
RESEARCH ARTICLE

The Structure of the Determiner Phrase in Moroccan Arabic: A Minimalist Approach

Ayoub Zrari

Doctoral student, Faculty of Languages, Letters and Arts, English Department, Ibn Tofail University, Kenitra, Morocco.

Corresponding Author: Ayoub Zrari, **E-mail:** ayoub.zrahi@uit.ac.ma

ABSTRACT

This study analyzes the structure of the determiner phrase (DP) in Moroccan Arabic (MA) within the framework of the Minimalist Program (MP). The study focuses on the determiners, adjectives, and possessives within the DP. The findings show that the determination of definiteness or indefiniteness of the noun is crucial and affects the structure of the DP. In this respect, the head of the DP possesses a definiteness feature; thus, noun movement to the determiner position is triggered by both the definiteness feature and the Minimal Link Condition (MLC). Adjective phrases in the DP are analyzed through the functional category AgrP to satisfy the features of the nouns and adjectives locally. Specifically, the uninterpreted features of case, gender, and number are carried in the head of AgrP, and movement is triggered by the need to satisfy the Extended Projection Principle (EPP) and to allow for feature checking while respecting the MLC principle. The paper argues that Carnie's (2013) arguments about the possessive DP are inadequate to account for MA and proposes the insertion of a functional projection "PossP" that dominates the whole DP, enabling the genitive case to be assigned to the possessor DP. The study shows that the MP approach is adequate in analyzing the DP structure in MA, the operations MOVE and MERGE, and the EPP and MLC principles play essential roles in forming DP structures. The paper also notes that when elements move, they leave behind a copy of the model element to preserve the original semantic interpretation.

KEYWORDS

Determiner Phrase, Moroccan Arabic, Minimalist Program

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1. Introduction

The determiner phrase (DP) is a central element of the syntactic structure that identifies and modifies noun phrases in a sentence (Abney, 1987; Chomsky, 1995). Within the Minimalist Program framework, the DP has received significant attention as a site of investigation for understanding the structure of language and the operations of the human mind. In this study, we aim to contribute to this ongoing inquiry by investigating the determiner phrase structure in Moroccan Arabic, a dialect of Arabic spoken in Morocco. Specifically, we focus on the constituent items that comprise the DP structure, including the definite and indefinite articles, adjective phrases, and possessives. By analyzing these items in Moroccan Arabic within the Minimalist Program framework, we hope to gain insight into the underlying principles of syntactic structure and their implications for our understanding of linguistic variation and the human mind. To achieve this, we use data collected from linguistic corpora and apply analytical methods based on the minimalist program, including feature checking, movement, and merge operations. Our findings about the structure of the determiner phrase in Moroccan Arabic have important implications for linguistic theory and the study of human cognition, both within and beyond this specific language.

In this respect, this study incorporates three sections excluding the introduction and the conclusion. First, it reviews the literature and introduces the theoretical knowledge of the Determiner Phrase. Then, it presents an overview of the Minimalist Program. Finally, it provides an in-depth analysis of the phrase structure under scrutiny.

2. Literature Review

The determiner phrase (DP) has long been a subject of inquiry in linguistic research, with scholars investigating its structure and function across a variety of languages and theoretical frameworks (Chomsky, 1981; Kayne, 1994; Alexiadou & Wilder, 1998; Boskovic, 2007; Baker, 2008; Pereltsvaig, 2018). The DP has been a particularly fruitful area of investigation within the Minimalist Program, as it offers a window into the minimalist principles of syntactic structure and economy of derivation (Chomsky, 1995). In the context of Moroccan Arabic, there has been some research on the DP structure. However, much of this research as concentrated on the morphological characteristics of definite and indefinite articles, rather than examining the broader structure of the DP. Our study seeks to build on this existing research by exploring the DP structure in more detail.

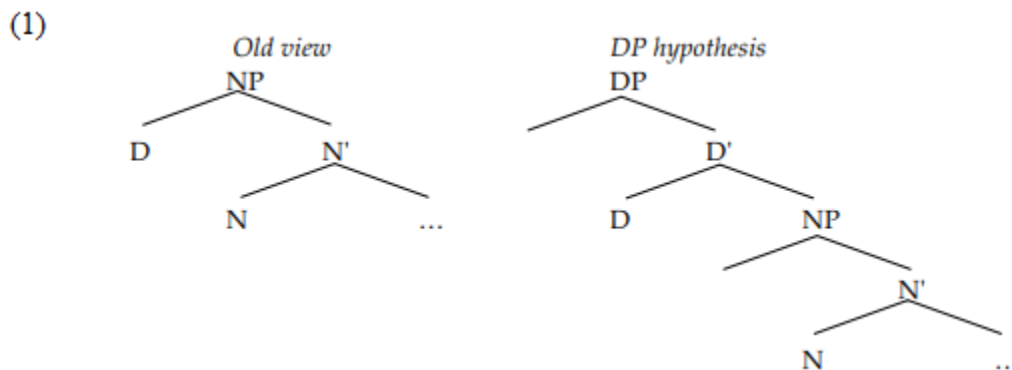
One practical approach to the DP within the Minimalist Program is the Bare Phrase Structure (BPS) proposed by Chomsky (1995). BPS posits a minimalistic structure for DPs consisting of a head noun and specifier. In contrast to traditional transformational grammar, which posits the existence of functional categories such as determiners and adjectives, BPS eliminates these categories in favor of a more minimalist approach. This view has been developed further by subsequent scholars, who have proposed various structures and operations for the DP within the Minimalist Program framework.

Some researchers have explored how the DP relates to other syntax components, such as the sentence and the clause. For instance, Longobardi (1994) proposed a complex network of functional categories and movement operations to describe the DP's structure, while Rizzi (1991) suggested that 'relativized minimality' could be applied to analyze the DP. He claimed that the DP has a layered structure, with the determiner (D) occupying the topmost position, followed by functional projections such as number (Num) and gender (Gen). He suggested that these functional projections are crucial for determining the interpretation of the DP and that they play a role in establishing syntactic dependencies between the DP and other elements in the sentence. Other scholars have focused on the functional features of the DP, such as definiteness, number, and gender. For example, Abney (1987) proposed that the functional category D is responsible for the features of definiteness and specificity, while Giusti (1997) argued that the DP serves as a functional unit that conveys both referential and quantificational information.

Abney (1987), in this respect, proposed a detailed analysis of the DP within the Minimalist Program, arguing that the functional category D is responsible for encoding the features of definiteness and specificity. According to Abney, the DP consists of three components: the D head, the NP complement, and the specifier. The D head determines the grammatical properties of the noun phrase, while the NP complement contains the lexical content of the phrase, and the specifier position introduces referential properties into the noun phrase.

Davies and Dresser (2005) built on Abney's analysis by proposing that the structure of the DP in English and other languages can be represented using a tree diagram, with the determiner as the head of the phrase and the noun as the complement. They argued that the DP's head-complement structure is reflected in the language's distribution of determiners and nouns.

Carnie (2013) also proposed an analysis of the DP, drawing on insights from cognitive grammar and construction grammar. He argued that the DP is a construction consisting of a head (the noun), an optional specifier, and a determiner (as illustrated in (1)). The determiner is responsible for encoding definiteness, while the specifier can introduce a range of semantic and discourse-related information. Carnie's approach emphasizes the importance of the constructional nature of the DP and the interaction between syntax, semantics, and discourse in its analysis.



Note: Reprinted from "Syntax: A Generative Introduction Third Edition", by Carnie, A. 2013, p. 209. Copyright 2013 by Wiley-Blackwell Publication.

In line with the example above, Abney (1987), Chomsky (1992), and Carnie (2013), among others, propose that determiners are DP heads that take syntactic constituents that have nominal features (e.g., NP) as complements. Therefore, the DP hypothesis (1) appears to contradict the previous analysis whereby the determiner takes place in the Spec-position of an NP as in the old view illustrated in (1).

In the context of Moroccan Arabic, research is scarce in the Moroccan DP structure. Therefore, thoroughly examining this language's syntactic structure principles is necessary. By examining the syntactic and semantic properties of the DP in Moroccan Arabic, with a focus on the proposals of Abney (1987), Carnie (2013), and Davies and Dresser (2005), this study aims to contribute to our understanding of the underlying principles of syntactic structure and their implications for our understanding of linguistic variation and the human mind.

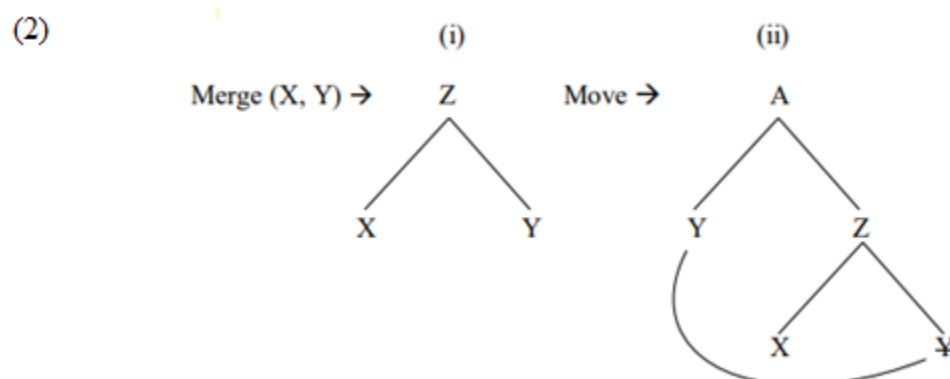
3. The Minimalist Program

The minimalist program is a linguistic framework proposed by Noam Chomsky in the 1990s, which seeks to simplify the rules and principles of the generative grammar of a language. This program is seen as a further development of the earlier Government and Binding Theory (GBT) of syntax, which had become overly complex and difficult to apply (Chomsky, 1995; Radford, 2004).

The minimalist program is based on the idea that the human brain has an innate ability to generate an infinite number of grammatical sentences using a finite set of rules and principles. The goal of the minimalist program is to identify the essential elements of these rules and principles and to provide an optimal account of the human language faculty.

One of the key differences between the minimalist program and the government and binding theory is the introduction of the Minimal Link Condition (MLC), which simplifies the process of structure building. The MLC states that each element in a sentence must be linked to precisely one other element. This constraint ensures that the structure of the sentence is well-formed and that the principles of grammar are not violated (Boeckx, 2011; Chomsky, 2013; Fortuny, 2022).

Another essential concept in the minimalist program is Merge, which is the essential operation that combines two syntactic elements into a single structure. Merge can be applied in different ways, depending on the nature of the elements being merged. Chomsky (1995) stated that it "takes a pair of syntactic objects (SO_i, SO_j) and replaces them by a new combined syntactic object SO_{ij}." (p. 226). Therefore, it can, for example, be used to combine a noun phrase with a verb phrase to form a sentence. The schema (2i) shows a sample of the operation Merge, combining the syntactic objects X and Y to build Z.



Once the Merge operation has been applied and the linguistic elements are merged in their positions, other operations must apply to build the optimal output. The merged elements have distinct features, some of which are uninterpretable (Brucart et al., 2009). To solve this and obtain a convergent derivation, the Principle of Full Interpretation (henceforth FI) requires that all the unvalued uninterpretable features be omitted at a stage preceding the Logical Form. Therefore, the Principle of Full Interpretation states that 'features must be checked in a local configuration' (Chomsky, 2013).

Therefore, schema (2ii) depicts Move as the attraction of element (Y) by (Z) and its merger with (Z) to form (A) while leaving a copy of (Y). Thus, an essential sub-theory of MP is called the 'copy theory'. In this view, MP does not account for the existence of 'traces' as a principle that prevents the computational system from adding new elements to the derivation (Chomsky, 1995). Hence, traces are considered new elements and should not be used to avoid violating the inclusiveness condition. In this case, the strikethrough element is a copy of the moved element.

In this respect, the Principle of Full Interpretation forces the operation Move to apply. This displacement moves an element with an uninterpretable feature to a specifier position within a phrase, where the feature can be checked. That is a local configuration. With this in place, we simplify the GB movement rules down to one transformation movement rule: Move. In Chomsky's view, "the operation Move is driven by morphological considerations: the requirement that some feature F must be checked" (Chomsky, 1995 as cited in Epstein & Seely, 2006, p. 33).

Overall, the minimalist program provides a robust framework for understanding the structure of the DP and other functional projections in the syntax. Its emphasis on the principles of Merge and Move and the principle of Full Interpretation offers a rich set of tools for analyzing the structure of natural language and the human language faculty.

4. Data Analysis

Having discussed the literature and the Minimalist Program framework, this section focuses on analyzing the manifestation of the Moroccan Arabic Determiner Phrase. In doing this, our concern resides in the DP structure's items. Such items are definite and indefinite articles, adjective phrases, and possessives.

4.1 Definiteness in Moroccan Arabic

Definiteness in Moroccan Arabic is marked by the definite article /l-/ and is used to specify a particular noun. The definite article is prefixed to the noun, for example, /lk'tab/ "the book." The definite article is unmarked for number but is used to mark uniqueness, generality, and abstraction.

In Moroccan Arabic, the definite article undergoes assimilation to the first consonant of the preceding noun (Harrell, 2004). This process is known as "sun and moon letters" and is based on whether the first consonant of the noun is a "sun letter" or a "moon letter". This phenomenon of sun and moon letters is vital to consider in analyzing the determiner phrase structure in Moroccan Arabic as it affects the form of the definite article and its interaction with the noun it precedes. On the one hand, for nouns starting with moon letters pronounced with a hard stop, the definite article has two realizations: /əl-/ and /l-/. On the other hand, nouns starting with sun letters form the definite article by reduplicating their initial sound and adding the vowel /ə/ before the reduplicated element, resulting in a geminated consonant. For example, /rūbīnī/ "tap" becomes /ərrūbīnī/ "the tap" when the definite article is prefixed to the noun (3).

(3)

	<i>a</i>	<i>b</i>	<i>c</i>
<i>MA</i>	<i>əd-dār</i>	<i>əl-maṭār</i>	<i>*əm-maṭār</i>
<i>ENG</i>	<i>The house</i>	<i>The airport</i>	
<i>MA</i>	<i>əṣ-ṣibāt</i>	<i>əl-madīna</i>	<i>*əl-ṣibāt</i>
<i>ENG</i>	<i>The shoes</i>	<i>The city</i>	
<i>MA</i>	<i>ərrūbīnī</i>	<i>lk'təb (or lk'tab)</i>	<i>*əm-əl- madīna</i>
<i>ENG</i>	<i>The tap</i>	<i>The book</i>	

The data in (3) illustrate the difference between the two definite articles in MA. The table outlines the structure of the definite article concerning moon letters and sun letters. The definite article in Moroccan Arabic is pronounced as /l-/ or /əl-/ before moon letters. However, when the following consonant is a sun letter, it assimilates to the first consonant of the word and becomes a reduplication (i.e., /əṣ-ṣibāt/, /ərrūbīnī/). The phenomenon of assimilation is a common feature of many languages and occurs when sounds change to become more similar to a neighboring sound (Harrell, 2004).

In the case of the word /əṣ-ṣibāt/ (the shoes), the initial consonant /ṣ/ is a sun letter, which triggers the assimilation of the definite article /l-/. If we try to use /l-əṣ-ṣibāt/, we would be putting /l-/ and /əṣ-/ in the same word, which is not possible since they are in complementary distribution.

Complementary distribution occurs when two sounds or forms appear in different environments and do not appear in the same environment. In other words, "when two items are in complementary distribution, they are instances of the same thing." (Carnies, 2013, p. 210). In this case, /l-/ appears before all consonants except for sun letters, while the reduplicated element only appears

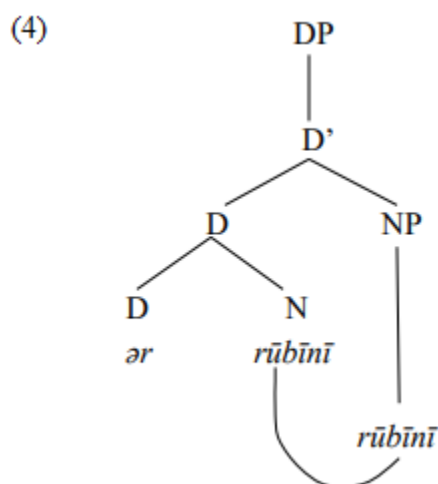
before sun letters. Therefore, */*al-šibāt/*, */*l-aš-šibāt/*, or */*am-əl-madīna/* are not grammatical because they violate the distributional restrictions of the definite article in Moroccan Arabic.

Indefiniteness, alternatively, is marked by using the indefinite articles */šī/* and */wahad/*. They typically appear before the noun they modify, and their form may vary depending on the phonological properties of the following noun. For example, in MA, the indefinite article is realized as */wahad/* before a noun that begins with a sun letter but as */wahad l-/* before a noun that begins with a moon letter (e.g., */wahad lk'tab/* (one book). This is similar to the pattern observed with the definite article in Moroccan Arabic.

Hence, determining definiteness or indefiniteness is crucial in the language and affects DP structure (Diesing, 1992). Some researchers argue that when definite or indefinite markers occupy a noun in Moroccan Arabic, there is a need to trigger a movement of the noun to the determiner position. This movement is necessary to resolve any ambiguity in the sentence and maintain grammaticality (Longobardi, 1994).

In addition, some researchers argue that the movement of the noun to the determiner position can be triggered by the Minimal Link Condition (MLC) (Abney, 1987; Chomsky, 1995). The MLC is a Minimalist Program principle that requires every sentence element to be connected to a unique syntactic node. As Boeckx (2011) points out, the MLC can be satisfied by moving the noun to the determiner position, where it is connected to the determiner, thereby fulfilling the requirement for a unique syntactic node."

We propose that, in the minimalist program, the head of the determiner phrase triggers noun movement to the determiner position in MA by possessing the definiteness feature, in addition to the MLC principle. The determiner phrase is a functional category with a definite article as its head in definite noun phrases and an indefinite article as its head in indefinite noun phrases. It is reasonable to assume that the definite article has a [+definite] feature that needs to be checked, and the noun phrase provides the feature [+N] that can check the [+definite] feature. The movement of the noun to the determiner phrase is triggered by the need to satisfy the feature-checking operation, which forms a grammatically correct structure. (e.g., as in the DP */ərrūbīnī/* (the tap) structure (4)).



Previous research on Arabic syntax supports this claim, indicating that definiteness is a grammatical category realized as an inflectional morpheme in the definite article of various Arabic varieties, including Moroccan Arabic (Benmamoun, 2000). Additionally, the movement of the noun to the determiner phrase in Arabic has been proposed by several researchers within the framework of the minimalist program (Fehri, 2002; Kremers, 2003). This movement is triggered by the need to satisfy the feature-checking operation, a fundamental principle of the minimalist program.

Therefore, it is reasonable to claim that the head of the determiner phrase possesses the definiteness feature and that this feature triggers the movement of the noun to the determiner in Moroccan Arabic.

4.2 Adjective Phrase in DP

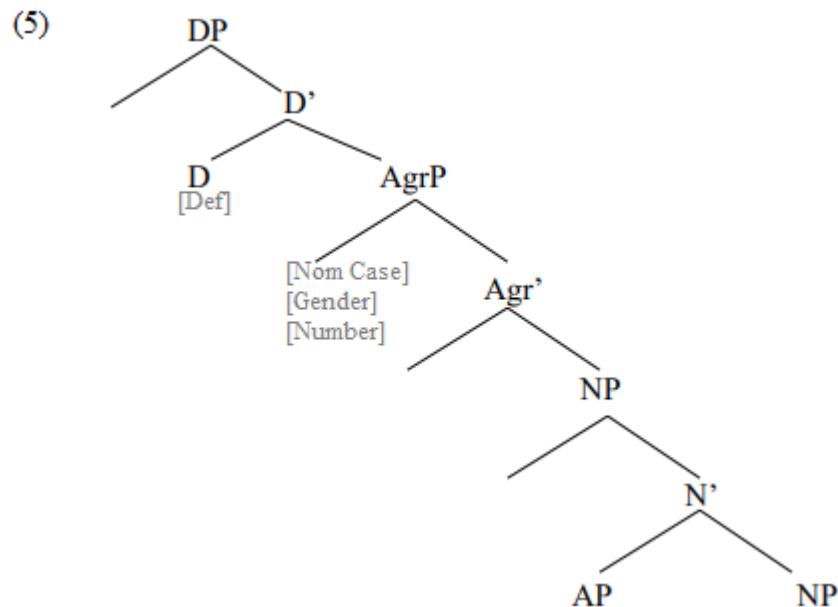
In Moroccan Arabic, adjectives follow the noun they modify and agree with the noun in gender and number. For example, in the phrase */əl-madīna l-χadra/* (the green city), */l-χadra/* (the green) is the adjective that modifies */əl-madīna/* (city) and agrees with it in gender and number.

The Adjective Phrase (AP) in MA can be analyzed as a specifier of the NP, as it appears before the noun in some cases, indicating that it is in a higher position in the structure. However, in other cases, the adjective appears after the noun, in what is known as the postnominal position (Fehri, 2002; Pereira, 2010). This can be analyzed as the result of the movement of the adjective from its base-generated position to a higher position in the structure.

Alexiadou and Anagnostopoulou (1998) and Holmberg (2000), as cited in Brattico (2011), propose that the movement of the adjective from its base-generated position to a higher position in the structure is triggered by the need to satisfy the Extended Projection Principle (EPP), which requires that all phrases have a specifier. In this view, adjectives move to the specifier position of the NP to satisfy the EPP requirement.

Cinque (2010) proposes that the need for feature agreement between the adjective and the noun triggers this movement. According to his argument, both the adjective and the noun have their own set of features, and moving the adjective to the specifier position of the NP allows for this feature agreement to occur.

Therefore, in a minimalist analysis of adjectives in Moroccan Arabic, the Agreement Phrase we propose can be used to account for the agreement between adjectives and the noun they modify. The idea behind AgrP is that it is a functional projection in the syntax containing the relevant features for agreement. In the context of DP structure, the AgrP is responsible for marking agreement between the determiner and the noun within the DP. For example, in English, the determiner "the" agrees with the noun in terms of number (singular vs. plural) and definiteness (definite vs. indefinite) (Chomsky, 1995; Longobardi, 1994). In Moroccan Arabic, the determiner also agrees with the noun regarding gender (masculine vs. feminine) and whether the noun is singular or plural.



The structure (5) shows the need for a feature-checking mechanism that allows the noun and its modifying adjective to agree. According to the Full Interpretation Principle, feature checking has to be done in a local configuration.

One of the central principles of the Minimalist Program is the idea of "economy", which, as we have mentioned, suggests that movement operations in the syntax should be as "minimal" as possible. This principle is based on the idea that "syntactic computation" should be "restricted to the minimum necessary to meet the communicative needs of the speaker/hearer" (Chomsky, 1995, p. 2). In other words, syntactic structures should be as simple and efficient as possible.

One way that the principle of economy is implemented in the Minimalist Program is through the concept of "Minimal Link Condition" (MLC), which requires that movement operations take place between elements that are as "close" as possible. Specifically, the MLC states that "a chain [i.e. a moved constituent] must be formed by moving the closest element that satisfies the relevant grammatical criterion" (Chomsky, 2000, p. 182).

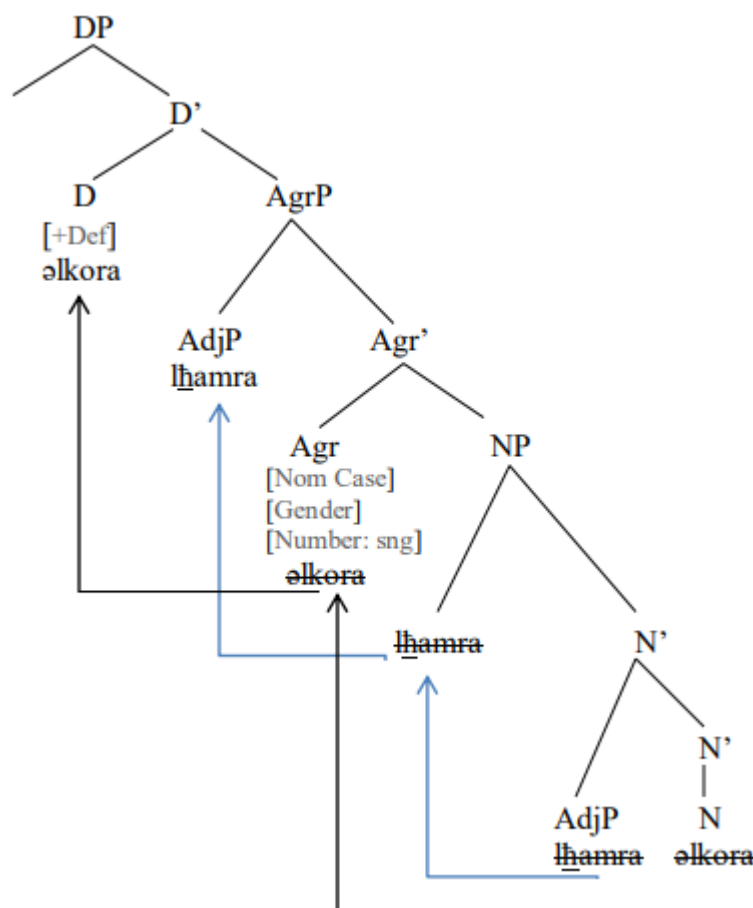
In this sense, we propose the functional category AgrP to satisfy the features of the nouns and adjectives locally. More specifically, we propose to use the functional category AgrP to satisfy the features of nouns and adjectives within a local context. In this

framework, the definiteness feature is carried by the D, while the head of AgrP carries uninterpreted features such as case, gender, and number. Hence, movement is triggered by the need to fulfill the EPP requirement and enable feature checking, while also adhering to the MLC principle.

(6) a. $\text{\textcircled{a}lkora}$ $\text{\textcircled{h}amra}$

The ball **sng** red

The red football.



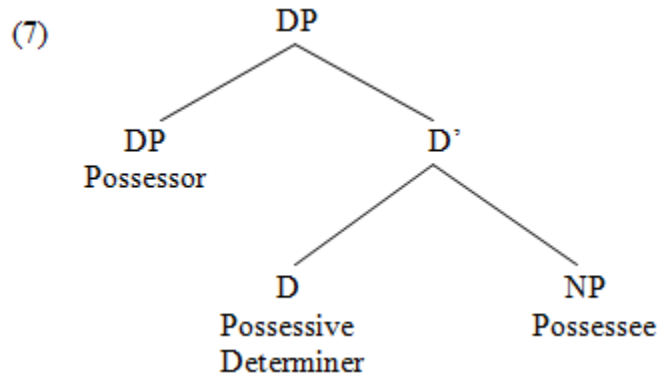
In this tree (6), the determiner phrase (DP) is the highest node, which contains the determiner (D) and the Agreement Phrase (AgrP). This tree shows that the noun (N) moves to Agr to identify its values of "nominative case," "masculine gender," and "singular number" with the features of Agr, respectively. To enable feature checking, the adjective / $\text{\textcircled{h}amra}$ / moves to Spec-NP to locally check the case, gender, and number with the noun / $\text{\textcircled{a}lkora}$ /. The definiteness feature triggers the movement of the noun to the D position. This movement causes the adjective phrase to move to the specifier position of AgrP to check definiteness with the noun locally. This satisfies both the Minimal Link Condition and the Extended Projection Principle (EPP) by providing a landing site for the moved adjective. Thus, the result is a well-formed sentence in Moroccan Arabic that satisfies the requirements of the minimalist program.

4.3 Possessive Determiners

In Moroccan Arabic, possessive determiners are a determiner used to indicate ownership or possession of a noun. They usually precede the noun they modify and agree with it in gender and number. This section attempts to account for the existence of a possessive determiner and its structure in Moroccan Arabic.

In terms of their structure within the minimalist program, possessive determiners in Moroccan Arabic can be analyzed as functional head that projects a determiner phrase (DP) with the possessed noun as its complement. The possessive determiner can be further analyzed as having a complex structure that includes both morphological and syntactic elements (Cinque, 1994; Longobardi, 1994)

One approach to analyzing the structure of the possessive determiner in Moroccan Arabic within the minimalist program is to use the concept of functional heads and their projections. According to this approach, the possessive determiner is a functional head that projects a DP with the possessed noun as its complement (7). The functional head's syntactic and morphological elements help determine its properties and relationship to other syntactic elements (Abney, 1987; Longobardi, 1994).



Another approach to analyzing the structure of the possessive determiner in Moroccan Arabic within the minimalist program is to use the principles of feature checking and agreement. According to this approach, the possessive determiner's syntactic and morphological elements must be checked against corresponding features on the noun they modify (Carnie, 2013). This checking process helps to ensure that the two elements agree in gender and number, which is a crucial characteristic of possessive determiners in Moroccan Arabic.

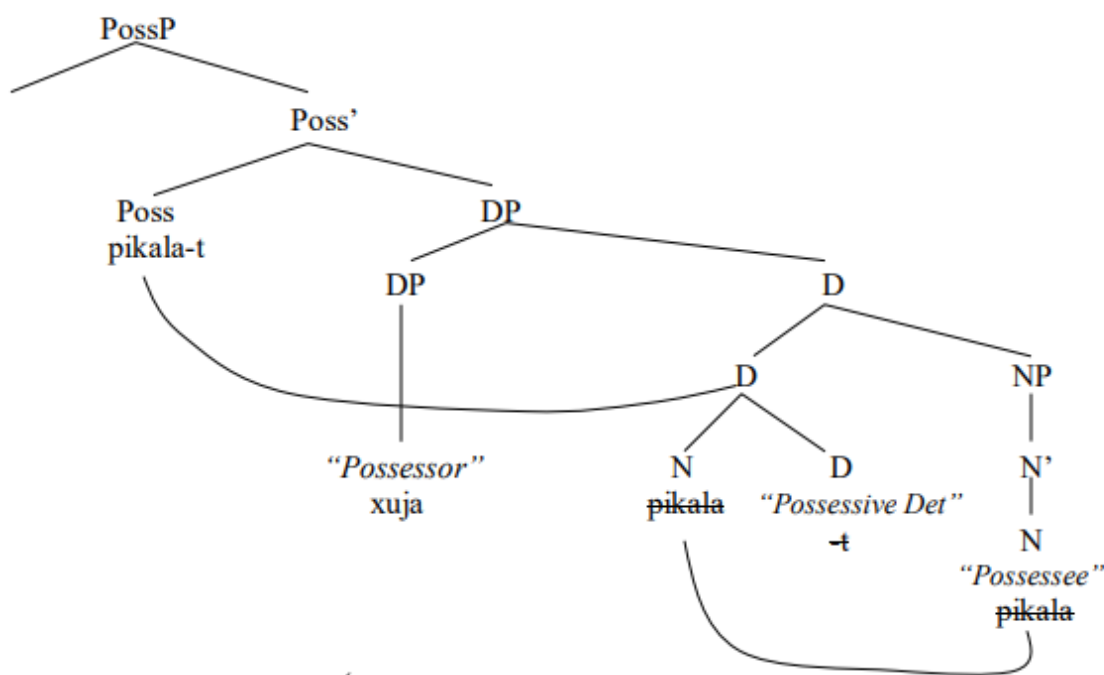
- (8)
- | | | | | | |
|----|-----------------------------|----|---------------------------------|----|---------------------|
| a. | <i>ktab-i</i> | b. | <i>ktab dja.li</i> | c. | <i>*al-ktab-i</i> |
| | <i>Book my</i> | | <i>book my</i> | | <i>the book my</i> |
| | <i>My book.</i> | | <i>My book</i> | | <i>*The my book</i> |
| d. | <i>ktab dja.l əl.maʕlæm</i> | e. | <i>*al ktab dja.l əl.maʕlæm</i> | | |
| | <i>The teacher's book.</i> | | <i>*The teacher's the book</i> | | |

We notice that in both (8a) and (8b), the morpheme *{i}* and *{dja.li}* occur to depict possessiveness. Witness that if we remove the morpheme *{i}* from the word "ktabi" (my book), for instance, the result would be a grammatical word that is "ktab" (book). Henceforth, the existence of *{i}* demarcates the presence of a possessive determiner. Additionally, notice that based on (c) and (e), it is safe to assume that the morpheme *{i}* is in a complementary distribution with determiners such as *{ə}*. Thus, explain the ungrammaticality of (c). Therefore, the morpheme is not a genitive case marker.

Based on our data from (8), we notice that the possessee precedes the possessor in MA, which is the opposite order of English and many other languages. This means that the structure of the possessive construction in Moroccan Arabic is somewhat different from what we might expect based on other languages (7).

One possible way to analyze the structure of the possessive construction in Moroccan Arabic within the minimalist program is to posit that the possessee and the possessor are in a specifier-head relationship, with the possessor as the specifier and the possessee as the head. This is sometimes referred to as a "head-initial" order, as opposed to the "head-final" order found in languages like English (Longobardi, 1994; Biberauer et al., 2015). See (9).

- (9) pikala-t xuja
 Brother's bicycle
 My brother's bicycle.



Under this analysis, we argue that the possessive suffix "/-t/ *"possessive determiner"* has an unspecified *[-/+Def]* feature, which is checked against the definite feature of the head of the possessor DP. The definite feature spreads to the entire possessor DP, making it available for the Determiner (D). The definite feature checking takes place under a spec-head configuration, where the possessor DP is in the specifier of the possessive determiner.

Furthermore, in this analysis, the determiner is positioned to the left of the head noun in the tree structure, as shown in (9). However, this is not problematic since the head noun moves up to the determiner, as previously discussed. This movement results in the head noun left adjoining to the possessive determiner to allow the definite feature to have scope over the entire phrase, as described by Alqassas (2015).

This creates a problem. The head noun cannot assign the genitive case to the possessor DP. To solve this issue, we opt for inserting a functional projection *"PossP"* that dominates the whole DP. Therefore, the head D */pikala-t/* raises to the head position of the functional projection, which is a position from which it governs the possessor DP. Thus, it enables the genitive case to be assigned to the possessor DP. Henceforth, this transformation explains the correct surface order in Moroccan Arabic, resolves any ambiguity in the sentence, and maintains grammaticality.

5. Conclusion

This study aimed to examine the Determiner Phrase (DP) structure in Moroccan Arabic through the lens of the Minimalist Program approach. Specifically, we focused on analyzing the definite and indefinite articles (definiteness), adjective phrases, and possessives within the DP. To achieve our goal, we drew trees to illustrate the proposed structures and provide a visual representation and derivation of our analysis. Hence, by adopting the Minimalist Program, we aimed to identify the underlying principles and mechanisms that govern the syntax of the DP in Moroccan Arabic.

In our analysis of the DP structure in Moroccan Arabic, we identified definiteness as a crucial aspect of the language that affects the DP's structure. To this end, we explored the nature of definiteness and argued that the head of the determiner phrase possesses this feature. We further proposed that the movement of the noun to the determiner position in MA is triggered by both the definiteness feature and the Minimal Link Condition (MLC). By drawing trees and providing detailed derivations, we demonstrated how definiteness feature checking is accomplished under the spec-head configuration and how this movement accounts for the

distribution of definite and indefinite articles in MA. Overall, our findings shed light on the intricate nature of definiteness in MA and its role in the DP's structure.

We also examined the role of adjective phrases within the DP in Moroccan Arabic. We argued that the movement of the adjective to a specifier position is triggered by the Extended Projection Principle (EPP), which requires all phrases to have a specifier. Furthermore, we proposed a feature-checking mechanism that enables agreement between the noun and its modifying adjective based on the Full Interpretation Principle. To account for this, we suggested the functional category AgrP as a mechanism to locally satisfy the features of both nouns and adjectives. Specifically, we argued that uninterpreted features such as case, gender, and number are carried in the head of AgrP, while the definiteness feature is carried in D. Hence, movement is triggered by the need to satisfy the EPP and allows for feature checking while respecting the Minimal Link Condition (MLC) principle.

Additionally, we challenged Carnie's (2013) proposal and argued that it needs to be revised to explain the possessive DP structure in MA. Specifically, we proposed that the possessive determiner has an unspecified feature [-/+Def] which triggers the movement of the head noun 'possessee' to left-adjoin to the 'possessive determiner'. To accommodate this structure, we inserted a functional projection "PossP" that dominates the entire DP. This new projection allowed us to assign the genitive case to the possessor DP, thus better capturing the possessive DP structure in MA.

In conclusion, this study has shown that the Minimalist program provides a robust framework for analyzing the structure of the DP in Moroccan Arabic. The operations of MOVE and MERGE and the principles of EPP and MLC are crucial in deriving the DP structures we have analyzed. Additionally, the findings of this study support the notion that when elements move, they leave behind a copy of the original element, which is essential for feature checking and ensuring well-formedness. By analyzing the definiteness, adjective phrases, and possessives within the DP in Moroccan Arabic, we have shown that the DP structure is complex, with various functional projections and feature-checking mechanisms at play. Therefore, this study contributes to the growing body of research on the syntax of Arabic and opens up avenues for further investigation of DP structure and movement in other language dialects.

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