An LFG analysis of Swedish double definiteness expressions

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Acknowledgements

I remember the first time I have become interested in the Swedish language back in 2007 when I had the opportunity to watch a particularly beautiful Swedish film in Buenos Aires. If at that time someone had told me that eight years later I would be writing an MA thesis on Swedish expressions of definiteness here in Barcelona, I would surely have taken it with some scepticism. And yet, this MA thesis is exactly about that. The specific topic of double definiteness stemmed from several discussions I had with a couple of professors when I was trying to model it in a traditional syntactic tree. I truly felt that I was delving into something fascinating and I was not wrong.

Mentioning all the people who helped me in one way or another to make this work possible is set to fail, but at least I would like to acknowledge a few key names. First and foremost, thanks to my supervisor Dr Alex Alsina for his trust, patience and guidance when I most needed it. He was extremely flexible and polite without allowing me to make big mistakes. Thanks also to Dr Esteve Clua for agreeing to accept a morphological analysis on Swedish definiteness as part of my coursework despite being a rather unfamiliar topic. Thanks to Dr Pilar Prieto for organising interesting events throughout the year that steered my passion about linguistics in the right direction. Special thanks must go to Dr Josep Fontana who shared his time, wisdom and insightful discussions about this and other highly theoretical syntactic puzzles. Thanks to my online Norwegian friend Marte and her Swedish partner Ava for helping me with several grammaticality judgements and invaluable comments. A warm thanks to all my classmates and friends, but especially to Kendall, Florence, Colleen, Andrew, Christo, Jeremy, Joel, Dasha, Dakota, Vítor and many others for such an amazing journey full of stimulating and sometimes heated discussions ranging from sociolinguistics to orthography and, of course, syntax.

Finally, this last line is reserved to my life companion and best friend, who has been standing by my side in spite of all my flaws, which are many: thank you Karina.

Contents

Abbreviations

A	Adjective
ADJ	Adjunct - LFG modifier
ADV	Adverb
AP	Adjectival phrase
COMP	Complement - LFG governable grammatical function
CP	Complementizer phrase
D	Determiner
DEF	Definiteness feature as a morphological marker or as an LFG formal feature
DEIXIS	Demonstrative feature
DIST	Distal value for DEIXIS feature
DP	Determiner phrase
F	Feminine gender
HSPG	Head-driven Phrase Structure Grammar
LFG	Lexical-Functional Grammar
MP	Minimalist Program
N	Noun
NP	Noun phrase
PL	Plural number
PROX	Proximal value for DEIXIS feature
SG	Singular number
Spec	Specifier
SPEC	Specifier - LFG grammatical function

1
Introduction

This work is about how Swedish expresses definiteness. As many other linguistic phenomena, definiteness resists unequivocal definition and this is precisely the reason why any research that pretends to study it satisfactorily has to spell out carefully a set of convincing terminology and criteria before attempting a delimitation of a relevant research topic.

The term definiteness is semantic at its core and it bears a close relationship with the modification and interpretation of meanings of linguistic expressions. Centuries ago, Lowth (as cited in Michael, 2010) had already stated that the wider sense of bare substantives in English can be modified by particles such as the so-called articles. This is compatible with the more philosophical linguistic fact that all languages have strategies to describe, infer and ultimately communicate properties or circumstances about real or imagined worlds, thus requiring a system to convey our thoughts and intentions. In this context, the meanings that are transmitted by natural languages are susceptible to be modified by means of morphosyntactic markers that, in some cases, correlate to gradable semantic boundaries from the more general to the more specific.

In addition, definiteness lives at the crossroads of several traditional modules of grammar: morphology, semantics and syntax. From a morphological point of view, definiteness is sometimes exclusively expressed with affixes. From a semantic point of view, there are formal descriptive accounts for its status as a special quantification device conveying uniqueness and other discourse properties such as referent identifiability (Lyons, 1999). From a syntactic point of view, free standing determiners or 'articles' are traditionally associated with it. In many languages, there are no syntactic determiners or dedicated definite markers. Instead, definiteness is transmitted by means of other morphosyntactic and pragmatic elements available, e.g., topic and focus.[1] Definiteness is therefore either explicitly expressed or covertly inferred by an orchestrated combination of linguistic devices such as word order, affixes or context, all of these highly dependent on the language under scrutiny. This is analogous to other grammatical features that use a range of combinatorial linguistic properties, e.g., tense (see Bittner, 2005 for a discussion on tenseless West Greenlandic). The range of diverse

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[1] According to Dryer (2013), it appears that the presence or absence of dedicated morphosyntactic definite markers are both fairly common and it seems to be an equally balanced situation among languages of the world; however, Lyons (1999) suggests that overt definiteness markers are present in a higher proportion of languages. What is undisputable is that it is rather common for languages to lack overtly-expressed definiteness.

linguistic strategies to encode definiteness proves to be an analytical challenge; therefore, I will devote the first part of Chapter 2 to discuss this complexity in order to reach a workable definition of definiteness.

The focus of this thesis is on Swedish expressions of definiteness, in particular double definiteness or double determination, as it has been labelled in the Scandinavian literature. The last part of Chapter 2 will aim to characterise this phenomenon appropriately, which I will briefly introduce here.

Now it is time to ask an important question: what makes Swedish definiteness especially interesting? Before answering this, some cross-linguistic generalisations are needed. First, morphosyntactic definiteness markers rarely show syntactic agreement, i.e., either there is one free standing syntactic determiner within a whole phrase or there is one instantiation of a definite affix. Second, when there is evidence of agreement, it is often realised uniformly either as a repetition of a syntactic determiner[2] (e.g. *to* in Greek), or as a repetition of affixes (e.g. *ha-* prefix in Hebrew). See examples (1) for Greek and (2) for Hebrew taken from Alexiadou and Wilder (1998) and Falk (2001a), respectively.

(1) **to**   vivlio   **to**   kokkino   **to**   megalo
    the   book the   red   the   big
    'the big red book'

(2) **ha-**gina   **ha-**metupax-at
    the-garden(F)   the-cared.for-FSG
    'the tended garden'

Swedish is part of a subset of Germanic languages which show definiteness agreement, together with others such as Norwegian and Faroese. As mentioned, this is fairly rare in itself (see Overview in Kibort, 2008) but it is even more peculiar that the definite markers in Swedish are morphological affixes and syntactic determiners that co-occur within the same noun phrase, unlike the more homogenous Greek and Hebrew. Take the following Swedish example:

(3) **den**   röda   bil-**en**
    the   red   car-DEF
    'the red car'

The term double definiteness simply refers to the double marking observed in (3), in bold, and it generally refers to the presence of at least two definite markers[3]. Although

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[2] This multiple instantiation of determiners in Greek has been labelled as *determiner spreading* by Androutsopoulou (1995).

[3] Börjars (1994) makes a distinction between *double determination* and *double definiteness*. The former consists of both syntactic and morphological definite markers contributing independently to the semantics of the noun phrase. The latter is a form of agreement in which there is only one semantically relevant definite marker, and there is at least one element that agrees with it. I will assume this definition of double definiteness throughout this work.

this trait of Swedish is sufficiently interesting to justify by itself the substantial attention received by linguists interested in the syntax of noun phrases, there is much more to say about this fascinating topic.

If agreement is assumed to be asymmetrical, i.e., some elements have inherent properties which spread to their controlled targets, then the grammaticality contrasts in (4) are puzzling, to say the least. Let us see why.

(4)

    a. bil-**en**
         car-DEF
         'the car'

    b. *röd-a   bil-**en**
         red-DEF   car-DEF

Considering the adjectival suffix to be a result of agreement (in line with Lyons, 1999 and Börjars, 1998a), how can (4b) be ungrammatical when it contains a definite N that is grammatical in the unmodified (4a)? Moreover, (4b) would become grammatical if a D is added, as in (3), thus suggesting that both the D and the nominal suffix have inherent definite properties. And yet, (4b) is ungrammatical due to the absence of the syntactic D while the supposedly inherent definite N is still present. In fact, we will see some evidence from modification by relative clauses (see section 3.2.4) suggesting that the nominal definite suffix in (3) is not inherently definite.

There is also an alternative syntactic interpretation for these data. When a prenominal A is present, a D becomes mandatory due to structural constituency reasons. Therefore, ungrammaticality of (4b) could be due to a structural impossibility for an A to occur without a D in a tree-like structure; however, there is conflicting evidence that has to be considered before positing such a structure with a constituent only dominating a D and an A. For this reason, I will only discuss briefly such proposed structure in section 3.2.2.1 with the sole aim to suggest further research.

In order to provide a solution for the above puzzle, and after discussing previous analyses of Swedish definite noun phrases, in Chapter 3 I will propose an analysis based on Lexical-Functional Grammar (LFG) together with the hypothesis of Lexical Sharing (Wescoat, 2002, 2007, 2009).

Finally, in Chapter 4 I will draw general conclusions and a brief mention of the relevancy of my proposed analysis of Swedish definiteness within the context of a broader theory of linguistic features. The adequacy of LFG as a constraint-based theoretical framework and a tool for modelling this kind of phenomena will also be highlighted.

2
Defining double definiteness

A proper delimitation of the multidimensional nature of (double) definiteness is required as a preliminary step before any research analysis on the topic can be proposed. A set of appropriate criteria and assumptions found in the key literature on features will be outlined in order to better understand and define definiteness (e.g., Lyons, 1999, Kibort, 2010) before focusing on the more specific case of Swedish double definiteness and related expressions.

First, the morphosyntactic nature of definiteness will be briefly discussed, comparing it with other types of linguistic features that are not sensitive to syntax in the context of a theory of grammatical features (Kibort, 2008).

Second, I will proceed to describe the possible types of formal realisation of definiteness as either morphological, syntactic, or both co-occurring simultaneously, thus suggesting potential conveyors of inherent definiteness and their agreement targets within the noun phrase.

Third, I will survey the main Swedish definite markers in order to assess their status as affixes, clitics or words, based on criteria adapted from Zwicky (1977) and Spencer and Luís (2012) and on insightful conclusions by Börjars (1998a). This exercise will contribute to a proper delimitation of the set of elements subject to the subsequent LFG analysis in Chapter 3.

Considering the above, the overall objective of Chapter 2 is to establish a common ground between the author and the reader for what is meant by Swedish double definiteness in terms of morphosyntactic status of its markers.

2.1 Definiteness as a morphosyntactic feature

Definiteness is often regarded by linguists as a grammatical feature expressed by languages in diverse ways and yet there seems to be no well-established feature theory with unequivocal criteria to identify such linguistic features. According to Kibort (2008), features can be classified in categories; namely, morphosyntactic, morphosemantic, or morphological. Since the definiteness feature is argued to participate in agreement (although rarely) it is sensitive to syntactic context; therefore, it is classified as morphosyntactic by Kibort (2008). Then, she mentions that other features (e.g. tense) are not relevant to syntax, thus falling under a morphosemantic or a purely

morphological classification. The last two categories are not relevant to this research and I will not discuss them in detail.

The following Figure 2.1 shows that these three categories can be depicted as a *Russian doll* model. The inner-most element consists of a purely morphological layer including features such as inflectional class; the intermediate layer adds a semantic component; and, finally, the last layer adds a syntactic component including the previous two. We are interested in the all-inclusive category labelled as morphosyntactic. Definiteness in Swedish seems to fall into this category since it encompasses morphological markers, a semantic interpretation and it has syntactic relevance.
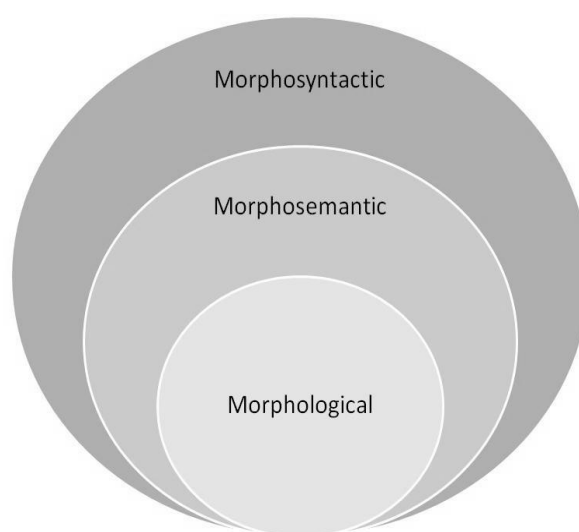

Figure 2.1. *Russian doll* model of grammatical features

It is important to bear in mind that the classification of a specific feature can vary from one language to another. In other words, if definiteness obeys the criteria to be considered a morphosyntactic feature in one language, the same might not be true for another. In fact, some languages do not express definiteness at all, at least morphosyntactically, relying solely on pragmatic devices. Therefore, Kibort's (2008) classification of definiteness as morphosyntactic should be understood as a feature that has been attested as such in at least some languages, while not being necessarily universally morphosyntactic. Since definiteness does seem to participate in agreement phenomena in languages such as Swedish, Hebrew and Greek, it fulfils the above criterion and, therefore, should be considered a morphosyntactic type of feature.

2.2 Types of formal realisations

Ideally, all features and their values would need to be realised morphologically or syntactically as evidence for positing such features in the first place. It turns out this is not always the case since features can be non-autonomous, in Kibort's (2008) terms.

This means that a particular feature is inferred from the syntactic context by means of other morphemes associated to different accompanying features[4]. Despite the non-autonomous traits of definiteness in some languages, Swedish do instantiate definiteness both morphologically, i.e., bound to As and Ns, and syntactically, i.e., by means of free standing Ds[5]. Since some of these markers or elements are associated with semantic and pragmatic functions typically expressed in all languages; i.e., discourse familiarity, referentiality, identifiability and inclusiveness (Lyons, 1999), it is then justified to include definiteness in the inventory of Swedish features.

Either a free standing element with syntactic status (e.g. articles or syntactic Ds) or a morphologically-bound marker (e.g. suffixes on Ns) can, in principle, be specified *inherently* with a definiteness feature [DEF]. It could also happen that these same elements are targets of an agreement controller or government. In other words, they could be specified for [DEF] *contextually* by other elements in which the feature originates inherently. In Swedish, depending on the analysis assumed, definiteness could be inherent to Ds and its values are selected from a set: [DEF +], [DEF −] and sometimes an unspecified [DEF u]. On the other hand, Swedish definiteness could also be contextual on As and possibly on Ns, as I will propose. In other analyses, Ns can also be considered to have a [DEF] specified inherently, but I will not assume this in my analysis and we will see why throughout this work. Although there is evidence indicating that most Swedish Ns are inherently definite, the analysis I propose in Chapter 3 will hopefully show that even when there are no overt Ds, a definite suffix on the N can still be a result of agreement, as opposed to inherently definite.

The properties of the realisation types (i.e., inherent vs. contextual and morphological vs. syntactic) for which I have used terminology borrowed from Kibort's (2008) work on grammatical features, are relevant to any analysis of Swedish double definiteness. This is because any given lexical item can have, in principle, inherent or contextual realisations of a [DEF] value and any given noun phrase can show a number of combinations of realisation types associated with the number of lexical items present. Therefore, depending on how Swedish features are interpreted, lexicalist analyses based on feature unification and parallel structural constraints, such as LFG, would explain Swedish data in different ways. It is then of vital importance that any realisation of a Swedish definiteness marker is adequately classified as either morphological or syntactic, and also as inherently definite (i.e., having a semantic interpretation) or contextually definite (i.e., agreement target).

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[4] Refer to Chesterman (1991, p. 108) for Finnish expressions of definiteness inferred partly from nominal case morphology.

[5] Swedish definite morphological markers and definite syntactic Ds are not associated exclusively with definiteness but also carry information about gender and number features. However, definiteness can still be considered autonomous in the sense that it is not inferred (solely) from context but from those very same morphosyntactic markers.

2.3 Swedish definiteness: affixes, clitics or determiners?

Conducting a survey of Swedish definiteness markers is an important first step towards an attempt of a morphosyntactic analysis involving them. The next step is to assign an appropriate morphosyntactic status to each marker based on well-known criteria for differentiating words, clitics and affixes. The results of an insightful morphological analysis in the literature on Swedish noun phrases (Börjars, 1998a) will also be taken into consideration.

2.3.1 A survey of Swedish definiteness markers

As it occurs in other Scandinavian languages, Swedish definiteness markers are all expressed within the noun phrase domain[6]. Word classes associated to these markers are nouns, adjectives and determiners. Table 2.1 summarises the relevant definite markers with their phonetic realisations[7].

Table 2.1

Noun endings	Singular	–(e)n	[ɛn] / [en] / [n]
		–(e)t	[ɛt] / [t]
	Plural	–(n)a	[ŋa] / [na] / [a]
		–en	[ɛn]
Adjectival endings		–a	[a]
		–e	[ɛ]
Preadjectival elements	Singular	den	[de:t] / [de:][8]
		det	[dɛn:]
	Plural	de	[de:]

Firstly, the singular definite forms of nouns are formed either by attaching –*(e)n* or –*(e)t* to the endings of their singular indefinite forms according to gender and phonological environment, i.e., stem endings in a consonant or a vowel. Swedish nouns inflect for two genders, namely, en-words (also known as non-neuter, common, or N-words gender) and *ett-words* (also known as neuter or T-words gender). Definite markers –*(e)n* attach to *en-words* while –*(e)t* does so to ett-words according to the inflectional rules described in Holmes and Hinchliffe (2008, p. 47-48). The plural definite forms of nouns are formed by attaching –*(n)a* or –*en* to the ending of their previously formed plural indefinites. In spite of the fact that singular indefinites inflect for gender and phonological features, plural forms have lost their gender-related inflectional information and have only retained their sensitivity to phonological environment. This

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[6] Cross-linguistically, definiteness seems to be expressed almost exclusively within a noun phrase domain; however, Lyons (1999, p. 86-87) pointed out that in some languages such as Hungarian and Swahili the verb encodes information about its definite object presumably in the form of agreement.

[7] Phonetic realisations will be useful to assess the morphosyntactic status of the definite markers in section 2.3.2.

[8] This alternative phonetic realisation is found in informal spoken Swedish known as *talad svenska* (Hersey, 2012).

is an instance of morphological neutralisation described in the literature as syncretism (Baerman, Brown, & Corbett, 2005).

Secondly, according to Holmes and Hinchliffe (2008, p. 55-56) Swedish adjectives inflect for definiteness by attaching *–a* or *–e* endings. The *–a* ending is common across most definite constructions. The distribution of *–e* is more restricted depending on some formal and semantic factors; i.e., *–e* attaches to past-participle adjectives ending in *–ad* or to superlatives ending in *–ast*; and normally it also attaches to adjectives before singular nouns denoting male entities.

Thirdly, the preadjectival free standing elements are *den*, *det* and *de*, depending on the gender and number of their accompanying nouns. Once again, syncretism is observed: the plural form *de* is used for both genders whereas the singular forms *den* and *det* show gender inflection, i.e., *den* is an en-word and *det* is an ett-word.

Finally, all the above definiteness markers combine in the syntax of Swedish double definiteness expressions following the patterns depicted in Table 2.2 below.

Table 2.2

en-words gender (DEF.SG)	ett-words gender (DEF.SG)	Plural both genders (DEF.PL)
den + A-*a* + N-*(e)n*	*det* + A-*a* + N-*(e)t*	*de* + A-*a* + N-*(n)a* / N-*en*

2.3.2   Morphosyntactic status of definiteness markers

The morphosyntactic status of the surveyed Swedish definiteness markers will be assessed and then assumed throughout this work in order to ensure a valid analysis of these markers under LFG theoretical principles. Crucially, if a marker is assumed to have the status of a bound morpheme, then a Lexical Integrity principle will disallow its insertion into a c-structure syntactic node. This principle has been a fundamental theoretical assumption of LFG since its first stages of development more than thirty years ago, and it still holds today: 'Morphologically complete words are leaves of the c-structure tree and each leaf corresponds to one and only one c-structure node.' (Bresnan, 2001, p. 92)

Since Swedish shows evidence of morphologically-bound definiteness markers, adopting the above principle would entail a rejection of other less lexicalist theoretical frameworks in which the syntax can 'see' inside word boundaries where its structural operations are able to be applied at a morphological level. Therefore, if sufficient evidence for a distinction between morphological word formation rules and syntactic rules is found, the choice of a lexicalist theoretical framework such as LFG would seem justified, since it readily assumes this distinction by virtue of the above-mentioned Lexical Integrity principle.

We have now reached the point in which the following questions must be formulated: are there any morphologically-bound definiteness markers in Swedish? If yes, are they clitics or affixes? In order to answer these questions, I will first state the

criteria to be assumed for testing Swedish definiteness markers for word-, clitic- or affix-hood[9]. These criteria are adapted from Zwicky (1977) and the more comprehensive and recent work by Spencer and Luís (2012). Then, I will run some diagnostics on each type of Swedish definiteness marker.

The rules for distinguishing words from affixes (Zwicky ,1977) are:
- ordering: bound morphemes do not move freely within a word without changing cognitive meaning;
- internal sandhi: word boundaries can normally be identified with phonological rules that only apply word-internally but not across word boundaries;
- binding: bound morphemes that are affixes cannot occur in isolation;
- construction with affixes: morphemes that are affixes attach to either a base or another affix;
- rule immunity: affixes cannot take scope over a conjoined pair of items of the same grammatical category, especially if they are not compound words;
- accent: affixes do not bear independent accent or stress.

In addition, the following are general properties to distinguish clitics from either words or affixes (Spencer & Luís, 2012):
- clitics express functional (inflectional) categories or discourse functions;
- clitics are generally unstressed or being able to undergo un-stressing;
- clitics need a host and they are not selective about which type of host they can attach to;
- clitics appear in clusters with a rigid order;
- clitics often have a different syntax from independent fully-fledged words.

2.3.2.1 Preadjectival forms

According to Lyons (1999), there is a strong tendency for free-form articles to occur in prenominal positions across languages, i.e., noun phrase-initial positions; and that is regardless of the overall syntactic order of other sentential constituents. These free standing elements are normally unstressed monosyllabic items that undergo processes of phonological reduction, or they are the result of polysyllabic demonstratives being reduced to a monosyllabic form. These properties are consistent with *den*, *det* and *de*. All these elements are realised as unstressed monosyllabic items and they appear to be all derived historically from demonstratives and pronouns. Also, these elements do not show any word-internal phonological process that could evidence an affix-like property as it would be expected by the internal sandhi rule for affixes. In addition, they can all occur in isolation, e.g., acting as other semantically distinct forms such as [deːt], [dɛnː] and [deː], which are free standing personal pronouns in Swedish, thus not being

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[9] As it is noted in the literature, these rules are not clear-cut and they should only be regarded as guidance and not as infallible tests. Therefore, my approach to testing each definiteness marker will be to apply as many rules as possible in search for the best match, although bearing in mind the current theoretical shortcomings in the field when it comes to defining these elusive categories.

compatible with the binding rule for affixes. Then, in spoken Swedish the more formal [deːt] has become [deː] showing signs of phonological reduction; however, this could be readily explained by general reduction rules that avoid doubling the consonant [t], a phenomenon observed in *det tredje* ('the third') that is realised as [deː ˈtɾeːdjɛ] (Hersey, 2012).

Despite these elements show some clitic-like properties such as being unstressed, not being selective of their potential neighbouring host and expressing discourse functions (e.g. reference); the syntactic patterns of *den*, *det* and *de* correspond to those of independent words that do not commonly undergo phonological reduction, except in cases of regular external sandhi which typically occur at word boundaries, as shown above with *det*. Finally, I will rely on Spencer and Luís's (2012) suggestion that clitics are more often than not enclitics, based on a cross-linguistic survey of clitics by Anderson (2005) in which only two examples of pure proclitics are given. In fact, *den*, *det* and *de*, if clitics at all, they would probably have to be proclitics since they are commonly found in sentential-initial or phrasal-initial positions.

All in all, after reviewing the key literature and applying some basic diagnostics, I conclude that the definite elements *den*, *det* and *de* are independent words that have the potential to become clitics due to their relative short length, lack of stress and functional properties.

2.3.2.2   Adjectival markers

Adjectival markers *–a* and *–e* are relatively easy to describe, at least phonologically, compared to other markers. The distributional restrictions of *–e* mentioned in section 2.3.1 allow for a simplified diagnosis in terms of criteria applicability.

First,*–a* [a] and *–e* [ɛ] are both unstressed, they must be bound to a host and they cannot take scope over a conjoint pair of adjectives. This strongly indicates their suffixal nature. Secondly, they differentiate from clitics in the sense that they are especially selective in term of their host: *–e* attaches restrictively to attributive superlative forms ending in *–ast* and to attributive past participle forms ending in *–ad*.
Finally, their realisation remains unaltered regardless of their phonological environment, thus showing the allomorphic alternation between [a] or [ɛ] that is not phonotactically-conditioned but rather morphologically-conditioned by the previous base or affix.

Considering the previous observations, I conclude that *–a* and *–e* are adjectival inflectional suffixes that do not show properties of either independent words or clitics.

2.3.2.3   Nominal markers

The overall status of the Swedish nominal definite markers *–(e)n*, *–(e)t* and *–(n)a* is analysed extensively by Börjars (1998a, p. 40-88), where she provides a substantial number of examples and tests that are compatible with the criteria I have summarised earlier in section 2.3.2. Although I will not discuss them in detail, her convincing conclusion is that these nominal definite markers are best described as morphologically-bound elements that do not have independent syntactic status and that follow

morphological formation rules sufficiently different from syntactic ones. This has an obvious impact on the choice of a theoretical framework and Börjars (1998a) has used HPSG for her analysis, which I will discuss in section 3.1.2.2.

2.3.3   Results and discussion

After surveying the relevant Swedish double definiteness markers, I have performed a literature review and a basic morphological analysis in order to determine their morphosyntactic status. The results are summarised in Table 2.3 below.

Table 2.3

Types of marker	Form	Status
preadjectival forms	*den*, *det*, *de*	words (syntactic determiners)
adjectival markers	*–a*, *–e*	inflectional suffix
nominal markers	*–(e)n*, *–(e)t* and *–(n)a*	suffix (with no syntactic status)

Based on the above, I will assume that the preadjectival forms *den*, *det* and *de* are independent free-standing words, i.e., syntactic determiners. The adjectival markers *–a* and the more restricted *–e* appear to be inflectional suffixes perhaps resulting from definiteness agreement. The nominal markers *–(e)n*, *–(e)t* and *–(n)a* will also be considered to be suffixes based on the extensive analysis by Börjars (1998, p. 40-88).

In summary, Swedish has several morphologically-bound definiteness suffixes both on adjectives and nouns without evidence of behaving either as clitics or as independent words. Additionally, Swedish also shows the presence of free standing syntactic determiners in a preadjectival-prenominal position[10].

Despite the above results, I am yet to find theoretically-independent conclusive evidence for positing a distinction between morphological word formation rules and syntactic rules. It follows that any choice of a lexicalist framework such as LFG would, in principle, seem to be ad-hoc at this stage. That said, I will briefly summarise interesting L1 acquisition data from Swedish (and Romanian) that seems to support a lexicalist framework over other less lexicalist analyses of double definiteness[11].

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[10] A methodological note is worth spelling out at this point. Given the similar distributional properties of the types of definiteness markers, I will use *den* to refer to all three syntactic determiners *den*, *det* and *de*. Likewise, I will choose the nominal affix *–en* to refer jointly to all following forms: the singular *-(e)n* and *-(e)t*, and the plural *-(n)a* and *-en*. Finally, I will use the adjectival inflection *–a* as a joint reference to *–a* and *–e*. As a consequence of this practice, all examples in this work will be singular en-words noun phrases (i.e., common gender) and no ungrammaticality will arise due to gender or number mismatches.

[11] See Börjars (1998, p. 87) for a discussion on cross-linguistic evidence and further references that would also support a lexicalist approach over other theoretical frameworks.

3

The syntax of Swedish definiteness

This chapter is devoted to my proposed LFG analysis of Swedish noun phrases with a special focus on definiteness feature distribution across Swedish double definiteness expressions. The main motivation for my work is to explore a new perspective on the analysis of Swedish, where the presence of determiners and modifiers has shown to be problematic for any structural syntactic accounts.

Firstly, I will discuss four representative authors whose work is based on assumptions under the Minimalist Program (MP) as in Chomsky (1995, 2000, 2001). Then, I will discuss two influential lexicalist approaches of different nature: a case of morphological blocking and an HSPG solution. Although I will aim to point out some potential shortcomings of these analyses, the extensive literature on the topic and the need to incorporate more relevant data are unavoidable limiting factors for a thesis of this calibre. Therefore, my proposal has to be regarded more as an exploration of the LFG flexibility and adequacy to account for this complex phenomenon rather than a complete solution to this long standing linguistic puzzle.

3.1   Previous accounts of double definiteness

The phenomenon of double definiteness has been discussed extensively in the literature on Swedish and other related Scandinavian languages, such as Norwegian and Faroese (e.g., Harries, 2014). Previous theoretical accounts are normally based on some version of MP, notably Delsing (1993), Embick and Noyer (2001), Julien (2002, 2003, 2005), and Schoorlemmer (2009, 2012). However, lexicalist approaches have also been proposed by several authors. Firstly, Hankamer and Mikkelsen (2002, 2005) relied on the notion of morphological *Poser-blocking* (Poser, 1992) to explain the ungrammaticality of Danish noun phrases and to apply it later to Swedish double definiteness data. Secondly, the solution proposed by Börjars (1998a) is based on the unification-based HPSG (Pollard & Sag, 1994) and it is without a doubt a very influential work on the topic since it has been cited numerously in related research. In sections 3.1.1 and 3.1.2, I will review all these accounts and briefly discuss some of their weak points.

3.1.1 Minimalist accounts

From a strict MP perspective, it is well established that morphological markers can occupy head positions, thus assuming they are syntactic in nature and that they can project their own phrasal categories. This would be the case of the Swedish nominal definiteness marker −*en*. Although this is instrumental for head or phrasal movement accounts, I will argue progressively throughout this work that a richer morpholexical component separate from the rules of syntax is indeed justified.

3.1.1.1 Head movement

The blocking of N-to-D head movement by prenominal adjectives has been claimed to be the reason for double definiteness expressions in both Embick and Noyer (2001) and Delsing (1993). They assume the following structures in Figure 3.1 and Figure 3.2, respectively. Both are similar to the one proposed by Abney (1987) as an alternative to the more traditional adjoined position for adjectives.
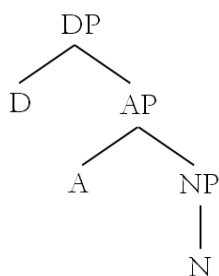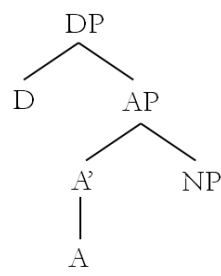
Figure 3.1

Figure 3.2

The AP is not projected when there is no A, so the N can move to D to attach the definite suffix that is argued to be based-generated in D position (Embick & Noyer, 2001). On the other hand, Delsing (1993) argues that the suffix is based-generated on the N and then it moves to D in order to lexicalise that position. Crucially, this process is also blocked in the presence of an A.

The issue with both accounts is that blocking head movement requires an independent explanation for the different patterns of realisation of the definite suffix, which needs to be sensitive to other types of nominal modifiers that are clearly syntactic. An example of this sensitivity is the optionality of the nominal definite suffix when relative clauses are present within the NP (see data in section 3.2.4). Another issue is the omission of a satisfactory explanation for the grammaticality of sentences with strings of prenominal adjectives. Additional APs are analysed as complements selected by other As, which is not supported by syntactic evidence, as far as I am aware. Also, as pointed out by Hankamer and Mikkelsen (2002, 2005) and Julien (2002, 2003, 2005), this configuration would not rule out

the possibility of N-to-A movement and then the movement of the complex N+A to D, which would attach the definite marker to an A, thus yielding an non-existent word. Finally, there is evidence from Swedish L1 acquisition that young children learn the definite N earlier than the syntactic D (see Sleeman, 2012), which empirically seems to contradict the argument that costly post-syntactic operations on morphemes are responsible for the instantiation of the definite suffix on the N, as defended by Embick and Noyer (2001).

In response to some of the above issues, Schoorlemmer (2009, 2012) proposed an account in which two DP projections are motivated by the need of an AP to c-command a lower D position in order to license its weak inflection, and also by the need of the same AP to be c-commanded by a higher D in order to interpret its own definiteness feature. The AP is assumed to adjoin at a DP level and the resulting structure is shown in Figure 3.3. Then, a syntactic operation (i.e. Merge) is observed on the two D heads motivated by interpretation requirements of the semantic component of the grammar. Additional operations at a morphological level will spell out both copies of D, both as a syntactic D and as the definite suffix on the N.
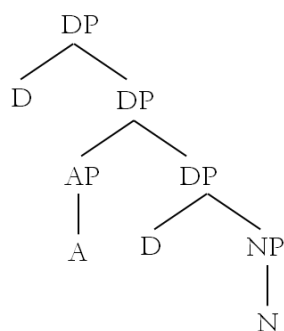
Figure 3.3. Structure proposed by Schoorlemmer

Although Schoorlemmer (2009, 2012) successfully avoided the undesired possibility of N-to-N or A-to-N head movements that is present in the above-mentioned accounts, it is not readily clear how it could reconcile L1 acquisition data (Sleeman, 2012), not to mention the appropriate structure of a grammatical string of prenominal As, including their definite marking sensitivity to agreement and interpretation for the entire string. Also, he explicitly leaves the optionality of the definite suffix with restrictive relative clauses for further research.

3.1.1.2   Phrasal movement

The blocking of phrasal movement by prenominal adjectives has also been used as a possible account for Swedish double definiteness in Julien (2002, 2003, 2005). The following structure in Figure 3.4 is the one assumed in Julien (2002) but it is analogous to Julien (2003, 2005).

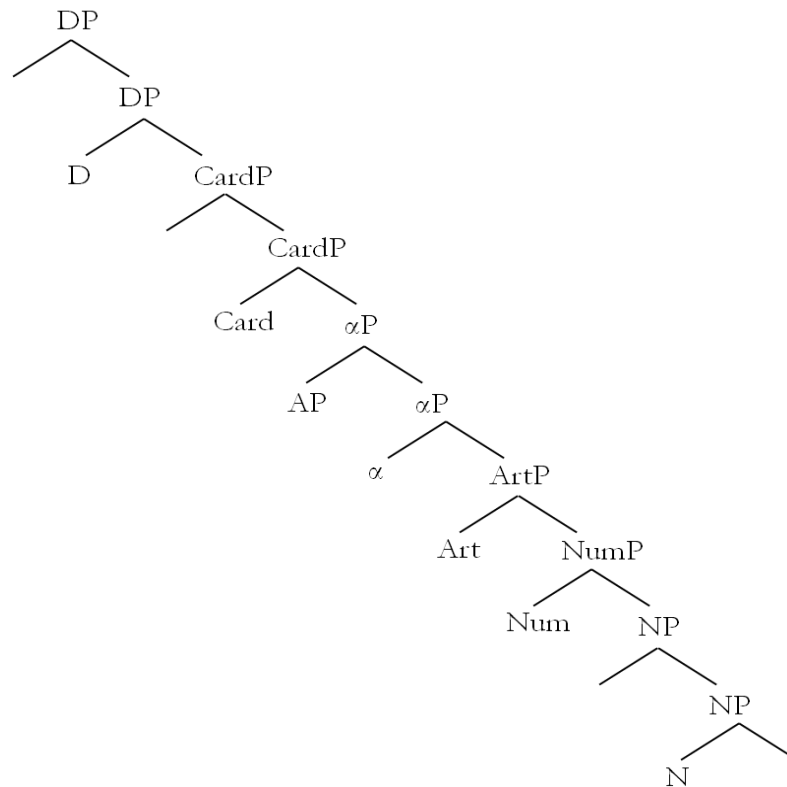Figure 3.4

An important assumption of this account is that the AP sits in a specifier (Spec) position of a functional projection termed αP. Both functional projections CardP and αP occur only if an AP or a Quantifier are present within the DP. The N moves first to Num to attach its Number and then to Art to attach the definite suffix. The resulting complex ArtP, also called nP in Julien (2003, 2005), is not able to undergo a Move syntactic operation to a Spec DP position because the presence of AP interferes with the Agree syntactic operation, which in turn is a prerequisite before Move can apply; therefore, the movement is blocked. Then, AP cannot move to Spec DP either because the account also assumes that Spec DP can only receive a phrase of nominal category, and AP is not.

Julien's phrasal movement account makes possible to avoid the limitations of a head movement account. To this respect, Schoorlemmer (2009) pointed out that prenominal As do not satisfy all the definiteness and phi-features required by Agree and therefore the complex ArtP (or nP) will be the phrase satisfying Agree and not the higher AP. This would permit the ArtP movement to Spec DP, contrary to Julien's claims and to Swedish double definiteness linguistic data. Also, it is once again not evident how a string of prenominal As would be structurally accounted for, although is it true that the presence of at least one AP would be sufficient for triggering double definiteness. Finally, head movement of the N that occurs lower in the tree is based on the traditional idea of a functional projection (ArtP or nP in this case) headed by a definiteness morpheme, and this is contrary, again, to what Swedish L1 acquisition data suggest, as in Sleeman (2012).

3.1.2 Lexicalist approaches

From a lexicalist perspective, word formation rules are theoretically prominent; however, the choice of a lexicalist framework to account for Swedish data has to be supported by relevant evidence. I believe this evidence is found in Swedish L1 acquisition literature as briefly mentioned in the previous section 3.1.1, assuming that a theory of grammar should be compatible with cognitive load processes related to language processing. In essence, Sleeman (2012) cited and described the Maturation Hypothesis, also defended by e.g. Radford (1990a, 1990b), which states that lexical categories are acquired before functional ones by young children. Sleeman then proceeded to argue for the suffixal status of the nominal definiteness marker in Swedish (and in Romanian) by discussing research in which the acquisition of this marker happens earlier than the obligatory syntactic determiner in double definiteness expressions. Taking the above into consideration, then the following lexicalist approaches in sections 3.1.2.1 and 3.1.2.2 seem to be better justified than a more dominant role of syntax as the regulator of feature distribution of double definiteness in Swedish, and perhaps in other related languages.

3.1.2.1 Poser-blocking Swedish

The first lexicalist approach that I discuss here was proposed by Hankamer and Mikkelsen (2002) and it is based on the idea of morphological blocking (see Poser, 1992; and Sells, 2011, for a recent summary on the topic). They assume a change of lexical category N-to-D in Danish instantiated by a lexical formation *Rule D* that occurs pre-syntactically and adds *–en* to a N. After analysing some Danish data, they propose the former rule to be optional in Swedish, thus permitting an N to be a head that projects an NP. In other words, despite having a morphological definiteness suffix, the head N would not necessarily become a D in Swedish. Then, the definite NP is taken as a complement of D. A structure of this kind would also allow traditional insertion of AP adjuncts without any inconvenience. However, when APs are not present, this optionality predicts the double definite example in (6). Since the hypothetical (6) would have the same meaning as the grammatical example in (5), Hankamer and Mikkelsen (2002) have applied the notion of Poser-blocking (Poser, 1992) in which 'lexical expressions […] block equivalent phrasal expressions'. According to them, this can explain why the morphologically-suffixed N in (5) wins over the ungrammatical semantically-equivalent syntactic expression in (6) or the impossible (7). Finally, (8) is grammatical with a demonstrative reading which is compatible with a Poser-blocking account, i.e., the NP is not blocked due to its different meaning.

    (5) bil-en
       car-DEF
       'the car'

(6) *den   bil-en
    the   car-DEF
    'the car'

(7) *den   bil
    the   car

(8) den   bil-en
    the   car-DEF
    'that car'

This lexicalist option seems more compatible with L1 acquisition data for Swedish in Sleeman (2012) than head or phrasal movement accounts. Positing a morpholexical Rule D that occurs before syntactic rules matches the L1 acquisition sequence observed in Swedish, which is also compatible with the assumption of a Maturation Hypothesis. Since APs are assumed to be traditional adjuncts, a string of prenominal adjectives with their own modifiers can easily be accounted for structurally, although the authors have not explained the obligatoriness of the definiteness suffix –*a* on As.

Despite these advantages, Hankamer and Mikkelsen's (2002, 2005) account heavily relies on a seemingly descriptive ad-hoc Rule D which changes its scope of application according to the language being studied, thus resulting in a divergent data interpretation with no clear empirical justification. This is especially true considering that D is a functional category that normally does not bear the content information that in this analysis would be inherited from the N. Schoorlemmer (2009) also criticised this and claimed that one of the morphological operations that he uses is preferred over Hankamer and Mikkelsen's (2002, 2005) since it explains both premodified or unmodified DP structures with only one theoretical device; however, I have pointed out that the post-syntactic nature of Schoorlemmer's (2009) solution suggests an incompatibility with L1 acquisition empirical data. Finally, Hankamer and Mikkelsen's (2002) explanation for the behaviour of Swedish restrictive and non-restrictive relative clauses contains some gaps. Under the assumption that D can take only a definite NP, the grammaticality of the example (9) below remains a mystery.

(9) den bil   som   vi   såg
     the car   that   we   saw
     'that car that we saw'

(10) den bil-en   som   vi   såg
     the car-DEF   that   we   saw
     'that car that we saw'

A solution to this mystery has been provided in Hankamer and Mikkelsen (2005) based on positing a tree structure in which *den* and *bil* are not sisters, hence not able to undergo Poser-blocking. In order for this solution to be plausible, they needed to depart from a lexicalist framework by assuming a DP-raising movement operation and, crucially, by allowing syntactic rules to have access to the nominal suffix –*en*, very much in the spirit of the MP analyses discussed in section 3.1.1. Sparing the details, while in principle their solution might be satisfactory, my analysis will account for data on relative clauses using less complex variations of c-structures and remaining faithful to a lexicalist framework perhaps more compatible with Poser-blocking.

3.1.2.2   An HPSG solution

An extensive study of the distribution of features in Swedish NPs has been put forth by Börjars (1998a). After discussing several headedness criteria for NP elements, she assumed that there is a lack of conclusive evidence for choosing either an NP or a DP analysis. Then, she proposed an NP analysis (slightly favoured over a DP one) applying an HPSG architecture (Pollard & Sag, 1994). This framework was chosen due to the need of bidirectional selectional constraints imposed by different elements of an NP without necessarily assuming a head. I will not describe in detail all HSPG formalisms used by Börjars (1998a) for reasons of relevancy and space; however, I will summarise the conceptual relationships she drew between D and N in presence of adjectival prenominal modifiers.

In her NP analysis, an adjectival modifier A selects an N that, in turn, must have a prenominal D. Some nouns such as *mus* would be specified in the lexicon as occurring necessarily with a D in order to yield the grammatical (11)[12]. Analogous to *bilen* ('the car'), other Ns such as *musen* ('the mouse') would be specified in the lexicon as requiring a D only optionally, since they can also stand alone as grammatical NPs by virtue of their proposed [DEF +] feature, as in (12). Therefore, when an A selects an N that requires an obligatory prenominal D, this will force a type of N such as *musen* to behave as *mus*, hence requiring a D obligatorily, as in (13). However, when A is not present, *musen* does not require a mandatory prenominal D to be grammatical due to its optional specifications, as in (12).

(11)   denna   mus
       this   mouse
       'this mouse'

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[12] Although Börjars (1998a) have relied on data including the demonstrative *denna* to draw some conclusions, she have also noted that *denna musen* is also grammatical in other Swedish dialects with a possible preference for *den här* ('this') in standard Swedish (Börjars, 1998a; p. 261). Interestingly, Holmes and Hinchliffe (2008: p. 87) have noted that *denna* is 'generally reserved for written Swedish and require no end article on the noun'. Considering the above, I will not regard these particular data as crucial for my work, although my LFG analysis in section 3.2 should be flexible enough to lexically accommodate *denna* cases. In fact, some Swedish words, e.g., *samma* ('the same'), occur in constructions such as *samma mus* ('the same mouse') that suggest another word class which do not trigger agreement on the N. The word *denna* could be analysed as part of such class, thus containing a different lexical specification.

(12) mus-en
mouse-DEF
'the mouse'

(13) den   hungriga   mus-en
     the   hungry   mouse-DEF
     'the hungry mouse'

Although the above summary is an obvious oversimplification of Börjars's (1998a) analysis, some of her assumptions are applicable to my LFG analysis in section 3.2 and they are worth spelling out. First, the choice of a lexicalist constrained-based framework such as HPSG is based on her convincing tests and conclusions about the need of a clear distinction between morphological and syntactic rules, as already mentioned in section 2.3.2.3. This is highly compatible with lexicalist LFG principles. Secondly, definiteness features on any lexical category such as D, N or A are all assumed to have three possible values, namely, [DEF +], [DEF −] and [DEF u] in Börjars's (1998a) terms. The [DEF u] feature value stands for an underspecification that allows a compatible feature unification with any of the other two values: [DEF +] or [DEF −]. Although I will not use [DEF u] explicitly in my analysis, it can be considered analogous to a lack of overt specification of a feature value in the lexical entries that I will propose in (25), in section 3.2.2. Despite the above, I differ in my choice of a DP analysis (over an NP one) which has the required theoretical compatibility with my assumptions on functional features contributed by lexical information.

Finally, one important issue that was not covered by Börjars (1998a) was the complexity introduced by the restrictive and non-restrictive relative clauses. Nevertheless, the reader has been directed to a Categorial Grammar account in Payne and Börjars (1994), which I will not discuss here for reasons of space. Therefore, in order to contribute to the study of relative clauses, I will also apply my proposed LFG analysis to basic data concerning relative clauses in section 3.2.4.

3.2 Proposed LFG analysis

In this section, I will present the details of my LFG analysis of Swedish double definiteness. The basic data for double definiteness relevant to this work can be summarised by the examples (14), (15) and (16); corresponding to: a) the obligatoriness of D when a prenominal A is present; b) the demonstrative reading of a D+N expression without prenominal As; and, finally, c) demonstrative expressions including, arguably, lexically complex Ds.

(14) den   röda   bil-en
     the   red   car-DEF
     'the red car'

(15) den   bil-en
     the   car-DEF
     'that car'

(16) den här / den där   bil-en
     the here / the there   car-DEF
     'this /that car'

In addition, I will also aim to explain several distributions of definiteness features that do not necessarily instantiate double definiteness but are closely related to it, i.e., a) the ability of single definite Ns to function as full referential NPs without prenominal modifiers in (17); b) the nominal interaction with relative clauses resulting in a puzzling optionality of the nominal definite suffix –*en* and yielding the equivalent expressions in (18) or in (19); and c) a selection of representative Danish data, a language in which double definiteness is ungrammatical, as exemplified in (20).

(17) bil-en
     car-DEF
     'the car'

(18)
     a. den   röda   bil-en   som vi såg
         the   red   car-DEF   that we saw
         'the red car that we saw'

     b. den   röda   bil   som vi såg
         the   red   car   that we saw
         'the red car that we saw'

(19)
     a. den   bil-en   som   vi   såg
         the   car-DEF   that   we   saw
         'that car that we saw'

     b. den   bil   som   vi   såg
         the   car   that   we   saw
         'that car that we saw'

(20)
     a. *gamle hest-en
         old   horse-DEF

b. *den   gamle   hest-en
    the   old   horse-DEF

c. den   gamle   hest
   the   old   horse
   'the old horse'

First, I will briefly recall the crucial theoretical points concerning feature distribution and their relevance to the grammaticality of noun phrases within an LFG theoretical framework. Second, I will propose appropriate lexical entries, phrase structure rules, and the c- and f-structures that are necessary for explaining the prototypical double definiteness example in (14). Third, I will proceed to apply the proposed analysis to demonstrative constructions, relative clauses and basic Danish data.

3.2.1 Functional and agreement markers

In Chapter 2, I have discussed how definiteness is expressed by different languages concluding that its overt morphosyntactic markers can either have an *inherent* contribution, thus being able to instantiate a [DEF +] value at the level of f-structure, or can be taken as *contextual* as part of an agreement phenomenon. I have suggested that D could be the only definiteness element that has inherent properties, while As and Ns simply agree. The *inherent* versus *contextual* classification in Kibort's (2008) terms, can be correlated to the *functional* versus *agreement* ideas in the more recent Börjars and Payne (2013), which included suggestions that are helpful to translate the theoretical points discussed in Chapter 2 into LFG formalisms. According to Börjars and Payne (2013), one of the notions of agreement is that a phrasal NP category that has a functional feature (by virtue of a functional marker on at least one of its syntactic elements) forces an agreement marking on other syntactic elements within the phrase, which do not contribute inherently to the NP phrasal feature. For instance, an NP can be a functionally-definite phrase by virtue of a [DEF +] feature value that is present on its f-structure. This phrasal [DEF +] value would result from the percolation of either a value on a free standing syntactic D or on a morphological marker present on any of its other lexical items. Then, all or some of the remaining items that do not contribute functionally to the [DEF +] phrasal feature would be forced to instantiate a definite agreement marker according to the lexical requirements of the language. This can be easily modelled in LFG by using constraining equations annotated on the appropriate lexical entries of the language under study[13].

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[13] Danish differs from Swedish in that it seems to force agreement markers only on As while Swedish requires that both As and Ns bear agreement markers, at least in the most representative double definite examples. Despite this cross-linguistic variation, the idea of a [DEF] feature originating in only one lexical item and then spreading by agreement is not incompatible with Danish behaviour. In fact, Danish is an example of how grammatical features that are morphosyntactic in one language could perhaps be only morphosemantic in another, according to the *Russian doll* model I proposed in section 2.1.

Let us take the set of following Swedish examples (21), (22), (23) and (24).

(21) bil-en
      car-DEF
      'the car'

(22)

    a. *röd-a   bil-en
        red-DEF   car-DEF

    b. *röd-a   bil
        red-DEF   car

(23)

    a. röd-a
        red-DEF
        *'the red one' (it only means 'red' which is not an NP)

    b. den   röd-a
        the   red-DEF
        'the red one'

(24) den   röd-a   bil-en
      the   red-DEF   car-DEF
      'the red car'

On one hand, these examples suggest that the definite suffix –*en* on the N is capable of inducing a functional [DEF +] feature on the NP, thus permitting the grammatical definite NP in (21). On the other hand, the definite suffix on the A cannot induce a [DEF +] on the NP on its own in (23) and, curiously, not even in cases such as (22) when it is accompanied by the same N that is grammatical when it stands alone. Therefore, it seems that the true functional or inherent [DEF +] feature value comes from the presence of the syntactic D and not from the morphological marker on the N. However, that would mean that the nominal –*en* is necessarily an agreement marker, thus leaving the grammatical (21) without an overt functionally-definite controller for this agreement effect. In order to argue for D to be the sole functional contributor of [DEF +], then the grammaticality of (21) has to be accounted for by other means. I will explain this oddity by resourcing to Lexical Sharing (Wescoat, 2002, 2007, 2009) in the context of the following section 3.2.2.

3.2.2 Obligatoriness of D with prenominal As

As a preliminary step, I propose the following set of lexical entries in (25). They include the necessary feature specifications and constraints that will be reflected in the analyses presented in the rest of this work.

(25)

    a. bilen: N $(\uparrow \text{PRED}) = $ 'car'
                               $(\uparrow \text{DEF}) =_c +$

    b. röda: A $(\uparrow \text{PRED}) = $ 'red'
                               $((\text{ADJ} \in \uparrow) \text{DEF}) =_c +$

    c. den$_1$:   D $(\uparrow \text{DEF}) = +$

    d. den$_2$:   D $(\uparrow \text{DEF}) = +$
                               $(\uparrow \text{DEIXIS}) = \text{DIST}$

    e. den-där: D $(\uparrow \text{DEF}) = +$
                               $(\uparrow \text{DEIXIS}) = \text{DIST}$

    f. den-här: D $(\uparrow \text{DEF}) = +$
                               $(\uparrow \text{DEIXIS}) = \text{PROX}$

    g. där: ADV $(\uparrow \text{PRED}) = $ 'there'
                                 $(\uparrow \text{DEIXIS}) = \text{DIST}$

    h. här: ADV $(\uparrow \text{PRED}) = $ 'there'
                                 $(\uparrow \text{DEIXIS}) = \text{PROX}$

    i. bil$_1$:   N $(\uparrow \text{PRED}) = $ 'car'
                                 $(\uparrow \text{DEF}) = -$

    j. bil$_2$:   N $(\uparrow \text{PRED}) = $ 'car⟨COMP⟩'

In addition, the following phrase structure rules in (26) will be necessary for building well-formed c-structures[14].

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[14] The proposed phrase structure rules in (26) are compatible with the c-structure in the DP analysis proposed by Börjars and Harries (2008); however, their idea that the nominal suffix *–en* is inherent to the N, i.e., equally contributing a [DEF +] feature value together with D, is different from my suggestion of its agreement nature.

(26)

a.   DP   →   D   NP
                             $\uparrow = \downarrow$ $\uparrow = \downarrow$

b.   NP   →   AP*   NP
                        $(\uparrow \text{ADJ} \in) = \downarrow$ $\uparrow = \downarrow$

c.   NP   →   N
                             $\uparrow = \downarrow$

d.   AP   →   A
                             $\uparrow = \downarrow$

I am assuming a DP analysis[15] as initially proposed by Abney (1987) in which a functional category D is the head and sister of an NP that, in turn, dominates its own nominal head. As pointed out by Bresnan (2001) and Dalrymple (2001), when present, AP constituents are permitted to adjoin to a maximal projection NP level recursively differing from the more traditional *Chomsky-adjunction*. This assumption will allow as many APs as required (including their potential adverbial modifiers) as adjuncts to a non-projecting NP that is theoretically more autonomous than an N' level. This type of what I would like to call *LFG-adjunction* provides a structural differentiation of adjoined constituents, which could prove to be useful to explain some puzzling behaviours of relative clauses and other phenomena. In addition, in LFG, all constituents are optional unless required by f-structure or other constraints, thus parentheses are not written in (26). In the lexical entry for *röda* in (25b), I have included a crucial constraining equation following the formalisation found in Dalrymple (2001, p. 144) basically meaning that the f-structure within which the AP has an ADJ function must also include a [DEF +] feature value. However, this constraining equation does not create a [DEF +] value itself since it is not a defining equation. This is also consistent with the agreement nature of the −*a* suffix on the A. Therefore, another linguistic element in the DP must instantiate that feature value. As pointed out by Börjars and Payne (2013), this type of constrain will ensure that any AP that is inserted into the structure will have to agree in definiteness, otherwise it will be ruled out rendering an ungrammatical structure, e.g., when As are inserted in their non-definite forms (i.e., indefinite or predicative forms). Also, the lexical entry that I proposed for *bilen* in (25a)

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[15]As I have been doing until now, I will still use the generic term 'noun phrase' or even 'NP' to refer to the nominal domain in focus, despite its inconsistency with my adopted DP analysis. The reasons for this are several. First, since not all constructions include syntactic Ds, the term 'noun phrase' is more compatible with intuitive notions across the literature. Second, I will not assume that Ds contribute to the f-structure level with a PRED value. Finally, since 'DP' is used throughout this work as a purely syntactic term related only to c-structures, I consider that 'noun phrase' remains clearer as a straightforward descriptive term.

includes another constraining equation requiring a [DEF +] value within the f-structure of the noun phrase. Considering my proposed lexical entries, it follows that the only remaining item that could be the functional contributor of a [DEF +] value is the syntactic D, and never the A or the N.

Using the previous the lexical entries in (25) and the phrase structure rules in (26), I present the following annotated c-structure in Figure 3.5 for (27), which is one of the most representative expressions of Swedish double definiteness, repeated from (14) for convenience. Although the example in (28) serves as an illustration of the grammatical recursivity of APs, I will not provide its annotated c-structure due to its straightforward similarity with the already analysed (27). However, it is worth noting that a potential string of prenominal adjectives will all mandatorily receive their agreement markers of definiteness by virtue of their respective constraining equations.

(27) den   röda   bil-en
     the   red   car-DEF
     'the red car'

(28) den   stora   röda   bil-en
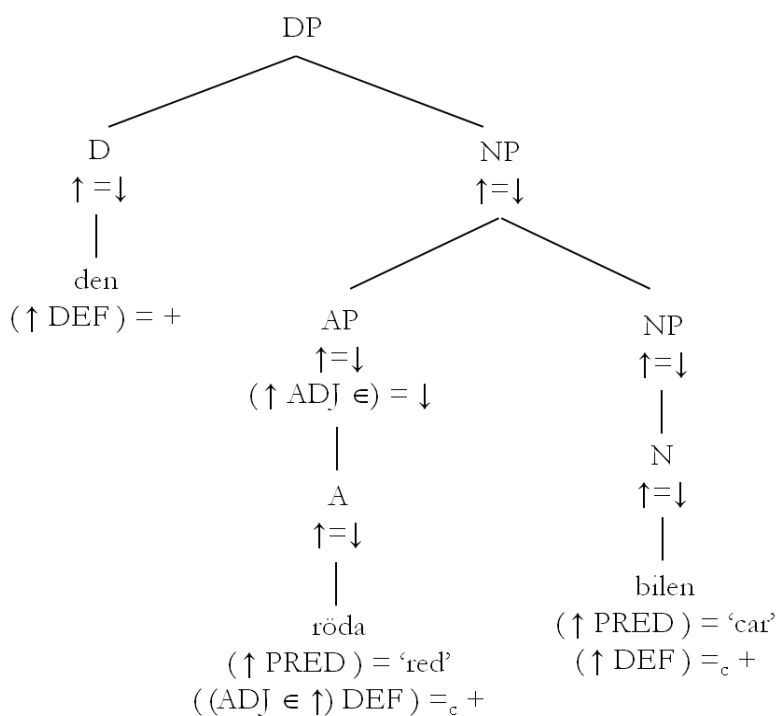   the   big   red   car-DEF
     'the big red car'

Figure 3.5

As a direct consequence of the positional restrictions depicted in the above c-structure, the following data in (29) are filtered out correctly because definite APs can only occur in prenominal position while Ds can only attach before APs.

(29)

    a. *bil-en   röda
        car-DEF   red

    b. *den bil-en   röda
        the   car-DEF   red

    c. *bil-en   den   röda
        car-DEF   the   red

    d. *den stora bil-en   röda
        the   big   car-DEF   red

The following f-structure in Figure 3.6 can now be mapped from the annotated c-structure in Figure 3.5. According to this f-structure, the D is only contributing its [DEF +] feature and it does not provide a PRED value, which seems to be acceptable for SPEC grammatical functions in LFG, as suggested by Asudeh and Toivonen (2009). This is an important assumption in order to satisfy the proposed constraining equations stipulated for As such as *röda*. More importantly, it also explains why the NP in a complement position with respect to D is not assigned a governable grammatical function by a PRED.

$$
\begin{bmatrix}
\text{PRED} & \text{'car'} \\
\text{DEF} & + \\
\text{ADJ} & \left\{ \begin{bmatrix} \text{PRED} & \text{'red'} \end{bmatrix} \right\}
\end{bmatrix}
$$

Figure 3.6

We are now in a position to understand why (30) is filtered out by means of f-structure constraints, which will result in the obligatoriness of the prenominal D when an AP is present.

(30) *röda   bil-en
       red   car-DEF

When APs are not present, as in (21), the corresponding constraining equations otherwise contributed by the APs do not have to be satisfied after a minimal f-structure is

generated. However, I have already mentioned that the lexical entry of *bilen* in (25a) provides a constraining equation which requires a [DEF +] feature to be available within its f-structure without instantiating a [DEF +] value itself. At first sight, this is odd because we have seen that *bilen* in (21) is a grammatical definite noun phrase on its own; therefore, the former analysis predicts it to be ungrammatical unless it is accompanied by a D. In order to explain this, let us first analyse the following example in (31), which should be grammatical by virtue of the phrase structure rules in (26) and because it certainly satisfies the constraining equation requirement imposed by *bilen*.

(31) den   bil-en
     the   car-DEF
     *'the car' ('that car')

Interestingly, this noun phrase is grammatical only when the inserted lexical entry from (25) is the demonstrative *den₂* but not *den₁*. In other words, this expression is interpreted with a different semantic content (i.e., demonstrative definiteness) than the one expected to be grammatical (i.e., generic definiteness). Therefore, two questions seem to arise. Why is *den₁* disallowed in this structure? And most importantly, why is *bilen* in (21) still grammatical with the definite generic reading of 'the car'?

To answer the first question I propose a mechanism of Poser-blocking along the lines of the analysis put forth by Hankamer and Mikkelsen (2002, 2005) discussed in section 3.1.2.1. Since there is a lexical item *bilen* that is morphologically encoding the same meaning as the syntactic phrase *den₁ bilen*, then the morphology wins and the ungrammatical phrase is blocked. However, in order for this to be possible, the second question has to be answered, since *bilen* has not been proposed to be a contributor of a defined [DEF +] feature value but only a contributor of a constraining equation. Contrary to fact, this would lead to ungrammaticality of (21) based on f-structure constraints since there is no D to generate a [DEF +] feature value to satisfy the constraints. The answer that I propose is that *bilen* undergoes a process of Lexical Sharing (Wescoat, 2002, 2007, 2009).

Let us see the annotated c-structure and its corresponding f-structure in Figure 3.7 for the ungrammatical *den₁ bilen* ('the car'). According to Wescoat's Lexical Sharing hypothesis, it is possible for one lexical item to be mapped onto two syntactic nodes in a c-structure tree without violating its well-formedness rules and still maintaining compatibility with an LFG framework. I will therefore depict the basic assumptions of Lexical Sharing while applying them to the c-structure in Figure 3.7 [16].

---

[16] It might seem odd that I am choosing a c-structure of an ungrammatical interpretation of a noun phrase in (31) to illustrate the principles of Lexical Sharing. However, it is a perfect and simple example for illustration purposes since it has more than one lexical item while simultaneously depicting how independent parallel structures can interact with other mechanisms of the grammar, e.g., Poser-blocking in this case.

DP

D
$\uparrow = \downarrow$

NP
$\uparrow = \downarrow$

den$_1$
$(\uparrow \text{DEF}) = +$

N
$\uparrow = \downarrow$

bilen
$(\uparrow \text{PRED}) = \text{'car'}$
$(\uparrow \text{DEF}) =_c +$

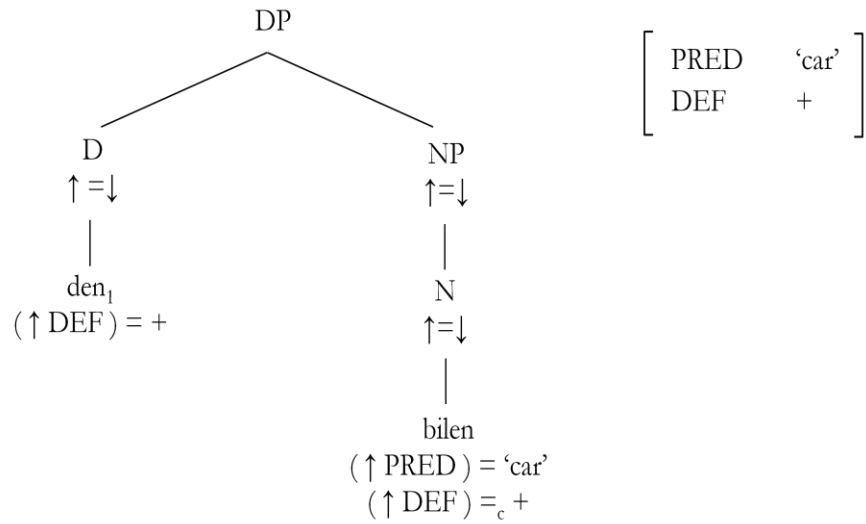$$\begin{bmatrix} \text{PRED} & \text{'car'} \\ \text{DEF} & + \end{bmatrix}$$

Figure 3.7

First, the terminal nodes (i.e., words) are severed from their mother nodes (i.e., syntactic categories). This creates what is termed as *l(exical)-structure*, which simply groups the newly available string of detached words. This group of words is formally labelled as W. Then, a correspondence between l- and c-structures is required by a lexical exponent mapping that associates c-structure terminals to l-structure using arrows, as shown in Figure 3.8.

DP

D
$\uparrow = \downarrow$

c-structure

NP
$\uparrow = \downarrow$

den$_1$
$(\uparrow \text{DEF}) = +$

N
$\uparrow = \downarrow$

bilen
$(\uparrow \text{PRED}) = \text{'car'}$
$(\uparrow \text{DEF}) =_c +$

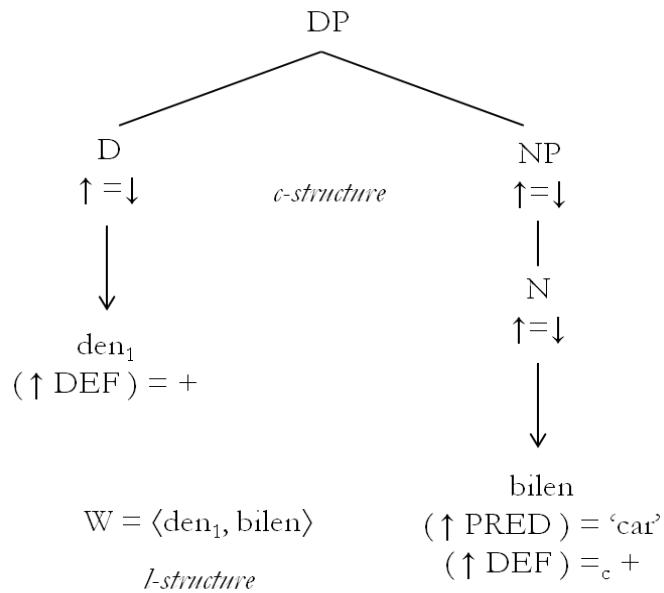W = $\langle$den$_1$, bilen$\rangle$

l-structure

Figure 3.8

The words in W would still have to retain their linear ordering that was formerly constrained by the now severed c-structure in order to preserve homomorphism between both l- and c-structures. This is achieved by an order preservation axiom that prevents arrows from crossing. One of the most important properties of Lexical Sharing is its ability to restrict the sharing or mapping of a lexical exponent only to adjacent terminal nodes in the c-structure, thus complying with the Lexical Integrity principle without affecting the above-mentioned homomorphism between structures.

The integration of Lexical Sharing to an LFG framework requires a formalism that allows functional information from lexical exponents to be mapped onto a c-structure, which in turn will be linked to a corresponding f-structure level. While regular annotated phrase structure rules are the traditional solution for LFG correspondence, the mapping rules used in Lexical Sharing are labelled as lexical-exponence rules, which have particular properties. The example in (32) illustrates the hypothetical lexical-exponence rules for the ungrammatical *den₁ bilen*. The $\Downarrow$ symbol means that the f-structure information of the terminal syntactic node annotated with that symbol is the same as the lexical exponent mapped onto that node.

(32)

    a. den_1 $\leftarrow$ D
                        $(\downarrow \text{DEF}) = +$
                        $\Downarrow = \downarrow$

    b.   bilen $\leftarrow$ N
                        $(\downarrow \text{PRED}) = \text{'car'}$
                        $(\downarrow \text{DEF}) =_c +$
                        $\Downarrow = \downarrow$

The above formalism can now be used as a tool to analyse the grammatical noun phrase *bilen* ('the car') in (21). The annotated lexical-exponence rule in (33) and the phrase structure rules in (26) will render the well-formed c-structure in Figure 3.9, while generating the f-structure in Figure 3.10 that is the same as the one in Figure 3.7 for *den₁ bilen* in (31).

(33)   bilen $\leftarrow$ D   N
                        $(\downarrow \text{DEF}) = +$ $(\downarrow \text{PRED}) = \text{'car'}$
                        $\Downarrow = \downarrow$ $(\downarrow \text{DEF}) =_c +$
                                        $\Downarrow = \downarrow$

c-structure

DP

D
$\uparrow = \downarrow$
$(\downarrow \text{DEF}) = +$
$\Downarrow = \downarrow$

NP
$\uparrow = \downarrow$

N
$\uparrow = \downarrow$
$(\downarrow \text{PRED}) = \text{'car'}$
$(\downarrow \text{DEF}) =_c +$
$\Downarrow = \downarrow$

bilen   W = ⟨bilen⟩

l-structure

Figure 3.9

$$\begin{bmatrix} \text{PRED} & \text{'car'} \\ \text{DEF} & + \end{bmatrix}$$
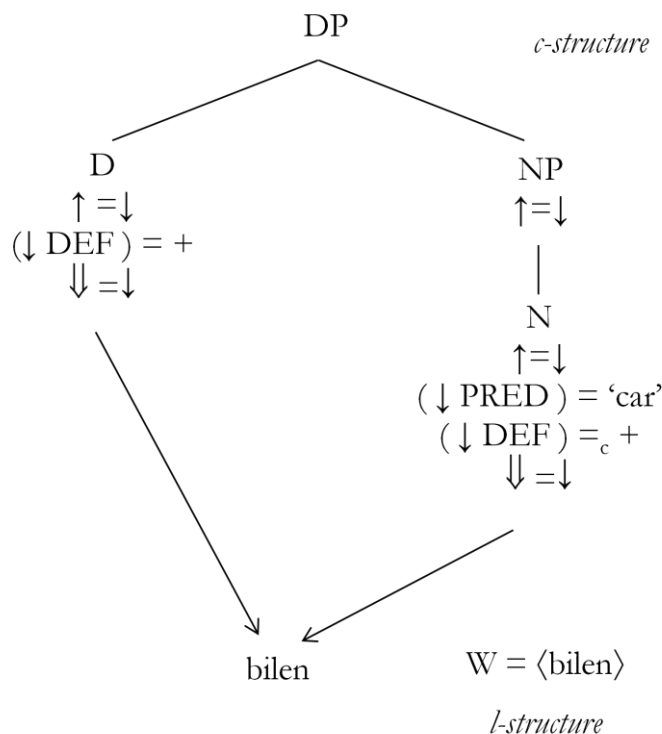
Figure 3.10

All in all, the above analysis shows how an ungrammatical Poser-blocked syntactic phrase such as *den₁ bilen* ('the car') is susceptible to undergo a process of Lexical Sharing, while still satisfying the functional and structural constrains imposed on the originally blocked syntactic phrase. This has interesting implications for any analysis of morphosyntactic grammatical features, since it allows a single lexical item to be the contributor of a functional (or inherent) feature value, such as [DEF +], even if the free-standing syntactic form of the original contributor of the feature value, e.g., a D, is not overtly expressed. This solves the puzzle of the ungrammatical example *röda bilen* first presented in the introduction as (4) and then repeated in (30). In other words, if a functional D is not present then it cannot contribute a [DEF +] feature value, thus resulting in ungrammaticality of the noun phrase. However, a single lexical item can be mapped onto both D and N positions at c-structure level motivated by a Poser-blocking mechanism by which a D+N phrase is blocked by that shared lexical item.

3.2.2.1 Adjectival adjunction and further research

As traditionally assumed, I have proposed that APs are prenominal adjuncts albeit adjoined to an NP maximal projection. However, if all APs are recursive adjuncts it is then unclear why in many languages (e.g. Spanish and English) some As are restricted to prenominal positions while others can still occur in adjoined pre- or post-nominal positions, indistinctively. This is compatible with analyses in which APs are closely associated with preceding Ds (e.g. Abney, 1987; Delsing, 1993), instead of forming a non-maximal N' type of constituent. This has inspired me to devise the alternative c-structure in Figure 3.11, which could capture these pre- and post-nominal adjectival distributions. However, my sole purpose with this alternative proposal is to encourage further research, since LFG theoretical assumptions for well-formedness and mapping of f-structures would not be easy to reconcile for such c-structure. Briefly, I suggest that some incompatibilities arise from the fact that in my main proposal in section 3.2.2, I am not assuming SPEC to be an LFG grammatical function and this allows me to consider the syntactic D as the contributor of a [DEF +] value to the f-structure (and not its PRED value). Formally, this is the only manner to satisfy the adjectival constraining equation $((ADJ \in \uparrow)DEF)=_c+$. If the alternative structure in Figure 3.11 is assumed, a SPEC function (or at least some kind of governable OBJ function) would be required for AP_1, as complement of D, thus making it difficult to satisfy the above-mentioned adjectival constraining equation for all types of APs simultaneously. This would result in difficulties for allowing the insertion in an AP_2 position of As bearing a definite *–a* suffix, required by Swedish facts. Despite these theoretical problems, the c-structure has the advantage of structurally capturing a split distribution of As and a clear association between D and certain kinds of As or other parts of speech observed in Swedish, such as cardinals or *adjectival determiners* in Börjars's (1998a; p. 206) terms.
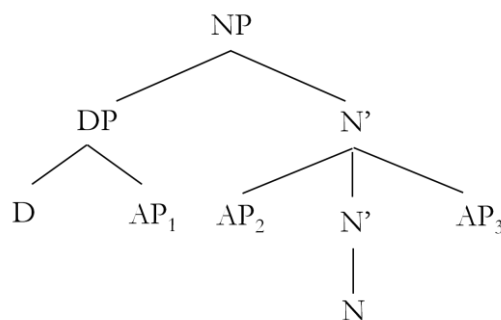

Figure 3.11

Also, in the literature there is an insightful account for this adjectival positioning puzzle that involves *small constructions* (Sadler & Arnold, 1994), which might also explain the split

syntactic distribution of As in a convincing manner. These authors proposed that prenominal strings of As and some ADVs can participate in those constructions as non-projecting syntactic categories that cannot take complements of their own, e.g., PPs. This is supported by the fact that only post-nominal As can normally take complements and also by the fact that some APs seem to act as complex lexical items. See Figure 3.12 below for an illustration of a possible analysis applied to a Swedish NP. Although I will not pursue a detailed analysis of Swedish double definiteness using Sadler and Arnold's proposal here, it could also be a topic for further research.
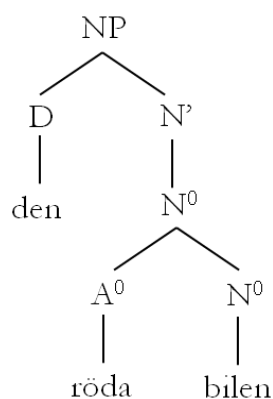
Figure 3.12

3.2.3 Demonstrative expressions

The analysis presented so far can also account for Swedish noun phrases that convey an exclusively demonstrative reading such as (34) and (35), while also filtering out (36).

(34) den här / den där   bil-en
       the here / the there   car-DEF
       'this / that car'

(35) den här / den där   röda   bil-en
       the here / the there   red   car-DEF
       'this /that car'

(36) *den röda   där / här   bil-en
        the   red   there / here   car-DEF

These examples contain the expressions *den här* ('this') and *den där* ('that') that have been traditionally analysed by several influential authors (e.g. Delsing, 1989, 1993; Santelmann, 1992) as prenominal attributive As. An alternative analysis has also been proposed in which

these elements are lexically complex Ds. I assume the latter analysis since there is conclusive linguistic evidence against the first position (refer to Börjars, 1998, p. 19). Suffice is to say that a lack of definiteness agreement suffixes on *här* and *där*, failed coordination tests, and ungrammaticality of (36) all constitute important syntactic evidence of this. There is also evidence of phonological reduction in support of the status of *den här* (and *den där*) as one single word. The example in (37), repeated from (31), shows *den* to have semantic equivalence with the distal demonstrative *den där* but not with the proximal *den här* in (34) suggesting a grammaticalised form originated by phonological reduction.

(37) den   bil-en
      the   car-DEF
      *'the car' ('that car')

After regarding *den här* and *den där* as lexically complex Ds, it follows that they behave as single lexical entries and they should be regarded as such in compliance with the Lexical Integrity hypothesis (Bresnan, 2001; Dalrymple, 2001). Therefore, the following analysis in Figure 3.13 and Figure 3.14 is in place for (35) [17].
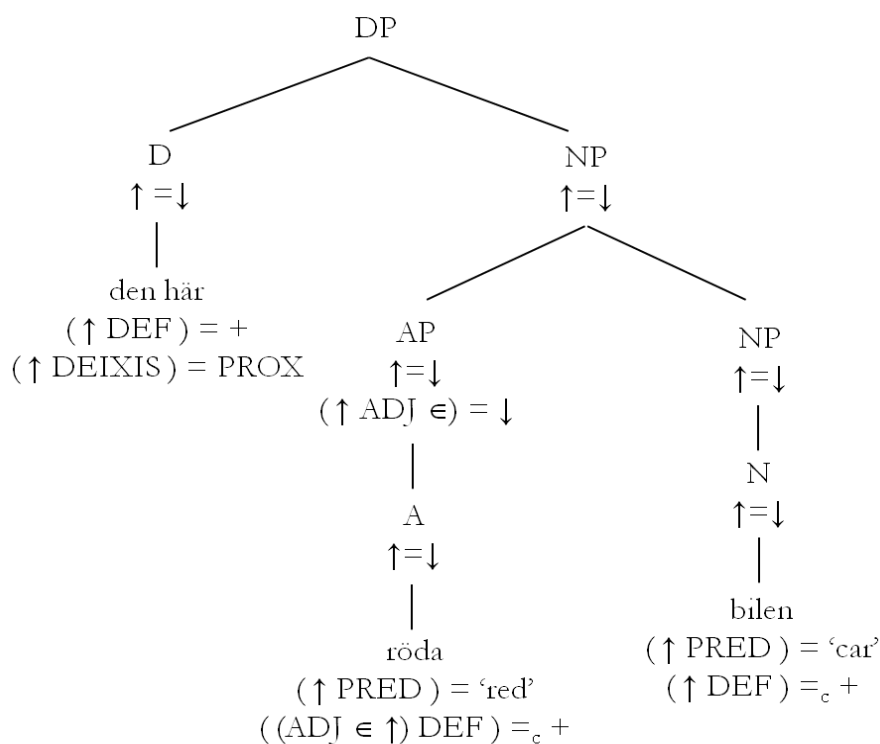

Figure 3.13

$$\begin{bmatrix} \text{PRED} & \text{'car'} \\ \text{DEF} & + \\ \text{DEIXIS} & \text{PROX} \\ \text{ADJ} & \left\{\begin{bmatrix} \text{PRED} & \text{'red'} \end{bmatrix}\right\} \end{bmatrix}$$

Figure 3.14

An additional fact is that the words *här* and *där* also exist separately as adverbs attested in the grammatical examples (38) and (39).

(38) den   bilen   där
      the   car-DEF   there
      'that car there'

(39) den   röda   bil-en   där
      the   red   car-DEF   there
      'the red car there'

Let us also recall their lexical entries from (25) repeated below in (40) for convenience.

(40)

    a. där: ADV   (↑ PRED) = 'there'
                      (↑ DEIXIS) = DIST

    b. här: ADV   (↑ PRED) = 'there'
                      (↑ DEIXIS) = PROX

In these cases, *här* and *där* can easily be accounted for as traditionally adjoined to an N' level. This is perfectly compatible with my proposed c-structure in which a simple addition of a phrase structure rule would permit ADVs to be adjoined to the right-hand side of the NP, as generally assumed. Finally, the ungrammaticality of (41) below is predicted only by virtue of f-structure clash between DEIXIS values contributed by *den₁* and *här* to the f-structure, respectively. This clash does not occur in (38) thus resulting in grammaticality.

(41) *den bil-en   här
      the   car-DEF   here
      'that car here'

3.2.4 Relative clauses

When Swedish double definiteness noun phrases are post-nominally modified by relative clauses, they show an interesting property: the nominal definite agreement suffix *–en* seems to be optional. After some formal expansion and considerations, my proposed analysis should explain this puzzling behaviour. An important first consideration is whether this syntactic property is sensitive to restrictive and non-restrictive interpretations of the modifying relative clauses. The following data will help to determine in which cases this seems to be true[18].

(42)

     a.   den   röda   bil-en   som vi såg
         the   red   car-DEF   that we saw
         'the red car that we saw'

     b.   den   röda   bil-en,   som vi såg
         the   red   car-DEF   which we saw
         'the red car, which we saw'

(43)

     a.   den   röda   bil   som vi såg
         the   red   car   that we saw
         'the red car that we saw'

     b.   *den   röda   bil,   som vi såg
         the   red   car-DEF   which we saw

The above examples suggest that when the suffix *–en* is absent, i.e., in Ns such as *bil*, the non-restrictive reading is ruled out. In contrast, when it is present, i.e., in Ns such as *bilen*, then an ambiguity arises between restrictive and non-restrictive interpretations.
The presented data are compatible with both lexical entries for *bil* proposed in (25) and repeated below in (44) for convenience.

(44)

     a. bil_1:   N   (↑ PRED) = 'car'
                            (↑ DEF) = −

     b. bil_2:   N   (↑ PRED) = 'car⟨COMP⟩'

---

[18] I use a comma to represent the noun phrases modified by relative clauses that have a non-restrictive interpretation. When there is no comma before the relative pronoun *som* ('that'), it means that the interpretation is restrictive.

In addition, the phrase structure rules in (45) are posited[19] together with the c- and f-structures in Figure 3.15 in order to explain the grammaticality contrast as observed in (43).

(45)

a.　DP　→　D　　　　　　NP
　　　　　　　$\uparrow=\downarrow$　　　$\uparrow=\downarrow$

b.　NP　→　AP*　　　　　NP
　　　　　　($\uparrow$ADJ $\in$) = $\downarrow$　$\uparrow=\downarrow$

c.　NP　→　N　　　　　　CP-r
　　　　　　$\uparrow=\downarrow$　　　$\uparrow=\downarrow$

d.　NP　→　NP　　　　　CP-nr
　　　　　　$\uparrow=\downarrow$　　　$\uparrow=\downarrow$

e.　AP　→　A
　　　　　　$\uparrow=\downarrow$
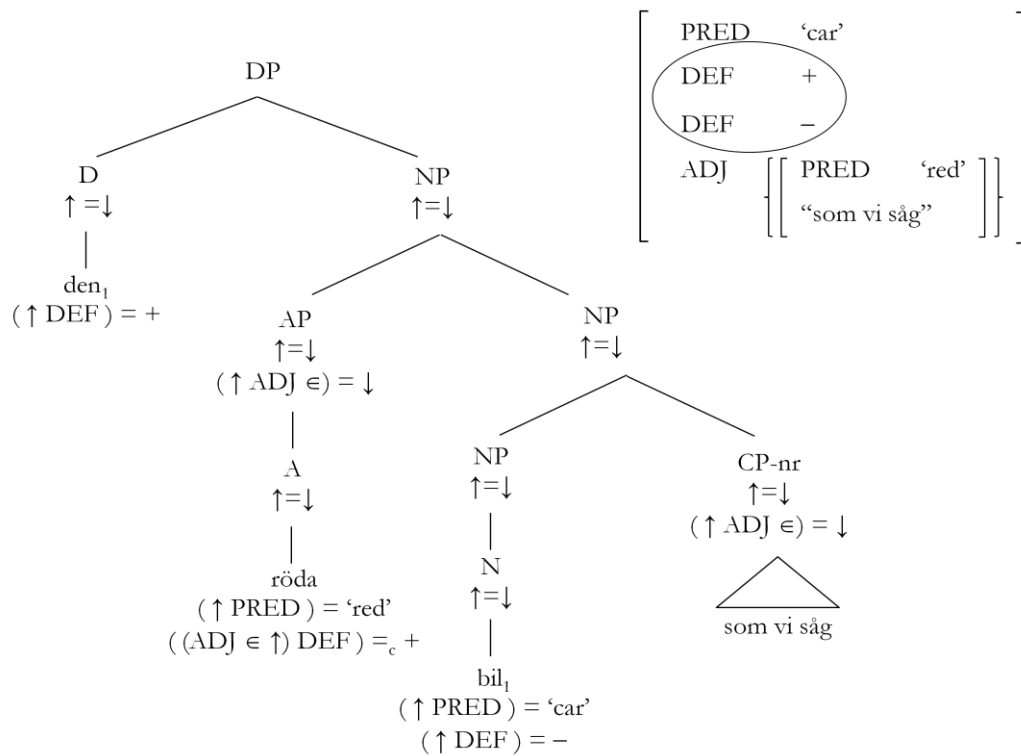
Figure 3.15

The above structures readily show a violation of the consistency requirement (Dalrymple, 2001, p. 39), which results in ungrammaticality by virtue of the attribute [DEF] requiring two incompatible values: [DEF +] is contributed by *den₁* while [DEF −] is contributed by *bil₁*. Then, the constraining equation associated with the adjective *röda* would not be able to be tested due to the contradicting [DEF] values which make impossible to generate a minimal well-formed f-structure in the first place. In contrast, if the lexical item *bil₂* is inserted in lieu of *bil₁*, the structure would need to have a mandatory COMP grammatical function associated to the CP *som vi såg*. Since there is no CP in that position, ungrammaticality of (43b) would therefore arise by virtue of a completeness requirement violation (Dalrymple, 2001, p. 35).

Turning our attention to the structures in Figure 3.16 below, both of them are well-formed, thus yielding a grammatical expression. Also, there is no inconsistency regarding [DEF] values because *bil₂* is unspecified for [DEF] and does not clash with [DEF +] contributed by D. Moreover, if *bil₂* was to be replaced by *bil₁*, then we would not only have an inconsistency of [DEF] values again, as in the previous f-structure in Figure 3.15, but there would also be a violation of the coherence principle (Dalrymple, 2001, p.37) since the governable function COMP would not be subcategorised by any PRED.
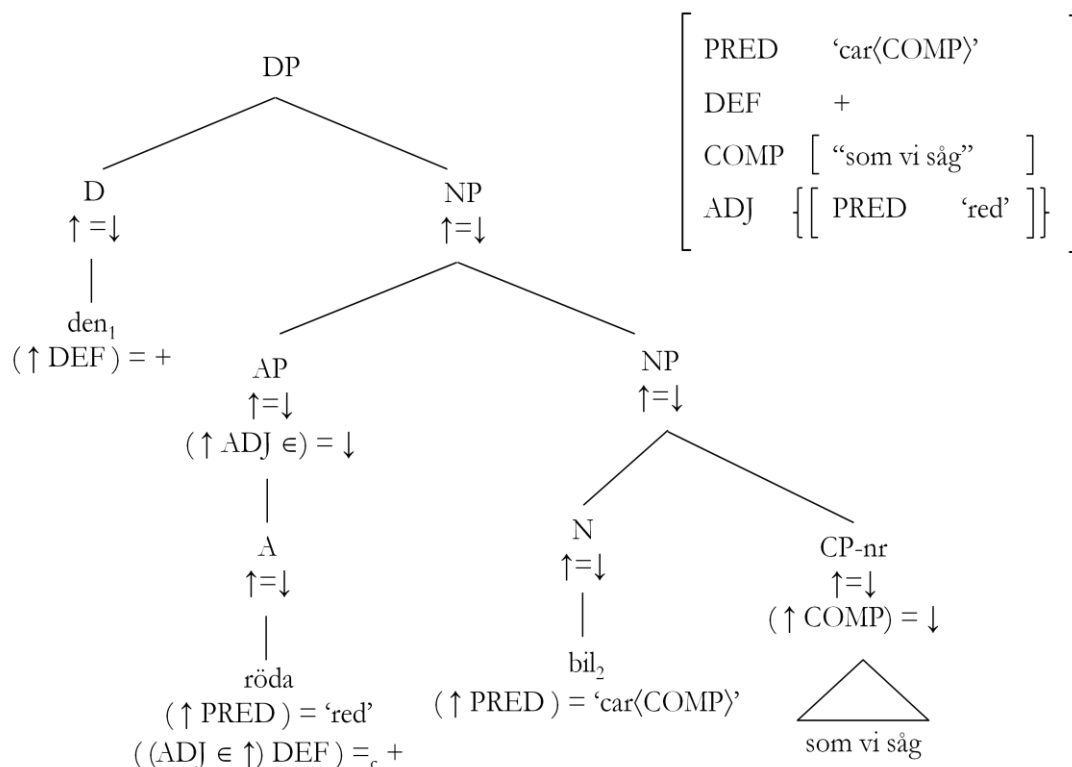

Figure 3.16

Considering the discussion so far, I propose that when a CP receives the ADJ function it will be interpreted as non-restrictive while if it receives the COMP function it will be interpreted as restrictive. It follows that a restrictive interpretation would only be possible when an N such as *bil₂* is inserted, which subcategorises for a mandatory COMP grammatical function, as discussed above. In contrast, a non-restrictive interpretation will not be possible with *bil₂* insertion, since the CP would have to be adjoined to NP, thus receiving the ADJ grammatical function and there would not be a COMP to satisfy the requirements of *bil₂*.

Another interesting set of data presented below in (46) and (47) can be accounted for by using the same arguments discussed above. The lack of a prenominal A results in a demonstrative reading based on the insertion of the lexical item *den₂* instead of *den₁*. However, the ungrammaticality in (47b) can be explained by its clear parallelism with the former analysis of the expressions in (43).

(46)

    a.   den   bil-en   som   vi   såg
        the   car-DEF   that   we   saw
        'that car that we saw'

    b.   den   bil-en,   som   vi   såg
        the   car-DEF   which we   saw
        'that car, which we saw'

(47)

    a.   den   bil   som   vi   såg
        the   car   that   we   saw
        'that car that we saw'

    b.   *den   bil,   som   vi   såg
        the   car   which we   saw

For reasons of scope, I will not discuss in detail the reason for the ambiguous restrictive and non-restrictive interpretations of the relative clauses in (42) and (46) where the presence of a N such as *bilen* seems to play a crucial role. However, it seems that some solutions can be briefly proposed for further research. First, a purely lexical one would be to propose an additional separate entry for *bilen* that would require a mandatory COMP to be present. Second, a *Chomsky-adjunction* to an N' syntactic node could be posited between the levels of NP and N. The CP-r would attach and receive an ADJ grammatical function structurally different to the ADJ received higher in the c-structure when adjoined to an NP maximal projection. The second option seems more promising since *bilen* does not seem to be morpholexically sensitive to the presence of a CP in the same way that *bil* is; therefore, a new lexical entry for *bilen* would not be readily justified.

3.2.5 Danish data

Contrary to Swedish definiteness feature distribution, in Danish it is not grammatical to have a noun phrase with a syntactic definite D co-occurring with an N that is morphologically marked for definiteness. Take the following examples (48a) and (48b). At first sight, they seem to be analogous to their Swedish counterparts if we assume similar information in Danish lexical entries. My DP analysis in section 3.2.2 would rule out *gamle hesten* in (48b) by virtue of lacking a functional [DEF] feature at f-structure due to the absence of absent a functional D. Next, the grammatical *hesten* in (48a) could be explained by a process of Lexical Sharing (Wescoat, 2002, 2007, 2009) in which *hesten* is mapped to two adjacent syntactic nodes D and N.

(48)

    a. hest-en   (Danish)
        horse-DEF
        'the horse'

    b. *gamle hest-en
        old   horse-DEF

    c. *den   gamle hest-en
        the   old   horse-DEF

    d. den   gamle hest
        the   old   horse
        'the old horse'

The main difference between Danish and Swedish is evidenced in examples (48c) and (48d). I have argued that both definite suffixes on A and N were definite agreement markers in Swedish. If the same type analysis is applied to Danish, we have to conclude that Danish Ns are not forced to agree with the definiteness of the overall noun phrase. In addition, if we assume that the main contributor of a [DEF] feature is the D for both languages, it then follows that variation in patterns of overt morphological markers are perfectly possible on lexical items that do not contribute functionally to the definiteness of the noun phrase. This assumption would provide an economic explanation for the reversion of grammaticality in (48c) and (48d) compared to their Swedish counterparts.

Since it has been assumed that agreement is fundamentally an f-structure phenomenon, then the relevant Danish lexical entries that I propose in (49) will need to reflect the variation with respect to Swedish by means of a modification in its lexical properties.

(49)

    a. hesten: D, N   (↑ PRED) = 'horse'   (Danish)

b. hest: N (↑ PRED) = 'horse'

c. den_1: D (↑ DEF) = +

d. den_2: D (↑ DEF) = +
(↑ DEIXIS) = DIST

e. gamle: A (↑ PRED) = 'old'
((ADJ ∈ ↑) DEF) =$_c$ +

Whereas in Swedish the entry for *bilen* requires that the noun phrase has a [DEF] feature contributor by means of a constraining equation, the Danish *hesten* does not seem to have that constrain. It follows that *hesten* could in principle co-occur with Ds such as *den₁* or *den₂* in the following expressions (50) or (51). However, since *hesten* has been argued to be involved in a process of Lexical Sharing, then examples (50) and (52) would be Poser-blocked and, therefore, ungrammatical.

(50) *den_1 hest-en
the   horse-DEF
'the horse'

(51) *den_2 hest-en   (Danish)
the   horse-DEF
'that horse'

(52) *den_1 hest
the   horse
'the horse'

(53) den_2 hest
the   horse
'that horse'

Now the demonstratives (51) and (53) have to be explained differently. In fact, why is Danish *den_2 hesten* ('that horse') in (51) ungrammatical when it seems it should be grammatical in the same way as the Swedish *den_2 bilen* ('that car') is?

The first solution that I propose for this cross-linguistic puzzle is fundamentally lexical. In Swedish, *den_2 bil_1* ('that car') is ungrammatical due to a clash between [DEF +] of *den_2* and [DEF −] of *bil_1*. In Danish, however, *hest* is underspecified for [DEF], so the analogous *den_2 hest* in (53) is grammatical. This means that (53) is now available to compete with *den_2 hesten* in (51) that is morphologically more complex, thus blocked.

A second solution could be that the Danish word *hesten* is a specialised lexical item only available as a result of Lexical Sharing, thus placing it under the terminal nodes D and N, whereas in Swedish the analogous form *bilen* is simply an N that can occur without having necessarily undergone a Lexical Sharing process with a D. The latter analysis would filter out both (50) and (51) since *hesten* would be occupying both N and D positions in the c-structure by virtue of being lexically shared and, therefore, not permitting a D to be instantiated resulting in ungrammaticality. In addition, the phrase in (52) would be Poser-blocked by the very same availability of *hesten*, as already explained. Finally, the phrase in

(53) is not Poser-blocked since (51) have been already filtered out by other means. Therefore, *den₂ hest* in (51) is grammatical.

When a prenominal A is present, *hesten* cannot be instantiated due to the adjacency condition imposed on nodes D and N by Lexical Sharing assumptions. This would explain the ungrammaticality of both *gamle hesten* in (48b) and *den gamle hesten* in (48c) since *hesten* cannot occupy both D and N positions in a c-structure that has an A in between those nodes.

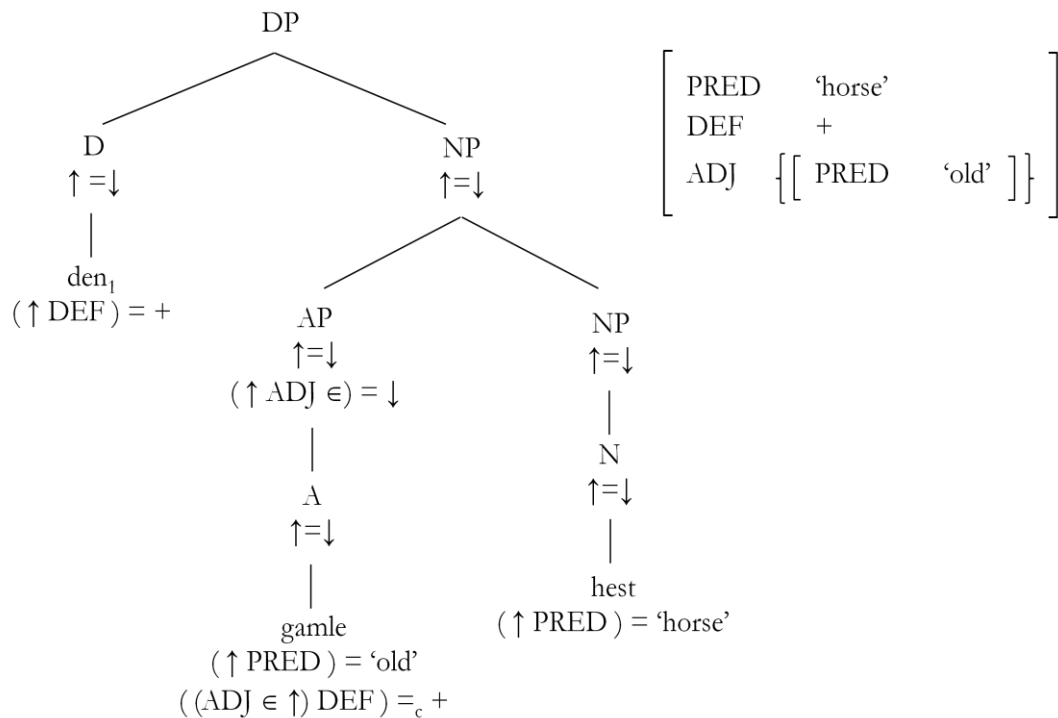Finally, (48d) is grammatical according to the c- and f- structures in Figure 3.17 below.

Figure 3.17

I hope I have shown that certain dimensions of variation across languages can be explained satisfactorily by analyses that involve slight modification of feature specifications of lexical entries as opposed to other post-syntactic morphological operations posited mainly by MP frameworks. More specifically, I have used the same phrase structure rules that were developed to account for Swedish data and have applied them to a selection of data from Danish which lacks double definiteness phenomena instantiated on Ns. This supports the idea that a lexicalist framework such as LFG might have both the flexibility and adequacy to explain cross-linguistic variations by virtue of using parallel and independent constraining structures.

4
Conclusions

In this work, I have discussed the nature of Swedish definiteness within noun phrases as a morphosyntactic grammatical feature, as opposed to morphosemantic or purely morphological one. Then, I have suggested that syntactic Ds could be analysed as the only inherent definiteness markers in Swedish instantiating contextual agreement both on As and on Ns in spite of the puzzling data in (4).

Then, a survey of preadjectival, adjectival and nominal Swedish definiteness markers was conducted together with an assessment of their status either as words, clitics or affixes. Results of these tests were summarised in Table 2.3, which show evidence of syntactic Ds, i.e., *den*, co-occurring with suffixes, i.e., *–a* on adjectives and *–en* on nouns. Also, L1 acquisition data from Swedish (and Romanian) in Sleeman (2012) seems to support empirically and independently the suffixal status for the nominal *–en* since its acquisition occurs earlier than the syntactic *den* observed in double definiteness expressions. Interestingly, these findings would argue against some post-syntactic operations posited in analyses based on traditional head or phrasal movement since I have argued that these movement-related analyses suggest that the attachment of *–en* to the N is more costly that its realisation as a syntactic D. Additionally, Börjars (1998a) provided some cross-linguistic evidence and references justifying her HSPG lexicalist approach. Based on the above, a lexicalist framework such as LFG seemed an adequate choice for an analysis of double definiteness phenomena due to its separation between morphological and syntactic rules in compliance with the Lexical Integrity principle (Bresnan, 2001).

In my LFG analysis, I have proposed a c-structure for Swedish noun phrases compatible with a DP analysis. The flexible LFG architecture allowed me to posit the adjunction of both APs and CPs to an NP maximal projection dominated by a DP, thus providing a structural differentiation from other potentially lower *Chomsky-adjuncts* to an N' level, which could explain the peculiar morphosyntactic behaviour of some relative clauses presented in section 3.2.4. Then, I applied the Lexical Sharing hypothesis (Wescoat, 2002, 2007, 2009) to provide a solution for the puzzling noun phrases without overt Ds; i.e., (21) and (30). Thanks to this solution, Ds were able to be analysed as inherently definite, thus possibly being the true controllers of syntactic agreement both on As and Ns, as previously suggested.

All in all, my LFG analysis accounts for all data presented in this work, notably the much discussed obligatoriness of a syntactic determiner D when a noun N is premodified

by an AP. Demonstrative constructions and selected data concerning relative clauses were also analysed satisfactorily. Moreover, the analysis of basic Danish data indicates promising flexibility for a cross-linguistic application of this approach. My proposal is also in line with Swedish L1 acquisition evidence by virtue of being a lexicalist framework.

As a concluding remark, I hope this work has contributed, albeit modestly, to the understanding of such an intriguing phenomenon as double definiteness present in some Scandinavian languages. More generally, I firmly believe that a comprehensive research of definiteness as a morpho-semantico-syntactic feature could reveal profound insights into the manner in which natural languages express grammatical features.

Bibliography

Abney, S. P. (1987). *The English noun phrase in its sentential aspect* (Doctoral dissertation). Massachusetts Institute of Technology, Cambridge, MA.

Alexiadou, A., & Wilder, C. (1998). Adjectival modification and multiple determiners. In A. Alexiadou & C. Wilder (Eds.), *Possessors, predicates and movement in the DP* (pp. 305-332). Amsterdam: John Benjamins B.V.

Alsina, A. (2010). The Catalan definite article as lexical sharing. *The proceedings of the LFG'10 conference* (pp. 5-25). Retrieved from http://csli-publications.stanford.edu/

Anderson, S. R. (2005). *Aspects of the Theory of Clitics*. USA: Oxford University Press.

Androutsopoulou, A. (1995). The licensing of adjectival modification. In J. Camacho, L. Choueiri & M. Watanabe (Eds.), *WCCFL 14: The Proceedings of the Fourteenth West Coast Conference on Formal Linguistics* (pp. 17-31). Stanford, CA: CSLI Publications.

Asudeh A. & Toivonen I. (2014). With lexical integrity. *Theoretical Linguistics*, *40*(1-2), 175-186.

Asudeh, A., & Toivonen, I. (2009). Lexical-functional grammar. In B. Heine & H. Narrog (Eds.), *The Oxford handbook of linguistic analysis* (pp. 425-458). Oxford: Oxford University Press.

Baerman, M., Brown, D., & Corbett, G. G. (2005). *The syntax-morphology interface: A study of syncretism*. New York, NY: Cambridge University Press.

Bittner, M. (2005). Future discourse in a tenseless language. *Journal of Semantics*, *22*(4), 339-387.

Borin, L., Forsberg, M., & Roxendal, J. (2012). Korp-the corpus infrastructure of Språkbanken. In *Proceedings of the Eighth International Conference on Language Resources and Evaluation (LREC'12)* (pp. 474-478). Istanbul: ELRA.

Börjars, K. (1994). Swedish double determination in a European typological perspective. *Nordic journal of linguistics*, *17*(02), 219-252.

Börjars, K. (1998a). *Feature distribution in Swedish noun phrases*. Oxford: Blackwell Publishers.

Börjars, K. (1998b). Clitics, affixes, and parallel correspondences. *The proceedings of the LFG'98 conference* (pp. 1-14). Retrieved from http://csli-publications.stanford.edu/

Börjars, K., & Donohue, M. (2000). Much ado about nothing features and zeros in Germanic noun phrases. *Studia Linguistica*, *54*(3), 309-353.

Börjars, K., & Harries, P. (2008). The clitic-affix distinction, historical change, and Scandinavian bound definiteness marking. *Journal of Germanic Linguistics*, *20*(04), 289-350.

Börjars, K., Payne, J. (2013). Dimensions of variation in the expression of functional features: Modelling definiteness in LFG. *The proceedings of the LFG'13 conference* (pp. 152-170). Retrieved from http://csli-publications.stanford.edu/

Bresnan, J. (2001). *Lexical-functional syntax*. Oxford: Blackwell Publishers.

Chesterman, A. (1991). *On definiteness: A study with special reference to English and Finnish*. Cambridge: Cambridge University Press.

Chomsky, N. (1995). *The minimalist program*. Cambridge, MA: The MIT Press.

Chomsky, N. (2000). Minimalist inquiries: The framework. In R. Martin, D. Michaels & J. Uriagereka (Eds.), *Step by step: Essays on minimalist syntax in honor of Howard Lasnik* (pp. 89–155). Cambridge, MA: The MIT Press

Chomsky, N. (2001). Derivation by Phase. In M. Kenstowicz (Ed.), *Ken Hale: A Life in Language* (pp. 1-52). Cambridge, MA: The MIT Press.

Corbett, G. G. (2010). Features: essential notions. In A. Kibort & G. G. Corbett (Eds.), *Features: Perspectives on a key notion in linguistics* (pp. 17-36). Oxford: Oxford University Press.

Dahl, Ö. (2003). Definite articles in Scandinavian: Competing grammaticalization processes in standard and non-standard varieties. In B. Kortmann (Ed.), *Dialectology meets typology: Dialect grammar from a cross-linguistic perspective* (pp. 147-180). Berlin: Mouton de Gruyter.

Danon, G. (2010). The definiteness feature at the syntax-semantics interface. In A. Kibort & G. G. Corbett (Eds.), *Features: Perspectives on a key notion in linguistics* (pp. 144-165). Oxford: Oxford University Press.

Delsing, L. O. (1989, September). A DP analysis of the Scandinavian noun phrase. In *NP Colloquium*. University of Manchester.

Delsing, L. O. (1993). *The internal structure of noun phrases in the Scandinavian languages: A comparative study*. Lund: Dept. of Scandinavian Languages, University of Lund.

Dryer, M. S. (2013). Definite Articles. *The world atlas of language structures online* (Chapter 37). Retrieved from http://wals.info/chapter/37

Embick, D., & Marantz, A. (2008). Architecture and blocking. *Linguistic Inquiry*, *39*(1), 1-53.

Embick, D., & Noyer, R. (2001). Movement operations after syntax. *Linguistic Inquiry*, *32*(4), 555-595.

Falk, Y. N. (2001a). Constituent structure and grammatical functions in the Hebrew action nominal. *The proceedings of the LFG'01 conference* (pp. 83-103). Retrieved from http://csli-publications.stanford.edu/

Falk, Y. N. (2001b). *Lexical-functional grammar: An introduction to parallel constraint-based syntax.* Stanford, CA: CSLI Publications.

van Gelderen, E., & Lohndal, T. (2008). The position of adjectives and double definiteness. *Working Papers in Scandinavian Syntax, 82*, 1-22. Retrieved from http://projekt.ht.lu.se/uploads/media/WPSS_82.pdf

Giusti, G. (1994). Enclitic articles and double definiteness: A comparative analysis of nominal structure in Romance and Germanic. *Linguistic Review*, *11*(3-4), 241-255.

Hankamer, J., & Mikkelsen, L. (2002). A morphological analysis of definite nouns in Danish. *Journal of Germanic Linguistics*, *14*(02), 137-175.

Hankamer, J., & Mikkelsen, L. (2005). When movement must be blocked: A reply to Embick and Noyer. *Linguistic Inquiry*, *36*(1), 85-125.

Harries, P. (2014). *The distribution of definiteness markers and the growth of syntactic structure from Old Norse to Modern Faroese* (Doctoral dissertation). University of Manchester, Manchester.

Hersey, A. C. (2012). Swedish art song: A singer's handbook to diction and repertoire. (Doctoral dissertation). University of Miami, Florida, FL.

Holmes, P., & Hinchliffe, I. (2008). *Swedish: an essential grammar* (2nd ed.). Oxon: Routledge.

Julien, M. (2002). Determiners and word order in Scandinavian DPs. *Studia Linguistica*, *56*(3), 265-315.

Julien, M. (2003). Double definiteness in Scandinavian. *Nordlyd*, *31*(1), 230-244.

Julien, M. (2005). *Nominal phrases from a Scandinavian perspective* (Vol. 87). Amsterdam: John Benjamins B.V.

Kibort, A. (2008). Grammatical Features Inventory: Typology of grammatical features. University of Surrey. Retrieved from http://www.smg.surrey.ac.uk/features

Kibort, A. (2010). Grammatical Features Inventory: Definiteness. University of Surrey. Retrieved from http://www.smg.surrey.ac.uk/features

Lyons, C. (1999). *Definiteness.* Cambridge: Cambridge University Press.

Lohrmann, S. (2010). *The structure of the DP and its reflex in Scandinavian* (Doctoral dissertation). Retrieved from http://elib.uni-stuttgart.de/opus/volltexte/2010/5890/

Leu, T. (2008). *The internal syntax of determiners* (Doctoral dissertation). Retrieved from http://irs.ub.rug.nl/ppn/317337262

Michael, I. (2010). *English grammatical categories: And the tradition to 1800*. Cambridge: Cambridge University Press.

Nordlinger, R., & Bresnan, J. (2011). Lexical-functional grammar: Interactions between morphology and syntax. In R. D. Borsley and K. Börjars (Eds.), *Non-Transformational Syntax: Formal and Explicit Models of Grammar*. Oxford: Wiley-Blackwell.

Payne, J., & Börjars, K. E. (1994). Swedish noun phrases meet Categorial Grammar. *Proceedings of the XIVth Scandinavian Conference of Linguistics and the VIIIth Conference of Nordic and General Linguistics, August 16-21, 1993 : special session on spoken language* (pp. 111-126). Göteborg: Dept. of Linguistics, Gothenburg University.

Poser, W. J. (1992). Blocking of phrasal constructions by lexical items. In I. A. Sag & A. Szabolcsi (Eds.), *Lexical matters* (pp. 111-130). Stanford, CA: CSLI Publications.

Pollard, C., & Sag, I. A. (1994). *Head-driven phrase structure grammar*. Chicago, IL: University of Chicago Press.

Radford, A. (1990a). *Syntactic theory and the acquisition of English syntax: The nature of early child grammars of English*. Oxford: Wiley-Blackwell.

Radford, A. (1990b). The syntax of nominal arguments in early child English. *Language Acquisition, 1*(3), 195-223.

Schoorlemmer, E. (2009). *Agreement, dominance and doubling: The morphosyntax of DP*. Utrecht: LOT, Graduate School of Linguistics.

Schoorlemmer, E. (2012). Definiteness marking in Germanic: Morphological variations on the same syntactic theme. *The Journal of Comparative Germanic Linguistics*, *15*(2), 107-156.

Sells, P. (2011). Blocking and the architecture of grammar. In E. M. Bender and J. E. Arnold. (Eds.), *Language from a cognitive perspective: Grammar, usage, and processing* (pp. 81-97). Stanford, CA: CSLI Publications.

Sleeman, P. (2012). The suffixal nature of the post-nominal article in Swedish and Romanian: evidence from L1 acquisition. In H. van der Liet & M. Norde (Eds.), *Language for its own sake: Essays on language and literature offered to Harry Perridon*, (pp. 189-207). Amsterdam: Amsterdam Contributions to Scandinavian Studies.

Spencer, A., & Luís, A. R. (2012). *Clitics: An introduction*. New York, NY: Cambridge University Press.

Wescoat, M. T. (2002). *On lexical sharing* (Doctoral dissertation). Stanford, CA: Stanford University.

Wescoat, M. T. (2005). English nonsyllabic auxiliary contractions: An analysis in LFG with lexical sharing. *The proceedings of the LFG'05 conference* (pp. 468-486). Retrieved from http://csli-publications.stanford.edu/

Wescoat, M. T. (2007). Preposition-determiner contractions: An analysis in optimality-theoretic lexical-functional grammar with lexical sharing. *The proceedings of the LFG'07 conference* (pp. 439-459). Retrieved from http://csli-publications.stanford.edu/

Zaenen, A., & Kaplan, R. M. (1995). Formal devices for linguistic generalizations: West Germanic word order in LFG. In M. Dalrymple, R. M. Kaplan, J. T. Maxwell III & A. Zaenen (Eds.), *Formal Issues in Lexical-Functional Grammar* (pp. 215-239). Stanford, CA: CSLI Publications.

Zwicky, A. (1977). *On Clitics*. Bloomington, IN: Indiana University Press.