actual formation of compounds. All interaction between the subjects was discouraged during the test and the break. However, this factor is difficult to supervise in an ordinary classroom setting with volunteers.

The paraphrasing task proceeded much in the same manner, although the pacing was left entirely to the subjects. The time spent on each paraphrasing task was about 20 minutes, although there were individual differences. Again, questions were allowed and answered when concerning the vocabulary used in the sentences.

3.3 Test results for N-N compounds

The predictions made in Chapter 2 concerning the L1 influence on N-N compounds include productivity, head-directionality and gender marking. The results are presented and analyzed against the hypothesis in the sections below.

The subjects are organized in two groups, intermediate and advanced. The intermediate group has studied for two years (four terms) and the advanced for three to four years. The internal ordering of the group is according to an ascending Cloze test score (see section 3.1), so that subject number one has the lowest score, subject number two the second lowest, and so on, unless otherwise mentioned.

For the compounding tasks the Cloze test proved to be a very poor predictor of performance and there is very little correlation between the Cloze test score and the aspect of performance in producing compounds. Although the Cloze test measures proficiency in general, including structures and vocabulary, it is quite clear that it does not capture competence in the specific area of compounding. This in itself interesting fact has no bearing on the rest of the results presented below.

The results for the control group of five native speakers of Spanish in Valladolid are presented side by side with the results of the Finnish subjects.

There are few general remarks about the answers. First, any forms which do not use the expected vocabulary were accepted as long as they make sense and respect the compound formation rules. Second, allowances were made for all orthographic irregularities and no orthographical mistakes were counted as faults. The spelling vacillates even at the highest level and most often soft and hard phonemes are confused:

p-b, t-d, k-g alternate, since the soft versions are not original phonemes in Finnish. All such aspects were ignored in the data analysis.

3.3.1 The productivity of the N-N compound

Hypothesis (N1a) and (N1b) which are both based on the 'compounding parameter' predict that due to L1 influence native speakers of Finnish will not shy from producing N-N compounds at the lower levels. Once compounding has been realized to be a non-productive process, the productivity should diminish until, at higher levels, the exceptional cases have been learnt through input.

In order to analyze the productivity at different stages, the data was organized in categories of N-N compounds and non-N-N compounds. The total amount of N-N compounds reflects the productivity of the respective group. The N-N compounds represent forms of compounds where two nouns have been merged, namely N-N compounds of both correct and inverted directionality, as well as compounds with incorrect gender marker on the head or modifier, and incorrect plural marker on the head or modifier, including the inverted forms. Examples of the acceptable forms are presented in (14) to (19).

(14) *mujer araña* (correct)
[woman spider]
spider woman

(15) **araña mujer* (inverted directionality)
[spider woman]

(16) **hombre araño* (gender marker on the modifier)
[man spider+gender marker]

(17) **mujera araña* (gender marker on the head)
[woman+gender marker spider]

(18) **hombre arañas* (plural marker on the modifier)
[man spiders]

(19) **hombres araña* (plural marker on the head)
[men spider]

The non-N-N answers include all other forms, such as a noun or an adjective or a combination of the two, a prepositional phrase, or a nonsense answer. Examples of these are listed in (20) to (24).

(20) *pulpo* (noun)
[octopus]

(21) *pulposo* (adjective)

(22) *hombre pulposo* (noun with adjective)
[man octopus-adjective]

(23) *hombre de pulpo* (prepositional phrase)
[man of octopus]

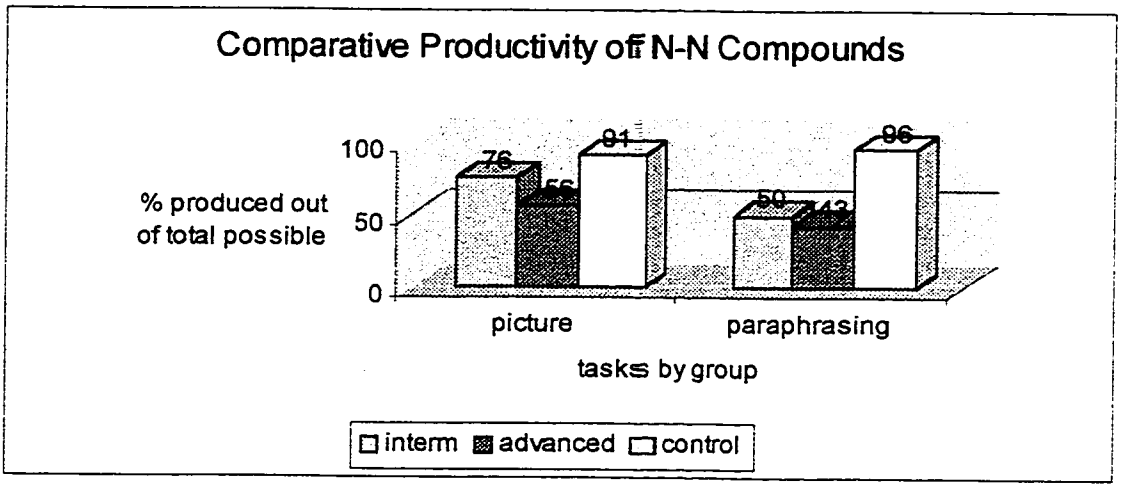
(24) *boracho madrugada* (nonsense answer)

The results for both the picture and paraphrasing task showing the productivity can be found in Table 3.4 on the next page.

Table 3.4

Comparative Productivity of N-N Compounds

	picture task productivity		paraphrasing task productivity	
	raw data	%	raw data	%
intermediate	119/156	76	78/156	50
advanced	41/72	56	31/72	43
control	64/70	91	67/72	96



As predicted, the results show a reduction in the amount of compounds produced between the intermediate group and the advanced group, although the paraphrasing task shows less of a difference. As was mentioned above, the paraphrasing task favors more advanced subjects as it requires a higher level of comprehension to complete the task, and the results are more likely to reflect the expectations for the advanced group. The difference between the groups is not overwhelmingly big, but nevertheless shows a downwards trend, which is in accordance with the hypothesis: once the low productivity

of N-N compounds has been realized, the production also diminishes. As there is data only from two groups of Finnish speakers, the full development trend cannot be charted. Although the two groups perform in the predicted way, data from a beginners group as well as data from a near-native group would confirm -or disconfirm- the rest of the trend.

One subject only, number A19, has spent a substantial amount of time in a Spanish-speaking environment. His performance in the paraphrasing task is comparable to that of the control group, with 10 acceptable items. In the picture task on the other hand, he produces only 7 out of 12 acceptable N-N compounds. This subject, although closest to 'near-native' of all subjects, still resorts to prepositional phrases in two cases, whereas as a comparison there is not one single prepositional phrase in the control group. In this case at least, even on the most advanced level there is still some aversion to forming pure N-N compounds.

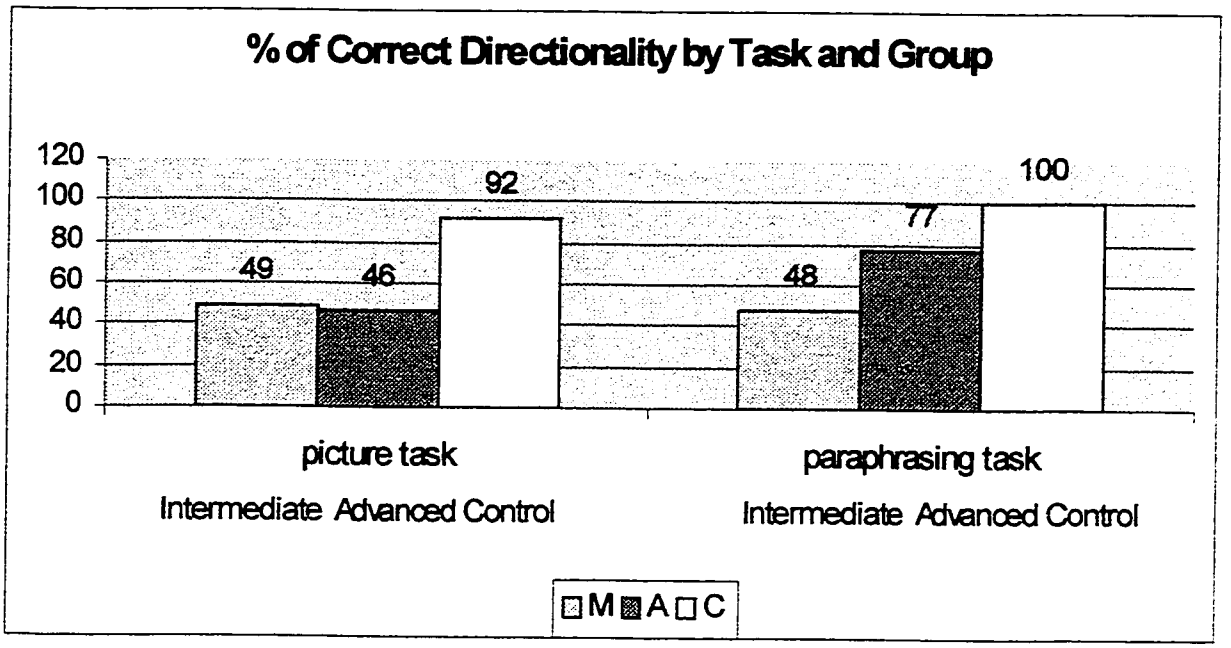
3.3.2 Compound-internal directionality

Hypothesis (N3) is based on the Word Marker feature and predicts that native speakers of Finnish will produce right-headed compounds at the lower levels of proficiency, because of the lack of a mental representation of the double bracket-feature. As this feature is acquired through exposure to Spanish, the directionality will change to reflect the canonical Spanish order.

The results for the directionality include all N-N-compounds as listed in section 3.3.1 about productivity. The items with correct directionality were counted, and they are presented in Table 3.5 on the next page as percentages of the total amount of acceptable items produced.

Table 3.5 Percentage of Correct Directionality by Task and Group

	Picture Task	Paraphrasing Task
intermediate	49%	48 %
advanced	46%	77%
control	92%	100%



In the picture task both groups have almost equal percentages of correct directionality, each approaching the 50 % line. The paraphrasing task shows a difference of 30 percentage points between the two groups.

As in the previous analysis above, the paraphrasing task favors the more advanced subjects because it requires a higher level of reading comprehension. On the other hand, unlike the picture task, it defines which constituent is the head and which is the modifier. For example, a picture of a *tortuga cartero* or 'turtle postman' can be interpreted as primarily a turtle but who is also a postman or, alternatively, as a postman who happens to be a turtle. In the paraphrasing task there is no ambiguity on this point as the head is

defined. Consequentially, in the case of N-N compounds the answers from the paraphrasing test probably reflect the real competence better than the picture task.

This is supported by the results from the control group, who had a score of 100% correct (64/64) in the paraphrasing task but only 92% correct directionality in the picture test (59/64). The five instances of incorrect directionality were distributed over three items: *reina rana* [king frog] instead of *rana reina* [frog king] in three instances, *hombre pulpo* [man octopus] and *hombre hormiga* [man ant] being the other two presented as *pulpo hombre* and *hormiga hombre*. Considering such a small percentage of incorrect directionality in the control group it seems likely that the pictures were mostly interpreted correctly with the intended head. On the other hand, since every misconception, i.e. a seemingly inverted directionality due to choice of the wrong head, is still counted as an N-N-compound, it will contribute doubly towards the half-half average by canceling a correct one instead of being added as one. Since the test does not indicate the subject's intention but only the final product, the correct interpretation of the data remains unclear and the results untrustworthy, always approaching the 50% random division.

In the case of the paraphrasing task on the other hand, the results should reflect the actual competence. In this task the correct directionality is 30 percentage points higher in the advanced group than in the intermediate and this result supports the hypothesis.

As expected, the results indicate a fall in productivity at mid-level (see Table 3.4). If this is due to the gradual realization that Spanish is a [-affixal] language, the productivity should rise again once the 'stereotype' for productivity in exceptional cases has been established. When this happens, the compounds should have correct

directionality in accordance with the pattern. In other words, attested compounds, such as *pez espada* or 'swordfish', could act as triggers for productivity and head directionality which then are used as a model to produce invented items, such as *mujer pulpo* or 'octopus woman' for example. The prediction in that case is that as productivity rises again at the higher level, the directionality will also be correct.

In order to put this prediction to test, the subjects in each group were organized in ascending order of productivity. The internal order of both groups separately runs from the lowest productivity to the highest within the group. The correct and inverted directionality for each individual subject was calculated and can be seen in the graphs in Table 3.6.

Table 3.6 Productivity and Directionality by Subject, Picture and Paraphrasing Task
The subjects are ordered according to rising productivity within each group

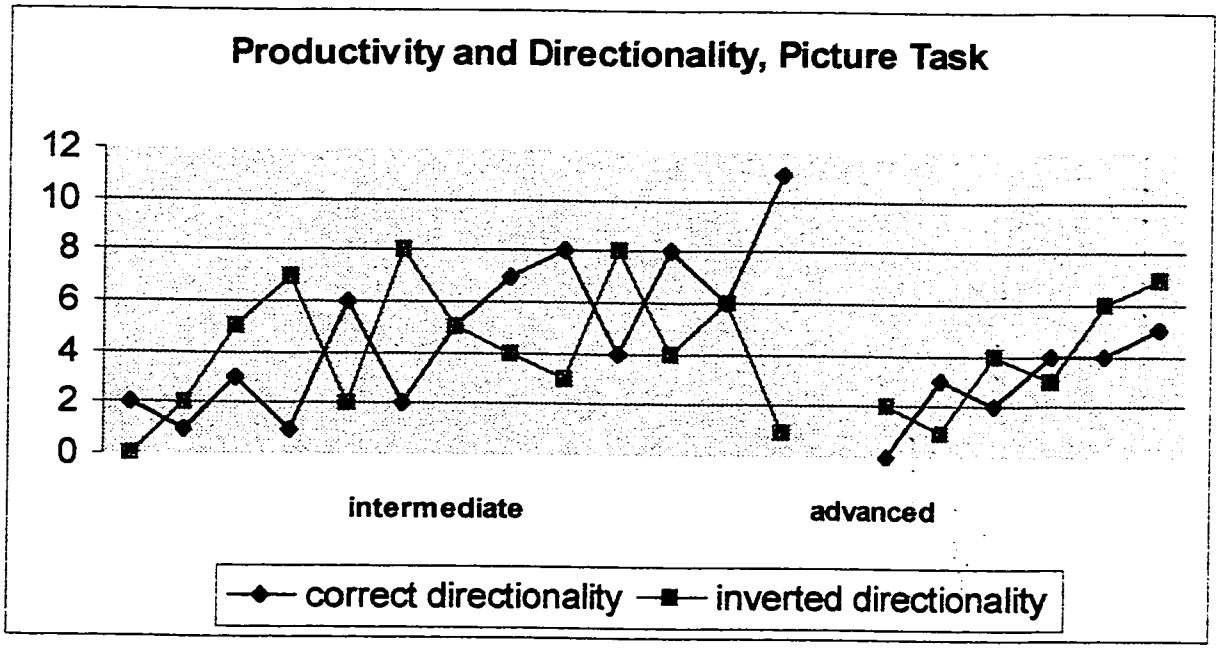
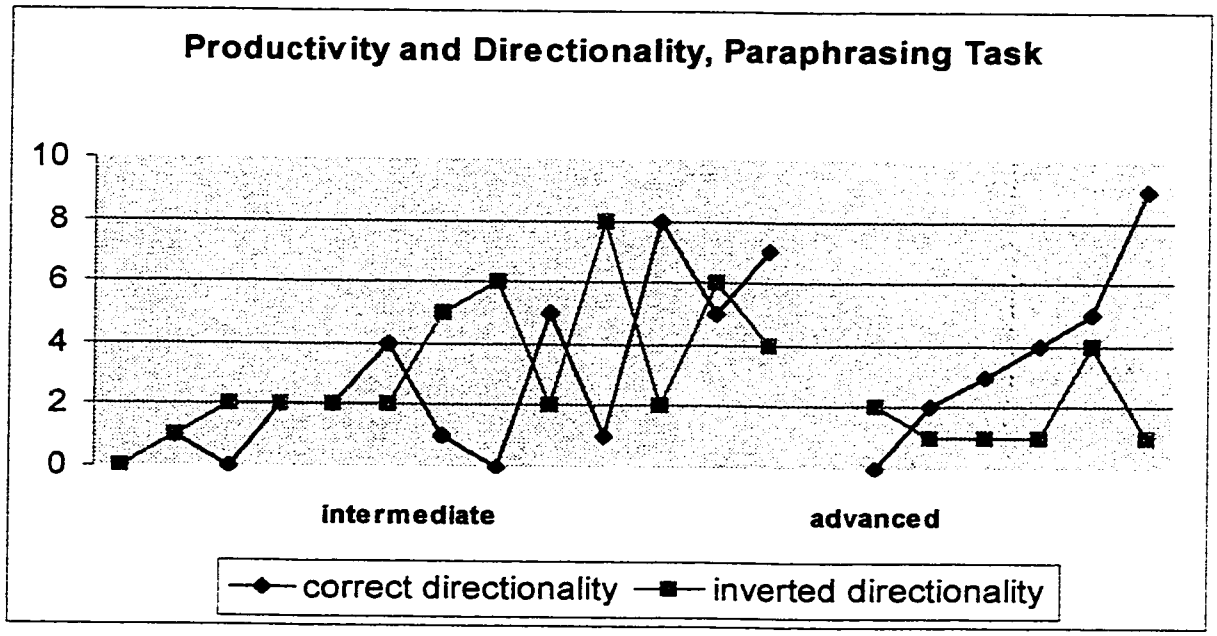


Table 3.6 continued



The graph shows two lines, one for correct and one for inverted directionality. According to the prediction, these lines should be intertwined at the intermediate level, independent of productivity. At mid-level the lines should sink low as productivity falls, after which they should separate. The line for correct directionality should shoot up leaving the inverted directionality at the lowest level or zero.

In the case of the picture task the two lines are intertwined and follow each other closely for both groups. As mentioned above, the picture task was problematic as the directionalities were arbitrary in some cases, as the head was not clear. These results do not show a clear cut trend of more correct directionality with higher productivity.

The results of the paraphrasing task on the other hand show the predicted trend. In the intermediate group there is no distinction between directionality as productivity rises, and the lines in the graph are intertwined. The advanced group on the other hand

have a clear growing gap between the directionality trend lines in the graph. The productivity increase is entirely carried by correct directionality with one exception (subject A14). These results support the prediction.

3.3.3 Treatment of gender markers

In order to test the propensity for gender marking, the test contains five pairs of compounds which depict essentially the same compound, but in a feminine and a masculine form, as for example in the pairs in (25).

(25)	*la mujer araña*	*el hombre araña*
	[woman spider]	[man spider]
	spider woman	spider man

The nouns in Finnish do not have gender nor gender markers and, consequentially, no gender markers differentiating the pairs were expected to be found in the Spanish N-N compounds.

The prediction proved to be true as only three instances of gender markers were found in the results (3/327). One was in the intermediate group, '*el rana reino*', [the frog kingdom] produced by subject number 7. She produced 23 out of 24 possible N-N compounds, the rest of the pairs being well formed in terms of gender but predominantly with inverted directionality. It is therefore plausible that *reino* should be considered the head, not the modifier. Also, the intended form is likely *rey*, 'king', which of course should be different from the feminine form. The two other instances of gender marking occur in the advanced group, both in the picture task in the case of *pulpa:* first, *pulpa hembra* [octopus female] (by subject number 19) and second, *señorita pulpa* [miss

octopus] (by subject number A18). In the first case *pulpa* is the head, in the second one the modifier. (This is clear since neither subject shows problems with directionality in other answers.)

Out of the gender pairs, *lobo* and *pulpo* are the only ones with *-o* endings. Neither subject produced any answer for *mujer lobo,* which was in the picture task. This could be either because the picture was unclear or because the concept was unclear since there is no actual word for 'werewolf' in Finnish. One produced *hombre lobo,* the other nothing. For comparison, in the control group the only item with gender marking was *mujer loba* in two instances, which is considered a possible form.

It is not prudent to draw any conclusions from only three occasional instances of gender marking. However, these are not mistakes but clearly intended forms which occurred at the advanced level. The two advanced subjects in question do not have a problem with directionality but do have some problems with productivity (preferring prepositional compounds or single nouns). They produced an item each with an inappropriate gender marker. The combination of these facts point away from the Word Marker as a trigger for directionality. The data is insufficient for further speculation in this case, and the question of whether it has been understood by these subjects remains open.

3.3.4 Conclusion

The prediction of diminishing productivity was based on the hypothesis of a 'compounding parameter' which differentiates between Spanish as a [-affixal] language and Finnish as [+affixal]. A lower productivity of compounding was expected to start showing at the advanced level once L1 influence gives way to the realization of the

parameter. The results in this study support this hypothesis showing a lower productivity of pure N-N compounds at the advanced level.

The hypothesis predicting the compound-internal directionality to switch from the L1 -influenced inverted order to the canonical Spanish order is based on the Word Marker feature. As the abstract concept of the Word Marker becomes available through being exposed to Spanish, the subjects will start forming compounds correctly. The results of the directionality analysis were complicated by the fact that the picture task does not clearly indicate the head and the modifier of the compound, leaving the subject's intention uncertain in some cases. The paraphrasing task does not have this flaw, but on the other hand it favors the advanced subjects. The picture task shows no difference between the groups, whereas the paraphrasing task shows the expected improvement between the intermediate and the advanced group.

An analysis relating productivity and correct directionality in the paraphrasing task showed, as predicted, that as the productivity increases again at the advanced level, the directionality is predominantly correct. The results for the picture task did not show any clear trend.

As Finnish has the same gender for all nouns, no gender markers were expected in the results. The few that showed were clearly intentional and among the advanced subjects, who constantly showed correct directionality. Although the data is not sufficient to draw any firm conclusions from, this finding undermines the Word Marker as a trigger for directionality. Instead, as Liceras and Diaz (in press) suggest, directionality could be established independently of the Word Marker feature. It could be learnt in conjunction with the correct ordering of a Noun Phrase with an Adjective Complement, regardless of the Word Marker.

In conclusion, the results show a diminishing productivity from intermediate to advanced level, as predicted. The compound-internal directionality shifts from inverted to correct only at the upper advanced level in this study. A closer analysis of productivity and directionality by individual subject does show that as productivity starts rising again at the higher advanced level, the correct directionality has established itself.

3.4 Results for deverbal compounds

The predictions made in Chapter 2 concerning the deverbal compounds include the L1 influence on directionality, production strategies, as well as the morphology in terms of infinite verbal forms and plural markers on the modifier. This section explains how the results were organized in order to analyze them against the hypotheses and presents the results. The general remarks about the organization of the results that were made in the beginning of section 3.3 are valid for the following sections as well.

3.4.1 Results for compound-internal directionality

The hypothesis D1 predicts that the correct compound-internal directionality for deverbal compounds produced by native speakers of Finnish will rise directly related to competence level. At a lower level L1 influence will cause the head-modifier order to be inverted, as the Base Rule Ordering Principle would predict in the canonical order in Finnish Noun Phrases. The directionality will change as the canonical Spanish modifying order is learnt through input at higher competence levels.

For the directionality analysis, the acceptable answers are those that can be classified as deverbal compounds of some sort, whichever the directionality. These would include those items with the exact form sought, as in (26), and those recognizable

as Spanish compounds, but lacking in some aspect, such as forms with infinitives and incorrectly inflected verbs, as in the examples in (27) to (29). These forms all appear in the answer for some item or another, even not necessarily for the one used in this example. (These examples also refer to section 3.4.2 below, which deals with infinitive forms.)

(26)	*salvavidas*	(expected form)
	'life saver'	
(27)	**salvar**vidas***	(infinitive)
(28)	**salva**ndo**vida*	(gerund)
(29)	**salv**o**vidas*	(inflected, 1st person singular)

The head-directionality is inverted if the noun precedes the verb, as the example in (30). This stands for all other verbal forms, as well as in examples (31) to (33).

(30)	**vidasalva*	(inverted directionality)
(31)	**vidasalva**r***	
(32)	**vidasalva**ndo***	
(33)	**vidasalv**o***	

The items that are classified as unacceptable include all other categories, such as descriptive phrases, prepositional phrases (NPN), nouns, including synonyms and derivatives or any combination of those, as well as nonsense answers. The examples in (34) to (38) are examples of the unacceptable items.

(34)	*rueda que sirve para salvar*	(paraphrasis)
(35)	*rueda para salvar*	(NPN)

(36) *rueda* (Noun)

(37) *salvador* (Derived Noun)

(38) *rueda de salvador* (NPN with a Derived Noun)

In addition, some subjects clearly marked their answers so that the intended directionality can be read from the answer although they are not acceptable as compounds. An example is given in (39).

(39) - *rueda* (hyphen marks missing constituent)

These items are included in the data for directionality.

The results of the directionality analysis can be found in Table 3.7 and 3.8 below.

Table 3.7 The percentage of correct directionality by group

	intermediate	advanced	control
picture task			
total produced, raw data	(194/325)	(106/150)	(95/125)
total produced,%	59%	70%	76%
% of correct directionality	55%	98%	100%
paraphrasing task			
total produced, raw data	(50/260)	(75/120)	(89/100)
total produced, %	19%	60%	89%
% of correct directionality	42%	94%	100%

Table 3.8 The percentage of correct directionality by task and group

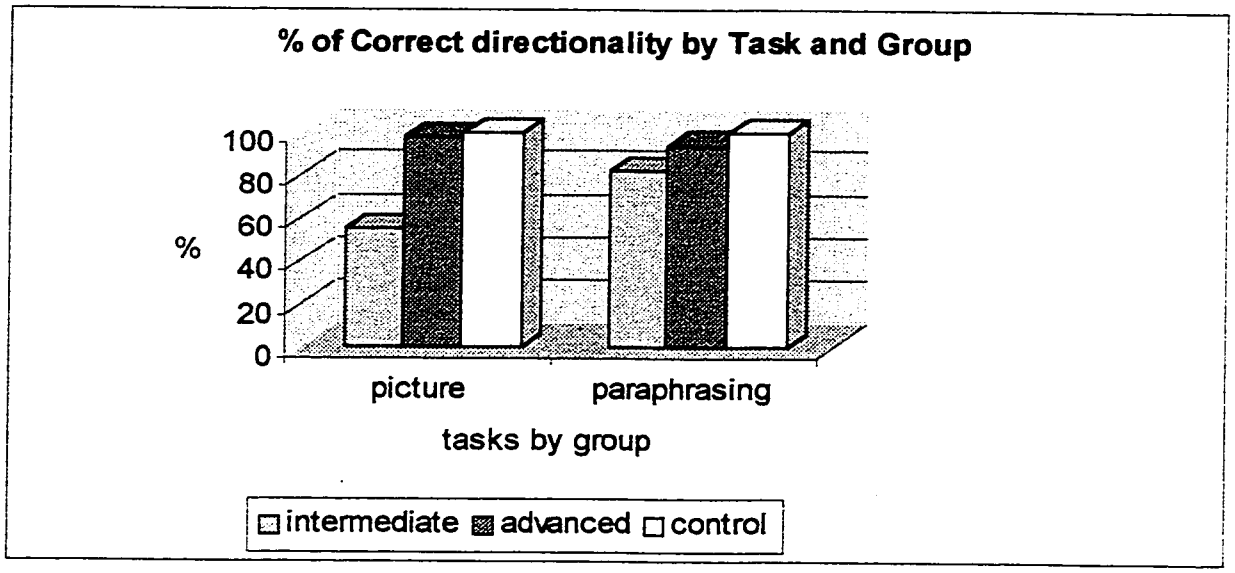


Table 3.7 and 3.8 show the percentages of correct directionality by task and group. In the picture task the intermediate group of 13 subjects could potentially produce a total of 325 compounds. They produced 194 (59% of total possible) acceptable compounds, out of which 55% had correct directionality. The advanced group produced 106 (70%) acceptable compounds out of 150 possible. Out of these 98 % had correct directionality. The control group produced 76%, that is 95 out of 125 possible compounds with 100% correct directionality.

The results of the paraphrasing task follow along the same general lines: the intermediate group produced 82% of compounds with correct directionality. However, this group produced only 50 acceptable compounds out of 260 possible ones (19%). The advanced group answered 75 out of 125 possible (60%) with 94 % correct directionality, 4% fewer than in the picture task. The control group again had 100% correct

directionality with a total of 89 out of 100 possible items.

As predicted when designing the tasks, the paraphrasing task favors the more advanced subjects, since reading and comprehending a sentence correctly becomes faster and easier at higher levels of proficiency. Consequently, the more advanced subjects have an advantage over the intermediate in the paraphrasing task, which is evident in the total amounts of items answered in the respective tasks. Therefore the statistic showing a higher percentage of correct directionality for the intermediate group in the paraphrasing task as opposed to the picture task may be misleading, since the less proficient performers have not answered anything at all in most cases.

Another possible explanation would be the 'learning' effect. Some highly lexicalized items, such as for example *rascacielos* or 'skyscraper' which appears early in the test, could act as a model for later correct production. There is, however, no

indication of such learning, some subjects even produced items with inverted directionality in the paraphrasing task after producing correct ones in the previous picture task. The possible 'learning' effect may be canceled by the relatively long test which leaves little time to reflect as opposed to react.

A closer look at the results by individual subjects shows the same trend. Tables 3.9 and 3.10 on the next page show the ratio of the difference between correct directionality and inverted directionality divided by the total of acceptable answers for each subject separately, as presented in (40).

(40) $$\frac{\text{(amount of correct directionality) - (amount of inverted directionality)}}{\text{total amount of acceptable compounds}}$$

This ratio shows the consistency of the directionality that each subject produces. The ratio can vary between [-1] and [+1], the value [-1] indicating that all acceptable compounds have inverted directionality. [+1] indicates that the acceptable compounds all have correct directionality. Any value between the two extremes show that the subject is inconsistent to that degree.

Each column in the graph represents the performance of one subject. The subjects are divided in intermediate, advanced and control groups, the internal order of each group being the ratio of performance in the picture task.

In the case of the picture task, the statistics show a clear path from inverted directionality through a period of mixed directionality and then on to correct directionality already at the intermediate level. All advanced and control subjects are consistently producing compounds with correct directionality to a 100%, if they produce compounds.

The same ratio for the paraphrasing task (subjects ordered as in picture task graph) shows a picture of more consistent directionality, with only three subjects with fractional values - although it has to be noted that three intermediate performers did not produce any answers at all in the paraphrasing task. As was indicated above, relatively few items (50/260) were produced by the intermediate group in the paraphrasing task, which was ascribed to the relatively higher level of comprehension that is needed for this task. The results on the whole are less reliable, and the percentages in the graph show a skewed picture.

Table 3.9 Raw data for directionality ratio

subjects	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13
picture task													
correct directionality	7	2	2	1	22	0	0	2	0	24	2	17	25
inverted directionality	16	0	14	0	2	11	8	13	2	0	18	6	0
ratio	-0.39	1.00	-0.75	1.00	0.83	-1.00	-1.00	-0.73	-1.00	1.00	-0.80	0.48	1.00
paraphrasing task													
correct directionality	5	1	0	0	10	0	0	0	1	4	2	7	12
inverted directionality	2	0	2	0	0	4	0	0	0	0	0	0	0
ratio	0.43	1.00	-1.00	0.00	1.00	-1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00

subjects	A14	A15	A16	A17	A18	A19	C1	C2	C3	C4	C5
picture task											
correct directionality	12	24	23	1	22	24	20	20	11	22	22
inverted directionality	0	0	0	0	0	0	0	0	0	0	0
ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
paraphrasing task											
correct directionality	1	19	18	0	13	20	20	17	15	19	18
inverted directionality	3	0	1	0	0	0	0	0	0	0	0
ratio	-0.50	1.00	0.89	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Table 3.10a Ratio of correct versus inverted directionality per subject, picture task

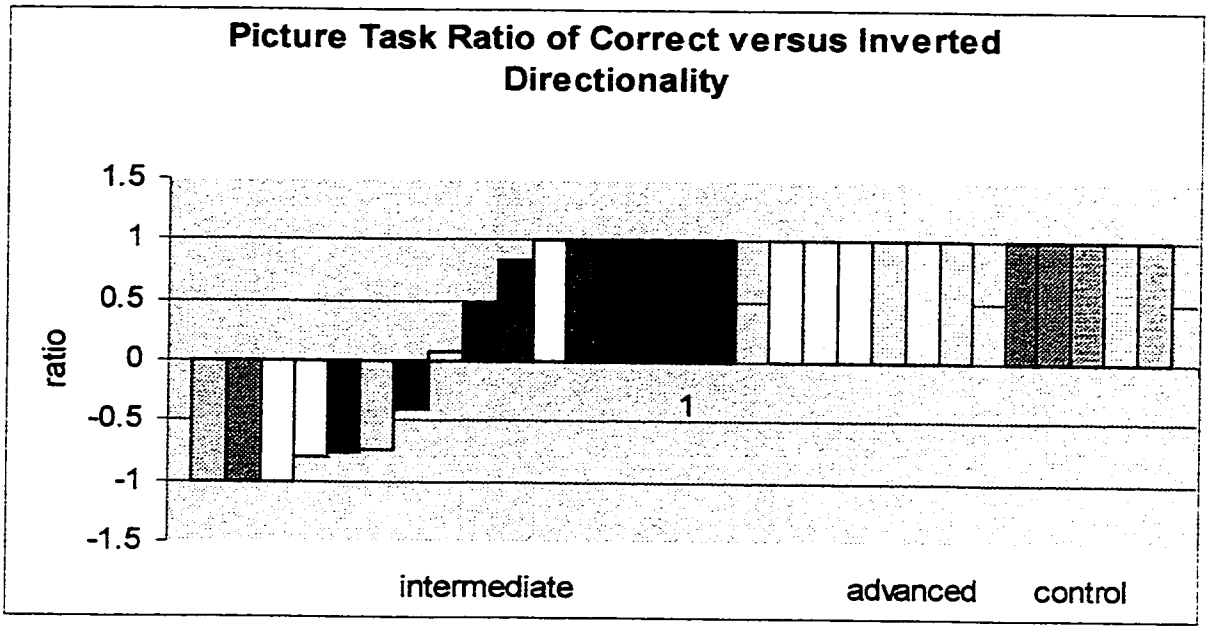
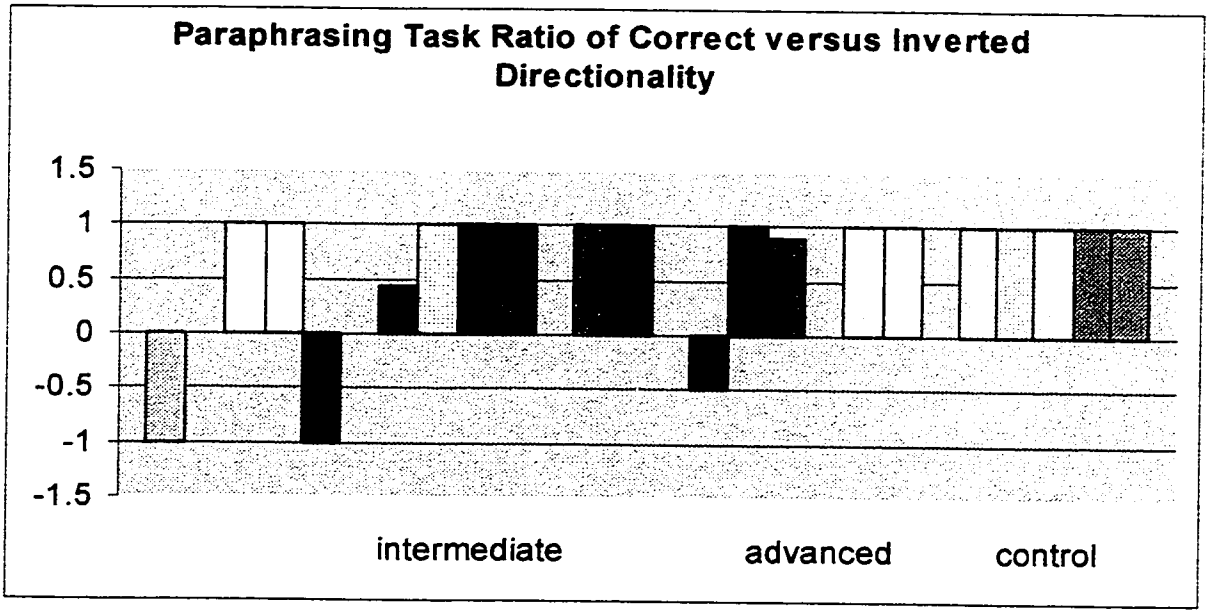


Table 3.10b Ratio of Correct versus Inverted Directionality, paraphrasing task



In the paraphrasing task the only fractional value on the intermediate level corresponds to a subject who produced about the same ratio, but below zero, in the picture task. Although the total amount of compounds she produced in the picture task was higher by more than three times (23 compared to 7 in the paraphrasing task) it does not easily explain the difference between performances. It could be a case of learning during the test, although evidently the other correct features of the deverbal compound remain unclear to her. The other intermediate subjects showing inconsistency between performance in the two tests have too few acceptable items (one or two each) to draw any definite conclusions.

One of the advanced subjects, who in the picture task scored a [+1] with 12 items, has a negative ratio in the paraphrasing task. He produced altogether four compounds in the paraphrasing task, out of which three with inverted directionality. The reason for this exception remains unclear, and may be because of fatigue, especially since he was a very poor performer over all, and tired out during the test.

Another advanced subject has only 94,5% correct directionality, breaking the line of 100% correct directionality consistency. In this case there is only one inverted compound out of 18 correct ones. A closer look at her performance in this task shows that for this particular item she has struggled on a lexical level as well. For all other items she has chosen the appropriate lexicon and form, except for this particular one, *guardabarros*, 'mudguard', which she calls '*barrodistribuya*', [mud distributes]. This lapse seems to indicate that the correct ordering is not yet at an instinctive level, but can easily be disturbed if other problems requiring attention arise, such as the lexicon in this case.

While the intermediate group is still grappling with the concept of directionality, the results show that once the correct directionality has been established, it seems to be mostly consistent. Regrettably, there is no data for a beginners group, which could confirm the prediction that beginners will more consistently produce items with inverted directionality due to L1 influence.

3.4.2 Infinitives and derivational suffixes

The morphological setup of the Spanish deverbal compound is not entirely clear. The verbal component consists of a verb with the appearance of an inflected verb, third person singular, which however has no effect on the phrasal syntax. This form is sometimes described as a derivational, deverbalised form without an explicit derivational suffix. However, ordinary verbal inflection is not mastered at low levels of proficiency. The hypothesis D2 predicted finding infinitives and other verbal forms with other than third person singular inflection within the deverbal compounds produced by the Finnish subjects. The tendency was assumed to subside at higher levels of proficiency. The results concerning the infinitive forms are found in Table 3.11 on the next page.

Table 3.11 Compound-internal infinitives

subjects	picture task			paraphrasing task		
	infinitives	total acceptable	%	infinitives	total acceptable	%
M1	5	13	38	3	8	37
M2	8	10	80	1	2	50
M3	-	-	-	-	-	-
M4	-	-	-	-	-	-
M5	-	-	-	-	-	-
M6	5	8	63	4	4	100
M7	2	2	100	1	1	100
M8	3	3	100	-	-	-
M9	4	4	100	1	1	100
M10	-	-	-	-	-	-
M11	-	-	-	-	-	-
M12	-	-	-	-	-	-
M13	-	-	-	-	-	-
A14	5	5	100	2	2	100
A15	-	-	-	-	-	-
A16	2	22	9	-	-	-
A17	-	-	-	-	-	-
A18	-	-	-	-	-	-
A19	-	-	-	-	-	-
total	**34**	**229**	**15**	**12**	**117**	**10**

Other incorrect inflectional forms are not included in the result data nor analyzed, because it is hard to differentiate between the different inflectional forms in practice. Correct third person verbal inflectional endings vary with incorrect endings borrowed from other declensions and with the first person inflection marker. The endings *-a, -e, -o* are found in compounds, and differentiating between the intention behind incorrect third

person inflection and first person inflection is difficult in practice. Notably, no other inflectional forms are found (for example, no second person singular). There are all in all less than twenty instances of recognizable incorrect inflections apart from the infinitives. While acknowledging that these incorrect inflections do exist, we will ignore them in the present analysis and refer only to the results concerning compound-internal infinitives. The various forms are listed in section 3.4.1 in examples (26) to (33).

The picture test yielded a total of 31 compound-internal infinitives out of 129 acceptable items, (24 %), within the intermediate group. Six subjects produced infinitives, and in the case of four, the only acceptable ones were compounds with infinitives. Surprisingly, in the advanced group there are also stray cases of infinitives, a total of seven out of 100 acceptable items (7 %). Two subjects were responsible for those infinitives (number 14 with 5/5 and number 16 with 2/22). Predictably, the control group produced no infinitives.

The paraphrasing task produced a total of 12 infinitives out of 117 acceptable answers, or 10 %. 10 items were produced by five subjects within the intermediate group and 2 in the advanced group, both by the same subject as in the picture task (this subject, number 14, did not produce any acceptable deverbal compounds without an infinitive).

The directionality within compounds with infinitive forms has the same variables as directionality in general, i.e. proficiency level and individual subject. Some subjects produce items with either directionality, while others are more consistent. The results show no clear-cut pattern in this aspect.

Other derivational strategies

Finnish deverbal compounds are formed with the agentive markers *-jA* and *-in*, which are comparable to the English agentive suffix *-er* , as for example in 'dish wash-**er**'. An analysis of the derivational strategy using the Spanish equivalent *-or* ending within a compound shows that it is as rare as the infinitive form. The actual data is in Table 3.12.

Table 3.12 Occurrence of compound internal -or endings

subjects	**picture task**			**paraphrasing task**		
	-or endings	total answered	%	-or endings	total answered	%
M1	-	-	-	-	-	-
M2	-	-	-	-	-	-
M3	12	22	54	-	-	-
M4	-	-	-	1	2	50
M5	-	-	-	-	-	-
M6	4	19	21	-	-	-
M7	1	20	5	-	-	-
M8	3	20	15	-	-	-
M9	-	-	-	-	-	-
M10	-	-	-	-	-	-
M11	3	24	12	-	-	-
M12	4	22	18	-	-	-
M13	-	-	-	-	-	-
A14	5	19	26	-	-	-
A15	-	-	-	-	-	-
A16	-	-	-	-	-	-
A17	-	-	-	-	-	-
A18	-	-	-	-	-	-
A19	-	-	-	-	-	-
total	**32**	**411**	**8**	**1**	**156**	**0.6**

The derivational suffix was used occasionally by six subjects and as a consistent strategy by one. There were 33 compound internal *-or* suffixes in all, 22 % of the total answers of the concerned subjects and 11% of the total answers of the entire intermediate group.

All of these derivational suffixes were added at the end of a compound, imitating the Finnish deverbal structure, the modifying noun as the first component and the verb with a deverbal suffix as the second, as the examples in (41) and (42) below.

(41) **callelimpiad-**or***
'kadunlakaisi-**ja**'
[street sweep-**er**]

(42) **pájaroespantad-**or***
'linnunpelät-**in**'
[bird scar-**er**] or 'scarecrow'

Forms with an agentive suffix within the compound, i.e. imitating the Spanish canonical order, see (43) as an example, are not found in the results.

(43) **espantad-**or** *pájaro*
[scar-**er** bird]

On the other hand there are some laudable attempts by one subject (number M6) to fill a morphological gap by applying any suffixes, such as in (44) and (45).

(44) *hielorompe**ro***
[ice break+suffix]

[watermelon devour+suffix]

These also appear only on the end of the verb in the second position as in Finnish, never between the two constituents.

Hypothesis D2a predicts that infinitives and other incorrect inflectional forms would be produced at lower levels but disappear at the advanced level. Although the infinitive forms are not epidemic at the intermediate level, some can be found as predicted. The results are surprising in that infinitives also appear at the advanced level, even with subjects who already consistently produce correct directionality. The advanced subject who produced most of the infinitives (number 14) is the lowest performer across the board in the advanced group and the only one who did not produce any correct Spanish-like deverbal compounds at all.

The directionality of the compounds containing infinitives varies in the same way as the directionality for the other acceptable compounds does, as can be seen in Table 3.13 on the next page.

Infinitive forms appear both in the first and the second component, as in ***comer****moscas* and *moscas****comer*** for 'flyeater'. However, all other derivational suffixes, such as *-or*, only appear in a compound if the directionality is inverted or Finnish-like, as in *plumaportad****or*** for *portaplumas* 'penstand', for example. It seems that the verbal inflection, including the infinitive, is perceived differently from a genuine derivational suffix by Finnish students of Spanish.

Table 3.13 Directionality in items with infinitives

subjects	picture task			paraphrasing task		
	infinitives total	directionality correct	inverted	infinitives	directionality correct	inverted
M1	5	-	5	3	1	2
M2	8	8	-	1		
M6	5	-	5	4	-	4
M7	2	2	-	1	1	-
M8	3	3	-	-	-	-
M9	4	2	2	1	1	-
A14	5	5	-	2	-	2
A16	2	2	-	-	-	-
total	**34**	**22**	**12**	**12**	**3**	**8**
		64%	**35%**		**25%**	**75%**

3.4.3 The compound-final plural -s

The plural -s on the Spanish compound has been explained as a generic plural, generalizing the scope of the modifying component to apply to all such, as in *limpiabotas* or 'shoe cleaner' who will clean many and any shoes in general. The use of the plural -s varies amongst native Spanish speakers, some using it as a rule and others leaving it out at times, although, as was mentioned before, it has been suggested (Varela, 1999) that the plural -s is becoming a derivational morpheme for the deverbal compounds. Mass nouns are thought not to call for the plural -s, although native speakers will add it on these words as well.

The data findings concerning the compound plural -s is listed in Table 3.14 below.

Table 3.14 Occurrence of plural -s

subjects	picture			paraphrasing		
	plural -s	total acceptable	%	plural -s	total acceptable	%
M1	-	13	-	2	8	25
M2	4	10	40	1	2	50
M3	-	2	-	-	-	-
M4	-	1	-	-	-	-
M5	18	M1	82	9	10	90
M6	-	8	-	-	1	-
M7	-	2	-	-	1	-
M8	-	3	-	-	-	-
M9	1	4	25	-	1	-
M10	21	21	100	4	4	100
M11	-	2	-	-	-	-
M12	9	16	56	5	6	83
M13	3	25	12	3	12	25
Total	**56**	**129**	**43**	**24**	**45**	**53**
A14	-	5	-	1	2	50
A15	21	24	88	18	19	95
A16	3	22	14	10	18	56
A17	1	3	33	-	-	-
A18	12	22	55	11	13	85
A19	23	24	96	20	20	100
Total	**60**	**100**	**60**	**60**	**72**	**83**
C1	20	20	100	19	20	95
C2	18	20	90	17	17	100
C3	10	11	91	15	15	100
C4	21	22	95	19	19	100
C5	22	22	100	18	18	100
Total	**91**	**95**	**96**	**82**	**89**	**92**

The control group presents over ninety percent of plural -s in the deverbal compounds in both tasks. The advanced and the intermediate groups both show a difference of about twenty percent in performance between the tasks, as in the other results as well. This can again be attributed to the fact that the paraphrasing task requires a higher level of proficiency, and therefore the answers that are produced are more likely to be correct. The advanced group does produce 20% more plural -s on average than the intermediate group.

The individual variation within the intermediate group in the picture task is vast. Only six subjects produce any plural -s at all. Out of these six, two subjects produce two thirds of the total plural -s. These two subjects definitely add the plural -s as a rule, whereas the others seem to do it more or less haphazardly. In the paraphrasing task the same subjects produce most of the plural -s applying their rule of the plural -s constantly.

The advanced group shows individual variation as well. As noted above, subject number 14 performed well below the average of the advanced group in all aspects of the task, as he did this time again not producing any plural -s. Another advanced subject, number 17, opted for an alternative compounding method for most of the test, using the prepositional model, as in *abridor de latas* [opener of cans]. As this type of compound is not of specific interest in this thesis, her results are excluded. Out of the four remaining advanced subjects, two still vacillate, using the plural -s sometimes, but not constantly and showing no logical pattern and two subjects are consistent in their use of the plural -s.

The plural -s always (100%) appears in the correct place on the end of the compound, that is only when the compound has the Spanish-like directionality, as in *salvavidas* ,'life savers', for example, although infinitives and other faulty verbal forms may occur. There are no instances of a plural -s between two constituents at either level, as in the form **pájaros-espanta* [crows scare] for example. If the directionality is inverted or Finnish-like, the first constituent is invariably singular.

An analysis concerning the plural -s on count nouns versus mass nouns shows no difference between the two types. In the case of the control group, only one compound was consistently left without a plural -s, *cortahierba,* 'lawn mower'. The other seven instances fall randomly on different items, indifferent of the type of noun. No control

subject drops plural -s more often than the others.

The Finnish subjects show no preference for leaving out the plural -s on mass nouns. The same advanced subject (number 16) who produces *cortahierba*, a mass noun, without a plural -s will produce **abrecarta* or 'letter opener' without a plural -s.

The conclusion from the plural -s analysis supports hypothesis D3a, which states that the plural -s feature is learnt through positive input. First, it hardly figures at the lower level of proficiency, although some of the intermediate subjects use it dutifully as an obviously learnt rule. Second, it never occurs between the constituents, which would indicate that it is not perceived as an important or compulsory feature, but rather like the frosting on a cake, applied once all other features have been mastered. The plural -s is not established as securely even on the advanced level as correct directionality, for example.

3.4.5 Conclusion

The hypotheses concerning the deverbal compounds were all supported by the test result, showing that L1 influence can be detected in all the aspects that were analyzed within the framework of this thesis. The Cloze proficiency test was not a good predictor of any aspect of compounding, whereas the group level predicts performance better. As to the tasks, the picture test may catch a wider scope of the subjects, since it is easier to grasp. The paraphrasing test was answered only partially by most subjects, especially at the intermediate level, which can be attributed to the relatively higher level of comprehension that is needed to complete the task. The respective results therefore have to be looked at against this fact, the paraphrasing task being expected to yield more correct answers than the picture task.

Hypothesis D1 predicts that the head-modifier directionality will shift from right-headed or Finnish-like to left-headed or Spanish-like as the proficiency level rises. The results support the prediction, showing a shift as early as at the medium intermediate level. All advanced subjects showed consistently over 95% correct head-directionality in the compounds that were produced.

In hypothesis D2, infinitive forms were predicted to be found at low levels of proficiency. However, surprisingly they were produced at all levels, subsiding only with the three highest performing subjects. The infinitives occurred at levels where the correct directionality had already been established. Also, infinitives occurred equally in both left- and right-headed compounds, with no distinction from the other inflected verbal forms. On the other hand, forms with the agentive derivative suffix *-or* within a compound only ever occur in cases of right-headed compounds, that is in the Finnish-like structure. From this different treatment, it can be concluded that the inflected verbal form is not perceived as an ordinary derivational form, but that it is somehow different and allows the correct left-headed ordering.

Hypothesis D3a concerning the compound-internal plural -s on the end of the deverbal compound predicted the plural -s only to appear at the advanced level after it had been learnt through positive input. The results indicate that it indeed is the last feature acquired in Spanish deverbal compounding and added only to correctly formed left-headed compounds. Some subjects at the intermediate level are constant in their production of the plural -s, while others produce them in a scattered manner. The Finnish subjects clearly do not see the plural -s as a compulsory feature.

Hypothesis D 3b, predicting that the Finnish subjects will not distinguish between mass nouns and count nouns in terms of the plural -s is also supported by the data,

although the test may not have been designed well to measure this aspect. It includes only a few mass nouns and contains no comparative item pairs. In this test even the control group shows no sign of distinction between the two.

Summing up, the results show that deverbal compounding appears to be affected by L1 influence concerning directionality up until the intermediate level. Also, the correct verbal form does not establish itself until the advanced level and independently of the directionality. The compound final plural -s seems to be the last feature acquired in compounding, added to altogether correct compounds.

Comparing Lardiere's study with Spanish students of L2 English with the present study, the L1 influence at the beginner and intermediate levels is obvious in both directionality and morphology. As in Lardiere's (1998) study, the results of the present study also show L1 influence in inverted directionality with the correct directionality establishing itself at the advanced level. Lardiere's study includes attributive compounds (such as square-nosed person) in order to compare whether the acquisition of correct directionality in those and the deverbal compounds coincide, as they should according to the Base Rule Ordering Principle. The tests in the present study were not designed to include such a task. Thus no comparison can be made between the studies as to the coincidence of the acquisition of directionality of deverbal and attributive compounds.

In her study Lardiere found that the most common error made was to pluralize the modifier constituent, as in *flies eater*. No incorrect compound-internal plurals, such as in *moscas come* [flies eater], occur between the constituents in the Spanish data elicited from the Finnish subjects. Also, Lardiere finds derivational suffixes between the components, as in *eater fly*, whereas forms such as *comedor mosca*, [eater fly] never occur in the results of the present study. Lardiere ascribes these forms to an attempt to

mimic the Spanish deverbal derivational suffix (i.e., the 3rd person singular, which is sometimes described as a derivational form). In parallel, the Finnish subjects also resort to their own L1 model compounding with *-or* suffixes only on the right-headed compounds. These findings show the strong L1 influence on the L2 compounding as both sets of results mirror the L1 structures so clearly.

CONCLUSION

The past three chapters have described the theoretical background for a study and the actual study made on the acquisition of Spanish N-N and deverbal compounds by native speakers of Finnish. The focus has been on the differences between compounding in the two languages at the level of word syntax and morphology, or more specifically productivity, head-directionality and the use of gender and plural markers and derivational suffixes.

The hypothesis for the N-N compounds concerned productivity and directionality. Based on the 'compounding parameter' suggested by Snyder (1995), the productivity was predicted to be high at lower levels, due to L1 influence and then to fall at mid-level as the [-affixal] character of Spanish was realized. It was predicted to rise again at the highest level as the exceptional cases had been learnt through positive input. Both the results from the picture task and the paraphrasing task show the predicted trend on an aggregate level. An analysis by individual subject shows the predicted trend in more detail, where the productivity tapers between the intermediate and advanced level only to rise again at the higher advanced level. The hypothesis is supported by this data.

Head-directionality was predicted to switch to the correct left-headed Spanish order as the double bracket feature of the Word Marker (Harris, 1991; Piera, 1995) was realized. The results from the picture task do not show a difference between the groups, both groups approaching 50% of correct directionality. This may be due to the nature of the picture task, as the head of the compound is not clearly defined in the picture task, thus leaving room for interpretation and consequently unreliable data for directionality. The paraphrasing task on the other hand shows a clear improvement between the intermediate and the advanced group as predicted.

No gender markers were predicted to be found, since Finnish Nouns do not have any. However, on the advanced level there were a couple of items with gender marking. This finding puts in question whether the Word Marker feature indeed is perceived by the subjects. Liceras and Diaz (1999) suggest that the Word Marker does not trigger the correct directionality and, although scarce, these results seem to support that finding.

The hypothesis concerning the deverbal compounds included directionality, appearance of infinitive verbal forms and the compound final plural -s. Based on the Base Rule Ordering Principle (Beard, 1996; Botha, 1981), the directionality was predicted to be inverted at the intermediate level due to L1 influence, and then assumed the correct directionality at the advanced level. The results show the predicted pattern, an even and gradual change from inverted to correct directionality, which was achieved between late intermediate and the advanced level. A remarkable consistency can be seen in the directionality produced by each individual subject.

Infinitive forms instead of the conjugated 3rd person singular forms were predicted to be found at the lower levels and to subside at the higher level. The results show infinitive forms at all levels, even at levels where the directionality is correct.

Derivational endings on compounds on the other hand appear only in Finnish-like right-headed compounds, which could imply that verbal forms are not seen as derivations. The plural -s seems to be the last feature acquired, as it only appeared on well formed compounds, independent of level.

The contribution of this thesis is threefold. First, the introductory chapter provides a detailed comparison of Spanish and Finnish N-N and deverbal compounding, based on the most recent theories related to compounding. Because of its comparative nature, this chapter as such is useful reading for any student or teacher of Spanish. Second, the two tests that were designed for the purpose of eliciting compounds can be used for further research as a base to expand and build on further. An interesting challenge would be to develop the N-N picture test in order to eliminate the ambiguity as to the compound head. Third, a considerable amount of Spanish compounds were elicited from Finnish subjects whose other L2 knowledge does not bias the results. The present and further analysis of these contribute to the pool of knowledge on compounding.

There are some interesting issues that could be addressed in further study of this data. A main issue of interest in compounding is the head-directionality and its trigger. The theories related to compounding do not provide the same explanation for N-N and deverbal head-directionality. However, it would be interesting to investigate if the correct head-directionality coincides for the two types of compounds. The rough division into two levels in this study does not provide sufficient insight on the matter and an analysis by individual subject is needed for this purpose. Also, expanding on the present study, an additional test for Noun Phrases with Adjective Complements, along the lines of Lardiere's (1998) study, could shed light on the directionality issue.

If the compound's head-directionality is linked with the directionality of Noun

Phrases with Adjective Complements, the triggering relation could work both ways. A possible test for pedagogical purposes would be to teach a class a critical amount of left-headed compounds and measure the improvement in ordering of Nouns and Adjectives in Noun Phrases.

Beard's (1996) LMBM model derives prepositional compounds from the same base as pure compounds. Equally, some N-N compounds can be prepositional as well. The present study focused on pure N-N and deverbal compounds and no analysis of prepositional compounding strategies was included. As Finnish does not use prepositions in compounding, an analysis of the patterns and production of prepositional compounds and their relation to the type of corresponding Finnish compounds could prove interesting.

Another unexplored issue is the drop of the plural -s on mass-nouns. The test in this study did not provide enough data on this issue. However, it could be expanded to include more pairs with mass-nouns and count-nouns for the same type of compound.

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APPENDIX I
The Cloze test

CLOZE TEST

Instrucciones: En el texto que les proporcionamos a continuación, figuran espacios en blanco en lugares donde deberían aparecer palabras concretas. Esos espacios los hemos numerado del 1 al 20. Por favor, lean primero el texto en su totalidad para poder captar el significado del mismo. Una vez realizada la primera lectura, vuelvan a leerlo y elijan una de las palabras que aparece en la hoja de respuestas para rellenar cada uno de los espacios en blanco. No incluyan las palabras en el texto sino en la hoja de respuestas rodeándola con un circulo, como se indica en el ejemplo que les damos a continuación

EJEMPLO:
Es conveniente leer las instrucciones con cuidado _____ de elegir las respuestas

a. para
b. al
c. antes

El sueño de Juan Miró

Hoy se inaugura en Palma de Mallorca la Fundación Pilar y Joan Miró, en el mismo lugar en donde el artista vivió sus últimos treinta y cinco años. El sueño de Joan Miró se ha _____(1). Los fondos donados a la ciudad por el pintor y su esposa en 1981 permitieron que el sueño se _____ (2); más tarde, en 1986, el Ayuntamiento de Palma de Mallorca decidió_____ (3) al arquitecto Rafael Moneo un edificio que _____(4) a la vez como sede de la entidad y como museo moderno. El proyecto ha tenido que _____(5) múltiples obstáculos de carácter administrativo. Miró, coincidiendo _____(6) los deseos de toda su familia, quiso que su obra no quedara expuesta en ampulosos panteones de arte o en _____(7) de coleccionistas acaudalados; por ello, en 1981, creó la fundación mallorquina. Y cuando estaba _____(8) punto de morir, donó terrenos y edificios, así como las obras de arte que _____exhibirán (9).

El edificio que ha construído Rafael Moreno se enmarca en _____(10) se Denomina "Territorio Miró", espacio en el que se han _____(11) de situar los distintos edificios que constituyen la herencia del pintor.

El acceso a los mismos quedará _____(12) para evitar el deterioro de las obras. Por otra parte, se _____(13), en los talleres de grabado y litografía, cursos _____ (14) las distintas técnicas de estampación. Esos talleres también se cederán periodicamente a distintos artistas contemporáneos, _____(15) se busca que el "Territorio Miró"_____(16) un centro vivo de creación y difusión del arte a todos los _____(17).

La entrada costará 500 pesetas y las previsiones dadas a conocer ayer aspiran _____(18) que el centro acoja a unos 150.000 visitantes al año. _____ (19) responsables esperan que la institución funcione a pleno rendimiento a principios de la próxima semana, si bien el catálogo completo de las obras de la Fundación Pilar y Joan Miró no _____ (20) listo hasta dentro de dos años.

APPENDIX I
The Cloze test

CLOZE TEST: ANSWER SHEET

NAME: _____

INSTITUTION: _____

1.	a. cumplido b. completado c. terminado	7.	a. poderoso b. poder c. favor	14.	a. sobre b. en c. para
2.	a. inició b. iniciara c. iniciaba	8.	a. al b. en c. a	15.	a. ya b. así c. para
3.	a. encargar b. pedido c. mandando	9.	a. le b. se c. los	16.	a. será b. sea c. es
4.	a. hubiera servido b. haya servido c. sirviera	10.	a. que b. el que c. lo que	17.	a. casos b. aspectos c. niveles
5.	a. superar b. enfrentarse c. acabar	11.	a. prentendido b. tratado c. intentado	18.	a. a b. de c. para
6.	a. por b. en c. con	12.	a. disminuído b. escaso c. restringido	19.	a. los b. unos c. gente
		13.	a. dar b. ofrecerán c. dirán	20.	a. habrá b. será c. estará

APPENDIX II

Questionnaire, English version

Questionnaire

1. Name _____
2. Age group (please circle)
   4-12 12-17 17-25 26-40 +40
3. Address and telephone number _____
4. Mother's dominant language _____
   Father's dominant language _____
5. Language(s) spoken at home as a child _____
6. Language(s) you spoke during the first five years of your life
   _____
7. Language(s) studied in:
   Primary school _____
   Secondary (high) school _____
   University _____
   Other institutions _____
8. What other languages do you presently speak? _____
9. What language do you feel most comfortable with at this time?
   _____
10. What languages do you speak:
    -at home _____
    -at school _____
    -at work _____
    -in your dreams _____
11. Why are you studying Spanish?
    -B.A. in Spanish
    -double major
    -personal reasons
    -professional reasons
    -other _____
12. Contact with Spanish outside class room:
    Present contact:
    -approximate hours per week: _____
    -context (e.g. friends, family, clubs, etc): _____
    Previous contact:
    - Have you ver visited a Spanish speaking country? Please circle: Yes No
    - When? _____
    - For how long? _____

APPENDIX III
Example of the Picture test answer sheet

PRUEBA I: DIBUJOS

Le vamos a presentar una serie de dibujos para que nos diga
a) Qué se hace con el aparato o qué hace la persona del dibujo.
b) Cómo denominaría (= qué nombre daría) a la persona o aparato que figura en cada uno de ellos.

[Si lo necesita, puede consultar su 'diccionario', es decir la lista de vocabulario que le hemos proporcionado.]

1. a._____

   b._____

2. a._____

   b._____

3. a._____

   b._____

4. a._____

   b._____

5. a._____

   b._____

6. a._____

   b._____

APPENDIX III

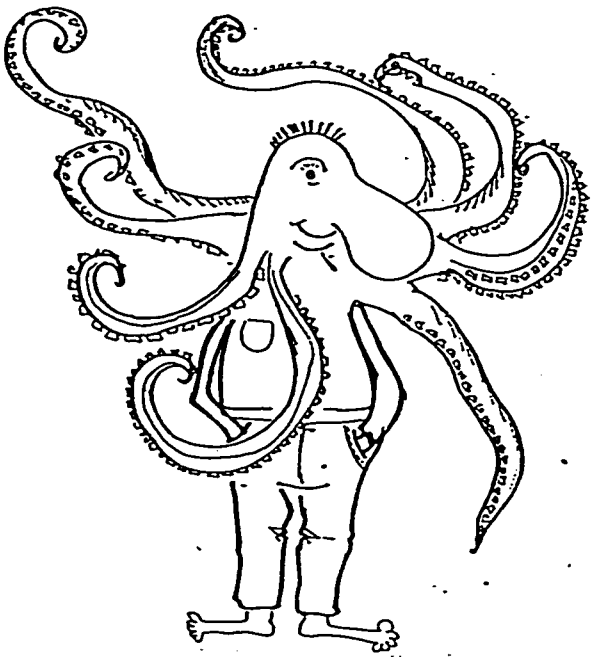
Continued

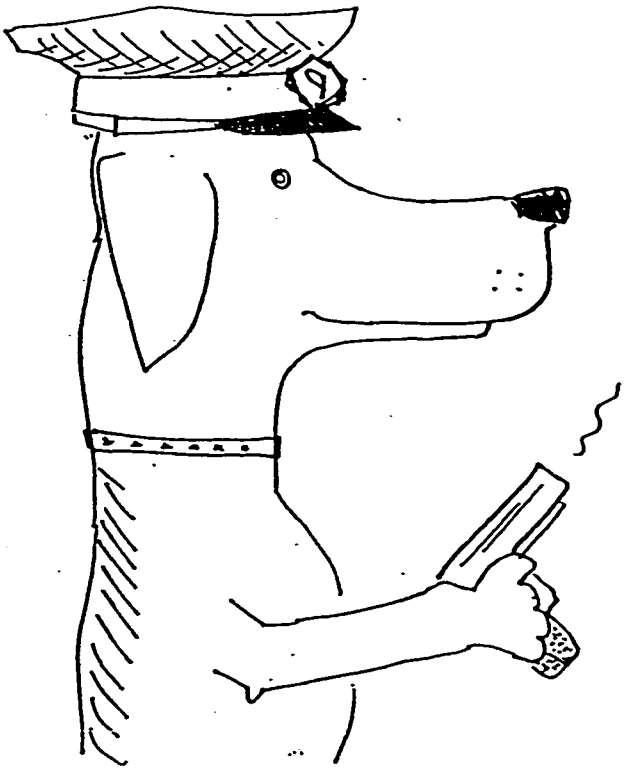
Examples of the pictures in the Picture test

APPENDIX III

Continued

Examples of the pictures in the Picture test





APPENDIX IV
Examples of the Paraphrasing Task

PRUEBA II: PARAFRASIS

Tarea: Proporcione el nombre de los objetos o de las personas que se definen en las frases siguientes.
[Si lo necesita, puede consultar su 'diccionario', es decir la lista de vocabulario que le hemos proporcionado.]

1. Los productos químicos o naturales que sirven para quitar las manchas de los cristales se llaman

_____

2. Un utensilio que sirve para rascarse la espalda se llama

_____

3. Los productos químicos o naturales que sirven para quitar las manchas de la ropa se llaman

_____

4. A una especie de pinzas que sirve para cortarse las uñas se les llama

_____

5. ¿Como se llama la parte de los vehículos (coches, camiones, etc.) que evita que el barro se distribuya por todo el exterior?

_____

6. Una persona cuya profesión es cuidar y vigilar los bosques es

_____

7. A una persona que se especializa en robarle los teléfonos móviles a la gente se le podría llamar

_____

8. Si vives en bosques en los que hay osos, puede ser aconsejable tener un aparato que asuste a los osos para que no se acerquen. ¿Cómo podríamos llamar a ese aparato?

_____

9. Una máquina que sirve para tirar pelotas, como cuando se juega al tenis, se llama

_____

10. En los coches hay un cristal delantero que sirve para evitar que entre el viento y que se denomina

_____

11. Un pájaro u otro animal que se alimenta de moscas se llama

_____

12. En los puertos, junto al mar, ¿cómo se llama esa especie de pared que protege los barcos y contra la que se rompen las olas?

_____

13. ¿Cómo se llama el objeto que se coloca encima de los papeles para evitar que se pierdan o se los lleve el aire?

_____

14. El mecanismo que se adapta a la parte exterior del cristal delantero del coche y que aparta el agua o la nieve que cae sobre él se llama

_____

15. Un utensilio que sirve para cortar las puntas de los cigarros puros se llama

_____

APPENDIX V
Word list for Deverbal Test

Test #1

ahmia,	
nielaista	tragar
asettaa	posar
avata	abrir
henki, elämä	vida
hirviö	monstruo
hyttynen	mosquito
jää	hielo
kala	pescado
kannattaa	portar
kantaa,	
kärki	punta
katu	calle
kirja	libro
korkki	corcho
kuljettaa	portar
kuoria	cascar
kuvaruutu	pantalla
kynä	pluma
lasi	vaso
lautanen	plato
lintu	pájaro
lumi	nieve
matkatavara	equipaje
ottaa, poistaa	sacar
pähkinä	nuez
pelastaa	salvar
pelästyttää	espantar
pilvi	nube
poistaa	quitar
puhdistaa	limpiar
pullo	botella
purkki	lata
pyydystää	atrapar
raapia,	
rapsuttaa	rascar
rikkoa, särkeä	romper
rotta	rata
rypäle	uva
saapas	bota
sandia	vesimeloni
suudella	besar
sydän	corazón
syödä	comer
taivas	cielo
tallata	pisar
tappaa	matar

Test #2

aalto	ola
ääni	voz
avata	abrir
heittää	tirar
huonekalu	mueble
kantaa	portar
karhu	oso
kärpänen	mosca
kirje	carta
kynsi	uña
lasi	cristal
leikata	cortar
loka, muta	barro
metsä	bosque
nurmi, ruoho	hierba
pallo	pelota
paperi	papel
pelästyttää	espantar
poistaa	quitar
puhdistaa	limpiar
puhelin	teléfono
raapia,	
rapsuttaa	rascar
rikkoa	romper
säilyttää, vahtia	guardar
selkä	espalda
sikari	puro
suojata,	
syödä	comer
tahra	manchas
talloa, astua	pisar
tuuli	brisa
varten, vastaan	para