THE MORPHOSYNTAX OF THE MALTESE DETERMINER PHRASE

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By

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ABSTRACT

Based in the Distributed Morphology and Minimalist frameworks, this dissertation provides an in-depth analysis of the DP in Maltese, an area of the language that has largely gone untouched by generative frameworks. In doing so, it focuses on two separate areas of interest: adjectival definite marking and construct states.

Maltese adjectives seemingly take an optional definite marker prefix when modifying a definite noun. Previous descriptions of the phenomena have labeled this adjectival definite marking as optional definiteness agreement that appears for pragmatic reasons or a phrasal clitic that is dependent on the type of noun and adjective to which it attaches. Given the semantic effects and other characteristics found in fieldwork data, I argue that adjectival definite marking is better understood if analyzed in parallel with Greek definite determiner spreading. Specifically, I show that the marking causes a restrictive interpretation like in Greek and is generated in a reduced relative clause whereas adjectives which appear without definite marking are generated as a\P specifiers of nP. As such, the analysis supports a raising-style analysis of reduced relative clauses and provides further evidence for the derivation of adjectives in two distinct syntactic positions in the DP. It also distinguishes Maltese adjectival definite marking from the Arabic varieties, where adjectival definite marking is analyzed as agreement due to its obligatory and semantically vacuous nature.
In the second portion of the dissertation, I examine a type of phrasal construction termed the “construct state”. Like the Arabic varieties and Modern Hebrew, Maltese utilizes this construction for a range of syntactic functions, including possession, kinship relations, and compound formation. However, Maltese differs from these related languages in the restricted nature of its construct states and their distinctive morphosyntactic characteristics. To account for these differences, I provide an analysis of construct states as inalienable possessives derived via a head-complement relation between a root and its internal argument. As such, the analysis weighs in on current debates regarding the interaction of roots and argument structure in the syntactic component.
ACKNOWLEDGEMENTS

Over the past five years, I have often thought of what and who this section of my dissertation would include. Like many endeavors, it took a village to get me to this point so I would like to take the time here to acknowledge the mentors, colleagues, affiliations, friends, and family who made this dissertation and my doctoral degree possible.

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# Glossing Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Meaning</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>First person</td>
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<tr>
<td>2</td>
<td>Second person</td>
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<tr>
<td>3</td>
<td>Third person</td>
</tr>
<tr>
<td>ACC</td>
<td>Accusative</td>
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<tr>
<td>AL</td>
<td>Alienable possession</td>
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<tr>
<td>COMP</td>
<td>Complementizer</td>
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<tr>
<td>COP</td>
<td>Copula</td>
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<tr>
<td>CS</td>
<td>Construct state marker</td>
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<tr>
<td>DEF</td>
<td>Definite marker</td>
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<td>DEM</td>
<td>Demonstrative</td>
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<td>Distal</td>
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<td>DU</td>
<td>Dual</td>
</tr>
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<td>F</td>
<td>Feminine</td>
</tr>
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<td>GEN</td>
<td>Genitive</td>
</tr>
<tr>
<td>INAL</td>
<td>Inalienable possession</td>
</tr>
<tr>
<td>INDEF</td>
<td>Indefinite marker</td>
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<tr>
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<td>Imperfective</td>
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<tr>
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<tr>
<td>SPR</td>
<td>Superlative</td>
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</tbody>
</table>
CHAPTER 1
Maltese in a generative setting

1 Introduction

In this dissertation, I investigate the morphology and syntax of the Maltese Determiner Phrase (DP) under the formal generative frameworks of Distributed Morphology and Minimalism. This investigation is based on spoken fieldwork data collected from native Maltese speakers in Malta in 2018. The project expands upon previous research on Maltese linguistics, increases the presence of Maltese data in the field of linguistic theory, and extends the empirical coverage of these frameworks to novel data in a previously understudied Semitic language. This is achieved through a thorough investigation of the language’s DP structure, including discussion of the basic linear order of elements in the DP (Chapter 2) and various aspects of DP-internal inflectional morphology (definite marking, Chapter 3) and derivational morphology (construct states, Chapter 4, and compounds, Chapter 5). This investigation results in analyses that distinguish Maltese from other Semitic languages (Modern Hebrew, the Arabic varieties, Amharic), particularly in the behavior of adjectival definite marking and the formation of construct states, and weighs in on current debates regarding the position of adjectives in the DP, the use of head movement in lexical decomposition, and the merger site of roots and their syntactic content. Overall, the dissertation presents a unified approach to the Maltese DP by deriving various morphosyntactic phenomena using basic assumptions in the Distributed Morphology and Minimalist frameworks.
This introductory chapter proceeds as follows. In section 2, I present a basic overview of the Distributed Morphology and Minimalist frameworks. Section 3 provides background on the Maltese language and section 4 elaborates on the sources of data used throughout this dissertation. Finally, section 5 provides a brief overview of the dissertation’s content by chapter.

2 Distributed Morphology and Minimalism

Throughout the dissertation, I will analyze the Maltese DP under the formal generative frameworks of Distributed Morphology (DM from here) and Minimalism. In doing so, the analyses in Chapters 2 through 6 are the first to investigate morphosyntactic phenomena in the Maltese DP under such frameworks.

DM is a formal, generative framework that contains theories which operate over the narrow syntax and interfaces (for an exploration of the theoretical foundations of DM, see Halle & Marantz, 1993; Halle, 1997; Embick & Noyer, 2001). It assumes a Y-shaped model of language derivation which begins with a syntactic component relatively akin to the Minimalist framework (Chomsky, 2000, 2001) that feeds a phonological component and semantic component, shown in (1).

(1)

```
Syntax
  |__ PF
  |__ LF
```
The semantic component, Logical Form (LF), pairs syntactic material to semantic interpretations. The other, Phonological Form (PF), maps syntactic material to phonological forms.

Though Chapter 5 will include a brief discussion of the interpretation of compounds at LF, the majority of the analyses posited throughout this dissertation will focus on analyzing DP-internal phenomena through the interaction of the syntactic component and PF. In DM, it is assumed that syntactic material is spelled out to PF where it is manipulated using a series of morphological operations and linearized (see Embick, 2010 for a formalism of this linearization process). It is also at PF that morphological and syntactic material is paired with phonological form via the process of Vocabulary Insertion. This idea of ‘Late Insertion’ distinguishes DM from lexicalist theories in that it requires no phonological material be present in the syntax.

Rather than assuming a single lexical component which operates prior to syntax as in lexicalist theories, DM divides the previous duties of the lexicon into three separate lists. The only material assumed to be available in the syntax is contained in List 1, which consists of numerically-indexed roots (see Harley, 2014 for arguments as to what these roots may or may not contain), and syntactic feature bundles, termed ‘functional items’. The remaining two lists carry the phonological information (List 2) and semantic information (List 3) of these roots and functional items. These lists are accessed and paired with the syntactic material in their respective components of the grammar.

In the syntactic component specifically, I will assume that both sentences and words are derived according to the tenets of Minimalism, including a Bare Phrase Structure approach to hierarchical structure (Chomsky, 1985), and lexical decomposition in DM, respectively. I assume these structures are derived via the operation of Merge and that certain elements within this
structure undergo a type of Agree, whereby a probe-goal relationship is formed between two heads (see Chapter 3 for further elaboration). Further, it should be noted that the analyses proposed here adhere to a distinction between specifiers and adjuncts in the syntax, counter to Kayne (1994). While the analyses proposed in Chapters 2, 3, and 4 are not incompatible with a Kayne-style analysis of specifiers and adjuncts, the distinction between the two plays a direct role in predicting the linear order of elements in Maltese compounds, as discussed in Chapter 5. Lastly, I also follow Chomsky (2001) in assuming that the syntactic derivation of these words undergoes cyclic spell-out to PF and LF, the domain of which is defined by phases. Though assumed throughout the dissertation, the cyclic spell-out of syntactic material by phase is only directly relevant to the analysis of compounds proposed in Chapter 5.

Throughout the dissertation, further details will be provided regarding the relevant assumptions of each analysis as they pertain to these frameworks. In the meantime, the following section will acquaint the reader with the language of focus by providing a general overview of Maltese.

3 Maltese

The Maltese language is the national language of Malta, a set of islands in the Mediterranean Sea, south of Sicily. It is spoken by approximately 474,310 speakers worldwide (Simons & Fennig, 2017), with the majority living in country. It is generally classified as an Arabic variety1, and, as such, a West Semitic language under the Central Semitic subgroup. This classification pairs it

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1Borg (1997) notes that this classification is common but likely only apt as a genetic classification rather than a synchronic identification of the language. Discussion of morphosyntactic phenomena throughout this dissertation corroborates this observation.
most directly with Old South Arabic and the Northwest Semitic subgroup, which consists of the Canaanite languages (Hebrew, Phoenician, and Moabite), Aramaic, Ugaritic, Sam‘alian, and Deir ‘Alla (Rubin, 2008). The Arabic varieties are further classified by Kaye & Rosenhouse (2013) into an Eastern and Western branch, the latter containing Maltese, Libyan Arabic, Tunisian Arabic, Algerian Arabic, Moroccan Arabic, Hassaniyan Arabic (Mauritania), Andalusian Arabic (Spain), and Siculo Arabic (Sicily). The latter two are extinct varieties.

Outside of genealogical relations, the language has likely been historically influenced by other Afroasiatic languages, such as Berber due to proximity and Phoenician-Punic, an extinct Canaanite language of the Semitic family, which is argued to have preceded Maltese on the islands (Aquilina & Isserlin, 1981). Like other languages, using a single term, ‘Maltese’, leads the reader to assume a single variety of the language. However, despite the small size of the country, dialectal distinctions have been defined for urban and rural areas and the Gozo and Żurrieq regions (Stolz, 2011).

Though geneologically a Semitic language, Maltese contains lexical, phonological, morphological, and syntactic attributes of the Romance languages. These are the result of long-scale influence from Italian and to a much lesser extent, French, dating back to the Normans' conquest of the island in 1091 (Fabri, 2010). Much more recently, the language has been influenced by English, likely beginning in 1800 when Malta became a British colony. The influence of these unrelated languages has left a profound mark on Maltese, causing it to diverge from its Arabic and Semitic relatives on all levels of grammar. In the following subsections, I will provide a brief overview of the phonological, morphological, and syntactic levels of the language.

---

2It is possible that this classification is mainly geographically-based, given that all of the varieties listed in the Western branch are located to the west of those in the Eastern Arabic branch.
with relevant discussion throughout regarding the Semitic and Romantic effects on the language. These effects will become more apparent in analyses of the basic DP structure in Maltese (Chapter 2), definite marking on adjectives (Chapter 3) and construct states (Chapter 4), where it will be shown that the Maltese DP differs in its use of syntactic structure and movements from closely-related Semitic languages like Modern Hebrew, Amharic, and the Arabic varieties.

3.1 Phonology

On the phonological level, Maltese diverges from the other Arabic varieties in its lack of emphatic consonants as well as due to the integration of several phonemes from Romance languages, like Italian (see Borg, 1997 for further discussion). The full phonemic inventory for the language is given in Table 1 and compiled from relevant discussion in Borg & Azzopardi-Alexander (1997), Borg (1997), and Spagnol (2011).
Regardless of the source, all data throughout the dissertation is transcribed using Maltese orthography and glossed according to Leipzig Glossing Conventions unless otherwise noted in the text. Each orthographic symbol roughly corresponds with its IPA equivalent in the phonemic inventory in Table 1. However, there are a few notable exceptions to the correspondence between orthography and Table 1. They are as follows, with orthography in italics: gh is silent but generally causes lengthening of the surrounding vowels; q corresponds with [ʔ]; ċ is equivalent to [ʧ]; z represents [ʦ]; zz equates to [ʣ]; Ɂ corresponds with [z]; and ġ equates to [ʤ]. In addition, the orthographic symbol r may correspond with one of three allophones, including the alveolar trill [ɾ] included as a phoneme in Table 1, an alveolar tap [ɾ], and an alveolar approximant [ɹ].

The phonemic status of this segment is questionable since some researchers do not include it as part of the inventory (Spagnol, 2011) while others (Borg, 1997) suggest it as a phoneme and [ʦ], its allophone. While not directly relevant to the arguments presented in this dissertation, I will follow Borg & Azzopardi-Alexander (1997) in assuming that [ʦ] and [ʣ] are separate phonemes.
As for vowels, the inventory is as in Table 2 from Spagnol (2011) with relevant orthographic spelling included for each phoneme.

Table 2. Maltese vowel inventory

<table>
<thead>
<tr>
<th>Orthographic symbol</th>
<th>Short vowel correspondent</th>
<th>Long vowel correspondent</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>ɐ</td>
<td>ɐː</td>
</tr>
<tr>
<td>e</td>
<td>ɛ</td>
<td>ɛː</td>
</tr>
<tr>
<td>i</td>
<td>i</td>
<td>iː</td>
</tr>
<tr>
<td>ie</td>
<td></td>
<td></td>
</tr>
<tr>
<td>o</td>
<td>ɔ</td>
<td>ɔː</td>
</tr>
<tr>
<td>u</td>
<td>ʊ</td>
<td>uː, ʊː</td>
</tr>
</tbody>
</table>

Finally, the language includes the following dipthongs with corresponding orthographic spelling in italics: [ɐʊ] = aw or għu, [ɐi] = aj or għi, [ɛʊ] = ew, [ɛi] = ej or għi, [ɪʊ] = iw, [ɔɪ] = oj, [ɔʊ] = ow or għu (Borg & Azzopardi-Alexander, 1997, p. 299).

### 3.2 Morphology

Maltese morphology clearly exemplifies its Semitic ancestry because it uses root-and-pattern morphology in the derivation of words. A commonly noted example of this non-concatenative type of morphology in the Arabic varieties involves the root, K-T-B, which is generally found in association with the broad meaning of ‘writing’ or ‘text’. This root also appears and is derived into various forms and shades of that meaning in Maltese: kiteb ‘to write’, kitba ‘document’, ktieb ‘book’, kittieb ‘writer’ (examples from Stolz, 2011).
However, Maltese diverges from the Arabic varieties in its combined use of both the root-based morphological processes discussed above and stem-based morphological processes. Stem-based morphology is found in the Arabic varieties as well, as evident by the inflection of some plurals through suffixation (termed 'sound plurals'), but the use of stem-based morphology in Maltese is more distinctive given its Romantic influences. The most notable example of this distinction is found in the verbal domain. For example, the verb stem *(i)ppretenda* ‘to pretend’, from Italian, is inflected as in Table 3 below from Stolz (2011), with no alteration to the stem *pretend* throughout the table.4

| Table 3. Perfective paradigm for *(i)ppretenda* ‘to pretend’ |
|-----------------|-----------------|
|                 | Singular        | Plural          |
| 1st person      | *(i)ppretend-ejt* | *(i)ppretend-ejna* |
| 2nd person      | *(i)ppretend-ejt* | *(i)ppretend-ejtu* |
| 3rd person      | Masculine       | Feminine        |
|                 | *(i)ppretend-a*  | *(i)ppretend-ew*  |
|                 | *(i)ppretend-iet* | *(i)ppretend-ew*  |

Compare the forms in Table 3 to the Semitic verb *kiser* 'to break' in Table 4 from Hoberman & Aronoff (2003). In *kiser*’s perfective paradigm, the inflection of distinct person, number, and gender features is indicated through both stem alteration and suffixation.

---

4As a verb of Italian origin, *pretend* undergoes a process of initial consonant germination with a prosthetic vowel *i*-that appears when the previous word is consonant final.
Table 4. Perfective paradigm for *kiser* 'to break'

<table>
<thead>
<tr>
<th></th>
<th>Singular</th>
<th>Plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st person</td>
<td>ksir-t</td>
<td>ksir-na</td>
</tr>
<tr>
<td>2nd person</td>
<td>ksir-t</td>
<td>ksir-tu</td>
</tr>
<tr>
<td>3rd person</td>
<td>kiser</td>
<td>kisr-u</td>
</tr>
<tr>
<td>Masculine</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Feminine</td>
<td>kisr-et</td>
<td>kisr-u</td>
</tr>
</tbody>
</table>

This interaction of stem-based and root-based morphology is seen throughout the language but will not play a crucial role in the analyses to follow. However, the presence of these distinctive morphologies within the language sets the stage for later discussion of the division between Maltese and other Semitic languages.

Thus far, I have illustrated the basic phonological and morphological facts of the Maltese language. In the following and final subsection on the language, I illustrate the general facts regarding Maltese syntax.

### 3.3 Syntax

Maltese is a well-behaved head-initial language, with prepositions, determiners preceding nouns, verbs preceding their objects, and relative clauses following their head noun. The default word order for Maltese is SVO, though this order is flexible in cases of emphasis, topicalization, or reference to new/given information (Borg, 2007; Stolz, 2011). It is a pro-drop language, only including stand-alone subject pronouns for contrastive focus (Stolz, 2011). A sentence exhibiting
pro-drop, among several of the other characteristics described above, can be found in (2) from Stolz (2011, p.251).

(2) wasl-u l-villa, fetḥ-u u dahl-u

arrive-3PL.PFV DEF-villa open-3PL.PFV and enter-3PL.PFV

‘They arrived at the villa, they opened [the door] and entered.’

In regards to case, Maltese has a nominative-accusative system, which is evidenced by differential object marking on its direct objects. This differential object marking distinguishes between definite, animate direct objects and other direct objects. Animate direct objects require the object marker, ḫil or ḫl, glossed as OM in (3) and (4) (Borg, 2007). This includes common nouns referring to living beings, all proper nouns, and inalienable common nouns, regardless of animacy. All other direct objects do not take this marker, as shown in (5).

(3) ilbieraħ żor-na ḫil missier-ek

Yesterday visit-1PL.PFV OM father-2PL.POSS

‘Yesterday, we visited your father.’ (Borg, 2007, p.15)

(4) jithennew dawk li jħobbu ẖl

rejoice.3PL.IPFV DIST.DEM.PL COMP love.3PL.IPFV OM

ism-ek

name-2PL.POSS

‘Those that love Thy name shall rejoice.’ (Borg, 2007, p.15)
Unlike the morphological traits discussed above, these syntactic traits do not necessarily distinguish Maltese from other Semitic languages nor align it closer with Romance. However, the syntactic distinction between Maltese and other Semitic languages will be demonstrated in subsequent chapters.

4 Data sources: Fieldwork and Korpus Malti

Unless otherwise cited, the data presented throughout this dissertation was collected during fieldwork in Malta between July and August of 2018 and funded by Georgetown University’s Graduate School Dissertation Travel Grant and the Linguistic Department’s Travel Grant. The data was elicited individually from five consultants. The group of consultants comprises both men and women in their 20s to 30s from Northern, Central, and Southern locals on the island of Malta (excluding Gozo). Given complexities regarding multilingualism in Malta, consultants were asked to complete a questionnaire to determine their linguistic background and only those consultants which indicated the highest use of Maltese (≥65%) across three stages of their lifetime were invited to participate in the project.

In addition, supplemental data throughout the dissertation is taken from Korpus Malti, a corpus of Maltese texts provided through the Maltese Language Resource Server, and previous
publications and grammars of the language, including Aquilina & Isserlin (1981), Fabri (1993, 1996, 2010), Borg (1996), Borg & Azzopardi-Alexander (1997), Hoberman (2007), among others. These are cited accordingly throughout the dissertation. Orthography and glossing assistance was provided through commentary from native speakers and Dizzjunaru tal-Malti, an online Maltese dictionary made available by the Maltese Language Resource Server project.

5 Organization by chapter

The dissertation is divided into six chapters. Here in Chapter 1, I have provided a basic overview of the fundamental theoretical assumptions of the dissertation, a background for the Maltese language, and identified the sources of my data. Chapter 2 will begin the analysis of the Maltese DP by presenting and analyzing the basic structure of the DP, inclusive of demonstratives, prenominal modifiers, and nouns. Chapter 3 expands this view of the DP to include adjectives and ultimately argues that definite-marked and non-definite-marked adjectives are distinguished syntactically from one another. Chapter 4 develops an analysis of construct states in the language as they compare to those found in Hebrew. There, it will be shown that Maltese construct states are inalienable possessive constructions and analyzed as such. Chapter 5 introduces a subset of compounds in Maltese, which appear superficially similar to the construct states discussed in Chapter 4, and proposes that their analysis compares to primary compounds as presented in Jackson & Punske (2013). Lastly, Chapter 6 concludes with some final remarks regarding how the proposed DP structure may extend to account for pseudo-construct states and free genitives in future research.
CHAPTER 2
The Maltese Determiner Phrase

1 Introduction
The Maltese DP is an area of the language that is largely understudied and under-documented.
To my knowledge, only Fabri (1993) and Duffield (1999) comprise the proposed analyses of the Maltese DP, while others, including Borg (1996), Fabri (2001), and grammars such as Borg & Azzopardi-Alexander (1997), primarily focus on its description. Within the last 40 years of literature on Semitic DPs, Maltese data is often included only tangentially due to its unique behavior with respect to other Semitic languages, including its use of prenominal superlative adjectives (Shlonsky, 2004), prenominal adjectives (Duffield, 1999; a.o.), and freedom of adjectival ordering (Duffield, 1999).

In this chapter, I aim to begin filling this gap in the literature by describing and analyzing the basic structure of the Maltese DP. In doing so, I will define the linear order of elements within the DP and their interaction with definite marking (to the exception of adjectives which will be discussed in-depth in Chapter 3). Subsequently, I will propose a novel analysis of the Maltese DP under the Distributed Morphology framework (DM from here). The analysis that I propose here will continue to be developed in later chapters of this dissertation, culminating in a comprehensive picture of Maltese DPs.

The chapter proceeds as follows. In section 2, I describe the linear order of elements in the DP and their interaction with one another. In section 3, I propose an analysis of Maltese
nouns under the DM framework and argue that only head movement is required to derive the basic facts of the Maltese DP. Section 4 builds on discussion in section 3 by proposing an analysis of prenominal elements and demonstratives as heads merged along the DP spine and section 6 concludes.

2 Data

In this section, I provide a basic overview of DP-internal elements in the Maltese DP, including numerals, demonstratives, definite marking, and a brief introduction to superlative adjectives and quantifiers. When (some of) these elements are present in the DP, they appear in the order of (6)a, as demonstrated in (6)b.5

(6) a. Demonstrative – Prenom. Mod. – Noun – Adjective

b. dawk il-hames kotba l-ġodda

DIST.DEM.PL DEF-five book.PL DEF-new.PL

‘those five new books’ (Fabri, 2001, p. 156)

As shown in (6)a, the Maltese DP is arranged such that demonstratives appear on the leftmost edge, followed by prenom(inal) mod(ifiers), nouns, and finally adjectives.

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5Here, I will not discuss prepositional phrases as they appear in Maltese. Preliminary data and brief discussion of their manner in Chapter 6 indicates that they display free ordering with respect to post-nominal elements in the DP but further research is required to verify this and, ultimately, to define their role within the DP. In addition, I will avoid discussion of other adjectives in this chapter since they do not pattern like superlatives. Chapter 3 provides an in-depth discussion of post-nominal adjectives. Comparative adjectives, which do not pattern like superlatives or post-nominal adjectives, will be left for future work.
2.1 Prenominal modifiers

The term ‘prenominal modifier’ in (6)a refers to a group of elements that appear after the demonstrative but prior to the noun, as their name indicates. It consists of superlative adjectives (7)a, cardinal and ordinal numerals (7)b, and some quantifiers (7)c.  

(7) Maltese prenominal modifiers

a. l-itwal tiefel
   DEF-tall.SPR boy.M.SG
   ‘the tallest boy’

b. il-hamest iklieb
   DEF-five dog.PL
   ‘the five dogs’

c. xi qtates żgħar
   some cat.PL small.PL
   ‘some tiny cats’

Though the behaviors of superlative adjectives and quantifiers are interesting in their own right, I focus only on the behavior of numerals and their interaction with other prenominal modifiers here as they are directly relevant to the proposed analyses in Chapters 4 and 5. I leave superlative adjectives and quantifiers for future research.

[^6]: By ‘quantifiers’ here and throughout the discussion of prenominal modifiers in this chapter, I refer only to elements like some, most, all, every, etc. and not in the formal semantic sense.

[^7]: According to Hoberman (2007), the numeral can vary between a short form ħames ‘five’, a long form ħansa ‘five’, and a short form with word-final -t ħamest ‘five’. The short and long forms are dependent upon the syntactic environment in which they appear while the short form with word final -t occurs when the numeral appears before a class of nouns that includes nouns with word-initial consonant clusters that begin with a sonorant. As such, the short form of ħansa ‘five’ appears with a word-final -t in (7)b and the noun klieb ‘dogs’ has undergone word-initial epenthesis to avoid consonant clusters across word boundaries.
Generally, cardinal and ordinal numerals behave similarly with the exception of the cardinal numeral *wieħed* ‘one’.\(^8\) As prenominal modifiers, both types of numeral obligatorily appear before a plural noun and do not vary in form with respect to gender and number.

Multiple prenominal modifiers may also appear in a single DP. For example, cardinal and ordinal numerals may appear together. When this occurs, their default ordering is such that the ordinal numeral appears before the cardinal, as shown in (8) from Korpus Malti (academic46).

(8) Maltese numerals

\[
\text{l-ewwel} \quad \text{ghaxar} \quad \text{volumi} \\
\text{DEF-first} \quad \text{ten} \quad \text{volume.PL}
\]

‘the first ten volumes’

The same ordering is found when ordinal and cardinal numerals appear prenominally in Modern Standard Arabic as shown in (9), adapted from Fassi Fehri (1999, p. 113–114).

(9) Modern Standard Arabic numerals

\[
\text{ʔawwal-u} \quad \text{xams-i} \quad \text{muhaadˤaraat-in} \\
\text{first.M-NOM} \quad \text{five.M-GEN} \quad \text{lectures-GEN}
\]

‘the first five lectures’

Numerals may co-occur with other prenominal modifiers in the Maltese DP. In (10), the DP contains both a superlative adjective and cardinal numeral which are obligatorily ordered such that the adjective precedes the numeral.

---

\(^8\) *Wieħed* is distinctive from other numerals in that it appears post-nominally and agrees with the noun in gender and number. In addition, *wieħed* must modify a singular noun whereas all other cardinal numerals require a plural noun (Borg & Azzopardi-Alexander, 1997, p. 268). For this reason, further discussion of numerals here and throughout the dissertation is not inclusive of *wieħed*, which requires further investigation in the future.
The ordering and prenominal placement of prenominal modifiers, specifically numerals, is argued in section 4 to be a result of their merger as heads into the DP spine.

2.2 Nouns

Nouns follow after these prenominal modifiers in the Maltese DP. Setting aside definiteness for noun, Maltese nouns inflect for number and gender like the related Arabic varieties. The language has two genders (feminine and masculine) and three numbers (singular, dual, and plural), which are reflected (with the exception of dual number) in the various inflections of ‘dog’ in (11).

---

The productivity of the dual number in Maltese has been called into question (Plank, 1996; David, 2007; Camilleri, 2015) but I include it here since it appears on several nouns in the language which generally appear in pairs. However, it should be noted that dual inflection on nouns causes plural agreement on modifiers and verbs (Camilleri, 2015, p. 115).
These features are reflected through agreement on demonstratives, which are discussed in section 4, and attributive adjectives, discussed in Chapter 3.

2.3 Obligatory definite marking

Turning to definite marking, much of the discussion in later chapters regarding prenominal modifiers is due to their interaction with definite marking. When a Maltese DP is definite, it contains an obligatory definite marker that prefixes to the leftmost element in the DP, to the
exclusion of the demonstrative. In cases where the DP does not contain a prenominal modifier, the marker prefixes to the noun, as in (12).

(12) in-naḥla

DEF-bee.F.SG

‘the bee’

When a definite DP contains a prenominal modifier, the marker will instead attach to it as in (7)a and b above. In the case of multiple prenominal modifiers, it will prefix to whichever modifier is leftmost in the DP, as seen above for the ordinal numeral in (8) and the superlative adjective in (10).

This prefix, which is l- underlyingly, can surface as a variety of allomorphs, depending upon the surrounding phonological environment. Consider (13) and (14) below, adapted from Fabri (2001, p. 154).

(13) il- allomorph

ta-k il-ktieb
give.3M.SG.PFV-2SG DEF-book

‘He gave you the book.’

This is true for all definite DPs containing common nouns but not so for DPs containing proper nouns. In these cases, definite marking variably appears on some proper nouns, particularly proper nouns referring to place names. Compare (i) and (ii) from Borg (1996, p. 7).

(i) L-Ingilterra / il-Ġermanja
DEF-England / DEF-Germany
‘England’ / ‘Germany’

(ii) Għawdex / Sqallija
‘Gozo’ / ‘Sicily’
In (13), the prefix undergoes “outer epenthesis”, creating *il-* since the previous word, *tak*, is consonant final and the following word, *ktieb*, begins with a consonant. In (14), the prefix undergoes “inner epenthesis” since the word to which it is attached begins with a /s/ or /ʃ/. This creates *li-* (Fabri, 2001). Like in the Arabic varieties, when the prefix attaches to a word that begins with a coronal consonant (to the exception of /s/ or /ʃ/), the liquid of *l-, *li-* and *il-* will assimilate to the place and manner of articulation to that consonant, as in (12) above. These environments are summarized in Table 5.

Table 5. Allomorphs of the definite marker in Maltese

<table>
<thead>
<tr>
<th>Allomorphs</th>
<th>Environments</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. <em>il-</em></td>
<td>C# + _C</td>
</tr>
<tr>
<td>b. <em>li-</em></td>
<td>_ [s/ʃ]</td>
</tr>
<tr>
<td>c. <em>l-</em></td>
<td>default</td>
</tr>
<tr>
<td>d. Assimilation of liquid in (a) and (c)</td>
<td>_ [+coronal but not s/ʃ]</td>
</tr>
</tbody>
</table>

From a typological standpoint, obligatory definite marking in Maltese patterns like both Italian and Modern Standard Arabic in that it appears in contexts where the DP is not...
necessarily interpreted as definite. Like Italian, the obligatory definite marker appears on plural kind nouns (15) and, like Modern Standard Arabic, appears on generic nouns (16).

\[(15)\]
\[a.\] Italian, adapted from Dayal (2004, p. 397)

\[I \ cani \ sono \ diffusi\]

the dogs are widespread

‘Dogs are widespread.’

\[b.\] Maltese

\[il-qtates \ jiġru \ wara \ l-grieden\]

DEF-cats chase.3PL after DEF-mouse.PL

‘Cats chase mice.’

\[(16)\]
\[a.\] Modern Standard Arabic, adapted from Kremers (2003, p. 53)

\[al-kuħuul-u \ dˤaarr-un \ bi-l-sˤiħħat-i\]

DEF-alcohol-NOM damaging-NOM with-DEF-health-GEN

‘Alcohol is bad for one’s health.’

\[b.\] Maltese

\[l-ghasel \ hu \ ħelu\]

DEF-honey COP.3M.SG sweet.M.SG

‘Honey is sweet.’

These facts indicate that the obligatory definite marker is not strictly associated with definiteness but rather may appear in cases where an existential interpretation is to be avoided, as proposed
by Longobardi (1994).\footnote{It is also possible that the obligatory definite marker would be more aptly defined as a marker of one (or more) of the categories which define definiteness: uniqueness, familiarity, and specificity. Further fieldwork is required to tease apart these facts but I thank Hannah Sande for discussion on this matter.} Though a full analysis will not be posited here, the interaction between definite marking and generic nouns will be further explored in Chapter 3.

Overall, in this section, I have illustrated the basic facts regarding definite marking, nouns, numerals, and the linear order of elements in the Maltese DP. In the next section, I present an analysis of these facts under the DM framework.

## 3 Lexical decomposition in Distributed Morphology

Within DM, lexical categories are derived in the syntactic component via an acategorical root and categorizing head \( (n, v, a) \) (see Marantz, 1997, 2001; Arad, 2003, 2006; Embick & Noyer, 2007; Embick & Marantz, 2008; Harley, 2014; a.o.). Though analyses vary as to the content of these roots, I follow recent proposals in assuming that roots are distinguished in the syntax and List 1 by numerical indices (Pfau, 2000, 2009; Embick, 2000; Embick & Noyer, 2007; Acquaviva, 2008; Harley, 2014; Kramer, 2015) which are paired with phonological information late in the derivation (see Chapter 1).

Applying this to nouns specifically, I assume that each Maltese noun is composed of a numerically-indexed root that directly adjoins to \( n \), which carries gender features (Kramer, 2015), creating a complex head (Embick, 2019; Wood, 2019). Merged above \( n \) is the head, Num, which carries the number features of the noun, following Ritter (1991, 1993) (see also Kremers, 2003). This results in (17), which is the assumed basic structure of each Maltese noun here and throughout the dissertation.
In addition, I argue that the complex head containing the root and a undergoes head movement up to Num. In doing so, the analysis builds on nominal head movement originally proposed for Maltese in Duffield (1999) and Modern Standard Arabic in Kremers (2003), among others, by incorporating assumptions regarding lexical decomposition from DM.

In moving the complex head only up to Num, the Maltese DP structure is differentiated from other Semitic DPs, which are generally analyzed (to the exception of Kremers, 2003) via head movement of the noun up to D (Ouhalla, 1988; Ritter, 1988, 1991; Siloni, 1994, 1996, 1997; Borer, 1999; among others) or phrasal movement to an upper specifier in the DP (Fassi Fehri, 1999; Cinque, 2000; Sichel, 2002; Shlonsky, 2004). Crucially, these analyses have not assumed a full lexical decomposition approach to Semitic nouns — though some derive number features on a head merged above N (Ritter, 1991; Borer, 1999) and Shlonsky (2004, p.1507) provides a brief discussion of the analytical implications of acategorical roots for his analysis — nor have they focused on Maltese specifically. Rather, the great majority of literature on Semitic DPs have either analyzed the DP of a specific Semitic language (Hebrew, Amharic, Modern Standard Arabic, or a subset of the Arabic varieties) or generalized across the Semitic branch.

\[^{13}\text{Arguments for nominal head movement within the DP are by no means exclusive to analyses of Semitic languages but rather are pervasive throughout the literature. To my knowledge, the first analysis of nominal head movement was originally proposed by Dobrovie-Sorin (1987) and continued to appear in analyses such as Grosu (1988), Taraldsen (1991), Longobardi (1991, 1994).}\]
Therefore, I motivate the analysis of the Maltese DP as distinctive from previous approaches to Semitic DPs based on Maltese-specific data and current assumptions regarding word-building in DM.

First, as discussed above, DM assumes that nouns, among other lexical elements, are decomposed into separate heads in the syntax which are brought together using adjunction (for roots) and head movement. Thus, the argument that Maltese nouns are derived in the same way follows from the framework in which this analysis is situated.

Second, I motivate that head movement in the Maltese DP stops specifically at Num based on the presence of prenominal modifiers in Maltese. Unlike other Semitic languages where these elements are variably pre- and post-nominal, numerals, quantifiers, and superlative adjectives obligatorily appear prenominally in Maltese, as discussed in section 2, and illustrated by the ungrammaticality of (18)a in comparison to (18)b.

(18)  a. l-ewwel klieb  
      DEF-first dog.PL  
      ‘the first dogs’

   b. *il-klieb (l-)ewwel  
      DEF-dog.PL. (DEF-)first  
      Intended: ‘the first dogs’

(18)b is ungrammatical due to the post-nominal placement of the numeral, regardless of whether the numeral carries a definite marker (see discussion in Chapter 3 regarding the use of additional definite markers on post-nominal modifiers).
Following that these prenominal elements are generated above Num in the DP as either heads merged directly into the DP spine or specifiers of functional projections, any movement past Num will incorrectly predict post-nominal ordering. In this way, the Maltese DP is distinctive from languages like Hebrew (19) and Modern Standard Arabic (20) where the noun moves higher than Num to predict the post-nominal placement of these elements, at least in some cases (see Kremers, 2003; also Shlonsky, 2004 for a phrasal movement approach).

(19) Hebrew, adapted from Shlonsky (2004, p. 1484)

ʃaloʃ simfoniot riʃonot
three symphony.PL first
‘first three symphonies’

(20) Modern Standard Arabic

a. al-bujuut-u l-xamsa-t-u
   DEF-house.PL-NOM DEF-five-F-NOM
   ‘the five houses’ (adapted from Kremers, 2003, p. 62)

b. ʔawwal-u xams-i muh‘aad‘araat-in
   first.M-NOM five.M-GEN lecture.PL-GEN
   ‘the first five lectures’ (adapted from Fassi Fehri, 1999, p. 113)

Further support for a head movement-based analysis of Maltese nouns is provided in subsequent chapters of this dissertation. There it will be shown that analyses require only n-to-Num head movement to derive simple DPs, as discussed here, or complex DPs, like construct states or compounds as discussed in Chapters 4 and 5, respectively.
Thus, by invoking head movement to derive the noun in Maltese DPs, the analysis aligns with current assumptions in DM, builds on a subset of previous analyses of Semitic DPs which also require nominal head movement (though to a much higher projection than proposed here), predicts the prenominal placement of select modifiers in the DP, and sets the stage for analyses proposed here in subsequent chapters. This head movement is illustrated in (21), the resulting structure after head movement of the complex head to Num occurs in (17).

\[
(21) \quad [\text{NumP} \left\{ \sqrt{i23 + n} \right\}\text{Num}]
\]

In the next section, I will continue to build on the structure proposed in (17) to account for remaining DP-internal elements.

4 The upper layer of the Maltese Determiner Phrase

As the title of this dissertation and chapter suggests, I follow Abney (1987) in assuming that Maltese DPs project a DP layer that merges above the nominal projection, defined in the previous section as consisting of NumP, nP, and the root. Like Abney (1987) and Alexiadou, Haegeman, & Stavrou (2008), I posit that determiners, ie. the obligatory definite marker in Maltese, are the realization of the head, D, of this DP layer.

Additionally, I follow Kremers (2003), Shlonsky (2004), and Cinque (2010) in placing cardinal and ordinal numerals as heads along the DP spine. These are projected above NumP and below DP when required. Kremers (2003) argues that the lack of gender and number agreement found on numerals, their prenominal placement, and case assignment facts (seen overtly in Modern Standard Arabic) indicate that these elements are merged as heads on the DP
spine. These facts indicate that, when in prenominal position, Arabic numerals take nouns as their complement rather than merging as a specifier or adjunct of the noun. Though case is not overtly expressed in Maltese, the remaining facts are consistent with the data discussed in section 2 above. Therefore, like Kremers (2003), Card(inal)P and Ord(inal)P will be projected above NumP in the Maltese DP. Based on the data shown in (8), the ordering of these projections is such that Ord(inal)P merges above Card(inal)P. Overall, this generates the basic structure in (22).^{15}

\[ (22) \]

\[
\begin{array}{c}
\text{DP} \\
\text{D} \\
\text{OrdP} \\
\text{Ord} \\
\text{CardP} \\
\text{Card} \\
\text{NumP} \\
\text{Num} \\
\hline
nP \\
\hline
n \\
\sqrt{n}
\end{array}
\]

Combined with arguments for \textit{n}-to-Num head movement in the previous section, the structure in (22) predicts the linear order of DP-internal elements in (8) above, repeated as (23) below.

---

^{14}Kremers (2003)'s argument is most clearly illustrated when comparing the characteristics of post-nominal and prenominal numerals in Modern Standard Arabic. As Kremers notes, post-nominal numerals in Arabic behave like adjectives in that they agree with noun in gender, number, case, and definiteness. Prenominal numerals, on the other hand, do not agree in any respect with the noun. These differences indicate that pre- and post-nominal numerals are merged into the syntax in separate positions, one which agrees (specifier of the noun) and another which does not (head along the DP spine).

^{15}While I assume here and below that numerals and demonstratives head their own projections on the DP spine, proposals in later chapters that build upon the structure in (22) are generally unaffected by whether they act as heads or appear as specifiers to NumP, as in Cinque (2000). Rather, the analysis only requires that these elements appear strictly ordered as heads or specifiers in the DP such that superlative adjectives precede numerals and ordinal numerals precede cardinal ones.
Within (22), the root $\sqrt{\text{VOLUM}}$ adjoins to $n$. As the derivation proceeds, the complex head $n$ (containing the root and $n$) will undergo head movement up to Num, generating the complex head in Num: $[\sqrt{\text{VOLUM}} [n [\text{Num}]]]$. Above this, a CardP is merged into the structure, which will later be realized as $\text{ghaxar}$, followed subsequently by OrdP, ewwel. Last, D is merged into the structure and will be realized at PF as $l-$, generating the full ordering in (23). The full derivation is illustrated in (24).

(24)  
```
          DP  
         /      
D     OrdP  
   /        
  l-       
   
Ord  CardP  
  /  
ewwel Card  NumP  
 /  
   Num  NP  
      /  
     i-  |  
     nP  
        /  
   n  
  
$\sqrt{\text{VOLUM}}$  
```

Finally, I follow McCloskey (2004), among others, in merging demonstratives as heads of DemP above DP. It is often noted that demonstratives co-occur with definite markers in a variety

\[\text{Finally, I follow McCloskey (2004), among others, in merging demonstratives as heads of DemP above DP. It is often noted that demonstratives co-occur with definite markers in a variety}\]

\[\text{For ease of exposition here and throughout the dissertation, phonological material will appear in derivations like (24) to indicate the position of certain elements. For this reason, the root of } \text{volumi } \text{‘volumes’ would be defined as } \sqrt{\text{VOLUM}} \text{ and not numerically as in (17). However, the analysis maintains common DM assumptions that phonological material does not appear in the derivation until PF, where it is associated with roots and functional heads through Vocabulary Insertion.}\]

\[\text{It is outside the scope of this dissertation to debate the morphosyntactic and semantic content of numerals so I will not discuss the details of their realization at PF. See Ouwayda (2014) for an in-depth discussion of this matter.}\]
of languages, such as Greek, Javanese, Welsh, and Romanian (Kramer, 2010). Due to this fact, previous approaches have argued that demonstratives and definite markers do not occupy the same head, D. Rather, demonstratives have been analyzed as either the head of a DemP merged above DP (Fabri, 2001, citing Fabri, 1993; Doyle, 2002; McCloskey, 2004; Julien, 2005) or a specifier of a functional projection between D and NP that (co)vertly raises to Spec, DP, depending upon the language (Giusti, 1997, 2002). I argue that Maltese demonstratives are best analyzed by the former approach whereby demonstratives are generated as heads above DP.

My evidence for positing this is based on their interaction with construct states. In Chapter 4, it will be shown that though the leftmost noun of a construct state cannot be modified by a prenominal modifier, it does appear with demonstratives. As such, if demonstratives are generated in the specifiers of functional projections below D, its ability to modify these nouns in construct states seemingly contradicts the inability to modify the same noun with prenominal elements, given that both categories would be generated in the same area of the DP spine. Therefore, in order to straightforwardly account for the distinction between demonstratives and prenominal modifiers in construct states and their obligatory placement before D, demonstratives in Maltese are merged as Dem heads which select for a definite DP.

Before concluding this section, a final note should be made with regards to the typological implications of the Maltese DP and its arrangement of DP-internal elements. It has often been noted that the syntax of Semitic languages correlates with several of the language universals posited by Greenberg (1963) (see Cinque, 2000, 2005). This observation has led to a line of analyses which compare Semitic languages to that of non-Afroasiatic ones, such as Celtic (cf. Duffield, 1999, 2005; Dryer, 2018). In regards to the DP, previous Semitic analyses have
referenced the correspondence between the linear order of elements in the Semitic DP and Greenberg (1963)’s Universal #20, provided below in (25).

(25) Universal #20 from Greenberg (1963)

When any or all of the items (demonstrative, numeral, and descriptive adjective) precede the noun, they are always found in that order. If they follow, the order is either the same or its exact opposite.

In Cinque (2000), this universal is taken as evidence for an underlying order in the DP whereby demonstratives precede numerals which precede adjectives which precede nouns. He evidences this claim by deriving the various permutations of this order found in Modern Standard Arabic, shown in (26), through roll-up phrasal movement under Kayne (1994)’s antisymmetry theory.


a. Noun > Adjective > Numeral > Demonstrative
b. Demonstrative > Noun > Adjective > Numeral
c. Demonstrative > Numeral > Noun > Adjective

As shown throughout this chapter, the Maltese DP aligns with the Modern Standard Arabic order in (26)c and as such falls in line with other Semitic languages in corresponding with (at least some of) Greenberg’s universals. Following the structure proposed in this section, the analysis aligns with Cinque in assuming that the syntactic structure of the DP matches that of the linear order of prenominal elements in Greenberg’s universal. However, I argue that only head movement, not phrasal, is required within the Maltese DP since it correctly generates the order in (26)c, which is the only order permitted amongst these elements in the language.\textsuperscript{18} Thus, while

\textsuperscript{18}This excludes the possibility of prenominal adjectives, which are permitted in Maltese but to a limited extent and only with specific semantic effects. See Chapter 3 section 2.3 for a brief introduction to these facts.
the Maltese DP provides additional evidence for a tie between syntactic structure and typology, the analysis here distinguishes itself from that of other Semitic DPs in its claims regarding the movements which generate the linear order of DP-internal elements.

5 Conclusion

In this chapter, I have presented the linear ordering facts of the Maltese DP. Based on these facts, I developed a basic DP structure for Maltese which builds on current assumptions regarding lexical decomposition in DM. This structure will be further developed in Chapters 3, 4, and 5 where I will discuss and analyze the morphosyntactic behavior of adjectives, construct states, and compounds in Maltese.
CHAPTER 3
Secondary definite marking in Maltese

1 Introduction

In Chapter 2, I introduced the Maltese DP, which included discussion of obligatory definite marking. There, I showed that obligatory definite marking appears prefixed to whichever element occurs at the left edge of the DP, to the exclusion of the demonstrative. In addition to this definite marker, Maltese DPs may also appear with what I term a ‘secondary definite marker’ that attaches to attributive adjectives. Phonologically, this secondary definite marker shares its form with the obligatory definite marker as the prefix *l*- but differs from obligatory definite marking in its usage and placement in the DP. As such, Maltese DPs exhibit two types of definite marking: an obligatory definite marker (in bold) and a secondary definite marker (in italics). The latter is seemingly optional, as indicated by the parentheses in (27).

(27)  il-kelb     (il-)beżzieğh
     DEF-dog       (DEF-)cowardly

‘the cowardly dog’

In this chapter, I argue that the secondary definite marker is in fact not optional but causes specific semantic effects and displays syntactic characteristics. These qualities cause secondary definite marking to pattern differently from definiteness agreement in Semitic languages (Arabic: Fassi Fehri, 1999; Alqassas, 2013; Amharic: Kramer, 2010). However, many of these characteristics cause secondary definite marking to mirror phenomena in Greek (Alexiadou
& Wilder, 1998; a.o.) and various other languages (Cinque, 2010). In analyses of these languages, it was argued that adjectives are generated in two distinct locations of the DP. One type, termed ‘indirect modifiers’ by Cinque, are generated in a reduced relative clause while the other, termed ‘direct modifiers’, are located closer to the noun in either a specifier or adjunct position. Using this as a foundation, I argue that Maltese adjectives are also divided according to this dichotomy. Specifically, the analysis proposes that adjectives with secondary definite marking (indirect modifiers) are generated in reduced relative clauses and adjectives without marking (direct modifiers) are aP specifiers to nP. This structural distinction captures the unique characteristics of secondary definite marking. As such, the proposed analysis further strengthens arguments for a reduced relative clause approach to multiple definite marking in Greek over that of a split DP approach (Lekakou & Szendrői, 2007, 2012) in that only the reduced relative clause approach may extend to the Maltese data. In addition, the analysis provides support for a raising-style analysis of (reduced) relative clauses, as proposed in Kayne (1994) and continued in later analyses of Greek determiner spreading (Alexiadou & Wilder, 1998; Alexiadou, 2014a; see also Brame, 1968; Schachter, 1973; and Vergnaud, 1974 for raising analyses outside of Greek), over that of the matching-style analysis in Cinque (2010).

The chapter proceeds as follows. Section 2 provides a general overview of definiteness in the Maltese DP, distinguishing between obligatory and secondary definite marking. Section 3 discusses previous accounts of similar phenomena to secondary definite marking. Section 4 proposes an analysis of secondary definite marking based on Alexiadou & Wilder (1998)’s analysis of Greek determiner spreading. Section 5 concludes.
2 Characteristics of secondary definite marking

As discussed above, secondary definite marking and obligatory definite marking share the same phonological form but are differentiated by their placement in the Maltese DP. Specifically, secondary definite marking appears on post-nominal attributive adjectives while obligatory definite marking appears on the noun or prenominal elements, as shown in (28).

(28) id-dgħajsa l-ħamra dahlet fi-l-port
   DEF-boat.F.SG DEF-red enter.3F.SG.PFV in-DEF-port
   ‘The red boat entered the port.’

The secondary definite marker is dependent upon the obligatory marker in that if there is no obligatory marker on the noun, there cannot be secondary definite marking on the adjective. However, if the obligatory definite marker appears on the noun, the adjective can, but in some contexts need not, take secondary definite marking. This relationship is illustrated in (29).

(29) a. il-programm il-ġdid
   DEF-program DEF-new
   ‘the new program’

b. il-programm ġdid
   DEF-program new

c. *programm il-ġdid

19 There is a construction in Maltese called ‘Proper Name Formations’ (Fabri, 2009) which appear to counter this generalization. Though these constructions contain a noun and adjective, as shown in (i) from Fabri (2001, p. 161), they behave more like compounds than adjectival modification of a noun.

(i) Triq il-Kbira
    street.F.SG DEF-big.F.SG
    ‘Main street’
In (29)a, both the obligatory and secondary definite marker appear in the DP. Compare this to (29)b, which only contains the obligatory definite marker but remains grammatical. Finally, compare both examples to (29)c which is ungrammatical because it contains secondary definite marking but not obligatory definite marking.

In addition to its reliance on the obligatory definite marker, the contexts in which an adjective takes secondary definite marking are determined by semantic and syntactic characteristics. In the following sections, I will discuss each of these in turn.

2.1 Semantic effects

The secondary definite marker in Maltese has been tied to semantic and pragmatic effects in previous discussions of the phenomenon (Borg, 1996; Plank & Moravcsik, 1996; Fabri 1993, 2001; Gatt, 2018). While the classification of these effects varies between descriptions, fieldwork data indicates that it creates a restrictive reading for the adjective. For example, the interpretation of the adjective differs depending on the use of the secondary definite marker, shown in (30), a Maltese adaptation of Alexiadou (2014a, p. 20), which cites Kolliakou (2004). When present, as in (30)a, it forces a restrictive reading for the adjective. In this case, there are other scientists, but only the efficient ones have been sent home. When the secondary definite marker is absent (30)b, the adjective may be interpreted as either non-restrictive or restrictive in that either only the efficient scientists are being sent home (restrictive) or both efficient and non-efficient scientists are being sent home (non-restrictive).
(30) a. hu ordna li x-xjenzati
3M.SG order.3M.SG.PFV COMP DEF-scientist.PL
l-effiqenti jmorru d-dar
DEF-efficient.PL go.3.PL.IPFV DEF-home.F.SG

‘He ordered that the efficient scientists go home.’

= Just the efficient scientists are being sent home.

b. hu ordna li x-xjenzati
3M.SG order.3M.SG.PFV COMP DEF-scientist.PL
effiqenti jmorru d-dar
efficient.PL go.3.PL.IPFV DEF-home.F.SG

‘He ordered that the efficient scientists go home.’

= Just the efficient scientists are being sent home.
= The efficient scientists, among others, are being sent home.

The semantic effects of secondary definite marking also interact with obligatory definite marking in the transition from generic to specific meanings. For example, in (31), neither the noun nor adjective carry definite marking. This causes the DP to be interpreted generically.

(31) inbid abjad hu frisk fi-s-sħana

‘White wine is refreshing in the heat.’

Compare this now to (32). In Chapter 2, I demonstrated that generic nouns may appear with obligatory definite marking in Maltese, like Modern Standard Arabic. This remains true of generic nouns when combined with an adjective that does not carry secondary definite marking.
In this case, the DP may have either a generic or specific interpretation but neither interpretation forces a restrictive reading.

(32) l-inbid abjad hu frisk fi-s-shana


‘(The) white wine is refreshing in the heat.’

Now, take (33), which has both obligatory definite marking and secondary definite marking.

(33) l-inbid l-abjad hu frisk

DEF-wine.M.SG DEF-white.M.SG COP.3M.SG refreshing fi-s-shana

in-DEF-heat.F.SG

‘The white wine is refreshing in the heat.’

With both markers, the generic reading of the DP is lost. Only a restrictive interpretation is possible for (33), implying that there are other types of wine that may or may not be refreshing.

In this section, I demonstrated that the secondary definite marker causes a restrictive interpretation for adjectives and cannot be used in tandem with a generic reading of a DP. These facts will become relevant in section 4.1 where they will be used to identify secondary definite-marked adjectives as indirect modifiers under Cinque (2010). Next, I will present data indicating that the secondary definite marker is restricted by the type of adjective to which it may attach.
2.2. Interaction with adjective types

The semantic effects discussed in the previous section for secondary definite marking indicate that the marker is not in fact optional but rather used to convey a restrictive interpretation for the adjective. Another factor that causes this marker to appear optionally is its interaction with certain types of adjectives. While the marking appears readily on certain types of adjectives, it is restricted from appearing on others. This restriction stems from the semantic effects discussed in section 2.1 in that secondary definite marking does not appear on adjectives which lack a possible restrictive interpretation. This section will provide a survey of secondary definite marking on various types of adjectives and conclude with a few that disprefer the marking.

Maltese secondary definite marking readily appears on intersective adjectives like *qasir* ‘short’ (34)a, derived adjectives like *Ġermaniż* ‘German’ from the noun, *Ġermaniz* (34)b, underived adjectives like *twil* ‘tall’ (34)c, stage-level adjectives like *marid* ‘sick’ (34)d, and gradable adjectives like the aforementioned *qasir*. It appears on adjectives of Romance origin like *prinpal* ‘main’ (34)e and *importanti* ‘important’ (34)f and adjectives of Semitic origin like the aforementioned *qasir* (34)a, and *twil* (34)c.
In addition, it appears on adjectives regardless of which gender and number features the adjective takes, as exemplified by (35) and (36).
(35)  a. il-ktieb  l-iswed
    ‘the black book’

     b. il-mejda  t-twila
    DEF-table.F.SG   DEF-tall.F.SG
    ‘the long table’

(36)  a. il-qattus  l-għażżien
    DEF-cat.M.SG   DEF-lazy.M.SG
    ‘the lazy cat’

     b. il-qtates    il-bojod
    DEF-cat.PL   DEF-white.PL
    ‘the white cats’

However, given the restrictive effect of secondary definite marking, there are a handful of adjectives which generally do not appear with it. One such type is non-scalar adjectives like atomiku ‘atomic’ and ġeogra’ika ‘geographic’ as shown in (37), following definitions of these adjectives types in Burnett (2012).

(37)  a. *iż-zona  l-ġeogra’ika
    DEF-zone.F.SG   DEF-geographic.F.SG
    ‘the geographic area’

     b. ?*il-bomba  l-atomika
    DEF-bomb.F.SG   DEF-atomic.F.SG
    ‘the atomic bomb’
Since adjectives like _geogra%ka_ ‘geographic’ do not have a possible restrictive reading, it is expected that speakers will disprefer secondary definite marking on them. Only when a restrictive reading is forced do speakers permit the marking, as in (38) for _atomika_ ‘atomic’. 

(38) il-bomba l-atomika hija tip ta’ arma  
DEF-bomb.F.SG DEF-atomic.F.SG COP.3F.SG type of weapon  
nuclear  

‘The atomic bomb is a type of nuclear weapon.’

= Only bombs classified as ‘atomic’, as opposed to another type of bomb, are a type of nuclear weapon.

Plank & Moravcsik (1996) note two other types of adjectives which avoid secondary definite marking. These are non-intersective adjectives, (39)a, and classificatory adjectives, (39)b.

(39) a. l-ispirtu (*l-)awtentiku  
DEF-spirit.M.SG (DEF-)authentic.M.SG  
‘the authentic spirit’

b. il-qag%da (*l-)internazzjonali  
DEF-situation.F.SG (DEF-)international.F.SG  
‘the international situation’ (Plank & Moravcsik, 1996, p. 188)

It is likely that these types avoid definite marking for the same reason as _geogra%ka_ and _atomika_ though it remains to be seen if it is possible to add a marker when forcing a restrictive interpretation.
Overall, Maltese secondary definite marking exhibits semantic effects that predict its limited use on non-scalar, non-intersective, and classificatory adjectives. In the next section, I will elaborate on the syntactic characteristics of secondary definite marking.

2.3 Syntactic characteristics

Thus far, I have shown that Maltese secondary definite marking appears on attributive adjectives and exhibits semantic effects. These effects cause the marker to avoid certain types of adjectives which are unable to be interpreted restrictively. In this section, I now turn to the syntactic characteristics associated with secondary definite marking. Here, I will show that the marker only appears on post-nominal attributive adjectives and displays systematic patterns in the context of stacked and coordinated adjectives.

As shown in the data above and the linear order of the Maltese DP defined in Chapter 2, attributive adjectives generally appear post-nominally in Maltese. However, a small subset of adjectives do appear prenominally. These include adjectives with a marked interpretation, as in (40) from Borg (1996, p.15), and specific lexical items like allegat ‘alleged’, povru ‘poor/pitiable/pathetic’; and uniku ‘only’.

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20Many thanks to Albert Gatt for this data point.
These prenominal adjectives take definite marking instead of the noun like the prenominal modifiers described in Chapter 2, section 2. As such, the marker on these adjectives is not the secondary definite marker but the obligatory definite marker. This is further evidenced by the use of only one definite marker in DPs containing both a numeral and a prenominal adjective, as in (41) from Korpus Malti (parl7591).

(41) dawn iż-żewġ povri persuni
     PROX.DEM.PL DEF-two poor.PL person.PL

     ‘these two poor people’

The presence of only one definite marker in (41) and its placement on the leftmost edge of the DP, to the exclusion of the demonstrative, supports the claim that it is the obligatory definite marker. As such, it follows that the definite marker on the prenominal adjectives in (41) are instances of obligatory definite marking and therefore indicates that only post-nominal adjectives take secondary definite marking.21

21It is outside the scope of this dissertation to determine why a select few adjectives appear prenominally in Maltese while the rest are postnominal. However, it has been noted by Lucas & Čéplö (2018) that there is a correlation between these prenominal adjectives and “specificationational adjectives” in Italian. This group of Italian adjectives also appear prenominally and are the source of [at least] some of the prenominal adjectives in Maltese, such as uniku ‘only’.
To continue the discussion of syntactic characteristics, I turn now to the use of secondary definite marking on predicative adjectives. Generally, the class of predicative adjectives in Maltese differs from that of other languages. For example, the underlined adjectives in (42) are classified as non-predicative due to their ungrammaticality in English examples like (42).

(42)  
   a.  *The president is former.
   
   b.  *The murderer is alleged.
   
   c.  *The program is main.

These adjectives do not form the same class in Maltese. The English adjective ‘former’ is a prepositional phrase in Maltese. ‘Alleged’ is one of the unique prenominal adjectives in the language (as described above) and ‘main’ is permitted as a predicative adjective in Maltese, as indicated by the grammaticality of (43) below.

(43)  il-programm    huwa    principali
     DEF-program.M.SG COP.3M.SG main.M.SG

‘The program is main.’

In fact, of the data collected, only two adjectives display questionable grammaticality in predicative position: povru ‘poor/pitiable/pathetic’, as seen in (44) from Albert Gatt (p.c.) and allegat ‘alleged’. Crucially, these adjectives cause a questionable grammaticality judgement in

\footnote{Speakers vary on their opinions of this sentence, generally remarking that it is grammatical but semantically strange. However, further evidence that principali is in fact predicative comes from its use in the predicate position of a relative clause, as in (i) from Korpus Malti (parl5999). Many thanks to Albert Gatt for discussion of this data.}

(i)  Sfortunatament ghandna toroq li m-hum-ix daqṣhekk
      unfortunately have.3PL road.PL COMP NEG-COP.3PL-NEG enough
      tajbin, toroq li huma principali…
      good.PL, road.PL COMP COP.3PL main.PL…

‘Unfortunately, we have roads that are not good enough, roads that are main…’
predicative position when it is interpreted in the same sense as it would be attributively. For (44), this interpretation is such that the man is thought to be poor, pitiable, or pathetic.

(44) ʔir-raġel (huwa) povru


‘The man is poor/pathetic/pitiable.’

Outside of their non-predicativity, both allegate and povru share the characteristics of appearing prenominally in Maltese. This was discussed previously in relation to the placement of secondary definite marking. In that discussion, it was shown that prenominal adjectives carry obligatory definite marking, not secondary. Therefore, the available data indicates that secondary definite marking only appears on adjectives which are permitted in predicative position. This point will become particularly relevant for the proposed analysis discussed in section 4.

Thus far, I have shown that secondary definite marking only appears on post-nominal attributive adjectives which may be used predicatively. For the remainder of this data section, I will elaborate on more complex behaviors of secondary definite marking, exemplified by its distribution in the context of coordinated adjectives and stacked adjectives.

Like other adjectives in Maltese, coordinated adjectives may appear with secondary definite marking. However, the placement of this marking is restricted to only the leftmost adjective of the coordinated structure, as shown in bold in (45).
If the definite marker is attached to both adjectives, the interpretation of the DP changes. Specifically, as shown in (46), when *ahmar* ‘red’ and *abjad* ‘white’ take their own secondary definite marker, the subject of the sentence is perceived as wearing two shirts (either simultaneously or over the course of the day), one that is red and another that is white.

The pattern displayed by coordinated adjectives in (46) differs from that of stacked adjectives. Unlike coordinated adjectives, each stacked adjective may take secondary definite marking, as shown in (47)a, indicating the marker is recursive. It is also possible to use only one secondary definite marker in these contexts, but it must appear on the rightmost adjective, as in (47)b (see also Fabri, 1993 and Duffield, 1999).23

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23In addition to the two distributions shown here, stacked constructions may also appear without secondary definite marking on either adjective, as shown in (i).

(i) il-karozza Germaniża sabih
    DEF-car.F.SG German.F.SG beautiful.F.SG
    ‘the beautiful German car’
Specifically, secondary definite marking cannot appear solely on the leftmost adjective. This does not result in ungrammaticality but rather forces a predicative reading for the second unmarked adjective, as shown for kbir ‘big’ in (48).24

(48) il-ktieb l-iswed kbir

‘The black book is big.’

This pattern is further supported by reversing the adjective order. As seen in comparing (48) and (49), the same pattern emerges regardless of which adjective is leftmost/rightmost.

Following the analysis of non-marked adjectives as aP specifiers of nP to be proposed in section 4, this particular fact indicates that the Maltese nP may take multiple specifiers as has been recently proposed in the Minimalist Program (cf. Chomsky, 2004; a.o.) but I leave a full discussion of this matter for future research.

24 This fact is consistent throughout the elicited fieldwork data but Gatt (p.c.) also notes that there are a select number of unclear cases where the rightmost adjective does not take definite marking, as in (i) and (ii) below. These types of counterexamples are given questionable grammaticality judgements since speakers are generally not sure whether to mark the adjective or not and thus are likely due to a combination of language variation, the interaction of the semantic effects described in section 2.1, and the syntactic behavior described here. I leave further discussion and extension of the analysis to these examples for future research.

(i) ?l-grajja l-ohra importanti
    DEF-story.F.SG DEF-other.F.SG important.F.SG
    ‘the other important story’

(ii) ?l-istudji l-godda possibbli
    DEF-study.PL DEF-new.PL possible.PL
    ‘the new possible studies’
Overall, this section has discussed the semantic and syntactic characteristics tied to Maltese secondary definite marking. Semantically, the secondary definite marker causes a restrictive interpretation, which in turn limits its use to attaching to adjectives that have a possible restrictive interpretation. In section 2.3, I demonstrated that secondary definite marking is limited syntactically in its appearance. Specifically, it only appears on post-nominal attributive adjectives that are predicative. In section 4, I will explain this fact as an effect of these adjectives originating in the predicate position of reduced relative clauses. In a discussion of more complex adjectival constructions in 2.3, it was found that secondary definite marking is recursive or limited to appearing on the adjective farthest from the noun on stacked adjectives. This pattern is seemingly reversed on coordinated adjectives where marking is not recursive and only appears on the leftmost adjective. These more complex behaviors will be accounted for in section 4.3 through an extension of the reduced relative clause analysis. Before elaborating further, in the next section, I will discuss previous approaches to secondary definite marking in Maltese and related phenomena in other languages.
3 Previous accounts

In this section, I will explore previous accounts and descriptions specific to Maltese secondary definite marking with primary discussion of Gatt (2017) and Duffield (1999). I will then expand this into an overview of similar phenomena in both related languages (Arabic: Fassi Fehri, 1999; Alqassas, 2013; Amharic: Kramer, 2010), unrelated languages (Greek: Alexiadou & Wilder, 1998; Alexiadou, 2014a), and across languages (Cinque, 2010). It will be shown that while Maltese secondary definite marking shares qualities with each of the reviewed languages, all but one of the analyses fall short of accounting for each of the syntactic and semantic characteristics discussed in section 2. The analysis found to be most comparable to Maltese secondary definite marking is Alexiadou & Wilder (1998)’s (and later Alexiadou, 2014a’s) reduced relative clause analysis of Greek determiner spreading.

3.1 Maltese-specific

Much of the previous work on Maltese secondary definite marking has focused on a pragmatic account of the phenomena that ties secondary definite marking to a contrastive interpretation of the adjective. By “contrastive”, the literature here refers to a context where secondary definite marking is used to distinguish a single referent from a set of possible referents. As such, what previous literature calls ‘the contrastive nature’ of secondary definite marking generally aligns with the restrictive interpretation I discuss in section 2. This contrastive nature has been mentioned briefly in grammars of Maltese, such as Borg & Azzopardi-Alexander (1997), and discussed to a fuller extent by Fabri (2001), who also argues that secondary definite marking
cannot be agreement since it is not obligatory, Plank & Moravcsik (1996), which discusses secondary definite marking in a typological light, and Gatt (2018), which tests the contrastive nature of secondary definite marking from a psycholinguistic perspective. In addition, a brief syntactic analysis of secondary definite marking in Maltese was proposed by Duffield (1999) in his comparison of Irish and Maltese adjectives. Of these, I will focus on the results and claims of Gatt (2018) and analysis proposed in Duffield (1999) since they are the most comprehensive accounts.

Gatt (2018), like previous literature, hypothesizes that definite-marked adjectives are used in Maltese for a contrastive purpose. To test this, he constructs an experiment to determine whether speakers would be more likely to mark these adjectives as definite in a contrastive environment. When shown pictures such as those below, taken from Gatt (2018, p. 20), speakers were asked to respond to the question ‘Which object is in the red box?’.

(50)

In (50), the baseline and contrast conditions contain three different objects and the distractor condition contains two objects, one of which appears in two distinct colors (red and blue). Under

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<tr>
<td><img src="image1" alt="Baseline condition" /></td>
<td><img src="image2" alt="Contrast condition" /></td>
</tr>
</tbody>
</table>

[In addition to this experiment, Gatt (2018) also conducts a corpus study using Korpus Malti to specifically target cases where a definite noun is followed immediately by a definite-marked adjective at the beginning of a sentence. He then compares the number of times the same adjective appears with or without definite marking. In all, these adjectives were more likely to appear with definite marking than not with a comparison of definite-marked-adjectives used 8,336 times versus the same adjectives as indefinite appearing 2,303 times. Of the 8,336 definite-marked cases, 8,183 involve the adjectives ċieħor ‘other’, gdid ‘new’, and antik ‘old’. The remaining cases are distributed amongst the other 17 adjectives.]

51
Gatt’s hypothesis, the expectation is that, for the distractor condition, speakers will definite-mark the color adjective when identifying the boxed object.

After the survey’s completion, Gatt found that 80.9% of the adjectives used in describing the referent in the red box during the distractor condition were definite. 66% and 67% of the adjectives were also marked as definite when describing the referent for the contrast and baseline conditions, respectively. Thus, even when the speaker was not differentiating between two of the same referents in the picture, they used secondary definite marking over half of the time.

However, despite the seemingly high percentage of definite-marked adjectives in the contrast and baseline conditions, Gatt finds that the use of definite marking on adjectives in the distractor condition is “a statistically reliable trend (Gatt, 2018, footnote 5)” using logit mixed effect models. The tests indicated that treating the conditions as a fixed effect explains a significant proportion of the variation of definite-marked adjectives. Further, Gatt showed that there was no significant difference in the likelihood of using a definite-marked adjective when comparing the baseline and contrast conditions but, when comparing the distractor condition to these other conditions, the likelihood of using a definite-marked adjective was found to be highly significant ($p < .001$).

As Gatt’s results indicate, definite-marked adjectives do have a contrastive effect. However, speakers in the experiment did not definite-mark the adjective in the distractor condition 100% of the time and also utilized definite marking on adjectives in a good portion of the responses for the baseline and contrast conditions. The absence of definite marking in the distractor condition follows from the restrictive behavior discussed in section 2 in that secondary definite-marked adjectives must have a restrictive interpretation while non-definite-marked adjectives may be interpreted restrictively or non-restrictively. As such, utterances that did not
contain definite-marked adjectives could still be interpreted restrictively. In response to the finding that definite marking is used in seemingly non-contrastive environments, i.e. the baseline and contrast conditions, Gatt (p.c.) states that this is likely a task-based issue. Since the objective of the experiment is for speakers to identify the object, they may explicitly contrast that object in their response with the other non-target objects. Thus, it is expected that some speakers use secondary definite-marked adjectives in the baseline and contrast conditions to indicate contrast for the target object despite the absence of other objects of the same type.

With this in mind, I propose to incorporate Gatt (2018) and previous discussion of secondary definite marking into the analysis proposed in this chapter. It will be shown that a syntax-based analysis of the phenomenon will best account for the data, given the semantic effect of secondary definite marking discussed by Gatt and other researchers.

Before moving on to compare Maltese to other languages, it should be noted that the presence/absence of secondary definite marking on adjectives has been discussed briefly from a syntactic standpoint in the typological literature. Duffield (1999) argues for a theoretical distinction between specifiers and adjuncts (counter to Chomsky, 1994, 1995 and Kayne, 1994) by positing that the similarities and distinctions found between Celtic and Semitic languages are expected if attributive adjectives in Celtic appear in the specifier of AP, which merges above NP in the DP spine, as in (51)a, and the adjectives of Semitic languages are adjoined to NP (51)b.

(51) a. \[ \text{Spec} \rightarrow \text{A}' \leftarrow \text{AP} \rightarrow \text{NP} \] b. \[ \text{AP} \rightarrow \text{NP} \]
In his discussion, he notes the optional nature of Maltese adjectival definite marking and, building on the dichotomy proposed in (51), argues that this is predicted if definite-marked adjectives adjoin to NP, as is in (51)b and non-definite-marked adjectives appear in the specifier of AP, as in (51)a. He further evidences this distinction given its predictions for stacked adjectives. Remember from section 2.3, when stacked adjectives modify a definite noun, they will either both appear with definite marking or the marker will only appear on the rightmost adjective, as in (52)a from Duffield (1999, p. 136), who cites Fabri (1993).26 His analysis predicts this rightmost placement of the marker since the definite-marked adjective will appear in the lower syntactic position and the noun will undergo head movement past both AP projections up to Num, as in (52)b below.

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26Two notes regarding example (52)a: First, according to Duffield (1999) and Fabri (1993), the example has questionable grammaticality but fieldwork from 2018 indicates that similar examples are grammatical. Second, there seems to be variation regarding the meaning of bozza. Duffield cites this word as meaning ‘pear’ but native speakers of Maltese have noted that the meaning of bozza is in fact ‘lightbulb’ and the correct word for ‘pear’ is lanjasa. However, to maintain uniformity with Duffield’s analysis, I leave the cited meaning here.
As shown in (52)b, the structure and head movement correctly predicts the pattern displayed by stacked adjectives but, as he admits, it is “less than obvious” in his analysis how the definite marker is expected to appear on the adjoined adjective but not the adjective in Spec, AP. For the sake of argument, he posits that the definite marking on adjoined APs indicates that they are in fact DPs but does not go so far as to define what mechanism is responsible for valuing the definiteness features of the adjoined AP/DP.

Further, when compared to current assumptions regarding specifiers and adjuncts in the Minimalist Program, Duffield’s analysis no longer predicts the pattern in (52)a. The current structure of Duffield’s non-definite-marked adjectives counters the “minimalist” view of syntax in the Minimalist Program syntax by including a head, A, that remains unrealized in most, if not all, derivations of the DP. As such, Duffield’s analysis may be altered to derive non-definite-marked adjectives, which he argues are in the spec of an AP, as specifiers of the NP. However,
updating Dufield's analysis causes it to make incorrect predictions regarding the behavior of definite marking on stacked adjectives. Specifically, following discussion in Alexiadou, Haegeman, & Stavrou (2008, p. 11), specifiers in Minimalism are merged closer to the head than adjuncts. Thus, definite-marked adjectives adjoined to NP will be merged above the non-definite-marked adjectives in Spec, NP. Head movement of N to Num (see Chapter 2) will then place the non-definite-marked adjective on the rightmost edge of the DP, the opposite of the expected pattern for stacked adjectives.

Given the unclear nature of definiteness agreement in Dufield (1999) and the incompatibility of the analysis with current assumptions (or incorrect predictions when updating Duffield’s analysis to be compatible with current assumptions), I set the spec-adjunct analysis aside in favor of the reduced relative clause analysis to be proposed in section 4.1. Like Dufield, I will argue that the distinctions between definite-marked and non-definite-marked adjectives are predicted if they are generated in separate syntactic positions of the DP spine. However, I diverge from Dufield in placing non-definite-marked adjectives in Spec, np and definite-marked in the predicate position of a reduced relative clause. In this way, the analysis does not encounter the problem of determining how definiteness agreement appears on some adjectival projections but not others since, in the reduced relative clause analysis, the secondary definite marker is straightforwardly predicted as the realization of D.

In the next section, I provide an overview of adjectival definite marking in related Semitic languages. It will be shown that Maltese secondary definite marking differs from these phenomena in that, in Maltese, it imposes a semantic effect, as discussed in section 2.1 and therefore cannot be analyzed as a result of DP-internal agreement.
3.2 Determiner Phrase-internal agreement

In this section, I will discuss three distinct analyses of definiteness agreement. The discussion will cover obligatory definiteness agreement in Arabic as analyzed by Fassi Fehri (1999) and, more recently, Alqassas (2013) and optional definiteness agreement in Amharic (Kramer, 2010). While Hebrew also displays obligatory definiteness agreement on adjectives (Borer, 1999; Wintner, 2000; Danon, 2001, 2002, 2010; Falk, 2007; McNabb, 2013), I will only discuss the Arabic literature here given its closer relation to Maltese and optional definiteness agreement in Amharic because of its superficial similarity to secondary definite marking in Maltese.

3.2.1 Obligatory definiteness agreement in Arabic

In Modern Standard Arabic, definite features on attributive adjectives categorically covary with the definite features of the modified noun. Therefore, when the definite prefix ʔal- is present on the noun, it is also present on the adjective, as in (53)a. Likewise, when the noun is marked as indefinite with the suffix -n, the adjective also takes the indefinite suffix, as shown in (53)b. In cases where the noun is definite-marked and the adjective is not, the adjective is interpreted predicatively. This follows from the post-nominal placement of both predicative and attributive adjectives and the use of a null copula in the present tense (53)c.
Obligatory definite marking on attributive adjectives in Arabic varieties has been the subject of extensive previous research, including Fassi Fehri (1999), Assiri (2011), and Alqassas (2013), among others. Generally, these analyses argue that definite marking on adjectives is the realization of definiteness agreement, with proposals varying in the use of head or phrasal movement and how these definiteness features are realized. In the remainder of this section, I will briefly summarize the characteristics of Arabic varieties that drive these agreement-based accounts and the movements involved. I will then go on to show that Maltese DPs do not pattern like these Arabic varieties in many respects and, therefore cannot be analyzed in the same manner.

As described above, Modern Standard Arabic exhibits obligatory definite marking on attributive adjectives when they modify definite-marked nouns. To my knowledge, all Arabic varieties pattern like the data in Modern Standard Arabic in this respect. This obligatory
agreement does not have a semantic effect on the interpretation of the DP but distinguishes attributive adjectives from their predicative equivalents, as seen in comparing (53)b and c above.

It has also been noted by multiple approaches that adjectives in the Arabic varieties observe strict ordering restrictions (Fassi Fehri, 1999; Kremers, 2003; see also Sichel, 2002; Shlonsky, 2004 and Chapter 4 for discussion of similar facts for Hebrew). These restrictions are also found on English adjectives, as shown in (54).

(54)  a. the little green book
     b. ?the green little book

Sproat & Shih (1988, 1991) argue that adjectival ordering restrictions are based on a hierarchy ordered as in (55) (see also Bloomfield, 1933; Whorf, 1945; a.o.).

(55) quality > size > shape > color > provenance

Arabic adjectives adhere to this hierarchy but in the reverse order. For example, in the English example (54), the order of the prenominal adjectives is SIZE > COLOR. In the Modern Standard Arabic example (56), the order is reverse for the post-nominal adjectives, COLOR > SIZE.

(56)  l-kitaab-u   l-ʔaxdˤar-u   sˤ-sˤaɣiir-u
       DEF-book-NOM  DEF-green-NOM  DEF-little-NOM

‘the little green book’ (adapted from Fassi Fehri, 1999, p. 107)

Shlonsky (2004) and Fassi Fehri (1999) use this mirror image order to motivate movement within the DP. Shlonsky argues that this motivates a roll-up phrasal movement of the NP for Arabic (and Hebrew), which picks up APs on its way up to Spec, DP (or lower, see Shlonsky, 2004 for discussion of variable placements). Fassi Fehri, on the other hand, uses this and the post-
adjectival placement of adverbs, as motivation for the phrasal movement of APs to the specifier of functional projections, which he terms ‘dP’, along the DP spine.

Shlonsky (2004) and Fassi Fehri (1999) also motivate their individually-proposed movements with the placement of numerals in the Arabic DP. Specifically, numerals can appear prenominally or post-nominally. When prenominal, they are ordered like in English, Ordinal > Cardinal, as in (57)a, and when post-nominal, Cardinal > Ordinal, as in (57)b, both adapted from Fassi Fehri (1999, p. 113).

(57)  

a. ʔawwal-u xams-i muh‘aad‘araat-in  
    ‘first-NOM 五 GEN  lectures-GEN  
    ‘the first five lectures’

b. l-muh‘aad‘araat-u l-xams-u l-ʔuulaa  
   DEF-lectures-NOM DEF-five-NOM DEF-first  
   ‘the first five lectures’

When comparing these characteristics to those of the Maltese facts discussed in section 2, we find many differences. First, secondary definite marking is not consistently obligatory, as in Arabic. Second, secondary definite marking differs from Arabic’s adjectival definite marking in being semantically contentful. Third, as shown in examples (47) and (49), Maltese adjectives are not strictly ordered according to Sproat & Shih’s hierarchy. Lastly, as shown in Chapter 2, Maltese differs from Arabic is the placement of numerals. While Arabic may place numerals pre- and post-nominally, Maltese obligatorily places them before the noun where the leftmost one (the ordinal if included) takes the obligatory definite marker.
Given these differences between Arabic adjectival definite marking and Maltese secondary definite marking, previous analyses of the former are not easily extended to the latter. For example, in Alqassas (2013), Arabic’s adjectival definite marking is analyzed as a feature located on an Agr node. This node is adjoined to A at PF (see Halle & Marantz, 1993; Halle, 1997). The post-syntactic insertion of Agr features correlates with the lack of semantic effects exhibited by Arabic’s adjectival definite marking since it occurs after syntactic spell-out. As such, the insertion of features at PF does not, and cannot, affect interpretation at LF. However, the property of this analysis that accurately predicts the semantic vacuity of Arabic adjectival definite marking causes it to be unapplicable to Maltese. Since secondary definite marking has a semantic effect, it must be generated in the syntax so that it may be interpreted upon spell-out to LF.

Fassi Fehri (1999)'s analysis of Arabic’s adjectival definite marking indirectly avoids these spell-out issues by proposing to generate definite marking in the syntax. In his analysis, adjectives in Modern Standard Arabic are left-branching AP specifiers of functional projections which then move to dP to check their case, definiteness, and phi-features with those from (a segment of) D. The adjectives surface post-nominally after independent movement of N to D, which is argued to occur due to the affixal nature of the definite marker (Fassi Fehri, 1987; Ritter, 1987; Mohammad, 1988; Ouhalla, 1988). Extending this analysis to Maltese secondary definite marking predicts that the definite marker has a semantic effect since it is generated before spell-out to LF, and that it is recursive since every AP will move to a separate Spec, dP to check its features. Crucially though, it does not predict the lack of definite marking on adjectives in non-
restrictive interpretations. Since Fassi Fehri’s analysis is developed to account for obligatory adjectival definite marking, it is expected that every adjective will appear with an overt d.\(^{27}\)

The extension of Fassi Fehri’s analysis is further complicated when considering secondary definite marking patterns on stacked adjectives. In Arabic, each adjective will obligatorily appear with a definite marker. Maltese can also recursively put secondary definite marking on stacked adjectives, which would be accounted for using Fassi Fehri’s analysis of Arabic. However, Maltese may also only place secondary definite marking on the rightmost adjective, as shown previously in (47). In Fassi Fehri’s analysis, this would imply that in the context of stacked adjectives, the highest d of a series of stacked dPs may or may not be overtly realized but the lowest d of the dP series must always be overtly realized. Since the definiteness features of the phrase are originating from (a segment of) D, it is unclear how or why those features are not shared with the dP directly below DP but are shared with a lower dP.

\(^{27}\)In his discussion, Fassi Fehri (1999) argues that small clauses are applicable to the derivation of prenominal adjectives in Arabic, as in (i) from Fassi Fehri (1999, p. 135), and proposes a structure that is not unlike the reduced relative clause analysis to be proposed in section 4 of this chapter, as in (ii).

(i) ʔakal-tu ladˤiidˤ-a tˤ-ʔaʕaam-i
    ate-1SG delicious-ACC DEF-food-GEN
    ‘I ate the delicious (of the) food.’

(ii)  
    \[\begin{array}{c}
    \text{DP} \\
    \text{D'} \\
    \text{D} \\
    \text{IP} \\
    tˤ-ʔaʕaam \\
    \text{ladˤiidˤ}
    \end{array}\]

However, his analysis is distinctive from that proposed here since its purpose is to derive prenominal adjectives that do not take definite marking. As such, the movements he uses to predict the adjective’s linear placement are problematic when applied to the Maltese data since they move the adjective to an upper specifier of the DP, placing it in front of the noun and too high to take definite marking.
The differences in characteristics between Arabic adjectival definite marking and Maltese secondary definite marking discussed above indicate that the two phenomena are similar but not one and the same. This distinction becomes clearer upon consideration of previous analyses of Arabic adjectival definite marking. Therefore, I conclude that analyses of Arabic adjectival definite marking cannot extend straightforwardly to Maltese secondary definite marking. In the next section, I continue my evaluation of possible analyses for Maltese secondary definite marking with discussion of optional definite marking in Amharic.

### 3.2.2 Optional definite marking in Amharic

In Amharic, a Semitic language spoken in Ethiopia, definite DPs must be marked by a definite suffix, definite marking on adjectives is generally optional, and the definite marker does not consistently appear on the noun, but rather varies depending on the presence of other elements in the DP (Kramer, 2010). As shown in (58) below, the definite suffix appears on the noun when no other elements are present but can also appear on the attributive adjective, which is prenominal.

(58)  

a. bet-u  

   house-DEF  

   ‘the house’

b. bät'am  tillik'-u  bet  

   very  big-DEF  house

   ‘the very big house’ (Kramer, 2010, p. 198)

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28This optionality is only apparent when more than one adjective appears in the DP.
To account for this variable definite marker placement, Kramer (2010) argues that the obligatory definite marker of a definite DP is the realization of D[def], a clitic placed at the second position of the right edge of its domain. If only one element is contained in the domain (the noun) it suffixes to the noun, as in (58)a. The placement of this clitic is accounted for via Local Dislocation and a requirement for the Vocabulary Item of the definite marker to have a host and attach to the right edge of said host. An example derivation of *betu ‘the house’ is provided below from Kramer (2010, p. 211).

(59) \[
\begin{array}{c}
\text{DP} \\
\text{D[def]} \\
\text{-u} \\
\text{NP} \\
\text{bet} \\
\text{‘house’}
\end{array}
\rightarrow \text{ (Spell-Out and Linearization)} \rightarrow [-u * \text{bet}] \rightarrow [\text{bet-u}]
\]

When using prenominal DP-internal elements, the suffix attaches to the right edge of the rightmost prenominal element, as shown in the adjective *tillik’ in (58)b above. Assuming that APs, CPs, and DPs, are phases (Chomsky, 2000, 2001, 2004; Svenonius, 2004), the AP *bät’am *tillik’ ‘very big’ is spelled out prior to *bet and the definite marker. Once these elements are spelled out, the derivation appears as in (60), where the struck-through material represents previously spelled out elements. Following DM assumptions, once the material is linearized, Local dislocation will attach the definite suffix to the right edge of this AP phase (the edge being accessible under Kramer’s analysis), yielding [[*bät’am *tillik’]-u * *bet].
In order to account for the optionality of definite marking on adjectives, Kramer first argues that it is in fact an example of definiteness agreement, using Corbett (2006)’s criteria for canonical agreement. She is then able to account for this definiteness agreement with two DM mechanisms specific to ‘concord’, or DP-internal agreement: the insertion of AGR nodes and Feature Copying. The two are defined as follows from Kramer (2010, p. 229-230).

(61) Agr insertion (optional)
A → [A Agr]

(62) Feature Copying

The features on the closest c-commanding D are copied into the Agr node attached to A. The optionality of Agr insertion predicts that definiteness agreement will only optionally appear on adjectives in the DP. Feature copying copies the sets of features in D (gender and definiteness in Amharic) to the Agr node when it is present, yielding gender and definiteness agreement on adjectives. These are then realized together as the definite suffix during Vocabulary Insertion.

It is clear that much of the Amharic data is comparable to Maltese. Both languages exhibit definite marking on attributive adjectives and contain an obligatory definite marker located either on the noun or some other prenominal element in the DP. Where the two differ is in the semantic effect of this definite marking and its optional usage. Definiteness agreement in Amharic does not have a semantic impact. Kramer explains this through a morphological
analysis of the agreement at PF, which generates definiteness agreement in Amharic too late to affect interpretation at LF. This morphological analysis also predicts the optionality of agreement through the optional insertion of Agr nodes. When Agr nodes are inserted at PF, definiteness features are copied onto it and realized phonologically. In the absence of the Agr node, features have no place onto which they can be copied. Maltese secondary definite marking has a semantic effect, as illustrated in section 2. As such, it must be generated in the syntax so that it may be interpreted at LF. This indicates that a morphological analysis of Maltese secondary definite marking will not generate the necessary interpretive effect. In addition, Maltese secondary definite marking is not truly optional but is tied to its use in restrictive interpretations.

Overall, while the Amharic analysis seems applicable to Maltese secondary definite marking on the surface, fundamental characteristics distinguish the phenomena and their analyses.

3.3 Adjectives in reduced relative clauses

In this section, I review previous literature regarding definite marking and adjectives outside of Semitic languages. This will include discussion of Cinque (2010)’s distinction between direct and indirect modifiers as well as an overview of the extensive literature on Greek multiple definite marking.
3.3.1 Cinque (2010)

Cinque (2010)’s monograph argues for two separate DP-internal sources for adjectives. One source, located at a specifier position lower in the DP, is used for direct modification. The other adjectives, which are called indirect modifiers, are generated higher on the DP spine in a reduced relative clause structure. These two positions are distinguished by a variety of semantic and syntactic characteristics observed primarily in Romance and Germanic languages. I refer the interested reader to Cinque’s monograph for a full elaboration on these characteristics and here mention two that become relevant later in the chapter.

First, the direct/indirect modifier types are distinguished by their linear ordering. Generally, direct modifiers are found closer to the noun while indirect are farther away. In the context where both modifiers are used, the indirect modifier will appear outside of the direct.

Second, direct and indirect modifiers are tied to distinct semantic interpretations. Cinque observes that indirect modifiers restrict the interpretation of the adjective while direct are generally non-restrictive (or ambiguous). Further, indirect modifiers are argued to have a deictic interpretation while direct are generic. This, and the linear ordering of the modifiers, is exemplified by the English example in (63) from Cinque (2010, p. 26) with Cinque’s use of capitalization.

(63) I missed the THURSDAY Thursday lecture.

In (63), THURSDAY is located farthest from the noun and has a deictic reading (the lecture that occurred this past Thursday of the week) while the closer Thursday to the noun has a generic reading (the lecture that regularly occurs on Thursdays).
In his discussion of these distinctive behaviors, Cinque (2010, p. 28 and p. 98-99) specifically mentions secondary definite marking in Maltese as an example of indirect modification, suggesting that the restrictive nature of definite-marked adjectives, their location outside of unmarked adjectives in stacked constructions, and the absence of definite marking on non-intersective and classificatory adjectives follows from the dichotomy of indirect and direct modifiers. Due to these similarities, Cinque postulates that the indirect/direct dichotomy extends to Maltese whereby adjectives which carry definite marking in Maltese are indirect modifiers, derived from reduced relative clauses, and unmarked adjectives are examples of direct-modification.

As will be shown in section 4, Cinque’s predictions regarding secondary definite marking are on the right track but the mechanics of the analysis, since not discussed in Cinque’s brief remark, require further elucidation. Crucially, despite the correlation drawn by Cinque, I show in the remainder of this subsection how his analysis is not directly applicable to the Maltese data.

The first and primary issue of Cinque’s analysis when approaching secondary definite marking is the structure of his proposed reduced relative clause. Specifically, the reduced relative clause structure does not directly predict the presence of multiple definite markers. To review, indirect modifiers are generated as the predicates of reduced relative clauses, which are merged into the specifier position of a functional projection located high along the DP spine. Importantly, the subject position of the reduced relative clause is filled by PRO which is coindexed with the head of the reduced relative clause, placing Cinque’s analysis in line with other “matching” approaches to relative clauses (Lees, 1960, 1961; Chomsky, 1965; see Bianchi, 2002 for an overview). Direct modifiers, on the other hand, are generated as AP specifiers lower in the DP.
spine. A structure containing both types of modifiers can be seen in (64), where the matching relation between PRO and the head of the clause is indicated by indices.

(64)

```
DP
   FP
      F
        IP
           PRO
               Indirect → AP F FP
               Direct → AP F NP
```

While this type of structure may be applicable to Cinque’s analysis of other languages, it is not immediately apparent how secondary definite markers are generated in (64). The structure itself contains only one D, which arguably generates the obligatory definite marker of a definite DP. Without the inclusion of another D in the structure, the analysis requires one of two alterations to predict the appearance of further definite markers. For the first alteration, it may be proposed that secondary definite markers are generated through agreement of definiteness features, either with D or features on N as in Duffield (1999). However, this would require that the agreement operation predicts these definiteness features only appear in the reduced relative clause structure and not on the AP specifier. In a second possible alteration to the analysis, secondary definite markers are generated in a separate functional projection found only in the reduced relative clause. However, it is unclear what purpose this functional projection may serve that makes it different from a DP. Further, the introduction of a new functional projection into
the reduced relative clause would eliminate the parallels between reduced relative clauses and predicative sentences in Maltese since the latter do not place definite marking on the predicate unless the predicate serves as a full DP.

Another issue when applying Cinque’s analysis to Maltese is the linear order that structure (64) generates upon spell-out. In order to generate post-nominal adjective ordering, Cinque’s analysis invokes roll-up phrasal movement of NP. This is used to account for variation between prenominal adjectives in Germanic languages and post-nominal adjectives in Romance. His argumentation is as follows.

Building on Sproat & Shih (1991)’s observations of adjectival ordering, Cinque posits that the NP moves above the direct modifier AP to generate post-nominal direct modifiers. In Italian, this movement is optional depending on the type, and therefore height, of the direct modifier. As for indirect modification, Cinque observes that Romance languages display both prenominal and post-nominal orderings. Therefore, the functional projection containing the NP and direct

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29Specifically, in Italian, the NP obligatorily moves above APs containing classificatory adjectives and adjectives of nationality/provenance but only optionally raises above what Cinque defines as “higher” adjectives, such as color, shape, size, and value. This height distinction for direct modifiers is based on observations of adjectival ordering between English and Italian. English, with prenominal adjectives, is taken to be the underived ordering. This same ordering exists in Italian DPs but in the reverse order, as shown in (i) from Cinque (2010, p. 73). This reversed order is argued to be generated through a roll-up phrasal movement (see also Shlonsky, 2004 for similar arguments for Hebrew adjectives).

(i) a. un cane nero enorme
    a dog black enormous
    ‘an enormous black dog’

    b. English
    enormous > black

    c. Italian
    black > enormous
AP modifier, regardless of whether the former has raised above the latter, optionally moves up to Spec, DP. Overall, these movements yield four possible linear orders, given in (65).  

\[(65)\]

a. [Indirect Mod] - [Direct Mod] - [Noun]
b. [Indirect Mod] - [Noun] - [Direct Mod]
c. [Direct Mod] - [Noun] - [Indirect Mod]
d. [Noun] - [Direct Mod] - [Indirect Mod]

(65)a is the underlying order which generates unmarked adjective orderings in English. The remaining orders are found in Italian. (65)b is the order generated by movement of the NP above the direct AP modifier. This generates the order in (66) with the prenominal indirect modifier, *potenziale*, and post-nominal direct modifier, *possibile*, from Cinque (2010, p. 69).

\[(66)\] Maria intervistò ogni potenziale candidato possibile 'Maria interviewed every potential candidate possible.'

The order in (65)c is generated by movement of the functional projection containing the direct AP modifier and NP to Spec, DP. In this order, the NP remains in-situ, which is lower than the direct AP modifier. Lastly, (65)d is used to generate the Italian adjectival orderings where both adjective types are post-nominal. This is predicted by movement of the NP over the direct AP modifier and subsequent movement of the FP containing both the moved NP and direct AP modifier to Spec, DP.

Given that Maltese adjectives are (generally) post-nominal, the movements which generate (65)d are expected to apply to Maltese data in the same fashion as Italian. At first glance, this appears to be borne out. As discussed in section 2.3 and noted in appendix 2 by

\[30\] I exclude the possibility of multiple direct AP modifiers for the sake of brevity here though Cinque (2010) goes into extensive discussion.
Cinque (2010), stacked adjectives in Maltese may either place definite marking on the rightmost adjective of the sequence or on both adjectives, as in (67) repeated from (49).

(67)  
\begin{tabular}{lll}
   a. & il-ktieb & l-iswed & il-kbir \\
   & ‘the big black book’ \\
   b. & il-ktieb & iswed & il-kbir \\
   & ‘the big black book’ \\
\end{tabular}

The placement of the definite marker remains consistent regardless of whether the adjectives iswed and kbir appear in reverse order.

Following Cinque’s own assumptions regarding definite-marked adjectives in Maltese as indirect modifiers and unmarked ones, direct, the rightmost placement of definite-marked adjectives is predicted through (65)d. However, the FP to Spec, DP movement that generates this order in Cinque’s analysis is not compatible with the overall Maltese DP structure. In Chapter 2, I discussed the structure of the Maltese DP as containing prenominal elements like numerals, superlative adjectives, and some quantifiers. Cinque (2010) argues that numerals are generated below indirect modifiers following the data from German in (68) from Cinque (2010, p. 54); the grammaticality of (68)a indicates that numerals precede indirect modifiers, which is shown in brackets.
(68) a. Diese drei [in ihren Büro arbeitenden] Männer
these three [in their office working] men
‘These three men working in their office’

b. ??Diese [in ihren Büro arbeitenden] drei Männer
these [in their office working] three men

Since the adjectival orders in German (and English) are predicted to reflect the underlying order of the DP, it follows that the numeral projection should be merged higher than indirect modifiers. As such, Cinque argues for the structure in (69).31

(69) DP
   Card/OrdP
   Card/Ord FP
      IP FP
      PRO AP F FP
         AP F NP

Applying this to the Maltese data though makes incorrect predictions regarding the ordering of numerals and adjectives in Maltese. When roll-up phrasal movement occurs, it moves the FP containing NP and the direct AP modifier to Spec, DP. This correctly generates the required post-nominal adjective ordering for Maltese but also predicts that numerals will be located after the moved FP phrase and its contents. This is incorrect since numerals consistently

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31Cinque (2010) classifies the projection carrying numerals as a NumP. I have termed the projection Card/OrdP in the respective tree to avoid confusion with the NumP projection, which is assumed to carry number features in this analysis (see Chapter 2).
appear in prenominal position as shown in Chapter 2. Therefore, the structure in (69) cannot
generate both post-nominal indirect modifiers as well as prenominal numerals.

Overall, in this section I have discussed Cinque (2010)’s analysis of direct and indirect
modifiers. I have shown that while the analysis makes correct predictions in some respects for the
Maltese data, it falls short of predicting how multiple definite markers are generated in a single
DP and how the generation of post-nominal adjective orderings can also predict the presence of
prenominal elements. With these shortcomings in mind, I turn now to approaches of definite
determiner spreading in Greek. Like Cinque, a subset of these approaches argue that adjectives
are generated in separate syntactic positions, one of which is internal to a reduced relative clause.
However, I show that these analyses of Greek will fare better in their application to the Maltese
data given their assumptions regarding the placement of the reduced relative clause and the
position of the relative clause subject.

3.3.2 Definite determiner spreading in Greek

In Greek, definite DPs containing attributive adjectives may contain multiple instances of definite
marking, a phenomenon termed ‘Determiner Spreading’ (DS) by Androustopoulou (1995).

(70) to vivlio to kokino
DEF book DEF red

‘the red book’ (adapted from Alexiadou, 2014a, p. 19)

DS has been the subject of much literature over the years, including Androustopoulou
Alexiadou (2014a), and Leu (2007), among many others. Generally, analyses of the phenomenon take one of two approaches: the split DP approach (Lekakou & Szendrői, 2007, 2012) and the reduced relative clause approach (Alexiadou & Wilder, 1998; Alexiadou, 2014a). Both approaches aim to predict the semantic and syntactic characteristics of Greek DS, many of which are shared with Maltese secondary definite marking. In the section that follows, I will briefly discuss each characteristic and how it compares to Maltese. I will then conclude the section by discussing to the two main approaches to Greek DS.

Greek DS and Maltese secondary definite marking have several syntactic and semantic characteristics in common. The main semantic characteristic shared between the two languages is the restrictive interpretation caused by the additional definite marker. This is exemplified for Greek in (71), adapted from Campos & Stavrou (2004, p. 143) with bolding added. In (71)a, the adjective can only have a restrictive interpretation due to the use of DS on kali ‘efficient’. When DS does not appear in (71)b, both a restrictive and non-restrictive interpretation of the DP is possible.
(71) a. o diefhindis ipe oti [i kali i erevnites]
    DEF director said COMP [DEF efficient DEF researchers]
    tha apolithun
    will.be fired
    ‘The director said that the efficient researchers will be fired.’
    = Just the efficient researchers will be fired.

    b. o diefhindis ipe oti [i kali erevnites]
    DEF director said COMP [DEF efficient researchers]
    tha apolithun
    will.be fired
    ‘The director said that the efficient researchers will be fired.’
    = Just the efficient researchers will be fired.
    = The efficient researchers, amongst others, will be fired.

It was shown in example (30) in section 2.1 that Maltese secondary definite-marked adjectives exhibit this same restrictive effect while unmarked adjectives may be interpreted restrictively or non-restrictively.

On the syntactic side, Greek DS and Maltese secondary definite marking are both found to be recursive. In Greek, when multiple adjectives modify a definite noun, each adjective carries definite marking, as in (72). This parallels the recursivity of Maltese secondary definite marking, which may appear on each adjective that modifies a definite-marked noun, as shown previously in (67)a.
However, Greek DS differs from Maltese secondary definite marking in a few important ways. The differences primarily stem from Greek’s use of prenominal adjectives. When located prenominally, the adjective may still carry DS but only optionally. When located post-nominally, the adjective obligatorily carries DS. As such, the literature suggests that in definite DPs, post-nominal adjectives are expected to cause a restrictive interpretation while prenominal only optionally do so.32

Lastly, there are several characteristics of Greek DS that partially compare to those of Maltese secondary definite marking. Specifically, Greek DS only appears with adjectives that are intersective and predicative. When a non-predicative adjective is used, DS is not permitted. This is evidenced by the ungrammatical predicative use of ipotithemenos ‘alleged’ in (73)a and the absence of DS on the same adjective in attributive position (73)b, both from Alexiadou (2003a, p. 10).

(73) a. *o dolofonos itan ipotithemenos
   DEF murderer was alleged
   ‘The murderer was alleged.’

   b. o ipotithemenos (*o) dolofonos
      DEF alleged (*DEF) murderer
      ‘The alleged murderer’

32To my knowledge, this has not been explicitly stated in the literature on Greek DS but the pattern follows from the previous discussion.
While Maltese non-intersective adjectives pattern with Greek (see section 2.2), the facts regarding Maltese only partially match those in Greek given the discussion above regarding Maltese predicative adjectives. It is true that secondary definite marking in Maltese appears on predicative adjectives, even those that are not typologically common (see (43) and (25)e above). However, given that Maltese adjectives (like prinċipali ‘main’) do not pattern like other languages in being non-predicative, the available data does not provide a full picture of non-predicative adjectives in the language. Thus, it is currently unclear whether non-predicative adjectives also do not carry secondary definite marking.

Despite this gap in the Maltese data, this section has shown that Maltese secondary definite marking and Greek DS share a variety of characteristics, including causing a restrictive interpretation and the ability to appear recursively in a single DP. With these similarities in mind, I turn now to a brief overview of the previous analyses proposed for Greek DS.

### 3.3.3 Analyses of Greek definite determiner spreading

Greek DS analyses generally assume that DS is generated through a split DP or reduced relative clause approach. In this subsection, I will discuss these two approaches in turn and their applicability to the Maltese data. I will begin with discussion of the split DP approach and the issues it faces when accounting for Maltese’s strict post-nominal adjective ordering and the behavior of definite marking on stacked adjectives. I will then conclude this section with an overview of the reduced relative clause approach and its applicability to the Maltese data.
Analyses that invoke the split DP approach build their arguments on similarities found between Greek DS and Greek close appositives (see Lekakou & Szendrői, 2007, 2012). Like Greek DS, close apposition carries multiple definite markers, restricts the interpretation of the DP, and has free word order. An example of the last characteristic is given in (74), adapted from Lekakou & Szendrői (2012, p. 108).

(74)  
\begin{align*}
\text{a.} & \quad \text{o aetos to puli} \\
& \quad \text{DEF} \text{ eagle} \text{ DEF} \text{ bird} \\
\text{b.} & \quad \text{to puli o autos} \\
& \quad \text{DEF} \text{ bird} \text{ DEF} \text{ eagle} \\
& \quad \text{‘the eagle that is a bird’}
\end{align*}

To capture these similarities, researchers argue that Greek DS is derived like a close appositive where DP merges into a sisterhood relation with another DP, one of which contains the D-N sequence and the other, D-A. Since Greek DS differs from close apposition in that it does not contain two nouns, the second noun is argued to be elided from the DP containing the adjective. A basic illustration of this approach is given in (75), where $\emptyset$ represents the elided material.

(75)
\[ \text{DP1} \quad \text{DP2} \quad \text{DP} \]
\[ \text{D} \quad \text{NP} \quad \text{D} \quad \text{NP} \]
\[ \text{N} \quad \text{AP} \quad \text{NP} \]
\[ \text{A} \quad \emptyset \]

Two issues become immediately apparent when extending this split DP approach to Maltese. The first hinges on the free word order connection drawn between close appositives and
Greek DS. As shown in (74), nominals in close appositives may appear in either order. This ordering freedom is said to reflect the ability for both pre- and post-nominal adjectives to carry DS in Greek and is predicted through generating both close appositives and Greek DS using the symmetrical structure in (75). In this structure, the two DPs containing the noun and adjective, respectively, are adjoined. Due to this, they may be generated in either order. However, word order is one of the distinctions found between Greek DS and Maltese secondary definite marking. Unlike Greek, Maltese may only use secondary definite marking on post-nominal adjectives. In the rare cases that a prenominal adjective is used in Maltese, it takes the obligatory definite marker. As such, the symmetry of the structure in (75) is problematic when applied to secondary definite marking since it is unclear why the structure may be freely ordered in Greek but strictly ordered in Maltese.\(^{33}\)

The second issue when applying the split DP approach to Maltese secondary definite marking stems from the marker’s behavior on stacked adjectives. As Lekakou & Szendrői (2007) note, the split DP approach predicts that stacked sequences such as (76) from Lekakou & Szendrői (2007, p. 17) are ungrammatical since the DP containing *megalo* ‘big’ must contain an overt definite marker.

\(^{33}\)A way in which the split DP approach may be salvaged when applied to the Maltese data would require that there is language-specific tendency in Maltese for only the second noun to be elided, thus enforcing the strict post-nominal ordering of secondary definite marking in the language. This would then explain the contrast with Greek’s free ordering. However, even with this stipulation, the approach does not explain the predicative nature of secondary definite-marked adjectives nor the behavior of secondary definite marking on stacked adjectives (to be discussed below). This, in addition to the lack of evidence for the Maltese-specific tendency described above, indicates that the split DP approach cannot be extended to Maltese.
Though not discussed previously, this is another difference found when comparing Maltese and Greek. The pattern in (76) is ungrammatical in Greek but grammatical in Maltese stacked adjectives, as illustrated by (67)b above. As such, it is difficult to extend the analysis of Greek, which supports its approach by predicting the ungrammaticality of (76), to Maltese, where this pattern is grammatical.

With these issues in applying the split DP approach to Maltese in mind, I turn now to the other analysis commonly discussed for Greek DS: the reduced relative clause approach. Given the wide array of analyses that relate to this approach, I will only discuss Alexiadou & Wilder (1998)’s analysis in detail, which shares core assumptions with several others, such as Campos & Stavrou (2004), Androutsopoulou (2001), Leu (2008), and Alexiadou (2014a), that are crucial to the analysis in section 4.

Based on the characteristics of Greek DS described above, Alexiadou & Wilder (1998) propose that Greek DS is generated through the addition of a reduced relative clause structure in the DP. This reduced relative clause follows from Kayne (1994)’s proposal for English (with brief discussion of French) and contains the DS-marked adjective in the predicate of the clause. This is illustrated in (77) where the adjective, kokino ‘red’, appears as the predicate of CP. The analysis posits that the CP contains abstract C and I heads, as proposed by Kayne (1994), and generates the pre-nominal and post-nominal ordering of adjectives through movement. Specifically,

(76)  *to spiti megalo to petrino
      DEF house big DEF stone

‘the big stone house’

Since the authors do not explicitly provide a translation for the phrase in (76), I have provided a direct translation.
obligatory movement of the AP to Spec, CP, yields the prenominal ordering displayed in (77)b and subsequent (optional) movement of the subject DP, to vivlio, to Spec, DP2 generates the post-nominal ordering in (77)c.

(77)  

a. \[
\begin{array}{c}
\text{DP2} \\
\text{DP2} \\
\text{D} \\
\text{CP} \\
\text{IP} \\
\text{DP1} \\
to \text{vivlio} \\
to \text{kokino}
\end{array}
\]

b. \[
[\text{DP2 DEF } [\text{CP red } [\text{IP DEF book}]]] \\
to \text{kokino} \\
to \text{vivlio}
\]

c. \[
[\text{DP2 DEF book } [\text{DEF } [\text{CP red }]]] \\
to \text{vivlio} \\
to \text{kokino}
\]

By placing the adjective in the predicate position of the reduced relative clause, Alexiadou & Wilder (1998)'s analysis predicts that DS will only appear on adjectives that may appear predicatively, a prediction which is borne out per the discussion of the characteristics above. In addition, the raising-style analysis of reduced relative clauses proposed in (77) avoids some of the problems faced by Cinque (2010). Specifically, a raising-style analysis of reduced relative clauses will contain two (or more) DPs, one which contains the subject of the clause (DP1 in (77)) and another that projects over the whole clause (DP2 in (77)). As such, it is predicted that multiple definite markers will appear in these constructions.

Unlike the split DP approach, the reduced relative clause approach accounts for each of the similarities between Greek DS and Maltese secondary definite marking defined above.

Therefore, I propose to apply the reduced relative clause approach to Maltese secondary definite marking. It will be shown that, in addition to accounting for the similarities between Greek and
Maltese, the analysis can be straightforwardly altered so as to restrict secondary definite marking in Maltese to occur only on post-nominal adjectives. The mechanics of the analysis will be discussed in the next section, where I will incorporate analytical details from both Cinque (2010) and Alexiadou & Wilder (1998) to account for both secondary definite-marked and unmarked adjectives in Maltese.

4 Analysis of adjectives in the Maltese Determiner Phrase

In this section, I will argue that secondary definite marking in Maltese closely aligns with Alexiadou & Wilder (1998)'s, among others', reduced relative clause approach to DS in Greek and Cinque (2010)'s arguments for distinct adjective placements in syntax. The section will begin with an overview of how Cinque's arguments may be extended to account for the distinction between unmarked and secondary definite-marked adjectives in Maltese and then accordingly develop an analysis of unmarked adjectives as aPs in Spec, nP (see Norris, 2017a, 2017b and references therein). In section 4.1, I will apply Alexiadou & Wilder (1998)'s analysis of Greek DS to Maltese secondary definite-marked adjectives and then elaborate on how this analysis interacts with the structure of the Maltese DP as defined in Chapter 2. Section 4.2 illustrates that the analysis accurately predicts the placement of the secondary definite marker on adjectives and pre-adjectival adverbs and section 4.3 extends the analysis to account for the behavior of secondary definite marking on coordinated and stacked adjectives.

As discussed in section 3.3.1, Cinque (2010) argues that adjectives are generated in two distinct places of the DP spine. Indirect modifiers are located in a reduced relative clause high in
the DP while direct modifiers appear closer to NP in a specifier of a functional projection.

Though I argued that the structure of Cinque’s reduced relative clause and the proposed phrasal movement of his analysis makes incorrect predictions for Maltese, many of the characteristics with which Cinque distinguishes indirect versus direct modification are true for Maltese, as he notes in appendix 2 of the monograph.

To review, Cinque states that definite-marked adjectives in Maltese pattern like indirect modifiers in that they are located farther from the noun and cause a restrictive interpretation. Unmarked adjectives align with Cinque’s direct modifiers since they contain non-intersective and classificatory adjectives, cause a non-restrictive interpretation, and are closer to the noun. Here, I add one further point of data to Cinque’s list that indicates adjectives which do not have definite marking are direct modifiers. Specifically, as mentioned in section 2.1, adjectives are interpreted with a generic meaning when they do not carry definite marking. This was exhibited by (32) - (33) above, repeated below.
Once the definite marker is added to the adjective in (78)b, the generic meaning of the DP is no longer possible. The generic interpretation of the unmarked adjective in (78)a compares the generic interpretation found on direct modifiers in Cinque’s analysis. As such, many of the characteristics found for Maltese definite-marked and non-definite-marked adjectives pattern with the indirect and direct modification dichotomy proposed in Cinque (2010).

With this evidence in mind, I posit that, as Cinque (2010) suggests, adjectives in Maltese which do not carry secondary definite marking are direct modifiers. Similar to Cinque, I place direct modifiers in the specifier of $nP$. Together with the full lexical decomposition of the noun discussed in Chapter 2, the structure for (79)a is as in (79)b.
As in Chapter 2, the complex head containing √SPIRTU and n undergoes head movement to derive the noun. In turn, this creates the correct post-nominal ordering of the adjective awtentiku.

In addition, I follow Baier (2015) and Winchester (2018) in assuming that the categorizing head, a, carries a probe with unvalued gender and number features which are valued via Bidirectional Agree, defined by Baker (2008) as in (80).

(80) **Bidirectional Agree**

A probe with an unvalued feature F on head H Agrees with a goal G with a valued feature F only if H c-commands G or G-commands H.

Unlike the unidirectionality of Chomsky (2000, 2001)'s Agree, Bidirectional Agree permits agreement in any situation where a probe c-commands its goal or vice versa. This permits the gender and number features carried in the complex head in Num to value the gender and number features in a.\(^{35}\) Given the lack of definiteness features on a, the absence of definite

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\(^{35}\)Another possible analysis of gender and number agreement on adjectives could appeal to post-syntactic operations of concord, along similar lines of Kramer (2010)'s analysis of Amharic adjectival definite marking and Alqassas (2013)'s analysis of Arabic's adjectival definite marking, discussed in section 3.2.2 and 3.2.1, respectively. However, I assume a syntactic analysis of these agreement features based on arguments from Baier (2015) and Winchester (2018).
marking is expected despite the presence of gender and number features on non-definite-marked adjectives.

Thus, the analysis so far predicts the post-nominal placement of non-definite-marked adjectives, their gender and number agreement behavior, and the absence of definite marking on adjectives generated in this structural position. In the next section, I will expand the analysis to account for adjectives which carry secondary definite marking, building on arguments from Alexiadou & Wilder (1998) and Alexiadou (2014a), among others.

4.1 Adjectives with secondary definite marking

The analysis of indirect modifiers generally follows that of the reduced relative clause approach for Greek DS. Specifically, given the connection of secondary definite-marked adjectives to indirect modification in Cinque’s analysis, I posit that these adjectives are generated in the predicate of a reduced relative clause, like Alexiadou & Wilder (1998)’s analysis of Greek DS. However, due to the issues discussed in section 3.3.1 regarding the extension of Cinque’s reduced relative clause structure to Maltese adjectives, I will follow Alexiadou & Wilder (1998) in assuming that D takes the reduced relative clause as its complement. This raising approach to reduced relative clauses places the clause as a complement to D and generates the subject DP internal to relative cause, which eventually raises up to Spec, DP. In addition, this analysis

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36 It is unclear at this point how the semantic component may generate either a restrictive or non-restrictive reading for adjectives that are merged as direct modifiers in the syntax. I hypothesize that the ambiguity of this interpretation is due to this syntactic position following the arguments above for Maltese and in Cinque (2010) but leave a detailed discussion of the semantic implications of the direct modifier position for future research.
diverges marginally from Alexiadou & Wilder’s analysis of Greek by positing that the reduced relative clause is maximally contained within an IP, rather than CP as in Greek.

This approach to Maltese secondary definite marking accounts for each of the characteristics discussed in section 2. The presence of multiple Ds in the structure predicts the appearance of definite markers on both the noun and the modifying adjective. It also predicts the recursivity of the secondary definite marker when multiple adjectives modify a single definite noun. In addition, though data is unclear on the presence of non-predicative adjectives in Maltese, it has been shown that each of the adjectives found to carry secondary definite marking is predicative. As such, by placing definite-marked adjectives in the predicative position of the reduced relative clause, the analysis draws a correlation between adjectives with secondary definite marking and their predicative ability. Further, it predicts that only intersective adjectives, or adjectives that have a coerced intersective interpretation, will appear with secondary definite marking since only those may be used as indirect modifiers (Alexiadou & Wilder, 1998; Cinque, 2010; Alexiadou, 2014a; see also Sproat & Shih, 1988 for a similar proposal). Finally, in merging the reduced relative clause as IP, the analysis restricts movement within the clause. Like the derivation of post-nominal adjectives in Greek, the subject of the clause will raise from IP to Spec, DP. However, without a CP layer, the adjective cannot move in

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37 In a previous analysis of this data, presented at the Arabic Linguistics Forum in 2018, I argued that Maltese secondary definite marking could not be analyzed as a reduced relative clause. I based this argument on data that suggested the adjective *oħra* ‘other’ generally appears with secondary definite marking but cannot appear predicatively. Since that presentation, new data has suggested that in fact *oħra* is a predicative adjective, as shown in (i) below. I thank Maris Camilleri (p.c.) for her insight on this.

(i) il-bint *hi'ja* *oħra*

DEF-girl.F.SG COP.3F.SG other.F.SG

Literally: ‘The girl is another.’
front of the subject DP, as argued for Greek. Therefore, the analysis predicts the strict post-nominal nature of secondary definite-marked adjectives.\(^{38}\)

To exemplify the analysis developed thus far, the definite DP from (34)e above, repeated in (81)a, will be analyzed as in (81)b.

\[(81)\]
\[\begin{align*}
\text{a.} & \quad \text{il-programm} & \quad \text{il-principali} \\
& \quad \text{DEF-program.M.SG} & \quad \text{DEF-main.M.SG} \\
& \quad \text{‘The main program’}
\end{align*}\]

\[\text{b.} \]
\[
\begin{array}{c}
\text{DP2} \\
\text{D2} \\
\text{il-} \\
\text{DP1} \\
\triangle \quad aP \\
\text{il-programm} \\
\triangle \quad \text{principali}
\end{array}
\]

\[\text{c.} \]
\[
\begin{array}{c}
\text{DP2} \\
\triangle \quad \text{DP1} \\
\text{il-programm} \\
\triangle \quad \text{D2} \\
\text{il-} \\
\triangle \quad aP \\
\triangle \quad \text{principali}
\end{array}
\]

In (81)b, the adjective is generated as the predicate of the reduced relative clause whereas the relativized noun appears in Spec, IP as a full DP. Following the discussion of Bidirectional Agree in section 4, \(a\) probes up the tree and receives gender and number features from the subject,

\(^{38}\)However, I only stipulate this as a plausible prediction of the analysis given current debates regarding the availability of multiple specifier positions for a head in the syntax (see Chomsky, 2004).
Upon merging D2, the relativized noun DP1 moves up to Spec, DP2, the result of which is shown in (81)c. As such, the analysis predicts the post-nominal linear ordering of the secondary definite-marked adjective and its shared gender and number features with its modified noun.

In the Greek literature, little motivation has been proposed for the movements discussed above with the exception of Kariaeva (2004), which motivates the movement of the subject DP to a pre-adjectival position (FocusP) based on focus properties of Greek DS. While Kariaeva’s analysis differs from the one invoked here, Alexiadou (2014a) argues that the movement of the subject DP to Spec, DP may also be focus related. Outside of the Greek literature, Schachter (1973) argues that similarities between focus constructions and restrictive relative clauses in English, Akan [Niger-Congo; Ghana], Hausa [Afro-Asiatic; Nigeria], and Ilonggo [Malayo-Polynesian; the Philippines] may be derived by a raising-style analysis of both types of constructions whereby material is promoted from within an embedded clause to an external position. Given that nouns obligatorily appear before secondary definite-marked adjectives in Maltese, I follow the intuitions of these previous analyses of Greek as well as Schachter (1973) in positing that the subject DP obligatorily moves to Spec, DP2 due to semantic reasons. Though I will not go so far as to state explicitly how this is derived, I hypothesize the semantic motivation for moving the subject DP to Spec, DP2 is related to focus and the contrastive nature of secondary definite marking (see Fabri & Borg, 2002 for a discussion of focus in Maltese).

Tying together the discussion from Chapter 2 and the analysis of secondary definite marking above, the analysis now predicts the complex DP in (82), repeated from (6).

Though the gender and number features originate on $n$ and Num, respectively, as in Chapter 2, I follow Norris (2014) in assuming that a process of feature percolation occurs whereby the features of a head are shared with its extended projection.
This DP contains both a cardinal and demonstrative, in addition to a secondary definite-marked adjective.
In (83)a, the adjective godda ‘new’ is once again generated in the predicative position of
the reduced relative clause. The relativized noun, kotba ‘books’, acts as the subject of the reduced
relative clause, contained within a DP with the numeral hames ‘five’. Following the analysis
proposed in Chapter 2, $n$ moves up to Num and subsequently, DP1 moves up to Spec, DP2 as in
the analysis above. This generates the structure in (83)b.\(^{40}\)

### 4.2 Predicting the position of secondary definite marking

The current analysis makes predictions regarding the placement of the definite marker at
linearization. Following Embick & Noyer (2001), I assume that hierarchical structures are
linearized after Vocabulary Insertion at PF. Given the tree in (81)c, after the subject DP has
moved to Spec, DP, the structure will be linearized as in (84).

\[(84) \quad [[\text{il-programm}] \ast \text{il-} \ast \text{principali}]\]

Following the prefixal nature of the definite marker in Maltese, the analysis correctly
predicts that the definite marker will attach to the element to its right, that being the adjective
\text{principali} in (84).

The analysis also predicts that if an element appears before the adjective in the aP, the
definite marker will attach to that element rather than the adjective. This is borne out in cases
where the adjective is modified by an adverb. In Maltese, adverbs appear both pre- and post-
adjectivally. For example, the adverb \text{hafna} ‘very’, is post-adjectival whereas \text{vera} ‘really’, is pre-
adjectival. In cases where \text{vera} is used with an attributive adjective, the secondary definite marker
prefixes to the adverb rather than the adjective. When the attributive adjective appears with
\text{hafna}, the adjective takes the definite prefix as in (85)c.

\(^{40}\) A prediction of this analysis is that two demonstratives may appear at the beginning of the DP, one generated
above DP1 and the other above DP2 in (83). I assume this is avoided through haplology and may be tested in the
context where the demonstrative merged above DP2 was distinguished from one merged above DP1 in being distal
or proximal. I leave this for future research.
These facts follow from the analysis discussed above. Upon spell-out, D will be linearized to the left of the reduced relative clause. Since no other material appears in the clause except the aP, D will be linearized to the left of aP. In cases where vera is used, D will prefix to the adverb. In all other cases where the adjective is leftmost in aP, it will prefix to the adjective.

### 4.3 Extending to more complex data

In the previous section, I developed an analysis that accurately predicts the semantic and basic syntactic characteristics of secondary definite marking in Maltese. In the remaining sections of this chapter, I will show how the analysis explains more complex syntactic characteristics of secondary definite marking, namely coordinated adjectives and stacked adjectives.
4.3.1 Coordinated adjectives

As discussed in section 2.3, secondary definite marking appears on the first adjective of a coordinated adjective structure. This pattern is demonstrated by (86)a below, repeated from (45) in section 2 and predicted in the structure in (86)b.
yesterday, wear.3M.SG.PFV DEF-shirt.M.SG DEF-red.M.SG

u abjad

and white.M.SG

‘Yesterday, he wore the red and white shirt.’

Regardless of whether the predicate of the relative clause is analyzed as an asymmetric coordinate structure, as displayed in (86)b, or a tripartite coordination structure \( aP \rightarrow aP \ & aP \),
only one definite marker is generated. After DP1 moves to Spec, DP2, it follows that the definite prefix of D2 will be linearized as a prefix to the coordinate structure and therefore attach to the leftmost adjective.

It was also shown in section 2.3 that secondary definite marking can grammatically appear on both adjectives in a coordinated structure like (86) but this forces an interpretation such that the subject has worn two shirts, one that is red and another that is white. To predict this variation in interpretation, I propose that the structure of (87)a, repeated from (46) is as in (87)b.

(87)  
a. ilbierah, libes il-flok l-ahmar  
yesterday, wear.3M.SG.PFV DEF-shirt.M.SG DEF-red.M.SG  
u l-abjad  
and DEF-white.M.SG  
‘Yesterday, he wore the red shirt and the white (shirt).’

b.  
\[
\begin{array}{c}
\text{DP2} \\
\text{D} \\
\Downarrow \\
\text{il-flokk} \\
\triangle \\
\text{DP1} \\
\triangle \\
\text{ahmar} \\
\triangle \\
\text{abjad} \\
\text{DP4} \\
\triangle \\
\text{il-flokk} \\
\triangle \\
\text{IP} \\
\text{u} \\
\text{IP} \\
\text{D} \\
\text{&P} \\
\text{DP3} \\
\text{&P} \\
\text{DP2} \\
\end{array}
\]

In (87)b, two DPs are coordinated, each with their respective reduced relative clause. The analysis proceeds as it has for the examples above but in this case, I suggest that DP4, the second
iteration of *il-flokk*, is elided, leaving the D of DP3 to prefix to *abjad* after Linearization. The elision of this noun is evidenced by the grammaticality of (88), which does not elide the second iteration of *il-flokk* and maintains the same interpretation as (87)a.

(88) ilbieraħ, libes il-flokk l-ahmar u 
yesterday, wear.3M.SG.PFV DEF-shirt.M.SG DEF-red.M.SG and 
il-flokk l-abjad 
DEF-shirt.M.SG DEF-white.M.SG

‘Yesterday, he wore the red shirt and the white shirt.’

Overall, this extension of the analysis successfully predicts the use of secondary definite marking on coordinated adjectives and the variable interpretation when both adjectives in the coordinated structure appear with definite marking.

### 4.3.2 Stacked adjectives

Recall from section 2.3 that stacked adjectives occur in one of two scenarios: (i) both adjectives appear with secondary definite marking, or (ii) only the rightmost adjective appears with secondary definite marking. This is exemplified in (89), repeated from (47).

(i) copja wahda ghandha tinżamm fost l-atti ta-l-istess 
copy.F.SG one.F.SG have.3F.SG be.held.3F.SG among DEF-record.PL of-DEF-same 
qorti u l-obra ghandha tiği mibgħuta lil-l-Avukat Generali 
court and DEF-other have.3F.SG come.3F.SG sent.3F.SG to-DEF-Attorney General 
‘One copy should be kept among the records of the same court and the other should be sent to the Attorney General.’

In this example, the adjective *obra* carries secondary definite marking and therefore, under the analysis proposed here, is generated in the predicate of a reduced relative clause. The ellipsis analysis presented in (87) would thus predict this as an example of DP ellipsis as well since the subject of the reduced relative clause is elided.
Once again, the proposed analysis above predicts this pattern. When both adjectives appear with secondary definite marking, as in (89)a, both adjectives are generated as predicates of reduced relative clauses. This is shown in (90).

(90) \[
\begin{array}{c}
\text{DP3} \\
\text{D} \\
\text{il-} \\
\text{DP2} \\
\text{D} \\
\text{IP} \\
\end{array}
\]

The relativized DP, *il-ktieb* in DP1, raises to Spec, DP2. Then, DP2 raises to Spec, DP3. Both movements fall in line with the analysis above with the final order shown in (91).

(91) \[
\begin{array}{c}
\text{[DP3 [DP2 [DP1 il-ktieb] l- [IP [aP1 iswed]]] il- [IP [aP2 kbir]]]}
\end{array}
\]

When only the rightmost adjective carries secondary definite marking as in (89)b, the structure is (92). Here, the adjective with definite marking, *kbir*, is generated in a reduced relative clause while
the adjective without marking, *iswed*, is an *aP* specifier of *nP*, following the arguments in section 4.2. As expected, the direct modifier in this phrase, *iswed* ‘black’, may be interpreted restrictively or non-restrictively.

(92) \[ \[ \text{DP2} \[ \text{DP1} \text{il-ktieb iswed} \] il- ] \[ \text{IP} [\text{aP} [\text{kbir}]] \] ]

Within DP1, *n* moves up to Num, creating the complex head √KTIEB+n+Num. This generates the post-nominal ordering of *iswed*. DP1 then moves to Spec, DP2, creating the structure in (93).

(93) \[ [\text{DP2} [\text{DP1} \text{il-ktieb iswed}] \text{il- } [\text{IP } [\text{aP} \text{kbir}]]] \]

Overall, in this section I have proposed an analysis of Maltese secondary definite marking that distinguishes secondary definite-marked and non-definite-marked adjectives syntactically, building on arguments from Chapter 2 for the basic Maltese DP structure and *n*-to-Num head movement. In this last subsection, I have shown that this analysis easily extends to account for the complex syntactic behavior of this marking as it appears on coordinated adjectives and stacked adjectives, providing further evidence for the proposal developed in section 4 and 4.1.
5 Conclusion

In this chapter, I have proposed an analysis of Maltese secondary definite marking that provides support for Cinque (2010)’s foundational assumption for two distinctive syntactic positions for adjectives in the DP. In Maltese, Cinque’s direct modifier was found to correlate with adjectives that do not take secondary definite marking. These are generated as aP specifiers to nP. Cinque’s indirect modifiers, on the other hand, pattern with adjectives that take secondary definite marking and are generated as the predicates of reduced relative clauses.

However, it was shown that Cinque’s analysis of these reduced relative clauses, which were attached as specifiers to a functional projection along the DP spine, could not account for the data in Maltese. Rather, the analysis aligns more directly with Alexiadou & Wilder (1998)’s analysis of Greek DS and therefore provides further support for Kayne (1994)’s raising-style analysis of (reduced) relative clauses and the reduced relative clause style of analysis for Greek DS. In addition, I have shown in this chapter that Maltese differs from other related Semitic languages in its use of adjectival definite marking. This continues a developing trend in this dissertation begun in Chapter 2 that distinguishes the Maltese DP morphosyntactically from that of other Semitic languages.

Overall, the analysis proposed here for secondary definite marking in Maltese has theoretical implications for the types of phrase structure prevalent in the DP. Specifically, like Cinque (2010) and the reduced relative clause approaches to Greek DS, the analysis proposed here indicates that two distinct structural positions are present in the DP and is employed by languages such as Greek, Maltese, and Italian, among others. In doing so, it supports the use of reduced relative clause approaches to multiple definite marking in other languages over that of
the split DP approach following the applicability of the reduced relative clause analysis to languages outside of Greek.
CHAPTER 4
Construct States in Maltese

1 Introduction

Like Arabic and Modern Hebrew, Maltese contains structures commonly referred to as ‘construct states’ (CSs from here).

(94) Maltese

\[
\text{xagħar } \text{il-mara}
\]

\text{hair.M.SG} \quad \text{DEF-woman.F.SG}

‘the woman’s hair’

These constructions consist of a head followed by a complement and are generally used to convey possession or modificational relations. In (94), the head is \text{xagħar} ‘hair’ and the complement \text{mara} ‘woman’.

While Maltese CSs share many characteristic features with CSs found in Hebrew and Arabic, they also display unique characteristics that suggest their analysis should be different from previous approaches. To account for these characteristics, I propose an analysis of Maltese that draws from previous analyses of Hebrew CSs (Ritter, 1988, 1991; Borer, 1999; Shlonsky, 2004; Pereltsvaig, 2006) and analyses of inalienable possession which align possessors with internal arguments (Alexiadou, 2003b; Boneh & Sichel, 2010). While neither of these approaches straightforwardly extends to Maltese CSs alone, a combined account of select tools within each approach predicts the construction’s similarities to other Semitic CSs and inalienable possessives.
In order to account for the morphophonological, morphosyntactic, and semantic features of Maltese CSs, I propose that head noun roots are categorized by a distinct flavor of \( n \) that carries an inalienable possession feature and are semantically encoded for an inalienable possession relation. This feature percolates to the \( D \) of the head noun’s DP, creating a distinct flavor of \( D \), that is phonologically null. Together, these innovations predict the similarities between Maltese CSs and inalienable possessive constructions, including a distinctive morphophonological form and strict adjacency between the head and its syntactic complement. It is also argued that the distinctive nature of the head noun’s DP causes many of the traits associated with Maltese CSs while the complement’s DP behaves in the same manner as that of simple DPs. This dichotomy is expressed through their individual interaction with adjectives and numerals.

The chapter proceeds as follows. In section 2, I will elaborate on the basic characteristics of Maltese CSs as they compare to Hebrew and introduce how they will be analyzed in section 3. In this discussion, I will also provide a brief overview of the relevant literature associated with each of these characteristics and discuss whether they hold in Maltese as well. Section 3 will provide an analysis of Maltese CSs that incorporates analytical assumptions from the Hebrew CS and inalienable possession literature. Section 4 extends the analysis developed in section 3 to account for the definite marking behavior of CS-modifying adjectives. In doing so, it provides
further support for the analysis developed for definite-marked and non-definite-marked adjectives in Chapter 3. Lastly, section 5 concludes with a brief discussion of the characteristics not discussed in this chapter and hypothesizes as to how the current analysis may be extended to account for them in future research.

2 Characteristics of Maltese construct states

CS constructions can be found in a handful of Semitic languages, specifically Modern Hebrew, Modern Standard Arabic, and the spoken Arabic varieties in the North African and Middle Eastern regions. While previous research has investigated CSs in both Hebrew and Arabic, the vast majority have described and analyzed the characteristics associated with Hebrew CSs (Ritter, 1988, 1991; Borer, 1999; Shlonsky, 2004; Pereltsvaig, 2006; Danon, 2008; a.o.). With this literature as a foundation, I will elaborate on the morphosyntactic, semantic, and morphophonological characteristics of Maltese CSs and how they compare and contrast to those of Hebrew. Throughout this discussion, I will highlight the theoretical implications of each characteristic and how they have been addressed in previous literature.

42The same term has also been applied to similar constructions in Berber and East African languages in the Nilotic and Cushitic families due to the name being generally tied to a change of state for nouns in a particular syntactic relation. Though the possible comparison of Maltese CSs and the CSs described for these languages warrants further investigation, I will not discuss the constructions from these languages in the present study. For further elaboration on the phenomena associated with the term ‘construct state’ outside of the Semitic languages, see Creissels (2006).
43It is also possible that remnants of CSs show up in the peripheral Arabic dialects, like Khuzestani Arabic, spoken in southern Iran, though this variety seems to have combined attributes of the ezafe construction in Persian and the CS construction (Shabbibi, 2010).
44It should also be noted that the characteristics discussed in this section do not carry over to two subsets of Maltese CSs, one of which will be identified as ‘compounds’ in Chapter 5 and the other, ‘Pseudo-Construct States’ (Fabri, 1996). These will not be discussed in the current chapter but their relation to CSs as discussed here will be elaborated upon in Chapter 5 and Chapter 6, respectively.
2.1 The construct state marker

As described above, Maltese CSs consist of two nominal elements, a head and complement. These elements display distinct properties which distinguish one from the other and from their nominal forms outside of the CS. In this section, I will discuss the morphophonological characteristic of head nouns in both Maltese and Hebrew CSs, which will be shown to differ from the characteristics of complements and non-CS nouns.

In Hebrew and Maltese, the head noun of a CS is sometimes morphophonologically distinguishable from its non-CS counterparts and the complement. When a feminine singular noun that is -a final occurs in the head position of a Maltese CS, it appears with an additional suffix, -t (or its allomorphs) (Fabri, 1996; Koptjevskaja-Tamm, 1996; Hoberman, 2007). For example, when zij ‘aunt’ occurs as the head noun in the CS in (95)a, it takes this -t suffix, glossed as CS. Compare this to (95)b, where zij is not the head of a CS but the head of the free genitive construction and appears without -t.

(95) Maltese

a. zij-et
   it-tifel
   aunt-F.SG.CS DEF-boy.M.SG
   ‘the boy’s aunt’

b. iz-zij-a
   ta-t-tifel
   DEF-aunt-F.SG of-DEF-boy.M.SG
   ‘the boy’s aunt’

This additional suffix also appears on feminine head nouns in Hebrew CSs and has been referred to as ‘the construct state marker’ in previous literature (Faust, 2013, et seq). Compare the Hebrew
CS in (96)a to the free genitive form in (96)b, both of which have been adapted from Borer (1999, p. 46).

(96) Hebrew

a. mora-t kita

   teacher.F.SG-CS class.F.SG

   ‘a teacher of a class’

b. mora(a) šel kita

   teacher.F.SG of class.F.SG

   ‘a teacher of a class’

In the Hebrew CS literature, the appearance of the construct state marker on head nouns is seen as evidence for the prosodic word-hood of CSs. To my knowledge, the first approach to directly account for this phenomena was Borer (1999), which argues that the word-like properties of the CS are derived via incorporation of the head and complement nouns into the same head, D. This idea of incorporation builds on Baker (1988)’s analysis in that it creates a “morphological unit” within D.

Borer’s incorporation-based account differs from that of Shlonsky (2004), who derives the word-like properties of Hebrew CSs through case assignment. In his analysis, he follows Arad (2006) in assuming that nouns are derived by an acategorical root combining with a nominal categorizing head, which he defines as [ - V, - Det]. This head optionally carries a genitive case feature which is assigned to the CS complement in its complement position causing the complement to freeze in-situ. Shlonsky argues that the word-like properties of the CS are a “phonological reflex” of this case assignment operation (p. 43).
More recently, Faust (2018) takes construct state marking as an allomorphic alteration of the head noun’s gender and number heads. In line with recent assumptions in DM (discussed in Chapter 2), Faust argues that Hebrew roots undergo head movement up to a syntactic categorizing node, $n$, which categorizes the root and carries gender features. This complex head then undergoes movement up to a separate syntactic node, Num, which carries number features. Since the construct state marker is tied to both gender (feminine) and number (singular), Faust argues that the marker is a portmanteau that realizes both heads in contexts where they are not word-final. Given the word-hood of CSs, this predicts that the head will take the construct state marker if it carries feminine singular features.

Similar to Faust (2018), I will argue in section 3.2.2 that the construct state form on CS head nouns in Maltese is the realization of the categorizing head, $n$. However, the analysis to be proposed here will not require that both Num and $n$ be realized as a single affix in non-word-final contexts. Rather, it will be the type of $n$ that occurs in Maltese CSs that determines the appearance of the construct state marker. This type of $n$, which will be termed $n_{CS}$, carries gender features as is typically argued for $n$ but also causes its root to become a CS head noun. In contexts where this $n$ carries a feminine gender feature and the adjacent Num carries a singular feature, $n_{CS}$ will be phonologically realized as the construct state marker in (95)a.45

In summary, this section revealed that head nouns in both Maltese and Hebrew CSs may vary in their morphophonological form depending upon the value of their gender and number

45In section 3.2.2, I provide an analysis that assumes the separate realization of $n_{CS}$ and Num but Faust (2018)’s portmanteau approach is not directly incompatible with the analysis proposed there. Rather, since Faust and I both assume that $n$’s morphosyntactic material plays a role in the realization of the construct state marker, the argument presented here that the realization of the construct state marker is affected by the type of $n$ that is merged into the structure is straightforwardly applicable in either approach.
features. This phenomenon has been analyzed as a phonological effect of the syntactic formation of CSs throughout the Hebrew literature. Like these previous accounts, I posit that the formation of the construct state marker in Maltese is also syntactically-derived but the analysis differs from previous approaches in arguing that it is the type of categorizing head which determines where the marker occurs. In sections 2.2 and 2.3, I will demonstrate the benefits of this approach to the construct state marker in Maltese through a discussion of the morphosyntactic and semantic characteristics which are also predicted by this distinct flavor of $n$.

### 2.2 Maltese construct states are inalienable possessive constructions

In Hebrew, CSs are productively used to indicate a wide range of semantic relations. To distinguish these relations, previous research commonly divides them between referential (97)a, which broadly covers the possessive relations of the CS, and modificational relations (97)b.

(97) Hebrew, adapted from Borer (2009, p. 498)

- **a.** bejt ha-mora
  - house.M.SG DEF-teacher.F.SG
  - ‘the teacher’s house’

- **b.** bejt ha-ʔec
  - house.M.SG DEF-wood
  - ‘the wooden house’
Maltese CSs do not pattern with Hebrew in this manner. Specifically, Maltese CSs cannot be used to convey modificational relations like the Hebrew example in (97)b. These types of relations are ungrammatical when used in CS form in Maltese, as shown in (98).

(98) Maltese\textsuperscript{46}

\begin{itemize}
  \item a. *ċurkett id-deheb
    \hspace{1cm} ring.M.SG DEF-gold.M.SG
    \hspace{1cm} ‘the gold ring’
  \item b. *dar il-hġieġ
    \hspace{1cm} house.F.SG DEF-glass.M.SG
    \hspace{1cm} ‘the glass house’
\end{itemize}

In addition, Maltese CSs cannot be used for all referential relations, as in Hebrew’s (97)a. Rather, within the umbrella of referential relations, Maltese CSs may only be used to convey kinship relations (‘the boy’s aunt’), part-whole relations (‘the chair’s legs’), body parts (‘the dog’s legs’), and other examples of inalienable possession where the head references an item that is either located on or in reference to an abstract part of the complement, as in (99) (Fabri, 1996; Koptjevskaja-Tamm, 1996; Borg & Azzopardi-Alexander, 1997).

\textsuperscript{46}Generally, modificational CSs in Maltese can only be considered grammatical when interpreted as proper names. Fabri (1996) notes that the CS construction is used commonly for proper name formations, which would explain why these become grammatical when interpreted as such.
Comparable examples of alienable possessives are ungrammatical in CS form in Maltese, as shown in (100).

(99) Maltese

a. ħwejjeġ it-tifla
clothes.PL DEF-girl.F.SG
‘the girl’s clothes’

b. ton l-awtur
tone.M.SG DEF-author.M.SG
‘the author’s tone’

(100) Maltese

a. *kelb il-mara/Alex
dog.M.SG DEF-woman.F.SG/Alex
‘the woman’s/Alex’s dog’

b. *mejd-at il-mara
table-F.SG.CS DEF-woman.F.SG
‘the woman’s table’

\(^{47}\)Like Vergnaud & Zubizarreta (1992), I assume clothing falls under an extended category of inalienable possession.

\(^{48}\)Speaker variation exists that seemingly counters the semantic restrictions discussed here. Much of this variation is exhibited with CSs that convey an alienable possessive relation with specific possessees like dar ‘house’ and karozza ‘car’. This is likely due to either frequency or fixed expressions that are remnants of a period in Maltese where CSs were more productive. For example, speakers frequently find alienable possession CS examples like dar Maria ‘Maria’s house’ to be grammatical. This is likely due to the fact that CSs headed by dar are often found on house plaques to decorate and name individual homes in Malta. See Koptjevskaja-Tamm (2003) for further discussion. However, regardless of how these examples have persisted in the language, they in fact present further evidence for the semantic restrictions on Maltese CSs. For example, when an alienable noun like dar ‘house’ is used as the head of a CS, it requires the specific abstract interpretation of the noun, ‘home’, rather than the physical entity ‘house’.
With these semantic restrictions in mind, I will classify Maltese CSs as inalienable possessive constructions which are used for broadly-defined inalienable possessive relations, including kinship, body parts, part-whole, and relations like in (99). In doing so, Maltese is found to pattern with other languages like Adyghe, Old French, and the Besleney dialect of Kabardian, a North-West Caucasian language, which indicate body-part and kinship relations through inalienable possessive constructions (Dahl & Koptjevskaja-Tamm, 2001).

The grouping of these relations is further evidenced from a semantic perspective. The complement of kinship, body parts, and part-whole relations is semantically dependent on the head, as is expected for inalienable possessives. For example, kinship terms, like ‘the boy’s aunt’, are inalienable in that the noun ‘aunt’ requires a relationship between a person and their sibling’s child. The same relation can be said of body parts and parts in part-whole relations, which are defined in relation to the body and the whole, respectively.

A sizable literature exists on the syntax of DP-internal inalienable possession across languages (Vergnaud & Zubizarreta, 1992; Yoon, 1997; Heine, 1997, Nichols, 1988, 1992; Barker, 1995, 2011; Alexiadou, 2003b; Boneh & Sichel, 2010; Gebregziabher, 2012). In this literature, analyses generally agree that the inalienably possessed noun, which I will refer to as the ‘head’ here so as to maintain the parallel with Maltese CSs, is dependent upon that of the possessor, which I will refer to as the ‘complement’, both syntactically and semantically. To predict this dependency, they analyze inalienable possession as a merger of the complement into


49In classifying Maltese CSs as inalienable possessives, it calls into question whether these constructions need to be classified as ‘construct states’, especially given their other distinctive behaviors described in this chapter. However, I would argue that the nature of the constructions stills aligns with most of the characteristics associated with CSs in the Semitic literature. Therefore, it is typologically beneficial to classify them in this way since it indicates that CSs can surface differently in languages.
an argument position of the head noun. However, analyses differ with respect to which argument position the complement takes. Analyses like Vergnaud & Zubizarreta (1992) and Yoon (1997) argue that the complement is located in Spec, DP, similar to an external argument. On the other hand, analyses like that of Alexiadou (2003b), Boneh & Sichel (2010), and Gebregziabher (2012) argue that the complement behaves similarly to internal arguments and places it in the complement position of the head noun. Like Alexiadou (2003b) and Boneh & Sichel (2010), I will argue in section 3.1 that Maltese CSs, which have been defined as an inalienable possessive construction in this section, are generated by merging the complement into the syntactic complement position of the head noun. For the remainder of this section, I will provide a brief overview of Alexiadou (2003b)’s arguments for such and how they extend to the Maltese data.

In their investigations of inalienable possession, Alexiadou (2003b), Boneh & Sichel (2010), and Gebregziabher (2012), among others, note that the semantic and syntactic tie between the head and complement nouns is reflective of the syntactic relationship between a head and complement. Using evidence from Greek and other languages with inalienable possessors, Alexiadou (2003b) shows that the complement of an inalienable possessive patterns with internal arguments rather than external.\footnote{This head-complement arrangement is distinctive from that of alienable possession in Alexiadou (2003b)’s analysis, which she argues is derived by the merger of the complement as a head on the DP spine, located between DP and NP.} This argument is based on observations regarding similarities between object pronouns and inalienable possessors as well as the semantic and syntactic dependency of the complement to the head noun. For example, in the pronominal paradigm of Assiniboine [Siouan], given in (101) (adapted from Alexiadou, 2003b, p. 176; see...
also Seiler, 1983 and König & Haspelmath, 1998), we see that the form of inalienable possessive pronouns mirrors that of object pronouns while alienable possessive pronouns are distinctive.

(101) Assiniboine Pronouns

<table>
<thead>
<tr>
<th></th>
<th>Subj</th>
<th>Obj</th>
<th>Inalienable Poss</th>
<th>Alienable Poss</th>
</tr>
</thead>
<tbody>
<tr>
<td>1SG</td>
<td>wa</td>
<td>ma</td>
<td>ma</td>
<td>mitá</td>
</tr>
<tr>
<td>2SG</td>
<td>ya</td>
<td>ni</td>
<td>ni</td>
<td>nitá</td>
</tr>
</tbody>
</table>

Though Maltese does not distinguish pronouns based on (in)alienability, it does lend support for a connection between object pronouns and possessors. In (102) (adapted from Hoberman, 2007, p. 260), the suffixal pronouns provided appear as the direct object of verbs, objects of prepositions, and possessors. These are distinctive from that of the free form pronouns, which are (optionally) used as standalone subjects.

(102) Maltese Pronouns

<table>
<thead>
<tr>
<th></th>
<th>Free form</th>
<th>Suffixal</th>
</tr>
</thead>
<tbody>
<tr>
<td>1SG</td>
<td>jien(a)</td>
<td>-ni/-i</td>
</tr>
<tr>
<td>2SG</td>
<td>int(i)</td>
<td>-ek</td>
</tr>
<tr>
<td>3SG.M</td>
<td>hu(wa)</td>
<td>-u/-h/-hu</td>
</tr>
<tr>
<td>3SG.F</td>
<td>hi(ja)</td>
<td>-ha</td>
</tr>
<tr>
<td>1PL</td>
<td>aňna</td>
<td>-na</td>
</tr>
<tr>
<td>2PL</td>
<td>intom</td>
<td>-kom</td>
</tr>
<tr>
<td>3PL</td>
<td>huma</td>
<td>-hom</td>
</tr>
</tbody>
</table>

Given the similarities across languages between object pronouns and possessors, Alexiadou argues that the head and complement form a phrase with the complement merged as
the complement of the head noun or as the “complement of a light head that encodes the semantics of ‘part-whole’ relations (p. 179).” In doing so, the structure aligns inalienable possessors with complex predicates, capturing the fact that possessors and object pronouns share a form to the exception of subjects. The same fact stands for Maltese, as seen in (102), therefore providing evidence that the complements of Maltese CSs should also be analyzed as internal arguments.

In addition, the analysis proposed in section 3.2 will build upon Alexiadou (2003b)’s observation that light heads may encode inalienable semantics. There, I will argue that it is a distinctive flavor of $n$, termed $n_{cs}$, which encodes the inalienable semantic relation of the head and complement via an interpretable feature and licenses the CS complement at PF.

In this section, I have demonstrated the semantic restrictions found on Maltese CSs. It was shown that Maltese CSs are in fact inalienable possession constructions, which are used to convey kinship, part-whole, and body part relations. The section then went on to discuss several analyses of inalienable possession which place the complement in an argument position of the head noun so as to predict the semantic and syntactic dependency of head nouns in inalienable constructions. I briefly argued that the analysis of Maltese CSs in section 3.2 will follow Alexiadou (2003b) in placing the CS complement in the internal argument position of the head noun. This merger is licensed at PF by the head noun root’s categorizing head, which is a distinctive flavor of $n$ that encodes the inalienable semantic relation. In the next section, I turn to the morphosyntactic characteristics of the Maltese CS, beginning with a discussion of their interaction with definite marking and demonstratives.
2.3 No definite marking on head nouns

Unlike the semantic distinctions between Maltese and Hebrew CSs discussed in section 2.2, the CSs of both languages display similar definite marking behaviors. Both Hebrew and Maltese use prefixal definite markers, \textit{l-} for Maltese and \textit{ha-} for Hebrew, which attach to nouns in simple DPs.\footnote{See discussion in Chapter 2 of how this fact varies when elements like prenominal modifiers are included in the Maltese DP.} When two nouns are combined to create a definite CS, only the complement can carry the definite marker, as shown for Maltese in (103) and Hebrew, (104). It is this marker on the complement that causes the whole CS to have a definite interpretation, a phenomenon termed ‘definiteness spreading’ \cite{Borer1999, Danon2008}. Any attempt to add definite marking to the head noun results in ungrammaticality, as shown in b and c of the examples below for both languages.

(103) Maltese

\begin{itemize}
  \item[a.] \text{saqajn} \hspace{1cm} \text{il-kelb}
  \begin{itemize}
    \item[leg.PL] DEF-dog.M.SG
  \end{itemize}
  \text{‘the dog’s legs’}
  \item[b.] \text{*is-saqajn} \hspace{1cm} \text{il-kelb}
  \begin{itemize}
    \item[DEF-leg.PL] DEF-dog.M.SG
  \end{itemize}
  \item[c.] \text{*is-saqajn} \hspace{1cm} \text{kelb}
  \begin{itemize}
    \item[DEF-leg.PL] dog.M.SG
  \end{itemize}
\end{itemize}
(104) Hebrew, adapted from Ritter (1988, p. 915)

a. bejt ha-mora
   house.M.SG DEF-teacher.F.SG
   ‘the teacher’s house’

b. *ha-bejt ha-mora
   DEF-house.M.SG DEF-teacher.F.SG

c. *ha-bejt mora
   DEF-house.M.SG teacher.F.SG

In contexts where the CS is indefinite, the marker is absent from the complement for both Maltese (105) and Hebrew CSs (106).

(105) Maltese

sieq raġel
   leg.M.SG man.M.SG
   ‘a man’s leg’

(106) Hebrew, adapted from Borer (2009, p. 493)

bejt mora
   house.M.SG teacher.F.SG
   ‘a house of a teacher’

From a theoretical perspective, the lack of definite marking on CS head nouns calls into question whether the head is contained within a DP or a smaller projection like NumP. This reflects arguments for the lack of a DP layer in languages like Japanese (see Fukui, 1986; Fukui & Speas, 1986) whose noun phrases do not appear with overt definite markers. However, previous
analyses of this phenomenon in Hebrew have, to my knowledge, unanimously agreed that the head noun is contained within a full DP due to its definite interpretation. Like these analyses, data suggests that Maltese head nouns are contained within a DP given their definite interpretation, as shown in the contrast between (103)a and (105), as well as facts regarding the interaction of Maltese CSs and demonstratives. Before discussing these facts in the next section, I will provide a brief overview of how previous approaches have accounted for the lack of definite marking on Hebrew CS head nouns. These approaches have varied in their accounts of the phenomenon but generally consist of arguments for either a distinct type of D, head movement, or a parameter that avoids lexically filling both the head and specifier position of DP.

In Ritter (1988, 1991), the head noun of a CS undergoes movement up to D while the complement noun stops in NBR (referred to as Num in current frameworks). In her (1991) paper, the movement of the head noun up to D is motivated by the type of D that projects over a CS head noun. Specifically, she argues that the maximal projection of a CS is headed by a flavor of D called D_{Gen}, a phonetically null version of D that can assign genitive case. In order to value the definiteness feature of D_{Gen}, N, which carries a definiteness feature that was valued via a Spec-Head relation with the CS complement, must raise past Num and into D. In all DPs that contain a D, and not D_{Gen}, Ritter posits that nouns undergo head movement only to Num to receive number features. As a phonologically null head, the presence of D_{Gen} predicts the absence of definite marking on the head noun of a CS while movement of N to D_{Gen} predicts the spread of definiteness features from the CS complement to the head noun. Non-CS constructions will be headed by D, which enters the derivation with a valued definiteness feature and is overtly realized by the prefix ha- when that feature is definite.
Like Ritter, Borer (1999)'s analysis of Hebrew CSs utilizes head movement to predict the absence of definite marking on head nouns. However, the mechanics of her analysis differ from Ritter in that the CS complement is not contained within a full DP but rather a NumP. According to Borer, Hebrew (and other languages containing CSs) places definite features on the N stem of the complement instead of the D projected over the CS. This D is considered empty, similar to Ritter (1991). In order to realize the definite features on N, they must be inherited by D through movement. The required movements are illustrated in the sample derivation below, which has been simplified for ease of exposition.
The underlying structure of Borer's CS analysis is provided in (107)a above. To derive the CS, NumP2, which contains the complement noun, undergoes phrasal movement up to Spec, NumP1 as shown in (107)b. Then, in (107)c, the complement noun undergoes head movement through Num2 up to D to realize its definite marker.\footnote{Generally in Minimalism, this movement from a specifier position to a head is illicit. While this is not addressed straightforwardly in Borer’s analysis, she motivates the movement through satisfaction of the Definiteness Criterion in (108).} The head noun then undergoes head
movement through Num1 to the same D. This movement, which incorporates the two elements of the CS in D (and predicts the morphophonological facts in section 2.1), satisfies the Definiteness Criterion, defined by Borer as in (108) from example (84, p. 76).

(108) Definiteness Criterion

a. D must be αdefinite

b. Nαdefinite iff Dαdefinite, where N and D are members of the same extended projection.

Like Borer, Shlonsky (2004)’s analysis of CSs requires extra machinery to predict the absence of definite marking on the CS complement. In his approach to CSs, the NP containing the head noun and complement undergoes phrasal movement up to Spec, DP. This indicates, according to Shlonsky, that Semitic DPs cannot have both a lexically-filled specifier and lexically-filled D. Therefore, when a CS is formed via movement of NP to Spec, DP, the specifier of D will be lexically filled by the NP and the D of that projection will not be lexically-filled at Spell-out.

Given this brief overview, it is clear that previous analyses of Hebrew CSs required the addition of extra machinery, whether in the form of claims, criteria, or additional functional projections, to predict the absence of definite marking on the head noun of a definite CS. In section 3.3, I will argue that, like Ritter (1991), a distinct flavor of D, termed D_{CS}, will predict the lack of definite marking on Maltese head nouns. In the next section, I will provide further evidence for the DP-layer of head nouns, as well as complement nouns, in Maltese CSs, based on data with demonstratives and numerals.
2.4 Demonstratives and numerals in Maltese construct states

Maltese DPs may contain a number of prenominal elements, including demonstratives, which appear before the definite marker, and numerals, which appear between the definite marker and noun. This was analyzed in Chapter 2 as the result of the structure of the DP spine whereby an optional DemP takes a DP complement which takes an optional Card/OrdP complement. In this section, I will discuss the interaction of CSs with a subset of these prenominal elements: demonstratives and numerals. Ultimately, the data will indicate that both the head and complement noun are contained (minimally) within a DP but their projections differ with regards to what heads may appear along the DP spine. The section will begin with discussion of demonstratives and conclude with numerals.

Maltese and Hebrew CSs behave similarly with respect to definite marking in that the head noun cannot carry a definite marker regardless of the CS’s definite interpretation. However, the definite interpretation of the head noun is further evidenced by its ability to take demonstrative modifiers. In Hebrew, demonstratives are post-nominal and may modify either element of the CS. Regardless of which element they modify though, the demonstrative appears directly after the complement. For example, the demonstrative in (99)a appears after the complement but modifies the head, as demonstrated by their shared morphosyntactic features. When the demonstrative is placed between the two CS elements, it results in ungrammaticality, as shown in (109)b.
The non-canonical placement of a head-modifying demonstrative is indicative of an adjacency restriction in Hebrew placed on the head and complement nouns of a CS. This restriction forces the placement of the demonstrative after the complement so that it does not intervene between the head and complement noun (see also section 2.5 for how this interacts with adjectival modifiers).

Like Hebrew, either element of a Maltese CS may be modified by a demonstrative. In Maltese, demonstratives are prenominal and therefore place the demonstrative prior to the CS when it modifies the head noun, as in (110).

(110) Maltese

dik oħt Pawlu
DIST.DEM.F.SG sister.F.SG Paul
‘that sister of Paul’s’ (Fabri, 1996, p. 233)

As such, like Hebrew, I will argue that the head noun of the CS is contained within minimally a DP and maximally a DemP, building on discussion in Chapter 2.

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53 Many thanks to Maya Barzilai and other Hebrew-speaking informants for confirming this piece of data.
Despite these similarities, Maltese and Hebrew are distinctive in their adjacency restrictions. In (109), I showed that Hebrew is strict in requiring that the head and complement be adjacent to one another, as indicated by the post-CS placement of head-modifying demonstratives. This is not the case in Maltese, where the prenominal placement of complement-modifying demonstratives is respected. Specifically, when the complement of a Maltese CS is modified by a demonstrative, the demonstrative maintains its prenominal position and appears internal to the CS, as in (111).

(111) Maltese

xagħar dik il-mara

hair.M.SG DIST.DEM.F.SG DEF-woman.F.SG

‘that woman’s hair’

Therefore, like the head noun, the complement must be contained minimally within a DP or maximally a DemP.

While the behavior of demonstratives indicates that the projections of both the complement and head should be analyzed as DP/DemPs, data from numerals indicates that the DP spine of the complement and head noun are distinctive. As in simple DPs discussed in Chapter 2, the complement of a CS may be modified by a cardinal numeral (112).

(112) Maltese

saqajn id-disat\textsuperscript{54} irġiel

leg.PL DEF-nine man.PL

‘the four men’s legs’

\textsuperscript{54} See footnote 3 from Chapter 2 for an explanation regarding the variation in the form of the numeral and complement noun here.
The presence of the numeral in (112) indicates that the complement projects a CardP, which merges above NumP, as argued in Chapter 2. Further, the attachment of the definite marker to the numeral in (112) indicates that the CS complement behaves in the same manner as that of a simple DP whereby the definite marker attaches to prenominal elements.

Head nouns of Maltese CSs cannot be modified by numerals, as indicated by the ungrammaticality of (113).

(113) Maltese
a. *l-erbgħa saqajn il-kelb
   DEF-four leg.PL DEF-dog.M.SG
   Intended: ‘the dog’s four legs’

b. *erbgħa saqajn il-kelb
   four leg.PL DEF-dog.M.SG
   Intended: ‘the dog’s four legs’

As can be seen in (103), the presence of a numeral prior to the head of a CS is ungrammatical regardless of whether it appears with definite marking (113)a or not (113)b.

Taking the definite marking, numeral, and demonstrative facts together, it would appear that the complement and head noun are syntactically distinctive. Following the analysis of the Maltese DP spine in Chapter 2, the discussion here indicates that the head noun’s DP is deficient in that it does not permit numerals and does not appear with overt definite marking regardless of its definite value. However, it does permit demonstratives. This contrasts with the complement’s DP, which behaves like a simple DP in permitting prenominal modifiers, demonstratives, and definite marking (when definite). With this in mind, in section 3, I will analyze Maltese CSs as
containing two DPs, one which is the head noun’s projection and another that projects over the CS complement. In doing so, the analysis aligns with a subset of Hebrew CS analyses (Ritter, 1988, 1991; Shlonsky, 2004) in projecting the complement of the CS in a DP.

Thus far, I have demonstrated the morphophonological characteristics of Maltese CSs in section 2.1, the semantic characteristics in section 2.2, and morphosyntactic characteristics in 2.3 and 2.4. In these sections, it was shown that Maltese and Hebrew CSs are similar in their morphophonological alternations of the head noun, the lack of definite marking on the head noun, the spreading of definiteness features from the complement to the head, and the ability to modify both elements of the CS with a demonstrative. However, data indicates that they deviate with regards to the range of possible semantic relations between the head and the complement and their interaction with the placement of demonstratives. In the next three sections, I will conclude my overview of defining characteristics of Maltese CSs by discussing their interaction with adjectives. It will be shown that this morphosyntactic characteristic is one further distinction between Maltese and Hebrew CSs.

2.5 Adjectives appear after the construct state

Maltese and Hebrew CSs are both morphosyntactically restricted in the manner in which they are modified by adjectives. In the simple DPs of both languages, adjectives directly follow the noun they modify, as shown in (114) and (115).
(114) Maltese, repeated from Chapter 3

il-kelb (il-)beżziegh

DEF-dog.M.SG (DEF-)cowardly.M.SG

‘the cowardly dog’

(115) Hebrew, adapted from Shlonsky (2004, p. 1468)

ha-Volvo ha-xadaʃ

DEF-Volvo DEF-new

‘the new Volvo’

This is not the case for CSs. Adjectives are not permitted to appear between the head and complement in either language, regardless of which element it modifies. When an adjective modifies either the head or complement of a CS, it will always appear after the complement. For example, in (116), the Maltese adjective, ħodor ‘green’, appears after the complement but modifies the head of the CS, ġajnejn ‘eyes’. See also the comparable Hebrew example in (117).

(116) Maltese

ġajnejn il-qattus il-hodor

eye.DU DEF-cat.M.SG DEF-green.PL

‘the cat’s green eyes’

(117) Hebrew, adapted from Ritter (1988, p. 916)

bejt ha-mora ha-jafe


‘the teacher’s pretty house’
The fact that the adjective modifies the head, and not the complement, of the CSs in (116) and (117) is confirmed by both the respective interpretation of the CS and each adjective’s morphosyntactic agreement features.\textsuperscript{55} In cases where both the head and complement share the same features, it results in an ambiguous interpretation for the adjective.\textsuperscript{56}

The post-CS placement of adjectives is unsurprising for Hebrew given previous discussion of demonstratives. There, it was shown that Hebrew requires a strict adjacency between the head and complement. As such, it is expected that adjectives follow the same pattern as demonstratives and appear after the CS. However, in the discussion of demonstratives it was shown that the head and complements of Maltese CSs need not be strictly adjacent when the complement is modified by a demonstrative and/or numeral. Therefore, in Maltese, the

\textsuperscript{55} In Maltese, dual inflection on nouns causes plural agreement on modifiers and verbs (Camilleri, 2015, p. 115). As such, when the adjective modifies the dual noun \textit{għajnejn}, we expect it to appear in its plural form, which is borne out in (118).

\textsuperscript{56} It should be noted that Hebrew and Maltese CSs are distinctive in their interaction with adjectives. Hebrew CSs may permit modification of both the head and complement of a CS, creating a nested structure whereby the adjective that modifies the complement linearly precedes the adjective modifying the head, as shown in (i), adapted from Borer (1999, p. 45).

\begin{itemize}
\item[(i)] Hebrew
\begin{itemize}
\item kis\textsuperscript{ʔ}ot \textit{ha-kita} ha-xada\textsuperscript{ʃ}a ha-siv\textsuperscript{ʔ}onim
\item chair.M.PL DEF-class.F.SG DEF-new.F.SG DEF-colorful.M.PL
\end{itemize}
\textit{‘the new class’s colorful chairs’}
\end{itemize}

The nested structure in (i) is not permitted in Maltese. Rather, Maltese CSs are restricted to only one modified element in a single utterance, as shown by the ungrammaticality of (ii).

\begin{itemize}
\item[(ii)] Maltese
\begin{itemize}
\item *idejn il-mara il-qasira \textsuperscript{ʃ}ž-\textit{ţghar}
\item hand.PL DEF-woman DEF-short.F.SG DEF-small.PL
\end{itemize}
\textit{‘the short woman’s small hands’}
\end{itemize}

Given the limited available data regarding multiple adjectival modification of CS elements whereby only one element is modified (\textit{the big black dog’s legs}), it is unclear if this restriction is due to the modification of both elements or simply a restriction on number of adjectives that may modify a Maltese CS. As such, I leave this characteristic of Maltese for future research.

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adjacency restriction seems not to be between the head and complement noun but rather between the head noun and the DemP/DP containing the CS complement.

These facts indicate that the syntactic relationship between the head noun and complement DP/DemP must be one which predicts the post-CS placement of adjectives. Previous analyses for Hebrew have predicted this characteristic through assumptions regarding the merger site of the CS complement and movement of the head and complement so as to place them above adjectives on the DP spine. For the remainder of this section, I will provide a brief overview of the types of merger sites and movements proposed to predict this characteristic and conclude with discussion of their application to Maltese. Ultimately, it will be shown that Maltese CSs need only n-to-Num movement, as argued for simple DPs in Chapter 2, when the CS complement is merged as the complement of the head noun. This results in a unified view of DP-internal movement across constructions in Maltese.

To begin, analyses such as Borer (1999) and Shlonsky (2004) merge the CS complement into the syntactic complement position of the head noun, as illustrated in (119).

\[
\begin{array}{c}
\text{Borer (1999) and Shlonsky (2004)} \\
\text{NP} \\
\text{Head} \quad \text{Complement}
\end{array}
\]

Ritter (1988, 1991) and Pereltsvaig (2006), on the other hand, argue that CS complements are generated in Spec, NP, following arguments by Jackendoff (1977) and Chomsky (1986) who place possessive NPs, among other elements, in this position. This is illustrated in (120).
In this way, the Hebrew CS literature parallels analyses of inalienable possession by placing the complement in either the internal argument position (119) or the external (120).

In addition to the location of the CS complement, previous analyses have invoked head and/or phrasal movement to predict the strict adjacency of the head and complement. Analyses which assume a version of (120) must either invoke head movement (Pereltsvaig, 2006) or a combination of phrasal and head movement (Ritter, 1988, 1991) in order to predict both the head > complement ordering and their adjacency. Those that analyze the CS structure as in (119) are divided between either strictly phrasal movement (Shlonsky, 2004), which moves the head and complement as a unit, or a combination of head and phrasal movement (Borer, 1999) that incorporates both elements into a single head.

In analyses of Hebrew CSs using only phrasal movement (Shlonsky, 2004), the head noun’s root carries a genitive case feature which it assigns to the DP complement, freezing it in-situ. To predict the post-CS placement of adjectives, the NP containing the head noun and frozen complement undergo roll-up phrasal movement up to Spec, DP, passing through the specifiers of each functional projection in the process and pied-piping all material to its right. In doing so, the NP-complement will merge above APs, which are located in specifier positions of
functional projections along the DP spine and therefore places them to the right of the phrase containing the head noun and CS complement.\textsuperscript{57}

In Chapters 2 and 3, I discussed adjectival ordering and the placement of numerals as some of the main arguments used to support Shlonsky (2004)’s roll-up style of phrasal movement since it is argued to be present both in simple Semitic DPs and CSs. There it was shown that while adjectives in Hebrew and Arabic varieties appear in the reverse order of English adjectives, Maltese adjectives are freely ordered. As such, like for simple DPs in Chapter 2, the motivations for roll-up phrasal movement in Shlonsky (2004) are not found in Maltese.

On the other side of the debate is Pereltsvaig (2006)’s head movement analysis of Hebrew CSs. In a response article to Shlonsky (2004)’s phrasal approach, Pereltsvaig argues that cyclic head movement, not phrasal movement, generates the post-CS placement of adjectives. She notes that head movement is also able to predict the mirror ordering of light adjectives in Hebrew discussed in Chapter 2 and 3 if adjectives are taken to be heads as in Sadler & Arnold (1994).\textsuperscript{58} Ritter (1988, 1991) and Borer (1999) argue for this same type of nominal cyclic head movement up to D but combine it with phrasal movement of the CS complement up to Spec, NumP.

Extending this to the Maltese data at hand, we find that the combined movement approach to CSs is not required to predict the head > complement ordering and post-CS placement of adjectives. Rather, only n-to-Num head movement, as argued for simple DPs in

\textsuperscript{57}It is also this cyclic phrasal movement that predicts the nested ordering of adjectives that modify the head and complement of a Hebrew CS.

\textsuperscript{58}Pereltsvaig (2006) also argues that the head movement approach is superior to that of phrasal movement since, unlike light adjectives, heavy adjectives, i.e. those which have a phrasal complement or modifier (‘polite in manner’), in Hebrew do not appear in a mirror order of English. This is predicted by a head movement approach when light adjectives are merged as heads on the DP spine and heavy adjectives are merged in specifiers and therefore passed over by cyclic head movement.
Chapter 2, is required to generate these characteristics of the CS. Thus, Maltese DPs containing CSs are minimally distinguished from simple DPs in their derivation.

The similarity between simple DPs and DPs containing CSs in Maltese will be further evidenced in section 2.7 where I will show that CS-modifying adjectives behave in part like adjectives that modify simple nouns, as analyzed in Chapter 3. In combining arguments from Chapter 2 for \(n\)-to-num head movement, Chapter 3 regarding the syntactic placement of adjectives, and those presented here for merging the CS complement as a complement to the \(n\) and PF-licensing via adjacency, the analysis will derive the post-CS placement of adjectives. As such, the analysis is elegant in its approach to Maltese CSs since it requires minimal additional assumptions outside of the syntactic machinery proposed for simple DPs. The simplicity of this approach to CSs will be further demonstrated in the next two sections where I will elaborate on the distinctive behavior of definite marking on head-modifying adjectives and complement-modifying adjectives.

### 2.6 Obligatory definite marking on head-modifying adjectives

While Maltese and Hebrew both place adjectives post-CS regardless of which element they modify, the morphosyntactic behavior of these adjectives is distinctive between the languages. In Chapter 3, I illustrated that both Hebrew and the Arabic varieties display definiteness agreement on attributive adjectives which modify a definite noun. This same behavior is found on CS-modifying adjectives in Hebrew whereby an adjective that modifies the head of a definite CS will also carry definite marking as indicated in bold in (121).
Hebrew, adapted from Wintner (2000, p. 325)

pirxei  ha-gann  ha-japim  parxu
flower.PL  DEF-garden.SG  DEF-beautiful.PL  flourished.PL.PST

‘The beautiful garden flowers flourished.’

In contrast, when an adjective modifies the head (or complement) of an indefinite CS, the adjective is not definite-marked. Compare (121) above to (122) below.

Hebrew, adapted from Wintner (2000, p. 325)

pirxei  gann  japim  parxu
flower.PL  garden.SG  beautiful.PL  flourished.PL.PST

‘Beautiful garden flowers flourished.’

In Maltese, a head-modifying adjective is also found to obligatorily take definite marking when the head is definite, as shown in (123)a. Otherwise, the adjective is interpreted predicatively (123)b.

(123) Maltese

a. zij-et  it-tifel  is-sinjura
   aunt-F.SG.CS  DEF-boy.M.SG  DEF-rich.F.SG
   ‘the boy’s wealthy aunt’

b. zij-et  it-tifel  sinjura
   aunt-F.SG.CS  DEF-boy.M.SG  rich.F.SG
   ‘The boy’s aunt is wealthy.’

Gatt (p.c.) notes a bit of gradability for the interpretation of non-definite-marked adjectives which modify the head of a CS in that some speakers may permit the adjective to not take definite marking. While I will not speak to why this may the case, it should be noted that even for speakers that permit this variation, the presence of the definite marker on a head-modifying adjective forces a restrictive reading, as expected following the discussion in Chapter 3.
However, this obligatory definite marking cannot be a reflection of agreement between the noun and adjective since the same behavior is not found for head-modifying adjectives of indefinite nouns. In Maltese, when an indefinite adjective modifies the head of an indefinite CS, it results in ungrammaticality (124)a. Only the free genitive form may be used in these contexts, (124)b.

(124) Maltese

a. *rajt ġħajnejn qattus ħodor fi-d-dlam
   ‘I saw a cat’s green eyes in the dark.’

b. rajt l-ġħajnejn ħodor ta’ qattus
   saw.1SG DEF-eye.DU green.PL of cat.M.SG
   fi-d-dlam
   in-DEF-dark.M.SG
   ‘I saw a cat’s green eyes in the dark.’

   Literally: ‘I saw the green eyes of a cat in the dark.’

Thus, while Hebrew and Maltese are similar in the linear placement of adjectives that modify CSs, they differ with respect to the definite marking behavior of head-modifying adjectives. This distinction is expected if the morphosyntax of adjectives and structure of the head noun is different in the two languages. It was previously shown in Chapter 3 that definite marking on Maltese adjectives is distinctive from that of Hebrew and Arabic since the definite marker causes a semantic effect. Here, we see that adjectives in Maltese once again differ from that of Hebrew in their modification of CS head nouns. In section 4, I argue that this distinction is predicted when combining the analysis proposed in Chapter 3 for restrictive adjectives and the
CS analysis developed here. In the next section, I provide further support for the distinctive structures of the head and complement nouns in Maltese CSs through a discussion of definite marking on complement-modifying adjectives. Like head-modifying adjectives, definite marking on complement-modifiers behaves differently from Hebrew and therefore cannot be analyzed in the same fashion.

2.7 Restrictive definite marking on complement-modifying adjectives

In Hebrew, when an adjective modifies an element of a CS, the adjective must agree with the CS in (in)definiteness. This was shown to be true for adjectives that modify the head nouns of definite (121) and indefinite CSs (122). It is also true of adjectives which modify complements of CSs, as shown in (125).

(125) Hebrew, adapted from Ritter (1988, p. 916)

bejt ha-mora *{(ha-)jafa
house.M.SG DEF-teacher.F.SG *(DEF-)pretty.F.SG

‘the pretty teacher’s house’

Interestingly, Maltese complement-modifying adjectives do not share this behavior. Unlike Maltese head-modifying adjectives, complement-modifying adjectives need not obligatorily take definite marking when modifying a definite CS. Rather, these adjectives display the same definite marking behavior as those that modify a simple noun, which was discussed at length in Chapter 3 and referenced in section 2.6 above. Specifically, when definite marking appears on complement-modifying adjectives, it creates a restrictive interpretation for the adjective. This is exemplified for
the adjective *qasir* ‘short’ in (126), which takes a restrictive interpretation in (126)a when definite-marked. In (126)b, the adjective does not carry definite marking and may be interpreted as restrictive or non-restrictive.

(126) Maltese

a. saqajn ir-рагel il-qasir

   ‘the short man’s legs’
   = Multiple men but only the short man’s legs are under discussion.

b. saqajn ir-ragel qasir

   ‘the short man’s legs’
   = Multiple men but only the short man’s legs are under discussion.
   = May or may not be multiple men.

The dichotomy between head-modifying and complement-modifying adjectives demonstrated in this and the previous section indicates once again that the structure of complement and head differ from one another. Here, we see that complement-modifying adjectives behave in the same manner as those in simple DPs while head-modifying adjectives require definite-marked adjectives. In Chapter 3, I argued for a syntactic distinction between definite-marked and non-definite-marked adjectives whereby non-definite-marked are merged as *aP* specifiers to *nP* and definite-marked adjectives are generated in the predicate of a reduced relative clause. When applying the CS facts here to such an analysis, we see that the structure of the head noun does not permit *aP* specifiers while that of CS complements can. In section 3.2.1,
I will argue that this is an effect of the type of \( n \) that categorizes the head noun’s root, which is distinctive from the categorizing \( n \) head of roots in simple DPs.

So far, this section has elaborated on the morphophonological, semantic, and morphosyntactic characteristics of Maltese CSs. It was shown that while many of these characteristics are shared with Hebrew CSs, Maltese CSs are distinctive in their interaction with demonstratives and the definite marking behavior of CS-modifying adjectives. Throughout, I have discussed how each of these characteristics has been accounted for in the Hebrew CS literature and demonstrated how these approaches may or may not extend to the Maltese data. In addition, I have elaborated on how the analysis proposed in this chapter will contrast with or build upon previous literature on Hebrew CSs and inalienability constructions. In the next section, I will lay out these aspects of the proposed analysis in full and illustrate how they account for each of the characteristics of Maltese CSs.

3 Analysis of Maltese construct states

In the previous section, I provided an overview of the defining characteristics of Maltese CSs and how they have been evaluated in related literature. Throughout that discussion, I briefly noted how each characteristic will be accounted for in the analysis proposed here. In this section, I will flesh out those analytical details and their theoretical implications. It will be shown that Maltese CSs are syntactic structures composed of two DPs. The first DP contains the complement of the CS and merges as the complement of the head noun’s categorizing head, \( n_{\text{CS}} \). The second DP projects above the head noun. In order to account for the distinctive characteristics found
between the nominal elements of CSs, I will argue that CS complements are composed of a simple DP, as derived in Chapter 2. On the other hand, the head noun is categorized by a distinct flavor of $n$ that carries an inalienable possession feature. This feature percolates up the DP, creating a distinct flavor of $D$. It is the combination of these distinct flavors of $D$ and $n$ and the complement position of the CS complement that predicts the morphophonological, morphosyntactic, and semantic characteristics defined above. Otherwise, the analysis predicts that Maltese CSs behave in the same manner as other Maltese DPs, as discussed in Chapter 2 and 3, and requires no further movements than the expected $n$-to-Num head movement found in all Maltese DPs.

### 3.1 Construct state complements are complements of categorizing heads

As discussed in previous chapters, word-formation in the Distributed Morphology framework occurs in the syntax through the composition of acategorical roots and categorizing heads ($n$, $v$, etc). Due to their acategorical nature, the same root is used to derive both verbs and nouns in the syntax. For example, $\sqrt{DESTROY}$ can be adjoined to a $v$ to derive *destroy* or $n$ to derive *destruction*. Previous literature on roots and compounds (see Harley, 2014; Harðarson, 2017) have therefore argued that it is the root that is responsible for the common argument structure found between *destroy* (‘Romans destroyed the city’) and *destruction* (‘the Romans’ destruction of the city’). As such, they claim that roots enter the syntax with argument structure. However, many arguments have been presented against the association of argument structure with roots (Acquaviva, 2008, 2014; van Craenenbroeck, 2014; Alexiadou, 2014b; Embick, 2019; Wood, 2019) which have generally
agreed that the attachment site of internal arguments in low in the structure but is above the root, i.e. attached to the categorizing head. Here, I follow the arguments of Embick (2019), Wood (2019), and others in merging the complement of the CS as the complement of the head noun’s categorizing head, as in (127).

\[
(127) \quad \text{nP} \quad \text{DP/DemP} \quad \sqrt{n} \quad n
\]

The proposed structure in (127) for Maltese CSs is a combination of Hebrew CS analyses, specifically Shlonsky (2004) and Borer (1999) and select analyses of inalienable possession, such as Alexiadou (2003b), Boneh & Sichel (2010), and Gebregziabher (2012) (see also Kremers, 2003). Like these analyses, I place the complement of CS in the complement/internal argument position of the head but distinguish my analysis from theirs in integrating current assumptions regarding lexical decomposition in DM. In doing so, the analysis places the CS complement in the complement position of the head noun’s categorizing head. In the next section, I will elaborate on the function of this categorizing head and its implications for the analysis.

### 3.2 An inalienable n

Since the acceptance of lexical decomposition in Distributed Morphology, various papers have argued for grammar-specific variations of functional heads (Harley, 2009). Kastner (2016) argues that the non-concatenative morphological nature of verbal templates in Hebrew is the result of different flavors of a Voice head. Kramer (2015), in her arguments for associating gender features with n, posits different types of n which are distinguished by a feature’s gender value ([+/- fem])
and interpretability. In line with these proposals, I argue that Maltese utilizes a distinctive flavor of $n$, termed $n_{CS}$, that categorizes the root of head nouns and carries an inalienable possession feature.\textsuperscript{60} Therefore, this analysis follows the lead of many before in arguing for several varieties of functional heads.

### 3.2.1 $n_{CS}$ as a PF-licenser

In defining $n_{CS}$ as a distinct flavor of $n$, it follows that it will be distinctive from the basic $n$ form. In this section, I will argue that it differs both semantically and morphosyntactically from $n$ and is the cause for the semantic restrictions found for CSs, the strict adjacency demonstrated in section 2.5 between the head and complement, and speaker variation for grammaticality judgements of CSs.

As mentioned briefly in section 2.2, Alexiadou (2003b) notes that the complement of inalienable possessive constructions may merge into either an internal argument position of the head noun or into the complement position of light heads that encodes the semantic relation tied to inalienable possession. Combining this and the arguments presented in the previous section, I argue Maltese CSs are formed via the merger of the complement into the complement position of $n_{CS}$. It is this $n_{CS}$ that encodes the inalienable possession relation of the Maltese CS via the interpretable inalienable possession feature that it carries. In doing so, the analysis conflates Alexiadou’s two proposed positions for inalienable possessives using lexical decomposition. Furthermore, the analysis predicts that Maltese CSs are restricted to inalienable possessive relations since the head noun root of each CS will be categorized by an $n_{CS}$.

\textsuperscript{60} Here, the classification of ‘CS’ in $n_{CS}$ is not taken to be a construct state feature but rather is a diacritic used to easily distinguish it from other $n$ heads that do not carry an inalienable possession feature.
In addition, \( n_{CS} \) is distinguished from \( n \) in its ability to license the CS complement as a DP/DemP internal argument of the head noun. I argue that this licensing relationship requires adjacency between the head and complement, aligning with similar PF-licensing proposals for pseudo-noun incorporation structures (cf. Baker, 2014; Levin, 2015; Erlewine, 2018).\(^1\) The licensing relation is defined as in (128).

\[(128) \text{PF-Licensing}\]

Given a head \( X \) and projection \( YP \), \( X \) licenses \( YP \) iff \( X \) and \( YP \) are adjacent.

In referring to adjacency as a prerequisite for licensing, I follow Embick (2007)'s definition of adjacency at PF with a slight alteration, as shown in (129).

\[(129) \text{*; ADJACENCY:}\]

Represented as: \( (XP \ X \ * \ YP) \)

\( * = \) 'is left adjacent to'; where no phrasal material intervenes between \( X \) and \( YP \).

Specifically, (129) differs from the adjacency definition used in Embick (2007) in that it only requires that no phrasal material intervene between \( X \) and \( YP \). In applying this definition of adjacency to the topic at hand, \( X \) is identified as \( n_{CS} \) and \( YP \) is the DP/DemP complement of a CS complement. Thus, this adjacency restriction in (11) will hold so long as no phrasal material intervenes between \( n_{CS} \) and DP/DemP.\(^2\) When this adjacency relation holds, \( n_{CS} \) will license the DP/DemP complement as in (128).

---

\(^1\) That being said, I do not go so far as to claim that Maltese CSs are pseudo-noun incorporations nor even parallel CSs with these constructions. Rather, this area of literature is relevant only for its arguments for licensing after syntax and the licensing operation's tie to adjacency.

\(^2\) This divergence from Embick’s original adjacency definition is required given the analysis’s assumption that \( n_{CS} \) undergoes head movement up to Num, resulting in the complex head: \( [\sqrt{\ [n_{CS} \ [\text{Num}]]}] \). Because of this head movement, Num in fact intervenes between \( n_{CS} \) and the DP/DemP complement at PF but is not problematic for (129) since it is not phrasal.
The adjacency-based licensing relationship caused by $n_{CS}$ is evidenced through a comparison of adjectival modification between CSs and free genitives. In section 2.5, I showed that head-modifying adjectives do not directly follow the head noun but rather must appear after the whole CS. This is not true for free genitives. Compare the ungrammatical CS in (130)a to the grammatical version in b.

(130)  Head-modifying adjectives in Maltese CSs and free genitives

a. *saqajn qosra ir-raġel  
   ‘the man’s legs’

b. is-saqajn qosra ta-r-raġel  
   ‘the man’s short legs’

The ungrammaticality of (130)a is expected given the current analysis. At PF, $n_{CS}$ will be unable to license the CS complement since they are not adjacent. On the other hand, the grammaticality of (130)b is expected since the root of *saqajn will be categorized by $n$, not $n_{CS}$ and the complement of the free genitive is a PP. Though I leave a full analysis of free genitives for future research, it is likely that this PP is not merged in the internal argument position of the root, given its freedom of ordering with other PPs (131).
As such, it follows that the adjective may appear directly after the head noun of a free genitive since the PP need not be licensed as an argument and therefore need not be adjacent to the head noun. Additional discussion of this licensing relationship in regards to head-modifying adjectives will be discussed in section 4.2.

Further motivation for this adjacency-based licensing relationship comes from a typological perspective of inalienable possessives. Haiman (1985) notes that possessives are iconic in that “the greater the formal distance between X and Y, the greater the conceptual distance between the notions they represent (p. 130-136; quoted by Koptjevskaja-Tamm, 2003, p. 71)”. Koptjevskaja-Tamm (1996) extends this to Maltese CSs specifically, arguing that the strict adjacency between the head and complement is tied to the iconicity associated with their inalienable possessive relation. As such, an adjacency-based licensing relationship between the head and complement is expected given the strong semantic dependency of elements within inalienable possessives.

In defining \( n_{CS} \) as a PF-licenser, the analysis predicts that any root that merges with \( n_{CS} \) will be permitted to take a DP/DemP complement. However, the resulting construction will be
interpreted as an inalienable possessive due to the inalienable possession feature carried by the categorizing head. Due to this, it is expected that speakers may permit a variety of nouns to appear at the head and complement of a CS but that these combinations result in distinct semantic interpretations or are infelicitous in cases where the head is not an inalienably possessed noun dependent upon the possessor. As discussed in footnote 48, this fact is borne out.

3.2.2 $n_{CS}$ is the construct state marker

In addition to explaining the semantic and morphosyntactic restrictions of Maltese CSs, $n_{CS}$ can also be directly tied to the construct state form of CS head nouns. Currently, it is taken as a staple of DM that $n$ is the locus of gender features in the syntax (Lowenstamm, 2007; Kramer, 2014, 2015; Deal, 2016). As such, $n$ can vary in its phonological realization depending on the gender feature it carries. For example, many feminine nouns in Maltese end in -a while masculine nouns are unmarked. Compare tifel 'boy. M.SG' and tifl-a 'girl. ESG'. By invoking a new flavor of $n$, the analysis then predicts that the exponent of $n_{CS}$ may differ from that of $n$. Remember from section 2.1 that the head nouns of Maltese CSs display a distinct morphophonological characteristic whereby when the head noun is feminine and -a final, it takes a distinct construct state form through the addition of a -t suffix. The relevant example in section 2.1 has been repeated in (132) below.
(132) Maltese

a. zij-at
   aunt-F.SG.CS
   ‘the boy’s aunt’

b. iz-zij-a
   DEF-aunt-F.SG
   ‘the boy’s aunt’

Given this, I argue that the construct state marker is in fact an allomorph of $n$ that is contextually determined, similar to Faust (2018). Since it is only the head noun of a CS that appears with this form, it follows that the context which determines its insertion is a [+fem] feature on $n_{CS}$. This results in the (simplified) list of Vocabulary Items in (133).

(133) Maltese Gender Vocabulary Items

a. $n^{[+\text{fem}]} \leftrightarrow -a$

b. $n^{[-\text{fem}]} \leftrightarrow \emptyset$

c. $n_{CS}^{[+\text{fem}]} \leftrightarrow -at$

According to the Pāṇinian Principle (also known as the Elsewhere Condition) (Halle, 1997), the most specific rule that matches the morphosyntactic feature bundle will be inserted. This predicts that any $n_{CS}$ that also contains a [+fem] feature will be realized by $-at$.63 On the other hand, according to the Subset Principle (Halle, 1997), a morphosyntactic feature bundle that contains

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63This is very much a simplification of the gender system in Maltese since the exponence of gender is also conditioned by number, among other things. However, I leave it to future research to determine how each of these features interact with the Vocabulary Items proposed in (133).
an \( n_{CS} \) that is [-fem] will be realized by (133)b since the rule meets a subset of the features and no other rule is more specific.

Overall then, the specification of \( n_{CS} \) as a distinct flavor of \( n \) predicts the semantic interpretation of Maltese CSs, adjacency requirements between the head noun and CS complement, and the construct state marker seen on feminine singular head nouns.

### 3.3 Two types of D

Thus far, I have argued that Maltese CSs are derived by merging the CS complement as a DP/DemP into the complement position of \( n_{CS} \), a distinct type of \( n \) that licenses the complement, encodes the inalienable semantics of the construction, and predicts the morphophonological alternation of feminine singular head nouns. In this section, I will argue that, in addition to a distinct type of \( n \), Maltese CSs are derived via a distinct type of \( D \), which I will term \( D_{CS} \), that is realized at PF as phonologically null. In doing so, the analysis seems similar to Ritter (1991)'s, which argues for a phonologically null flavor of \( D \) as well. However, the analysis differs from that of Ritter in positing that this distinct flavor of \( D \) is derived via \( n_{CS} \)'s inalienable possession feature. Specifically, following Norris (2014)'s Feature Percolation Principles defined in (134) below, I argue that the inalienable possession feature on \( n_{CS} \) percolates up to \( D \), creating \( D_{CS} \).\(^{64}\)

\(^{64}\)As such, the ‘CS’ classification of \( D_{CS} \) is used simply as a diacritic to distinguish a \( D \) which carries inalienable possession features from that of other \( D \)s found in simple DPs.
(134) Feature Percolation Principles, taken from Norris (2014, p. 135)

a. All projections of a head $X^o$ have the feature-value pairs that $X^o$ has.


Let $Z^o$ be a head lacking the feature $[F]$.

Let $X^o$ and $Z^o$ be members of the same extended projection (i.e., both $[+N]$).

When $Z^o$ merges with $XP$, projecting $ZP$, $ZP$ also has the valued feature $[F:val]$.

A prediction of this feature percolation from $n_{cs}$ to $D$ is that every CS head noun will be categorized by $n_{cs}$ and headed by a $D_{cs}$. As such, CSs are expected to be semantically restricted to inalienable possession, as discussed in section 2.2, and lack definite marking on the head noun, as discussed in 2.3.

Support for positing an inalienable $D_{cs}$ that is morphophonologically distinct from $D$ is found cross-linguistically. In her typological survey of possession in European languages, Koptjevskaja-Tamm (2003) notes several languages that utilize separate sets of pronouns that are dependent upon the alienability of the construction. This is illustrated for Wappo in (135) (from Koptjevskaja-Tamm, 2003, p. 704) but is also found in Washo and Tunica.
(135) Wappo

a. Inalienable:

\[ \text{mi-t} \overset{ς}{l} \]

1SG.INAL-hair

‘my hair’

b. Alienable:

\[ \text{ime-t} \overset{ς}{l} \]

1SG.AL-hair

‘my (detached) hair’

Others, including Standard Italian and certain dialects of Catalan, exhibit distinctive definite marking behaviors in possessive constructions which are dependent upon (in)alienability. For example, in Catalan, alienable possessives appear with a definite marker whereas inalienable possessives (which are roughly limited to kinship) do not (Dahl & Koptjevskaja-Tamm, 2001, p. 210; glossing added).
(136) Catalan
   a. Inalienable possession
      mon pare
      1SG father
      ‘my father’
   b. Alienable possession
      a meva casa
      DEF 1SG house
      ‘my house’

As such, the lack of definite marking on Maltese CSs is comparable to these alternations if taken to be a realization of D_CS, which only appears in inalienable constructions. All other DPs will be headed by D. Overall then, the proposed analysis predicts the list of possible Vocabulary Items associated with D in (137).

(137) List of Vocabulary Items which realize D
   a. D [+def] ←→ l-
   b. D ←→ ø
   c. D_CS ←→ ø

While (137)a and b will realize the D of simple DPs, respective of that D’s definiteness value, the Vocabulary Item in (127)c is underspecified so that it will realize all instances of D_CS, regardless

It is likely that the realization of D_CS is slightly more complicated than (137)c and the null phonological realization of the head is in fact due to Impoverishment (see Halle, 1997). In this other version of the analysis, (137)c would not need to be listed as a separate Vocabulary Item. Instead, Impoverishment would delete [+def] when presented with a D carrying a [CS] feature and Vocabulary Insertion would then realize this D using the underspecified Vocabulary Item in (137)b. This alteration to the analysis would then avoid the accidental homophony found between the Vocabulary Items in (137)b and (137)c.
of whether it is specified as [+/-def]. Therefore, it is expected that head nouns in Maltese CSs will never appear with a definite prefix regardless of the value of $D_{CS}$.

A further benefit of heading Maltese CSs with $D_{CS}$ is its analytical predictions regarding the interaction of head nouns and demonstratives. As discussed in section 2.4, head nouns in Maltese CSs may be preceded by a demonstrative regardless of their lack of definite marking. In Chapter 2, I argued that demonstratives are merged as the heads of DemP and take DP complements. In positing that Maltese CS head nouns are contained within a DP that is realized as phonologically null, following the Vocabulary Item in (137)c, the analysis predicts the ability to merge demonstratives into the structure.

Overall, this section has argued for the presence of two types of $D$ in Maltese: $D_{CS}$, which heads Maltese CSs, and $D$, which appears elsewhere in the language. This claim was evidenced by the ability to precede non-definite-marked head nouns with a demonstrative and supported by a discussion of definite marking in other languages which exhibit (in)alienability contrasts. Combined with arguments in the previous sections regarding the CS complement as the complement of $n_{CS}$, which is the categorizing head of the head noun, this generates the following analysis of saqajn ir-ragel ‘the man’s legs’. Phonological realization of the respective $D$ heads is included in (138)c for illustration though the assumption is maintained that phonology is introduced via Vocabulary Insertion after spell-out (see Chapter 1).
In (138)b, the head noun’s root, √SIEQ adjoins to n_{CS}, which takes DP2 as its internal argument. Internal to DP2 is the CS complement’s root √RAĠEL, which adjoins to n. n then undergoes head movement up to Num. As DP1 is derived, the inalienable feature from n_{CS} percolates up the tree to D, creating D_{CS} while n_{CS} undergoes head movement to its respective Num. At PF, n_{CS} licenses DP2 given their linear adjacency shown in (138)c and D_{CS} is realized as null according to the Vocabulary Item in (137)c while D of DP2 is realized as il-. At LF, the construction is interpreted as an inalienable possessive due to the interpretable feature carried by n_{CS}.
The analysis exemplified in (138) predicts the correct linear order of elements in the CS. By merging the CS complement into the complement position of the head noun, the analysis does not require phrasal movement, as is necessary for Ritter (1988, 1991) and Shlonsky (2004). Rather, the derivation of CSs proposed here requires no extra movements than as is expected in the simple DPs of Maltese and as has been proposed for other Semitic languages. In addition, the placement of the CS complement aligns Maltese CSs with analyses of inalienable possession in various languages. Finally, by merging and licensing the CS complement as the complement of CS, the analysis ties together the semantic dependency between the head and complement and their required adjacency.

4 Adjectives and construct states

While the analysis above predicts many of the characteristics described for Maltese CSs in section 2, the question remains as to how it may extend to account for those characteristics that involved adjectival modification. In this section, I will argue that the interaction of adjectives and CSs follows straightforwardly from the proposed analysis of adjectives in Chapter 3 and of CSs above.

4.1 Complement-modifying adjectives

As discussed in section 2.7, complement-modifying adjectives behave like adjectives elsewhere in Maltese in that they are interpreted restrictively when definite-marked and are ambiguous in their restrictive or non-restrictive interpretation when definite marking is absent. This
phenomenon was analyzed in Chapter 3 as a result of adjectives merging in two distinct areas of the DP. Definite-marked adjectives are generated in the predicate of a reduced relative clause while non-definite-marked adjectives are merged into the specifier of \( nP \). This analysis of restrictive and non-restrictive adjectives easily extends to account for the behavior of complement-modifying adjectives. Specifically, I will argue that like adjectives modifying simple nouns, when an adjective carries definite marking, it is generated in a reduced relative clause. Otherwise, the adjective appears in Spec, \( nP \).

To illustrate, take the Maltese CS in (139). In this example, the adjective \textit{qasir} 'short' is modifying the complement of the CS, \textit{ir-ra\text{"g}el} 'the man'. This is clear due to the shared gender and number features, masculine singular, between the complement and the adjective.

(139) Maltese CS with complement-modifying adjective

\begin{verbatim}
  saqajn     ir-ra\text{"g}el     il-qasir
\end{verbatim}

‘the short man’s legs’

In (139), the adjective is interpreted restrictively since it appears with definite marking. Based on the analysis of restrictive adjectives in Chapter 3, this follows from the generation of the adjective in the predicate position of a reduced relative clause. Since the adjective is a modifier of the CS complement, the IP of the reduced relative clause will merge into the complement position of the CS complement's DP. In (140), this is defined as DP2.
From here, the head movements proposed in Chapter 2 and section 3 above derive the CS (140)b and d while DP3, containing the CS complement and subject of the reduced relative clause, undergoes phrasal movement to Spec, DP2 as argued in Chapter 3.

In the case where a complement-modifying adjective is not definite-marked and therefore ambiguous in interpretation between restrictive or non-restrictive, it is generated in Spec, nP. Like
in Chapter 2, head movement of \( n \) up to Num will cause the root to move to a head directly above the \( nP \). As such, the root surpasses the position of the adjective, causing the adjective to appear post-nominally. When extended to complement-modifying adjectives, this will consistently cause non-definite-marked adjectives to appear post-nominally. As the final noun in a CS, it will also cause the adjective to appear after the CS.

4.2 Head-modifying adjectives

Having predicted the behavior of complement-modifying adjectives, I turn now to head-modifying adjectives. Remember from section 2.5 and 2.6 that head-modifying adjectives must appear after the complement of a CS and are obligatorily definite-marked. If they are not definite-marked, the adjective is interpreted predicatively and therefore external to the DP. Like the analysis of complement-modifying adjectives proposed above, the definite-marked behavior of head-modifying adjectives is predicted by the analysis in Chapter 3. Specifically, like the definite-marked adjectives in Chapter 3 and the section prior to this one, I argue that definite-marked head-modifying adjectives are also generated as the predicates of reduced relative clauses.

To illustrate, take the Maltese CS in (141). Like a complement-modifying adjective, the adjective \( qosra \) appears directly after the complement of the CS. However, it is clear that the adjective modifies the head of the CS, and not the complement, based on the plural features shared between the head and adjective. These differ from that of the complement, which is masculine singular in this CS.
(141) saqajn ir-rağel il-qosra

‘the man’s short legs’

To predict the placement of qosra and its definite marking, the derivation is similar to that of complement-modifying adjectives but with the IP merged as the complement of DP1, as shown in (142) below.

(142) a. DP1
   \[\text{[DP1 il- [DP2 [\sqrt{\text{SIEQ}}+n_{CS}+\text{Num}] [DP3 ir- [\text{NumP} [\text{Num}\sqrt{\text{RAǦEL}}+n+\text{Num}]]]] qosra]]}\]

b. Head movement of $n$ to Num and subsequent head movement of $n_{CS}$ to $D_{CS}$

\[\text{[DP1 il- [DP2 [\sqrt{\text{SIEQ}}+n_{CS}+\text{Num}] [DP3 ir- [\text{NumP} [\text{Num}\sqrt{\text{RAǦEL}}+n+\text{Num}]]]] qosra]}\]

c. Phrasal movement of DP2 to Spec, DP1

\[\text{[DP1 [DP2 [\sqrt{\text{SIEQ}}+n_{CS}+\text{Num} [DP3 ir-\sqrt{\text{RAǦEL}}+n+\text{Num}]] il- [IP qosra]]]}\]
Similar to the movements in (140), the derivation of the CS in (142) consists of head movement of the complement's categorizing head up to Num and, subsequently, head movement of the head's to Num. Then, the subject of the reduced relative clause, which is the DP containing the head noun, moves up to Spec, DP1. This generates the correct linear ordering of the CS while locating the definite-marked head-modifying adjective after the CS.

Before concluding this section, I will briefly discuss how the proposed analysis accounts for the ungrammaticality of non-definite-marked head-modifying adjectives. In the discussion of \(n_{CS}\) in section 3.2.1, I noted that the strict adjacency observed between the head and complement of a CS is an effect of \(n_{CS}\)’s licensing the CS complement at PF. Under the defined rule for PF-Licensing in (128), non-definite-marked adjectives cannot appear between the head and CS complement since the head and complement must be adjacent. Non-definite-marked adjectives will be merged into Spec, \(nP\), placing them between the head noun, which has undergone movement up to Num, and the CS complement. Thus, at PF, the complex head containing \(n_{CS}\) will not be adjacent to the DP/DemP complement and therefore unable to license it. This then predicts that non-definite-marked adjectives will not modify the heads of CSs while predicting the grammatical use of head-modifying definite-marked adjectives, which are generated after the complement in a reduced relative clause.

Overall, this section has demonstrated that the proposed analysis in section 3 easily extends to account for the distinct behavior of adjectives when modifying elements of Maltese CSs. The analysis here also provides support for the structural distinction of restrictive versus non-restrictive adjectives proposed in Chapter 3.
5 Conclusion

In this chapter, I have argued for an analysis of Maltese CSs that aligns with previous literature on inalienable possession and specific aspects of approaches to Hebrew CSs. It was shown that Maltese CSs are derived by merging the CS complement as a DP into the complement position of the head noun’s categorizing head. Like the analysis of simple DPs in Chapter 2, both the head’s and complement’s categorizing head undergo cyclic head movement up to Num. Two flavors of pre-existing functional heads were proposed: $n_{CS}$ categorizes the head noun’s root and $D_{CS}$ is a phonologically null form of $D$ that appears only at the head of CSs. Together with arguments from Chapter 3 regarding the behavior of adjectives in Maltese, the analysis predicts the linear order of CS elements, the post-nominal placement of adjectives, the definite marking behavior of adjectives depending upon which CS element they modify, the ability to modify both the head and complement with demonstratives, the inclusion of prenominal material before a CS complement, and the morphophonological alternation of the CS head.

While the analysis covers a sizable portion of the characteristics discussed for Maltese CSs in section 2, it does not touch upon several morphosyntactic characteristics that may also be relevant to the discussion of Maltese CSs. One such characteristic is the recursive nature of Hebrew CSs, which has been discussed at length in the literature. However, given the limited nature of the data presented here, I will only briefly discuss how the proposed analysis may be extended to account for this characteristic if it were to be found in Maltese.

When a Hebrew CS is recursive, only the rightmost element behaves as a complement and all other elements to the left act as heads. This is illustrated in (143) where $kila$ ‘class’ is only element which carries the definite marker.

158
Hebrew, adapted from Borer (1999, p. 45)

delet bejt mora-t ha-kita


‘the door of the house of the teacher of the class’

Currently, the available data does not indicate whether Maltese CSs can be recursive like Hebrew but discussion of the phenomena with Gatt (p.c.) indicates they may be recursive. However, speakers generally prefer the use of a free genitive in place of one of the CSs. Though the analysis does not speak to these preferences, it does predict their recursion if the data following the pattern seen for Hebrew in (143). Specifically, the analysis predicts that if a CS is recursive, each noun in the CS, to the exception of the rightmost noun, would be categorized by $n_{CS}$ so as to license its DP complement at PF. The most embedded DP, which will contain the complement, will behave like other CS complements in containing an $n$ and D. This then predicts that every element in the CS, to the exception of the rightmost, will behave like a head noun and the rightmost will be the complement.

In order to conclude this chapter on Maltese CSs, I must remark on one further morphosyntactic characteristic of Maltese CSs that is distinctive from Hebrew. In section 2.4, I noted that the head nouns of Maltese CSs cannot be modified by a numeral. This is not the case for Hebrew, where numerals are permitted before the head noun, as shown in (144).

(144) Hebrew CS

xameʃ dirot ha-mora

five apartment.PL DEF-teacher.F.SG

‘the teacher’s five apartments’
Thus far, I have argued that the distinctive characteristics of Maltese CSs are derived primarily by the distinct flavor of $n$ that categorizes head noun roots. This $n_{CS}$ encodes the inalienable semantic relation of the construction and licenses the DP/DemP complement of the root via adjacency. As such, it may also be $n_{CS}$ which predicts the ungrammaticality of numerals in the DPs of head nouns. In section 3.2.1, I argued that $n_{CS}$ introduces an inalienable possession feature into the DP of the head noun which percolates up to DP, creating $D_{CS}$. It is this feature that causes many of the distinctive characteristics between the head noun of a CS and its complement, including the lack of definite marking. As such, it is plausible that this feature is also to blame for the inability to modify the head noun with numerals, given that CS complements can take numerals. This may be the case if the Card/Ord head are incompatible with the CS feature that percolates throughout the head noun’s DP. If this proposal is on the right track, it would also provide an explanation as to why numerals may precede the leftmost noun in free genitives since its DP does not contain $n_{CS}$, as shown in (145).

(145) Maltese free genitive with numeral

l-erbgha saqajn ta-l-kelb

DEF-four leg.PL of-DEF-dog.M.SG

‘the dog’s four legs’

Overall, in this chapter, I have presented a novel analysis of Maltese CSs that combines approaches from the inalienable possession literature, analyses of Hebrew CSs, and assumptions regarding lexical decomposition in DM. It was shown that Maltese CSs differ from Hebrew and thus require a distinctive analysis of the constructions that predicts the array of characteristics which differentiate Maltese from CSs in Hebrew. The analysis subsequently developed to account
for these characteristics indirectly provides support for the internal argument position of inalienable possessors, the availability of distinctive flavors of categorizing heads, and adjacency restrictions enforced by post-syntactic licensing, which are relevant in various subsets of the morphosyntactic literature.


CHAPTER 5
Construct State-like compounds

1 Introduction

Like other areas of the Maltese DP, compounding in the language is under-documented and understudied in generative frameworks. To date, only Fabri (2009) provides a comprehensive overview of the topic so as to form the “basis for future research in this neglected area of Maltese linguistics (p. 209).” In this chapter, I take up this topic by focusing on compounds which superficially appear to be CSs. These are defined by Fabri (2009) as “lexical constructs” and exemplified by the compound in (146) as compared to the CS in (147).

(146)  Compound

\[ \text{ħmar} \quad \text{il-lejl} \]

\[ \text{donkey.M.SG} \quad \text{DEF-night.M.SG} \]

‘nightmare’

(147)  CS

\[ \text{saqajn} \quad \text{il-kelb} \]

\[ \text{leg.PL} \quad \text{DEF-dog.M.SG} \]

‘the dog’s legs’

Like the CS in (147), the compound in (146) consists of two nouns, referred to here and throughout as the ‘head’ and ‘complement’ for ease of exposition, which are separated by a definite marker prefix on the complement. However, the constructions are distinctive from one
another in all respects except for their outward appearance. In this chapter, I will define the distinctive characteristics of these compounds, which I will refer to as ‘construct-state-compounds’ (CSCs from here) for theory-neutrality, and propose a novel analysis of CSCs that builds on previous approaches to English compounds in the DM framework. In doing so, the analysis will add to the small but growing body of literature on compounds in the DM framework and subsequently contribute to the development of DM’s foundation as a morphological framework by refining its approach to complex morphosyntactic phenomena.

The chapter will proceed as follows. In section 2, I show the distinctive characteristics of CSCs as they compare to CSs from the previous chapter. Section 3 provides a brief overview of compounds as they have been analyzed in the DM framework and how these analyses extend to account for Maltese CSCs. In section 4, I analyze CSCs as distinct syntactic structures from Maltese CSs and derive each of their morphosyntactic properties in turn and section 5 concludes.

2 Data: Construct state-like compounds versus construct states

Outside of the superficial similarity between CSCs and CSs, the two constructions are different in their semantic composition, use of definite marking and inflection, and interaction with demonstratives, prenominal modifiers, and adjectives. A summary of these distinctive traits is given in (148) below.
Summary of Distinctive CSC Characteristics

1. The semantic interpretation of the head and complement is non-compositional.
2. Definite marking obligatorily appears on the complement, though it is not interpreted.
3. When the compound is definite, the head noun takes a definite marker.
4. The head noun may be preceded by prenominal modifiers.
5. Number inflection only occurs on the head noun.
6. Adjectives may only modify the head noun and display the same restrictive/non-restrictive effect of definite marking as simple nouns.

In the following subsections, I will discuss each of these characteristics in turn, demonstrating how they distinguish CSCs from CSs and briefly discuss how they will impact the analysis in section 4.

2.1 Semantic non-compositionality

Maltese CSCs are exocentric compounds in that their semantic interpretation is not straightforwardly related the semantic interpretation of the head or composed from the combination of the head with the complement. This is very much distinctive from the CSs discussed in Chapter 4 which were both compositional and semantically restricted to inalienable possession relations. Compare the CSC in (149) to the CS in (150).
In (149), the semantic interpretation of the CSC is ‘shark’, which maintains the nominal category of the head (and complement) but cannot be predicted by the semantic contribution of either element. Specifically, following Allen (1978)’s “is a” condition, a shark is neither a type of dog nor type of sea. On the other hand, the interpretation of the CS in (150), ‘the woman’s hair’, is straightforwardly composed via an inalienable possession relation between the head, ‘hair’, and the complement, ‘woman’.

Throughout this section, I will demonstrate that CSCs pattern more like single nouns than their CS counterparts. Here, this is indicated by their non-compositionality, whereas in subsequent sections, it will be shown that their morphosyntactic behavior is similar to that of a single noun as well. I turn to these below.
2.2 Double definite marking and demonstratives

As mentioned in section 2, the complement of CSCs obligatorily takes the definite marker.

However, this definite marking does not create a definite interpretation for the CSC. Instead, it is semantically vacuous. When definite, the CSC will appear with an additional definite marker on the head noun. Compare the indefinite CSC in (151)a to the definite form in (151)b.

(151) CSC

a. qamar il-ħasel
   moon.M.SG DEF-honey.M.SG
   ‘honeymoon’

b. il-qamar il-ħasel
   DEF-moon.M.SG DEF-honey.M.SG
   ‘the honeymoon’

In section 4.2, I will argue that the il- on ħasel behaves as a linking element that is required for the composition of the CSC based on its semantic vacuity.

Another distinction between CS and CSCs that derives from the latter’s non-compositional nature is the placement of demonstratives. Remember that CSs can place demonstratives between the head and complement when the demonstrative modifies the complement. For CSCs, since the complement does not have a clear contribution to the non-compositional meaning, it is only possible to modify the CSC itself with a demonstrative. As such, the demonstrative can only appear prior to the entire CSC, as in (152) from Korpus Malti (culture3681).
Despite modifying the whole CSC construction, the demonstrative continues to agree with the head. This is illustrated in (153) from Korpus Malti (news40538) where the demonstrative takes the plural features of the head noun, *klieb* ‘dogs’, rather than the masculine singular features of the complement.

(153) CSC
dawn il-klieb il-bahar

PROX.DEM.PL DEF-dog.PL DEF-sea.M.SG

‘these sharks’

When modifying the complement directly with a demonstrative, and therefore placing it in the middle of the CSC, the non-compositional meaning for the CSC is lost, as shown in (154).

(154) CSC
kelb dak il-bahar
dog.M.SG DIST.DEM.M.SG DEF-sea.M.SG

‘the dog of that sea’

In section 4.2, I argue that this restriction is predicted by the size of the CSC complement. Unlike CSs, the complement of a CSC is reduced in size, as originally proposed in Jackson & Punske (2013) for English primary compounds.
2.3 Prenominal modifiers before the head

Unlike CSs, the head nouns of CSCs may be modified by prenominal modifiers. In Chapter 2, these were defined as numerals (cardinal and ordinal), quantifiers, and superlative adjectives. As shown in (155), numerals are permitted before the head noun. 66

\[(155)\quad \text{Numeral + CSC}
\]

\[
\begin{array}{lll}
\text{bi-ż-żewg} & \text{klieb} & \text{il-bahar} \\
\text{with-DEF-two} & \text{dog.PL} & \text{DEF-sea.M.SG}
\end{array}
\]

‘with the two sharks’

This compares to examples like (156), repeated from Chapter 4, where the head noun of a CS cannot be modified by numerals.

\[(156)\quad \text{Numeral + Construct State}
\]

\[\begin{align*}
a. & \quad \ast l-erbg\text{ħa} & \text{saqajn il-kelb} \\
& \text{DEF-four} & \text{leg.PLure} & \text{DEF-dog.M.SG}
\end{align*}\]

Intended: ‘the dog’s four legs’

\[\begin{align*}
b. & \quad l-erbg\text{ħa} & \text{saqajn il-kelb} \\
& \text{four} & \text{leg.PLure} & \text{DEF-dog.M.SG}
\end{align*}\]

Intended: ‘the dog’s four legs’

Not only does this descriptively distinguish the CSCs under discussion here from that of CSs, it implies that they are structurally distinctive from one another. In the conclusion of

\[\text{\textsuperscript{66}Data indicates this is also true for quantifiers, as seen in (i) but set this data aside since the syntax of quantifiers in the Maltese DP has not been discussed thus far in the dissertation.}\]

\[(i)\quad \text{Quantifier + CSC}
\]

\[
\begin{array}{lll}
hafna & \text{klieb} & \text{il-bahar} \\
\text{many} & \text{dog.PL} & \text{DEF-sea.M.SG}
\end{array}
\]

‘many sharks’
Chapter 4, I posited that numerals were not permitted in the DP of CS head nouns because of an incompatibility between Card/Ord and the inalienable possession feature carried by $n_{cs}$. This restriction causes the head noun of CSs to be contained in a much smaller DP projection than that of a noun in a simple DP. The data in (155) indicates that this restriction does not hold for the head nouns of CSCs. In section 4.1, I will show that this distinction is borne out by analyzing the head noun’s DP as the same as that of a simple noun.

2.4 Plural inflection on the head

The manner in which CSCs inflect for plurality is another distinctive characteristic that separates them from CSs. While CSs may inflect either element of the construction, CSCs only convey plural number through inflection on the head. Regardless of whether the CSC is interpreted as singular or plural, the complement remains singular. Compare the singular form of ‘shark’ in (149) above to the plural in (157) below.

(157) Plural CSC

\[
\text{il-klieb} \quad \text{il-bahar} \\
\text{DEF-dog.PL} \quad \text{DEF-sea.M.SG}
\]

‘the sharks’

This behavior is often seen as a diagnostic for compound-hood and distinguishes the head from other elements in compounds (see Bloomfield, 1933; a.o).\(^67\) In section 4.2, the lack of plural inflection on the complement is predicted by the smallness of the complement’s projection. It will

---

\(^67\)However, Harðarson (2017, p. 8), citing Bauer (2009) and Kvaran (2005) notes that there are compounds which do inflect both elements, as in Finnish, Estonian, Yimas, Tamashel, and Icelandic.

169
be shown that, unlike head nouns of CSCs and complements of CSs, the complement of a CSC is contained within a functional projection that is limited in size to contain only a root, categorizing head, and a functional head associated with the linking element discussed in section 2.2. By excluding Num, the analysis thus predicts that roots in this structure will only appear in singular form following that singular is the unmarked number in Maltese. This classification of singular number as the unmarked or default number is evidenced cross-linguistically (Harley & Ritter, 2002; a.o) and supported by number inflection in Maltese. Like the Arabic varieties, dual (if present) and plural suffixes attach to a singular noun\(^\text{68}\) (Borg & Azzopardi-Alexander, 1997, p. 136), indicating that it is the lack of number marking which causes a singular interpretation for the noun.

### 2.5 Restricted adjectival modification

When modifying CSCs, adjectives may only modify the head. This is indicated by the agreement pattern in (158) where the adjective appears in plural form, corresponding when the plural features of klieb ‘dogs’. This is also seen with Hebrew compounds, which are formed from construct states, as discussed in Borer (2009).

\(^{68}\)Like the Arabic varieties, Maltese also inflects for plural by altering the stem via ablaut and other stem-internal modifications. This has been termed ‘broken plurals’ in previous literature and is a topic of debate since it is not clear whether the plural is formed from the root or based on the stem. Given this contention, I ignore them for the sake of argument here and refer the reader to McCarthy & Prince (1990) and Ratcliffe (1998) for discussion on the topic.
In addition, CSCs display the same behavior as simple nouns in Chapter 3 whereby when the head noun is not definite-marked, the adjective cannot take definite marking. This similarity is also evident in the behavior of definite marking on CSC-modifying adjectives. Like in Chapter 3, CSC-modifying adjectives take definite marking when interpreted restrictively. Otherwise, when unmarked, the adjective is ambiguous between a restrictive and non-restrictive interpretation.

This behavior contrasts with CSs, which require definite marking on the adjective when it modifies the head. As such, CSCs, unlike CSs, display the behavior of a single noun with regard to adjective modification.

Overall, this section presented the morphosyntactic and semantic characteristics of CSCs in Maltese. Throughout the discussion I elaborated on how these properties differed from those of CSs and demonstrated that Maltese CSCs behave like simple nouns. In the next section, I will provide an overview of how similar phenomena have been analyzed by recent work in the DM framework.
3 Compounding in Distributed Morphology

The analysis of Maltese CSCSs to be proposed in section 4 is one of a handful that focus on compounding phenomena from the perspective of DM (cf. Punske, 2016 for a review of most analyses as they compare to non-DM approaches). The majority of this literature has primarily focused on English compounds (Harley, 2009; Jackson & Punske, 2013, 2015; Harðarson, 2017) and compounds in Icelandic (Harðarson, 2017). In Chapter 4, I provided an overview of Harley (2009) whose analysis argues for the derivation of synthetic and primary compounds via the merger of an $n_P$ into the internal argument position of the root. Later proposals (Jackson & Punske, 2013, 2015; Harðarson, 2017) have since argued that primary compounds are distinctive from that of synthetic and therefore should be analyzed differently. In this section, I will provide a brief overview of these later proposals for deriving primary compounds and how they extend to the Maltese data at hand.

To begin, Harley (2009) began the discussion of compounds in the DM framework with her analysis of primary and synthetic English compounds. These, she argues, are derived using a head-complement relation, as in (160). Unlike Harley (2009), Jackson & Punske (2013) propose that English compounds are generated using two distinct structures: the head-complement relation proposed by Harley and an adjunct-head relation. The head-complement relation is derived by merging an $n_P$ as a complement to the head noun’s root, as demonstrated in (160) while the adjunct relation adjoins a functional projection to the $n_P$ of the head noun, as illustrated in (161).
Like Harley, Jackson & Punske assume that synthetic compounds, like *truck driver*, are derived via the structure in (160). In doing so, their analysis captures the generalization that some roots exhibit a shared internal argument structure between their nominal (*truck driver*) and verbal forms (*drive a truck*), as discussed briefly in Chapter 4.

However, Jackson & Punske’s analysis is distinguished from Harley in that they do not extend the structure in (160) to primary compounds. Instead, they argue that primary compounds are derived via the structure in (161), where a functional projection adjoins to the head noun’s *nP*. In doing so, their analysis derives the semantic distinctions found between synthetic and primary English compounds which are otherwise lost in Harley’s analysis.

Specifically, unlike synthetic compounds, the relation between the head and non-head element of a primary compound is not reflective of argument structure. Rather, the relation is closer to that of adjunct modification, including such things as a locative (*kitchen sink*) or temporal modification (*night watchman*) and material composition (*cotton dress*) of the head noun (Giegerich, 2004, p. 3); see also Giegerich, 2009; Kingdon, 1959). As such, these semantic relationships are predicted by
adjoining FP, which Jackson & Punske define as a Loc(ative)P, Temp(oral)P, or Mat(erial)P
depending upon the semantic relationship of a given compound, to the head noun. An example
of the adjunct-head relation is given in (162) for the English compound *garage door*.

(162) Analysis of *garage door*

```
  nP
 /\     /
LocP  nP
 |
Loc nP √DOOR
 |
 n √GARAGE
```

In (162), the head noun’s root, √DOOR, merges with a categorizing head. Upon building the
LocP containing the non-head’s root, √GARAGE, LocP adjoins to the nP of the head noun. This
derives the correct linear order and reflects the expected semantic relation for the compound.

Jackson & Punske are not alone in structurally distinguishing synthetic and primary
compounds. Harðarson (2017) also argues that synthetic and primary compounds should be
derived distinctively in order to predict their semantic differences. Like Jackson & Punske, he
derives synthetic compounds in the same fashion as Harley but diverges in his account of
primary compounds. These, he argues, may be derived either by merging an nP into the specifier
of the head noun’s nP, as in (163) or by the derivation of each noun in a separate workspace
which are then merged “directly”, as in (164) (see also Borer, 2009 for a similar spec-head
approach to Hebrew compounds). Both structures are used to derive the primary compound,*nurse shoes*, with phonological information included for ease of exposition.
Harðarson (2017)’s spec-head structure

\[
\begin{array}{c}
nP \\
\downarrow \\
nurse & n \\
\end{array}
\]

\[\sqrt{\text{SHOES}}\]

Harðarson (2017)’s separate workspace structure

a. \[
\begin{array}{c}
n \\
\downarrow \\
n \sqrt{\text{NURSE}} & n \sqrt{\text{SHOES}}
\end{array}
\]

b. \[
\begin{array}{c}
n1 \\
\downarrow \\
n2 & n1 \\
nurse & shoes
\end{array}
\]

For the derivation of nurse shoes in (163), the roots undergo movement to their respective \(n\), creating complex heads in the categorizing head of each \(nP\). In the context where the head’s \(nP\) takes an \(nP\) in its specifier, the head’s \(nP\) is considered deficient (see also Harley, 2009). This permits the non-head’s \(nP\) and the head’s \(n\) to undergo morphological merger. The derivation of nurse shoes in (164) requires that the respective nouns are derived in a separate workspace (164)a and enter the main workspace as heads. These heads then merge together in (164)b to form a complex head.

From a theoretical standpoint, it is advantageous to separate the derivation of primary compounds from that of synthetic, as argued by Jackson & Punske (2013) and Harðarson (2017), due to their distinctive semantic relations. Given the non-compositionality of Maltese CSCs in this chapter, it is difficult to extend Harley (2009)’s head-complement analysis, which is grounded in arguments for root argument structure, to compounds which are not decomposable, much less
decomposable to a relation that mirrors that of a verb and its internal argument. In attempting to extend her analysis to the compounds here, it would weaken the theoretical basis of the initial claim. As such, I argue that Maltese CSCs should not be analyzed like their CS counterparts in a head-complement relation.

However, the question remains as to which relation can derive each of Maltese CSCs’ distinctive characteristics. In section 4.2, I will argue that Jackson & Punske (2013)’s adjunct-head analysis is preferred given its predictions regarding adjective placement.

Overall, this section has provided a brief overview of previous approaches to compounding under the DM framework. In the next section, I will present an analysis of Maltese CSCs as compounds in the same framework by building primarily on Jackson & Punske (2013).

4 Analysis

In the previous section, I provided an overview of current analyses of compounds in the DM framework. Harley (2009) argues for a head-complement relation between the elements of a primary compound, which is also the proposed structure for Maltese CSs in Chapter 4, while Jackson & Punske (2013) and Harðarson (2017) argue for adjunct-head and spec-head relations, respectively. In this section, I will elaborate on the details of the proposed analysis of Maltese CSCs, highlighting how they differ from the analysis of CSs in Chapter 4 and how they compare to the compounding analyses discussed in section 3. Ultimately, I will argue that CSCs are syntactically distinct from CSs in the structure of their heads and complements and in the relation of the complement to the head. Specifically, they will be derived by merging their
complement, which is limited in size to a root, categorizing head, and functional projection, as an adjunct of \( nP \). Also, unlike CSs, the head noun is categorized by a non-distinct flavor of \( n \) and D, present in simple DPs of the language. Further, I will argue that the semantically vacuous definite marker in CSCs is a linking element that realizes the head of the complement’s functional projection.

### 4.1 No \( n_{\text{CS}} \) or \( D_{\text{CS}} \)

In Chapter 4, the head noun of a CSs was argued to be derived via a distinct categorizing head, termed \( n_{\text{CS}} \), which encoded the inalienable possessive semantic relation of the construction via an interpretable inalienable possession feature. This feature percolates up the DP spine of the head noun and creates a distinct flavor of D, termed \( D_{\text{CS}} \), which is realized at PF as phonologically null. In this section, I will argue that CSCs contain neither of these distinct types of functional heads.

Unlike CSs, CSCs cannot be classified as inalienable possessive constructions since they do not convey an inalienable possessive relation between the head and the complement. Following the analysis of CSs in Chapter 4, this indicates that the head noun of CSCs are not categorized by \( n_{\text{CS}} \) but by \( n \), a nominal categorizing head that is not encoded for inalienable possession. The absence of \( n_{\text{CS}} \) in the CSC construction has implications for the position of the CSC complement in the structure. Namely, without \( n_{\text{CS}} \), the CSC complement cannot be licensed at PF as the complement of the head noun’s root. The question remains then if the CSC
complement merges as a complement regardless of $n_{CS}$’s presence or if it merges elsewhere along the DP spine. This will be taken up in section 4.3.

In positing that Maltese CSCs do not contain $n_{CS}$, it follows that they also do not contain $D_{CS}$. This is evidenced by the overt definite marking that appears on the head noun of definite CSCs, as in (151) in section 2.2. In Chapter 4, it was argued that $D_{CS}$ is realized by a phonologically null Vocabulary Item, regardless of the value of the definite feature associated with it. This is not the case in CSCs where $D$ is realized as $l$- (or its allomorphs) when [+def] and null when [-def].

The absence of $n_{CS}$ and $D_{CS}$ has implications for CSCs outside of overt definite marking. In the conclusion of Chapter 4, it was suggested that the inalienable possession feature introduced by $n_{CS}$ causes the head noun’s DP to be restricted in size such that it will not contain prenominal modifiers like numerals. By arguing for the absence of $D_{CS}$ and $n_{CS}$ in CSCs, the analysis predicts that such elements may freely appear in the head noun’s DP. This is borne out, as illustrated by the data in section 2.3 above and the analysis in section 4.3.

### 4.2 Complements are smaller than the Determiner Phrase

Like Jackson & Punske (2013)’s analysis of primary compounds in English, I argue that the complement of a CSC is derived by a root, categorizing head, and functional projection. This distinguishes it from CS complements in Chapter 4 which were analyzed as full DP/DemPs. Compare the (maximal) CSC complement structure in (165)a with a possible CS complement DP in (165)b.
In distinguishing the two structurally, the analysis predicts that the complement of a CSC will be limited in its contents and inflectional abilities.

By limiting the size of the complement to $nP$, the analysis has implications regarding number inflection and the presence of material generated high in the DP spine. Specifically, it predicts that the number feature of the complement will remain constant regardless of the number interpretation of the CSC as a whole. In section 2.4, this was shown to be true in that only the head noun’s number inflection is interpreted. Without Num, the complement will be realized at PF as the unmarked number, singular. This contrasts with the complements of Maltese CSs, which are contained in a projection with Num and whose number features are interpreted and vary independently from the head.

In addition, the small size of the CSC complement’s projection should restrict the merger of prenominal modifiers or demonstratives. In Chapter 2, it was shown that prenominal modifiers and demonstratives are merged as heads into the DP spine above NumP and DP, respectively. Given the absence of NumP, numerals and higher material cannot merge into the
structure. As such, the analysis predicts that CSC complements cannot be modified by these high-merging elements. This prediction is borne out, as discussed in section 2.2, and contrasts with CS complements which are freely modified by numerals, quantifiers, and demonstratives.

Finally, in merging CSC complements as FP adjuncts of head nouns, the analysis straightforwardly predicts the presence of the obligatory but semantically vacuous definite marker on CSC complements. I posit that this definite marker is in fact not a definite marker at all but rather a linking element that realizes the head of the functional projection. This assumption is supported by the behavior of the definite marker on CSC complements in correlation with similar elements found in the compounds of other languages, like German, Greek, and Dutch (Scalise & Bisetto, 2009). An example of linking elements in Greek and German is shown in (166) and (167) adapted from Ralli (2008, p. 20).

(166) Greek compound

kukl-o-spito vs. kukl(a)/spit(i)
doll-LE-house vs. doll/house
'doll house'

(167) German compound

Wirt-s-haus vs. Wirt/Haus
host-LE-house vs. host/house
'inn'

Like the linking elements in these other languages, the “pseudo-”definite marker in CSCs appears between the first and second element and is semantically vacuous.
Lastly, in positing the presence of an FP as the maximal projection of the complement, the analysis predicts both the obligatory nature of this linking element in CSCs and its placement as a prefix on the complement noun.  

In summary, in the analysis of CSs proposed in Chapter 4, the complement noun of the CS was derived as a DP that merged into the internal argument position of the head noun’s root. This position and the structure of the complement was argued to predict a number of the morphosyntactic characteristics associated with Maltese CSs. In section 2, I discussed how many of the characteristics of Maltese CSs do not parallel that of CSCs, indicating that the two constructions are syntactically distinct. Here, I argued that one way by which the constructions are differentiated is the projection of the complement. In CSs, the complement is contained minimally within a DP and maximally a DemP. Complements in CSCs, on the other hand, comprise a much smaller projection, namely a functional projection containing only nP and the complement’s root. In the next section, I will discuss another structural distinction between CSs and CSCs by focusing on the location of the complement with regards to the head.

4.3 Construct state-like complements are not syntactic complements

In this section, I will argue that CSC complements are not syntactic complements of the head noun’s root. Rather, they are adjoined to the nP of the head noun. This structural position of the

\[\text{At this point, it is unclear why the FP is required in the derivation of CSCs. In Jackson & Punske (2013), FP is associated with the various semantic relationships found for primary compounds, as described in section 3 but Maltese CSCs are non-compositional. Thus, the FP here cannot be associated with similar semantic relations. Instead, I posit that the FP here is not required for semantic relations but for syntactic purposes. Specifically, FP permits the attachment of the complement nP to the adjunct of the head’s nP, aligning with it with similar phrasal structures like PPs.}\]
complement is distinctive from that of CSs and predicts the post-CSC placement of adjectives and their lack of inalienable possessive interpretation.

In section 3, I noted that the literature on compounds in DM is divided with respect to their analysis of primary compounds. Harley (2009) argues for a head-complement relation, extending her arguments of synthetic compounds in English to that of primary compounds, whereas Jackson & Punske (2013) and Harðarson (2017) argue for structural distinctions between the two types of compounds. In section 3, I argued that there is little to no motivation to link Maltese CSCs with root argument structure since they are semantically not compatible with that of a head and its internal argument. This thus distinguishes CSCs from the inalienable possession relation of CSs. Setting the head-complement relation aside, three approaches to compounds remain: adjunct-head as in (161), spec-head as in (163), and derivation in separate workspace as in (164). While similar, each approach has its own implications regarding the derivation of CSCs.

In the separate workspace approach, the two elements of the CSC would be merged as a complex head. As such, the head noun cannot undergo head movement to the exclusion of the complement. This incorrectly predicts that the linear order of the CSC should be complement > head. Therefore, I argue that Maltese CSCs are not derived via the separate workspace approach.

In discerning the implications of the spec-head and adjunct-head approaches, the interaction of CSCs and adjectives becomes relevant. Specifically, when applying the both

70 There are two additional versions of this analysis. One may assume that the separate heads are merged in the reverse order such that the final linear order is head > complement. While this correctly predicts the order of elements, it causes the analysis to circle back to arguments as to why CSCs should be not be analyzed as head-complement structures. In merging the complement noun to the right of the head noun, it mirrors that of a head-complement relation and therefore does not explain the semantic disparity between synthetic compounds and CSCs. The second version of this analysis is that the complement is right-adjointed to the head. Given the lack of evidence for right-adjointed elements in the currently available data, I leave consideration of this proposal for future research.
approaches to the CSC data, they make specific predictions regarding the placement of adjectives. In section 2.5, I demonstrated that CSC-modifying adjectives display the same semantic effects as discussed in Chapter 3 and appear after the CSC. This implies that, like in Chapter 3, these adjectives are generated in their respective locations in the DP, dependent upon their definite marking behavior. Following arguments from that chapter, definite-marked adjectives are generated in the predicate of a reduced relative clause while non-definite-marked adjectives are merged as specifiers to nP. In assuming the adjunct-head approach for the CSC data, we find that the post-CSC placement of the adjective comes for free, placing non-definite marked adjectives as specifiers, which are merged below adjuncts, i.e. the position of the complement. The underlying structure of this analysis is given in (168).

(168)

\[
\begin{array}{c}
\text{DP} \\
\quad \text{D NumP} \\
\quad \quad \text{Num} nP \\
\quad \quad \quad FP nP \\
\quad \quad \quad \quad F nP aP n \\
\quad \quad \quad \quad \quad \text{il-} \leftarrow \sqrt{\text{HEAD}} n \\
\quad \quad \quad \quad \quad \sqrt{\text{COMP}} n
\end{array}
\]

On the other hand, the spec-head analysis, when applied to the CSC data, correctly predicts the position of low merging adjectives but, since both the complement and adjective are merged as specifiers, it requires that these specifiers be strictly ordered such that the aP merges below FP.
Given this and lack of evidence for one approach over the other, I follow Jackson & Punske in merging the complements of CSCs as adjuncts to $nP$.

Overall, I have shown in this section that CSC complements do not merge into the structure as the syntactic complements of roots, as argued for CSs in Chapter 4, but are adjoined to $nP$. In the next section, I will provide a brief illustration of the analysis and how it predicts each of the characteristics discussed in section 2.

### 4.4 A brief illustration

To illustrate the arguments regarding the structure and derivation of CSCs in the previous sections, I will provide a brief overview of the analysis in this section. Consider the CSC in (169).
In (169)b, the complement adjoins to the nP of the head noun, ħmar. The complex head containing the root and categorizing head of the head noun moves up to Num. This generates the final ordering, ħmar il-lejl.
The analysis proposed here straightforwardly accounts for the placement of pronominal modifiers and demonstratives with respect to the CSC. Given the structure in (169), it follows that demonstratives and pronominal modifiers like numerals will appear in front of the head of the CSC as in the derivation of simple nouns from Chapter 2. For example, the structure of the DP in (170)a would be analyzed as in (170)b and c.
(170) Numeral + CSC

a. bi-ż-żewġ klieb il-bahar
   with-DEF-two dog.PL DEF-sea.M.SG
   ‘with the two sharks’

b. 
   DP
   D CardP
   ż- Card NumP
   żewġ Num nP
       FP nP
           F nP n
                 il- n √KELB n
                               √BAHAR n

c. 
   DP
   D CardP
   ż- Card NumP
   żewġ Num nP
       n Num FP nP
           √KELB n F nP #
                  il- n
                                 √BAHAR n
In (170)b and c, the CSC is derived as in (169) above where the complement adjoins to \(nP\) and both the head noun’s \(n\) moves up to Num. After this movement, the numeral \(\text{žewg} \) ‘two’ is merged as a Card head into the structure, following arguments from Chapter 2. As such, like in Chapter 2, the analysis predicts that numerals and other prenominal elements will appear with the obligatory definite marker instead of the CSC as well as the linear order of the remaining DP-internal elements.

Lastly, I will exemplify how the proposed analysis interacts with definite-marked adjectives by tying in discussion of such phenomena from Chapter 3. As shown above, definite-marked adjectives appear after the CSC and agree with the head noun in morphosyntactic features. This is predicted in the analysis of (159), repeated as (171) below.
As in Chapter 3, the definite-marked adjective is generated in the predicate of a reduced relative clause. The CSC merges as the subject DP of the clause in Spec, IP and moves up to Spec, DP2. This in turn generates the correct linear order of elements exhibited in (171)a.

### 4.5 Predicting the absence of non-definite-marked adjectives

Before concluding this section, a final remark should be made regarding the inability to modify the complements of CSCs with neither a definite nor non-definite-marked adjective. From a
syntactic perspective, the analysis straightforwardly predicts the absence of complement-modifying definite-marked adjectives since the complement does not project its own DP and therefore cannot act as the subject of the reduced relative clause. However, the inability to modify complements with non-definite-marked adjectives is not expected since the complement contains an nP, the merger site of these low adjectives. Rather, the exclusion of non-definite-marked adjectives as complement-modifiers is an effect of locality restrictions on contextual allophony due to cyclic syntactic spell-out to LF.

In previous literature, the domain of allophony for a given root has been defined as either within the first categorizing head associated with a root (Marantz, 2001; see also Svenonius, 2008) or, slightly larger, within the phase of the root (Marantz, 2010, 2013). Under the first approach, analyses predict that only elements merged with the root may condition its meaning. Given counterexamples that have emerged in the literature though, a certain amount of flexibility has been afforded to this approach which permits the domain to extend outside of semantically or phonologically null categorizing heads (see Anagnostopoulou & Samioti, 2013; a.o.). The phase-based approach to locality takes an opposing argument that extends the domain of locality much farther than the first categorizing head. Instead, the domain includes all material contained within the phrase in which the root is spelled out so long as the material is adjacent to the root. Following previous assumptions that categorizing heads, DP, and CP are phases (Chomsky, 2000, 2001, 2004; Svenonius, 2004) and the DP hypothesis put forth in Abney (1987), this would imply that the root of a simple noun, which is derived only using one categorizing head, n, may be conditioned by any syntactic material that is merged within DP, so long as it is interpreted adjacent to that root.

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In applying these approaches to the Maltese data at hand, we find that the lack of complement-modifying non-definite-marked adjectives is explained through the adjacency restriction posited under the phase-based approach to contextual allosemy. Consider the schematic for a Maltese CSC in (172) where the noun’s \( n \) has moved up to Num.

(172) \[ [\text{NumP} \, \sqrt{+}n \, + \text{Num} \, [\text{FP il-} \, [\text{aP} \, \text{aP} \, \sqrt{+}n]]] \]

In the derivation of the complement, a non-definite-marked adjective will merge in the specifier of \( n \), placing it directly adjacent to the \( \sqrt{+}n \) comprising of the complement noun, as shown in (172). Under the phase-based approach, this adjacent placement causes the adjective to condition the interpretation of the complement at LF. While this may not be problematic for the derivation of simple nouns, the interpretation of the aP as a complement-modifier allows for the aP to compose with the complement before the complement is composed with the head. As such, the composition of the aP and complement creates a compositional reading of the complement that cannot be further altered via contextual allosemy when interpreted with the head noun. Put generally, the insertion of an aP complement-modifier in the syntax places the head and complement too far from one another at LF to derive the necessary non-compositional meaning of a CSC.

5 Conclusion

In this chapter, I have presented data on a set of compounds in Maltese that appear to share their form with the CSs discussed in Chapter 4. In section 2, I demonstrated that the similar morphosyntactic structure of CSCs to CSs is misleading and presented several morphosyntactic
and semantic characteristics which distinguish them from one another. In turn, I analyzed CSCs as distinctive from CSs due to the structure of their complements, the site in which their complements attach to the head noun’s DP, and the absence of $n_{cs}$ and $D_{cs}$ in the head noun’s DP. Together, these analytical assumptions predicted the morphosyntactic similarities between CSCs and simple nouns. Overall then, this chapter adds to the small but growing number of analyses in DM that derive compounds using basic assumptions of the framework and provides further support for the analyses proposed in Chapters 2, 3, and 4.
Chapter 6
Future research and final remarks

1 Introduction

In this dissertation, I provided an overview of DP-internal morphosyntactic phenomena in Maltese through analyses of definite marking, adjectives, construct states (CSs from here), and compounds (CSCs from here). Of course, this list does not comprise of all the morphosyntactic phenomena found in the Maltese DP. Therefore, in this final chapter, I will speculate on how the presented analyses may be extended to two further phenomena which were mentioned briefly in the discussion of CSs. These are pseudo-construct states, discussed in section 2, and free genitives, in section 3. Following discussion of these topics, I will conclude with some final remarks.

2 Pseudo-construct states

Outside of the CSs discussed in Chapter 4 and the CSCs in Chapter 5, there remains another set of constructions which emulate CSs but do not pattern entirely with the facts associated with CSs in Chapter 4. These are termed 'pseudo-construct states' (PCSs from here) (Fabri, 1996). A set of these PCSs can be found in (173) below, taken from Fabri (1996, p. 237).
As seen in (173), these constructions consist of two nominals, which I will refer to here as the head *xatt* and the complement *il-bahar* in correspondence with discussion in Chapters 4 and 5. In addition, PCSs contain a definite marker which prefixes to the complement, giving them the appearance of a CS.

However, both Fabri (1996) and fieldwork data suggest that PCSs are not easily defined as either a type of CS or CSC. Rather, they display properties of both constructions. For example, data from fieldwork indicates that PCSs may pluralize both the head and complement nouns as in (174).

(174) PCS

\[
\begin{array}{ll}
xtut & l-ibhra \\
\text{shore.PL} & \text{DEF-sea.PL}
\end{array}
\]

‘the shores of the seas’
This characteristic is shared with CSs, like in (175), but distinguishes PCSs from CSCs since the latter’s complements remain singular regardless of whether the CSC is interpreted as singular or plural.

(175) CS

saqażn l-irġiel

leg.PL DEF-man.PL

'the men's legs'

In addition, fieldwork data shows that PCSs may place demonstratives in between the head and the complement. This also occurs in CSs when the demonstrative modifies the complement but is not permitted in CSCs without losing their non-compositional reading.

Compare (176) to (177) and (178).

(176) PCS

xatt dak il-bahar

shore.M.SG DIST.DEF.M.SG DEF-sea.M.SG

‘the shore of that sea’

(177) CS

xagħar dik il-mara

hair.M.SG DIST.DEF.F.SG DEF-woman.F.SG

‘that woman’s hair’
CSC

kelb  dak  il-bahar

dog.M.SG  DIST.DEM.M.SG  DEF-sea.M.SG

Literally: ‘the dog of that sea’

However, PCSs do not entirely behave like CSs, despite the facts regarding demonstrative placement and pluralization of the complement. Fabri (1996) notes that, unlike CSs, the complements of PCSs obligatorily carry the definite marker. Fieldwork data indicates that this obligatory definite marker is semantically vacuous like that of CSCs, as illustrated by the indefinite nature of (179)a. Also like CSCs, the PCS is made definite by the addition of a definite marker to the head noun, as in (179)b.\(^{71}\)

(179)  PCS

a.  xatt  il-bahar

   shore.M.SG  DEF-sea.M.SG

   'seashore'\(^{72}\)

b.  ix-xatt  il-bahar

   DEF-shore.M.SG  DEF-sea.M.SG

   'the seashore'

Finally, in addition to the distinctive morphosyntactic characteristics of PCSs, their semantic relations do not neatly fall into the classification of inalienable possession, as was argued

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\(^{71}\)It should be noted that only some speakers permit this alteration. In cases where a speaker does not permit definite marking on the head noun, they often state that there is not a definite form of the PCS.

\(^{72}\)Note that the interpretation of (179)a is distinctive from that of Fabri (1996)’s interpretation in (173). It is possible that PCSs have undergone or are in the midst of further change such that between the time of Fabri’s publication and my fieldwork, the definite marker on the complement has lost its definite interpretation. This would then explain why some speakers permit additional definite marking on the head as in (179)b.
for CSs in Chapter 4. Though some PCSs do fall under this classification, like the part-whole relation conveyed by (179), others ((173)b and (173)c) convey a modificational relation, like Hebrew CSs (see Chapter 4, section 2.2).

In taking these facts together, Fabri (2009) classifies PCSs as constructions that fall on a continuum that divides the CSs described in Chapter 4 from CSCs in Chapter 5. This type of CS continuum has also been argued for in Hebrew by Barzilai & Winchester (2019). In their analysis, they posit three distinct syntactic structures which correspond with CSs, compounds, and blends, each of which share the same superficial appearance of CSs but are morphosyntactically distinctive from one another in various ways. They argue that these differences are an effect of the size of construction’s complement in the syntax. This is captured in their analysis by projecting CS complements as full DPs, which place them at one end of the continuum. The complements of compounds project to nP, placing them in the middle of the continuum. Finally, blends contain the smallest complement projection of the three with the direct merger of the complement’s root to the head’s root. This places blends and CSs at opposite ends of the continuum, exemplified in (180), with respect to the size of their complement and reflects the pattern of characteristics shared between CSs and compounds versus compounds and blends in Hebrew.

(180) Barzilai & Winchester (2019) CS continuum for Hebrew

<table>
<thead>
<tr>
<th>CS</th>
<th>Compounds</th>
<th>Blends</th>
</tr>
</thead>
</table>

Pending future research, the analytical tie posited by Barzilai & Winchester between a complement’s projection and its place along the continuum may also be applicable to the continuum found in Maltese. Many of the morphosyntactic characteristics described above that
distinguish CSs, PCSs, and CSCs are related to the complement. For example, demonstratives may appear between the head and complement of both PCSs and CSs when the demonstrative modifies the complement. CSCs, on the other hand, cannot take demonstratives. This indicates that the complements of PCSs and CSs must be large enough to project a DemP, following arguments in Chapter 2 and 4, but the complements of CSCs must be small enough to predict that they cannot, as proposed in Chapter 5. This, in correlation with Fabri (2009)’s observation discussed above, indicates the Maltese CS continuum is as in (181).

(181) CS continuum for Maltese

\[
\text{CS} \quad \text{PCSs} \quad \text{CSCs}
\]

Currently, the structural difference indicated by the continuum in (181) is reflected in the analyses of CSs in Chapter 4 and CSCs in Chapter 5. However, I leave for future research how the structure of PCSs compares to these two constructions to reflect the characteristics of its place on the continuum.

3 Free genitives in Maltese

In Chapter 4, I referred briefly to a construction in Maltese called the 'free genitive' (Ritter, 1991), which appears as an alternative construction to CSs. These constructions appear in contexts where a CS is not permitted, either due to morphosyntactic or semantic restrictions and are also found in other languages containing CSs, such as Hebrew and the Arabic varieties. In this section, I will provide a brief overview of the characteristics of free genitives in Maltese and posit how arguments presented in this dissertation may be extended to account for this construction.
To begin, elements in the Maltese free genitive follow the same linear order as those of CSs but with the addition of a preposition-like element, *ta*. In (182) and the following free genitive examples, I will gloss *ta* as ‘of’.

(182) Free genitive

\[
\text{is-saqajn} \quad \text{ta-r-raḍel}
\]

DEF-leg.PL of-DEF-man.SG

‘the man’s legs/the legs of the man’

As shown in (182), this *ta* appears after the leftmost free genitive element, *saqajn*, and before the rightmost element, *raḍel*. To maintain the parallel between free genitives and CSs, I will continue to refer to the leftmost element as the ‘head’ and the rightmost, the ‘complement’. Unlike CSs, both the head and complement of a free genitive may freely take definite marking if a definite interpretation for the respective noun is intended, as illustrated in (182) above.

Also unlike Maltese CSs, free genitives are not restricted semantically. They may be used to indicate inalienable possession (182), alienable possession (183)a, and modificational relations (183)b.

(183) a. \[
\text{il-mejda} \quad \text{ta'} \quad \text{Maria}
\]

DEF-table.F.SG of Maria

‘Maria’s table’

b. \[
\text{iċ-ċurkett} \quad \text{ta-d-deheb}
\]


‘the gold ring’
In addition, free genitives do not display the same morphosyntactic restrictions as that of Maltese CSs. Specifically, there appears to be no adjacency requirements between the head and the complement since they may be separated by prepositional phrases (184) or other free genitive complements (185). This results in the free ordering of these elements after the head of the free genitive, as seen by comparing a and b of the respective data points below.

(184) a. il-lettur mill-Amerika ta’ Maria
   DEF-lecturer from-America of Maria
   ‘Maria’s lecturer from America’

   b. il-lettur ta’ Maria mill-Amerika
   DEF-lecturer of Maria from-America
   ‘Maria’s lecturer from America’

(185) a. il-lettur ta-l-linguistika ta’ Maria
   DEF-lecturer of-DEF-linguistics of Maria
   ‘Maria’s linguistics lecturer’

   b. il-lettur ta’ Maria ta-l-linguistika
   DEF-lecturer of Maria of-DEF-linguistics
   ‘Maria’s linguistics lecturer’

In (184), the PP ‘from America’ is ordered freely with respect to the free genitive and (185) contains two free genitives, one which is possessive, ‘Maria’s lecturer’, and the other that is modificational, ‘the lecturer of linguistics’. These may also appear in either order.

Though further data is required to produce a full analysis of free genitives in Maltese, the freedom of ordering described above for free genitive complements may be explained by merging
free genitive complements as PP-adjuncts to $nP$. In doing so, it is expected that the complement may be ordered freely with respect to other free genitive complements, as in (185) and PPs, as in (184). Together with the $n$-to-Num head movement argued in Chapter 2 to occur in all Maltese DPs, this will also generate the correct linear order of elements in a free genitive. To illustrate, the basic structure for the free genitive in (186)a is given in (186)b.

(186) a. is-saqajn ta-r-rağel

`DEF-leg.PL of-DEF-man.M.SG`

'the man’s legs'

b. DP1

D NumP

is-

Num nP

PP nP

P DP2 n

ta

D NumP $\sqrt{SIEQ}$ n

-r-

Num nP

| n

$\sqrt{RÅGEL}$ n

c. Head movement of $n$

$[\text{DP, is=} [\text{NumP} [\text{Num} \sqrt{SIEQ} + n + \text{Num} ] [\text{PP ta} [\text{DP2, r= [NumP [\text{Num} \sqrt{RÅGEL} + n + \text{Num} ]]]]}]]$

Another prediction of the structure posited in (186) is the freedom of semantic relations conveyed by free genitives. In Chapter 4, I argued that the head noun of a Maltese CS is derived

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by a distinct type of $n$, called $n_{cs}$, which shares an inalienable possession feature with the D of the head noun's DP and turns it into $D_{cs}$. Free genitives carry none of the attributes associated with either $n_{cs}$ or $D_{cs}$ since their heads may be overtly definite-marked, they do not require adjacency of the head and complement, and they may convey other semantic relations than inalienable possession. However, further research is required to determine how this structure may interact with adjectival modification and prenominal modifiers.

4 Conclusion

Throughout this dissertation, I have introduced and analyzed morphosyntactic phenomena found in the Maltese DP by focusing on the use of definite marking, adjectives, construct states, and compounds in the language. It was shown that each point of interest was distinctive but interacted with much of the other phenomena under discussion. In Chapter 2, I presented an analysis of the basic DP in Maltese based on lexical decomposition and head movement of $n$ (containing both $n$ and the root) up to Num. This movement and basic structure was subsequently used in the analysis of the more complex DP-internal phenomena and yielded a uniform approach to the Maltese DP overall. In Chapter 3, the behavior of adjectives was shown to interact with definite marking, both obligatory and secondary, in ways which indicated that the DP contains two separate syntactic positions for aPs. In Chapter 4, I presented an analysis of construct states in Maltese as inalienable possessives that interacted with definite marking and adjectives such that it provided further evidence for the analysis of these adjectives in distinct DP positions as argued in Chapter 3. Chapter 5 presented a novel analysis of compounds that
explored their superficial similarities to the construct states discussed in Chapter 4 and ultimately argued for their distinctive analysis from construct states based on their separate morphosyntactic properties.

Outside of Maltese, the analyses presented throughout this dissertation have implications for the role of morphology and syntax in linguistic theory. Specifically, this dissertation lends support for the unidirectional interaction of these two components in grammar whereby standardly-assumed morphological operations, like derivation and inflection, begin in the syntax. First, in providing a unified account of the Maltese DP using lexical decomposition and head movement, the dissertation argues for the derivation of both simple and complex constructions in the syntactic component. Second, in analyzing the presence of definite marking on adjectives as a byproduct of two distinct merger sites for aPs, the analysis generates inflectional elements as the PF-realization of syntactic heads. In addition, the distinct aP merger sites found in Maltese are also argued to derive morphosyntactic phenomena in unrelated languages, such as Greek, English, and German. This indicates that these merger sites are available in the grammar for all languages but only surface (or have only been discovered) in this subset.

Overall, this dissertation analyzes morphosyntactic phenomena in the Maltese DP. In analyzing these phenomena, each chapter provides further insight into the structure of the DP in Maltese and other languages while also shedding light on the role of the syntax-morphology interface in linguistic theory. In addition, given the interaction of these phenomena with one another, the analysis presented in each chapter of the dissertation is further supported by its extension to more complex data in subsequent chapters. This culminates in a unified approach to the morphosyntax of the Maltese DP under the Minimalist and DM frameworks.
BIBLIOGRAPHY


Marantz, A. (2001). *Words*. Ms. MIT.


