Agreement in Palestinian Arabic:

an LFG Perspective

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To Dr. Yasser Yassin, (baba) for teaching me penmanship, for your inspiration and for your lovely letters that guide me.

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List of Abbreviations

1 First Person

2 Second Person

3 Third Person

ADJ Adjunct

AdjP Adjectival Phrase

AP Adjectival Phrase

Cnj Conjunct

CNG Case Gender Number

F Feminine

GEND Gender

GPSG Generalized Phrase Structure Grammar

HPSG Head-Driven Phrase Structure Grammar

LFG Lexical Functional Grammar

NOM Nominative

NP Noun Phrase

OBJ Object

PA Palestinian Arabic

PERS Person

PNG Person Gender Number

PP Prepositional Phrase

PRO Pronoun

RPA Rural Palestinian Arabic

SCA Single Conjunct Agreement

SG Singular

SUBJ Subject

SV Subject Verb

SVO Subject Verb Object

UPA Urban Palestinian Arabic

VS Verb Subject

VSO Verb Subject Object

Abstract

Agreement is a pervasive and varied phenomenon which is evident in almost every language with a wide linguistic scope that functions across syntax, semantics, pragmatics, lexicology and morphology (Corbett, 2006). This study provides description and analysis of agreement patterns in Palestinian Arabic (PA) with a focus on the patterns triggered by a plural head noun. There are three main agreement patterns observed between a plural head noun and a modifier, namely the full pattern, the deflected pattern, and the syntactic pattern. Each pattern is represented by a number of examples from the Corpus for Palestinian Arabic (Curras) (2016). Furthermore, I focus on a certain group of challenging nouns that I refer to as doublet nouns which trigger either a plural marker or a singular marker on the target depending on the interpretation of the noun as either individuated or non-individuated (which I call the two-some agreement pattern); such as *ʃabāb* 'guys', *wlād* 'boys', *zlām* 'men', *niswān* and *nasāwīn* 'women', and *nās* 'people'. In addition to noun-modifier agreement, I study verbal agreement patterns in Palestinian Arabic (PA) which are affected by the word order of the subject and the verb. The thesis contributes to the current literature on agreement through proposing a multi-factorial model to analyse a list of factors that affect agreement patterns in PA. These include syntactic, semantic, morphological, and

perception-related factors. I show that the new model accounts for the agreement patterns in PA through taking the speaker's perception into consideration. In addition, I argue that agreement both affects and is affected by the speaker's perception.

The first half of the thesis provides a descriptive analysis of agreement patterns and the factors of agreement. The second half of the thesis provides a formal analysis within Lexical Functional Grammar (LFG). A special discussion of the doublet noun *ʃabāb* 'guys' is provided within an LFG perspective, and I propose positing an **[IND]!** (**[IND]!**) restriction on the INDEX number to explain the patterns of agreement the noun *ʃabāb* 'guys' triggers. I also argue that INDEX works Noun Phrase (NP)-internally in cases of singular agreement on a modifier with a plural head noun. Finally, the fact that coordination can affect agreement is covered at length and presented through an LFG perspective. I provide evidence that the feature CONCORD in PA is distributed to a coordinated set of modifiers.

This is, to my knowledge, the first work which attempts to develop a poly-factorial model of agreement and to study agreement in PA spoken in the West Bank. The transcription in this study is more phonemic than phonetic; for the study is concerned with the syntactic structure of the language.

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Chapter 1

Introduction

This research aims at investigating the interesting agreement patterns observed in Palestinian Arabic spoken on the Palestinian lands of the West Bank in both the Urban dialect (Urban Palestinian Arabic (UPA)), and the Rural dialect (Rural Palestinian Arabic (RPA)). The research focuses on noun-modifier agreement and subject-verb agreement including cases of noun coordination and modifier coordination. The first part of the thesis introduces the need for a new model of agreement which I identify as the poly-factorial model of agreement which mainly combines pre-existing models of agreement to include the perception factor with the linguistic factors of agreement; thus, allowing a space to include the effect of any semantic changes in the sentence. The poly-factorial model is satisfactory in explaining cases of agreement in PA where a plural noun triggers singular on the targets. The second part of the

thesis provides an analysis of agreement from an LFG perspective and introduces an [IND] restriction on the INDEX feature of 'doublet' nouns to account for the 'two-some' agreement pattern. Additionally, I provide evidence that INDEX acts NP-internally in PA when a plural head noun triggers singular markers on the modifiers; which is a pattern discussed in Italian, Russian (Belyaev et al., 2015). Finally, I show that CONCORD is distributive in PA which is the common distributivity feature of CONCORD found in languages like English and Hindi (Belyaev et al., 2015, p. 13).

The thesis is organised into seven chapters. **Chapter 1** introduces the structure of the research and presents the research questions and hypotheses. **Chapter 2** provides a summary of the previous models that studied agreement dividing them into three main views by: syntacticians including non-transformational linguists, cognitivists and work concerning Arabic.

Chapter 3 is an introduction to the morphology and syntax of PA and the main agreement patterns observed in the language, including both head-modifier agreement and subject-verb agreement. Chapter 3 discusses plural formation in PA and the meanings related to broken plurals in PA, which form the basis of subsequent data analysis. **Chapter 4** addresses the factors affecting the agreement patterns in PA and divides the factors into linguistic and extra-linguistic ones. The chapter argues for agreement as a phenomenon indicating the speaker's 'mind-style' as well as a phenomenon affected by perception; thus,

supporting the argument by Belnap (1993, 1999); Brustad (2000) among many others.[1] Consequently, this thesis analyses agreement through a poly-factorial model which introduces the perception/individuation factor to analyse all the patterns of agreement in PA.

Chapter 5 is dedicated to the discussion of 'doublet' nouns in PA. 'Doublet' noun is a term I use to refer to nouns whose individuation value controls agreement.[2] The chapter introduces the [IND] restriction to account for 'two-some' agreement patterns triggered by doublet nouns. I show in this chapter that PA nouns do not exhibit a split in their CONCORD and INDEX features and rather some nouns can exhibit two coexisting indices . Furthermore, I support the claim in the literature of LFG that INDEX can act NP-internally by providing evidence of NP-internal INDEX-modifier agreement in PA. A formal analysis in LFG including the constraints of agreement is provided in this chapter to account for the singular and the plural agreement patterns triggered by doublet nouns. The same analysis can be extended to explain cases of full and deflected agreement with other non-doublet nouns.

Chapter 6 tackles the different readings of coordination provided by the agreement marker on a coordinated set of adjectives. The chapter places the the research in an LFG context and discusses the following concepts: split and joint readings of coordinated adjectives, distributivity of CONCORD in PA, scope of INDEX in PA and ellipsis and coordination.

[1] The thesis does not look into a possible interface between syntax and psycholinguistics due to the limit in scope; however, this remains an issue for future work. 'mind-style' in this thesis refers to the perception and interpretation by the speakers of the cardinality of head plural nouns in PA (*cf.* Brustad (2000) for the use of 'mind-style').

[2] 'Doublet' nouns have singular forms as compared to English collective nouns.

Finally, **chapter 7** provides the conclusion to the thesis.

1.1 Hypotheses and Research Questions

There is a debate in the literature whether agreement can be an indicator of the speaker's perception (Barlow and Ferguson, 1988; Belnap, 1993, 1999; Yamamoto, 1999; Brustad, 2000) in addition to agreement being a syntactic phenomenon. In other words, agreement functions as a window on the speaker's styles and perception towards the agreement ends (controller and target). The data sets in this thesis are approached from this perspective. Nevertheless, agreement is considered a linguistic phenomenon and is dealt with by appealing to syntactic and semantic factors in an attempt to explain the various patterns observed in languages (Corbett, 2000; Wechsler and Zlatić, 2003; Dalrymple and Nikolaeva, 2006; Corbett, 2006; Dalrymple and Hristov, 2010; Belyaev et al., 2015; D'Anna, 2017; Bettega, 2017). I adapt a two-fold hypothesis where I consider agreement to follow a set of rules explained by syntactic and semantic factors; consequently, explaining 'predictable' patterns in the language. Simultaneously, I allow a space for the perception of the speaker to have a visible effect on agreement. Thus, attempting to explain 'unpredictable' patterns. Building on this hypothesis, I explain the case of doublet nouns in PA. I show that these nouns, in addition to following some of the rules of agreement, are largely affected by the interpretation

of their number values. Therefore, I introduce an [IND] restriction in attempt to bring the linguistic and extra-linguistic factors together.

The motivation behind this research comes from the observations made by Belyaev et al. (2015) in languages like Italian and Russian which allow a plural head noun to be modified by coordinated singular adjectives. Belyaev et al. (2015) provide a discussion of the different split and joint readings associated with markers on the individual members of coordination. I build on the work of Belyaev et al. (2015) and provide a different analysis to similar cases of coordination and agreement in PA. Furthermore, the view of agreement in the work concerning Arabic mainly in Fezzāni Arabic (D'Anna, 2017), Tunisian Arabic (Ritt-Benmimoun, 2017), and Omani Arabic (Bettega, 2017, 2018) presents facts that are not necessarily true for PA.

Taking the above into account, the thesis attempts to answer the following questions. What are the agreement patterns observed in RPA and UPA by speakers of PA? and what are the factors affecting these agreement patterns? Moreover, what is the role of plural in terms of agreement patterns in PA and how is plural perceived in PA in terms of individuation? Consequently, can the existing models of agreement account for all the patterns in PA? How does coordination affect the agreement patterns in PA? Finally, can LFG explain the two-some agreement pattern observed with doublet nouns in PA? The research questions are addressed in the course of the thesis.

1.2 Data in the thesis

Data sets presented in this thesis come mainly from the Corpus for Palestinian Arabic (Curras) (2016) which is based on scripts from the performance of a group of Stand-up Comedians in Palestine and is mostly in RPA, unless specified otherwise. Additionally, some of the examples in the thesis are recorded of native PA speakers either in UPA or RPA by the author through online platforms, mainly WhatsApp due to the limit in the capacity to conduct this research in Palestine. Two surveys on the plural in PA were conducted online through Google Forums, and WhatsApp messaging service. Participant recruitment was carried through Facebook, and the participants in the first survey are the same as those of the second survey. Some of the examples were extracted from Facebook and Instagram pages especially **?**, and the Youtube channel Sukaj.[3] Finally, I provided the rest of the examples of the thesis as a native speaker of UPA.

1.3 Disclaimer

Due to the nature of this research, there is some limitation on the data sets used in this thesis. The Corpus for Palestinian Arabic (Curras) (2016) is a very recent online corpus that was published online and presents very few data sets most of which does not contain

[3] I collected the data from the platforms, translated to English and used in this research.

helpful or relevant examples. Additionally, I collected some data from online and social media platforms like Facebook, WhatsApp, and Youtube and I acknowledge the impact and limitation this has on my observations.

Chapter 2

Agreement Models Cross-linguistically

This chapter provides a discussion of the previous models of agreement cross-linguistically. I discuss the contribution of each model, providing examples, and discuss the issues a model tackles. The models presented in this chapter are thematically divided into three main views which include the view of agreement as a linguistic phenomenon, the view of agreement as an extra-linguistic phenomenon, and the view of agreement particularly in versions of Arabic. Section 2.1 presents the views of agreement in syntax and from the perspective of non-transformational theories like LFG and Head-Driven Phrase Structure Grammar (HPSG) cross-linguistically. Section 2.2 discusses agreement in Arabic vernaculars only according to the views in the papers studying agreement in Arabic. Section 2.3 presents facts related to the effect of perception on agreement. Finally, section 2.4 provides an overall summary of

the main considerations of the three views above. I argue in the thesis for the need for a new model of agreement which is a combination of the pre-existing models.

2.1 Agreement as a linguistic phenomenon cross-linguistically

This section discusses agreement in a number of languages viewed as a linguistic phenomenon. The section views the work of Comrie (1975); Steele (1978); Corbett (1979); Barker (1992); Aoun et al. (1994); Baker (1995); Chekili (2004); Boeckx (2006); Corbett (2006); Soltan (2006); Zwart (2006); Baker (2008), among many others. In addition, the discussion of agreement in non-transformational syntax as in the work of Bresnan and Mchombo (1987); Dalrymple and Kaplan (2000); Wechsler and Zlatić (2003); King and Dalrymple (2004); Heycock and Zamparelli (2005); Dalrymple and Nikolaeva (2006); Kuhn and Sadler (2007); Dalrymple and Hristov (2010); Kazana (2011); Alsina and Arsenijević (2012b,a); Hristov (2012); Belyaev et al. (2015); Sadler (2016); García (2017) is mentioned briefly due to the interesting proposals in LFG and HPSG. A detailed discussion of agreement in LFG including coordination and agreement in LFG is provided in chapter 6. The discussion is provided later in order to make it easier for the reader to grasp the important concepts that are more relevant to the discussion regarding coordination and agreement which is provided in chapter 6. Nevertheless, section 2.1.1 discusses the different mechanisms of agreement cross-

linguistically. Section 2.1.2 discusses the different agreement types: syntactic vs. semantic, as well as the discussion of the Agreement Hierarchy. Section 2.1.3 provides a discussion of the scope of agreement on the target in relation to the controller as in NP-internal targets and NP-external targets, in addition to anaphoric agreement. A discussion of the concepts relevant to this thesis follows including the discussion of feature resolution in section 2.1.4.1, the discussion of canonical agreement in section 2.1.4.2, the discussion of default features in section 2.1.4.3, and the discussion of agreement factors in section 2.1.4.4.

2.1.1 Agreement Mechanism

There is no consensus on the definition or the mechanism of agreement across linguistic theories. Agreement results in a target and a controller reflecting the same features or information; however, theories disagree on the mechanism by which the target shows the features of the controller. Generally, agreement is a state of affairs in which element X matches element Y in property Z (Barlow and Ferguson, 1988, p. 1). Some scholars consider agreement to involve the displacing of features from the controller to the target. In other words, and according to Moravcsik (1988, p. 90), one word carries the grammatical meaning relevant to another. For instance, in *Mary makes pancakes* (Corbett, 2006), the number marking on the verb *makes* provides information about the number of *Marys* not the number of *pancakes*; therefore, the number information is displaced or is "in the wrong place" (Corbett, 2006,

p. 2). Some scholars including Anderson (1992) defines agreement to involve feature mapping where one lexical category depends on the other and considers agreement "an intuitive notion". Anderson also considers two types of features: inherited features and transmitted features. Feature inheritance indicates that nouns have inherent features, like gender, which are assigned in the lexicon, as opposed to features transmitted to the nouns (being assigned to them) through the environment, as in the case a noun possesses. For instance, *razul* 'man' has the inherent feature M but a nominative case is a transmitted feature due to the function of the word in 1. The nominative case is assigned to *razul* through the suffix *un*.

(1) *ʒāʔ-a* *raʒul-un*
come.PST.PRF-3.M.SG man.M.SG-NOM
'A man came.'

Another account of agreement considers agreement a "systematic covariance" between two formal properties of two elements (Steele, 1978) which involves feature sharing between the elements of agreement. Moreover, transformational Grammar used agreement as a test to analyse other phenomena and treated agreement as feature copying from the controller to the target. For instance, in *These books*, the plural number is copied from the controller *books* to the demonstrative *these* (Corbett, 2006, p. 114). Feature copying faces many problems especially in pro-drop languages where the controller is absent, or in cases where the controller is underspecified. Consider (2) below in Russian.

(2) *Ja* *sidel* */ sidel-a*
1.SG.NOM sat[M.SG] / sat-F.SG
'I was sitting' (man / woman talking) Corbett (2006, ex.1, p. 115)

Corbett (2006) explains that the pronoun *Ja* 'I' is underspecified for gender in Russian; therefore, agreement can either be feminine or masculine on the predicate in (2). Barlow (1992) and (Corbett, 2006) show underspecification in gender is common in pronouns and this is one of the issues with the theories considering agreement a feature copying technique. In other words, feature copying fails when the features are absent, which is due to copying accounts involving "a considerable degree of redundancy" (Corbett, 2006, p. 115).

As opposed to feature-copying rules of agreement, unification-based approaches to agreement are applied in some frameworks, such as Generalized Phrase Structure Grammar (GPSG). These involve "cumulating partial information" from both the controller and the target (Corbett, 2006, p. 115). In other words, the features reflected on all the elements can be unified (provided they are compatible), as in (3), adopted from Corbett (2006, ex.2, p. 115), which is based on a feminine reading of (2).

(3) $\begin{bmatrix} \text{NUMBER:} & \text{singular} \\ \text{PERSON:} & 1 \end{bmatrix} \begin{bmatrix} \text{NUMBER:} & \text{singular} \\ \text{GENDER:} & \text{feminine} \end{bmatrix}$ (Corbett, 2006, ex.2,p. 115)

The information on the left-hand side in (3)represents the pronoun *ja* 'I' in (2), and the information on the right-hand side in (3) reflects the verb *sidela* 'sat' in (2). Since both the pronoun and the verb provide compatible features; i.e., both are reflected by the same information, singular number, the features in (3) can be unified as in (4).

(4)
$$\begin{bmatrix} \text{NUMBER:} & \text{singular} \\ \text{PERSON:} & 1 \\ \text{GENDER:} & \text{feminine} \end{bmatrix}$$
(Corbett, 2006, ex.3,p. 115)

Although unification-based rules are more promising than feature copying accounts of agreement, they face problems with more challenging agreement patterns, such as cases of hybrid nouns that trigger different agreement markers on the modifier and the predicate (Wechsler and Zlatić, 2003), as well as facing issues with cases of mismatches (Corbett, 2006). Finally, LFG considers agreement as a co-specification of features between a controller and a target. The targets place constraint(s) on the controller's features which are defined in the lexical entries of the lexical elements. For instance, in *I like books*, the target *like* places a constraint on the subject to be either 3.PL or 1/2.SG.[1] HPSG considers a feature sharing mechanism of agreement where both the controller and the target provide partial information. The second part of this thesis (chapters 5 and 6) uses LFG as the framework of analysis.

[1]A detailed discussion of agreement in LFG is provided in section 6.1.2.

To sum up, this section showed that different theories consider different accounts for the agreement mechanism which succeed in explaining some patterns of agreement and face troubles explaining other cases. There are accounts involving feature displacement, feature copying, feature co-specification and feature unification cross-linguistically. The next section discusses the types of agreement typologically.

2.1.2 Agreement Types

This section discusses the two types of agreement, namely, syntactic agreement and semantic agreement in section 2.1.2.2. However, before discussing agreement types, I provide a brief introduction of "the place of agreement" typologically in section 2.1.2.1. Finally, I provide a discussion of The Agreement Hierarchy in section 2.1.2.3.

2.1.2.1 Places of agreement

To start with, Corbett discusses several 'places of agreement'. Corbett (2006, p. 2-4) explains that agreement is a matter of syntax, semantics, morphology, lexicology and pragmatics based on the information involved in the agreement process. For instance, subject-verb agreement such as in (5) places agreement in the syntax of the language since the number marking on the verb is related to the number marking of the subject. In other words, changing the number value of the subject affects the agreement marker of the verb. Consider

(5) and (6) below.

(5) *Jembo helps his parents*

(6) *Jembo's parents are helped.*

The subject *Jembo* in (5) is singular which explains the singular marker on the verb *helps*. However, in (6), the verb *are* shows plural agreement with the subject *Jembo's parents*. This shows that agreement is a matter of syntax.

Similarly, agreement is a matter of semantics, such as the case with collective nouns as shown in (7) below as adopted from Corbett (2006, p. 2)

(7) *The committee has/have agreed.*

(Corbett, 2006, ex.3&4, p. 2)

In (7), either number *has/have* is grammatically correct and is based on the meaning. Collective nouns like *committee* in some varieties of English allow the option of using either the singular or the plural marker on the verb. It depends on the meaning of the collective noun as intended by the speaker; i.e., if the collective noun refers to one group of individuals, it requires a singular marker on the verb compared to when the conceptualised meaning refers to individual members of the group, which requires a plural marker on the

verb. Thus, agreement can be a matter of semantics.[2]

Agreement is also a matter of morphology. In other words, depending on the morphological facts of a language, certain agreement patterns are triggered. For instance in (8), the past tense *had* is underspecified for number, which is a fact of all past tensed verbs in English.

(8) *The committee had agreed.*

Corbett (2006) considers agreement a matter of morphology. In other words, it is the morphological fact of inflection, and in other cases declinability, that plays a role in the agreement pattern.

Finally, agreement can be a matter of pragmatics (Corbett, 2006, p. 4) as in the case with formal pronouns and/or honourific pronouns in some languages, where the morphology points to some features and the semantics points to others. This can be applied to the French distinction of *vous-tu* or to the Bulgarian example in (9), where the predicate *ste* 'are' is plural agreeing with a (grammatically/morphologically plural subject but semantically/pragmatically) singular subject *Vie* 'you' to show respect adopted from (Wechsler and Zlatić, 2003).[3]

[2]It is worth mentioning that agreement is a complex phenomenon and cannot be analysed as either syntactic or semantic only and depends on other factors as I show in this thesis. However (7) should be approached as an example of the semantics effect on agreement.

[3]Transcription and glossing as in original source.

(9) *Vie* *ste* *učtiv* *i* *vnimatelen.*
You(formal) **aux!** (**aux!**).2PL polite.SG and attentive.SG
'You(singular, formal) are polite and attentive.' (Wechsler and Zlatić, 2003, p. 5)

In (9), the verb *ste* 'are' shows plural agreement (grammatical agreement) with the subject *Vie* 'You' , while *učtiv* 'polite' is singular which supports the fact that agreement is pragmatic in (9).

To conclude, this section discussed the fact that agreement is a linguistic phenomenon which has a diverse scope across all areas. The next section discusses the difference between semantic and syntactic agreement.

2.1.2.2 Types of agreement

So far, most of the agreement cases presented involved controllers that induce one agreement pattern. However, it is documented in the literature that in some language there are controllers that trigger more than one type of agreement. In other words, the controller triggers different features on different targets. These nouns are referred to as 'hybrid nouns' in the work of (Wechsler and Zlatić, 2003; Hristov, 2012; Alsina and Arsenijević, 2012b,a, among many others). The treatment of hybrid nouns is different cross-linguistically. Corbett (2006, p. 155-157) considers the agreement pattern triggered by hybrid nouns 'a serious case of mismatches' and identifies two types of agreement induced by such nouns, namely, syntactic

agreement and semantic agreement. Corbett (2006) defines the syntactic type of agreement (also refers to it as 'agreement ad formam', 'formal agreement' or 'grammatical agreement') as agreement that is consistent with the form of the controller. On the other hand, semantic agreement (also known as 'agreement ad sensum', notional agreement', 'logical agreement' or 'synesis') is the agreement that is consistent with the controller's meaning.[4] More importantly, Corbett (2006) clarifies that the terms syntactic and semantic agreement are only used in cases of hybrid nouns or nouns that allow a choice of agreement patterns which is compatible with the view of HPSG and LFG. In non-transformational grammar, similar concepts to syntactic and semantic agreement are discussed in relevance to hybrid nouns. Wechsler and Zlatić (2003) refer to the agreement that is consistent with the controller's form (morphology) as CONCORD whereas INDEX refers to the agreement consistent with the controller's meaning along with a separate category for semantic/pragmatic agreement.[5] Therefore, Corbett's (2006) syntactic agreement maps to Wechsler and Zlatić's (2003) CONCORD features, and Corbett's (2006) semantic agreement is similar to Wechsler and Zlatić's (2003) INDEX features. Unlike Corbett's account, LFG and HPSG extend the notions CONCORD and INDEX to NP-internal agreement, and NP-external agreement, respectively with

[4]Corbett (2006) points out that in Semitic languages syntactic and semantic agreement are referred to as strict and deflected respectively and considers the terminology confusing (*cf.* (Corbett, 2006, footnote 10.,p. 155)). However, refer to my discussion of deflected and strict agreement in PA and the mapping to syntactic and semantic agreement in section 2.2.1.2.

[5]Agreement in LFG is discussed in more detail in chapter 6.

all nouns not only hybrid nouns.[6] A detailed discussion of CONCORD and INDEX is provided in section 6.1.2.[7] The syntactic/semantic agreement distinction is reflected in (10) below in Russian as adopted from Corbett (2006).[8]

(10) *moj* *brat* *tam* *tože* *žy-l'-i*
my[M.SG] brother(M)[SG] there also live-PST-PL
'my brother and his family also lived there' (Corbett, 2006, ex.38,p. 155)

In (10), the verb *žy-l'-i* 'lived' shows plural agreement although the noun phrase *moj brat* 'my brother' is singular. Therefore, Corbett (2006) considers the predicate agreement semantic since the plural number reflects the meaning (plurality) of the controller.

This section provided a discussion of the two main agreement types: syntactic and semantic agreement. I also showed that, for the sake of this introductory chapter, syntactic agreement is comparable to CONCORD while semantic agreement relates to INDEX. The next section discusses the Agreement Hierarchy in more detail.

2.1.2.3 The agreement hierarchy

The distinction between syntactic and semantic agreement extends to include constraints imposed by The Agreement Hierarchy proposed by Corbett (1979). The Agreement Hier-

[6]It is worth mentioning there is no simple one-to-one mapping between features and domains. More details and discussion in chapters 5 and 6 where I show it is possible for INDEX to act NP-internally.

[7]Discussion of agreement in LFG is saved and provided in chapter 6 due to the relevant and interesting points discussed in chapter 6.

[8]Transcription and glossing as in original source

archy refers to domains; a controller is kept constant and agreement patterns on the target in different domains are observed. In other words, Corbett predicts the agreement pattern triggered by a given controller on an attributive target to be potentially different from the agreement triggered by the same controller on a personal pronoun; for instance. The Agreement Hierarchy is given in (11).

(11) The Agreement Hierarchy:

attributive >predicate >relative pronoun >personal pronoun

> "For any controller that permits alternative agreements, as we move rightwards along the Agreement Hierarchy, the likelihood of agreement with greater semantic justification will increase monotonically (that is, with no intervening decrease). (Corbett, 1979)"

The above hierarchy predicts that the likelihood of having semantic agreement with the controller increases when moving rightwards along the Hierarchy. In other words, it is more likely for a personal pronoun to show semantic agreement with a given noun than an attributive modifier would. (12–14) illustrate how the hierarchy functions (Corbett, 2006, p. 208) through showing agreement with a noun in different domains.[9] Corbett provides (12) in Serbian/Croatian/Bosnian to demonstrate agreement with a quantifier. *brat-a* 'brother'

[9] In (12), REMNANT refers to the form of a remnant of the dual number.

is in syntactic agreement with its modifier; i.e., the modifier/quantifier *dv-a* 'two' matches the noun *brat-a* 'brother' in its gender features.[10]

(12) *dv-a* *dobr-a* *brat-a*
two-M.NOM good-REMNANT brother(M)-SG.**gen!** (**gen!**)
'two good brothers' (Corbett, 2006, ex.6,p. 208)

Corbett clarifies that the noun *brat-a* 'brother' " stands in a special form, a survival of the dual number which is synchronically a genitive singular"; therefore, agreement on the attributive modifier *dv-a* 'two' represents agreement according to form which is syntactic agreement. According to the Agreement Hierarchy, and since *dv-a* 'two' is in the attributive position (the leftmost position on the hierarchy), semantic agreement is less likely to take place.

Moving rightwards along the Hierarchy (11) as in (13), the target *nesta-l-a/nesta-l-i* 'disappeared' is in the predicate position in relation to the controller *brat-a* 'brother'; therefore, increasing the likelihood of semantic agreement. The verb *nesta-l-a/nesta-l-i* 'disappeared' shows two options; syntactic agreement (with the REMNANT through the [-*a*] suffix), or semantic agreement with the plural marker.

(13) *on-a* *dv-a* *brat-a* *su*
that-REMNANT two-M.NOM brother(M)-SG.GEN AUX.3PL
nesta-l-a/nesta-l-i
disappear-PST-REMNANT/disappear-PST-M.PL

[10]Transcription and glossing as in original source.

'those two brothers have disappeared' (Corbett, 2006, ex.7,p. 208)

The REMNANT marker on the verb *nesta-l-a* 'disappeared' reflects dual agreement with *brat-a* 'boy' which is syntactic according to the hierarchy.[11] However, the plural marker on the verb *nesta-l-i* 'disappeared' represents semantic agreement that reflects the meaning of plurality of the controller *brat-a* 'brother'. The likelihood of semantic agreement increases in (13) because the verb is in the predicate position; therefore, alternative agreement patterns, either syntactic or semantic agreement, are possible in (13). Moving further down the hierarchy as in (14), the target is the relative pronoun *koj-a/koj-i* 'who', which allows two agreement options similar to (13).

(14) *dv-a* *brat-a* *koj-a/koj-i...* *On-i...*
two-M.NOM brother(M)-SG.GEN who-REMNANT/who-M.PL... 3-M.PL
'two brothers who ... They ...' (Corbett, 2006, ex.8,p. 208)

In addition to the general four main constraints that were represented in the Agreement Hierarchy in (11),the likelihood of semantic agreement can be affected by the type of predicate (verb, adjective, noun, etc.) as presented in (15) which is known as Comrie's (1975) Predicate Hierarchy.

[11]Some might argue that agreement with the number, dual, should be classified as semantic; however, Corbett refers to syntactic agreement when the agreement pattern matches the form of the controller; therefore, in this example, the use of a dual marker (or a remnant) is closest to the form as Corbett explains the noun *brat-a* 'brother' is a survival of the dual number.

(15) The Predicate Hierarchy:

verb >participle >adjective >noun

Hence, reformulating the Predicate Hierarchy yields into the following hierarchy.

(16) The Extended Predicate Hierarchy:

attributive >[verb >participle >adjective >noun] >relative pronoun >personal pronoun

The extended hierarchy inserts the predicate hierarchy by Comrie (1975) in the predicate position in the original agreement hierarchy by Corbett (1979). The same rule of the monotonic increase of semantic agreement applies moving rightwards along the extended hierarchy. This means that semantic agreement is more likely with a predicate noun than a predicate verb, and is more likely with a relative pronoun than a predicate.

To conclude, this section discussed important notions related to the study of agreement which include the difference between syntactic and semantic agreement and the effect of domain of the target on the agreement pattern triggered. The next section discusses NP-internal and NP-external agreement in more detail.

2.1.3 The Scope of Agreement

Following the Agreement Hierarchy in (11) and the Extended Agreement Hierarchy in (16), there are different positions for the target to show agreement with a controller. Generally, there are two main domains/scopes of agreement: the head-modifier agreement which is NP-internal, and the Predicate-argument agreement which is NP-external. This section discusses the two scopes in relation to the features of CONCORD and INDEX in non-transformational grammar.

Agreement can occur between heads and their modifiers, like a noun(s) and its modifying adjective(s) as in (17), as well as, predicate-argument agreement (including V, Adj, Prep, and possessed N as predicates) as in subject-verb agreement in (18).

(17) *hijje* *binit* *ħilw-e*
PRO.3SG.F girl.(F)SG beautiful-SG.F
'She is a beautiful girl.' PA

(18) *hijje* *ṭilʕ-at* *bakīr*
PRO.3SG.F leave.PST.**prf!** (**prf!**)-THIRD PERSON (3).SG.F early.
'She left early.' PA

In (17), NP-internal agreement is observed between the controller *binit* 'girl' and the modifier *ħilw-e* 'beautiful'. In (18) NP-external agreement is observed with the predicate *ṭilʕ-at* 'left'. Both targets are marked for feminine singular. (17) and (18) introduce the notions of NP-internal targets and NP-external targets which are important for the

discussion of agreement from an LFG point of view. I show later in section 6.1.1 that in most cases, NP-internal agreement co-specifies the target with the CONCORD features and that NP-external targets co-specify the INDEX features of the head noun with some exceptions.

In addition to NP-internal and NP-external agreement, Anderson (1992); Wechsler and Zlatić (2003); Corbett (2006) discuss anaphoric agreement which in some cases triggers different markers. Anaphoric agreement is of the pronoun-antecedent type "defined on discourse structure" (Bresnan and Mchombo, 1987). Corbett (2006, p. 155) considers anaphoric agreement to be more semantic (as shown in the hierarchy above). Bresnan and Mchombo (1987, p. 752-753) distinguish anaphoric agreement from grammatical agreement and indicate that anaphoric agreement is the only non-local agreement which happens on the discourse level; therefore, anaphoric agreement relations are discourse-related. Unlike Corbett (2006), Wechsler and Zlatić (2003) consider anaphoric agreement to be pragmatic (pragmatically triggered). Wechsler and Zlatić (2003) distinguish between grammatical and anaphoric agreement through the ungrammaticality of a sentence when agreement fails. In other words, failure of matching anaphoric agreement to the controller features results in a co-referencing issue. On the other hand, failure to achieve grammatical agreement results in ungrammaticality. They provide the examples in (19) and (20) below to explain.

(19) *A cowboy$_i$ approached the bar. She$_i$ ordered a drink.*
M F

(Wechsler and Zlatić, 2003, p. 9)

(20) **He are happy.*
SG PL

(Wechsler and Zlatić, 2003, p. 10)

In (19), assuming *cowboy* is gender-specified and is masculine, the sentence is grammatical but the pronoun *she* lacks reference. On the other hand, in (20) because the verb *are* is plural and does not match the singular number of the subject *He*, the sentence in (20) is ungrammatical. Therefore, (19) and (20) support the claim that anaphoric agreement does not affect the grammaticality of a sentence.

To conclude, this section distinguished between grammatical agreement and anaphoric agreement. Grammatical agreement further includes NP-internal and NP-external agreement.

2.1.4 Concepts Relevant to the Discussion

This section provides a discussion of the concepts that are very relevant to the analysis of PA agreement patterns in this dissertation. In this section, I discuss feature resolution briefly 2.1.4.1, cases of canonical agreement 2.1.4.2, mismatches and resorting to default features 2.1.4.3, and agreement factors 2.1.4.4.

2.1.4.1 Feature resolution

The discussion of feature resolution is essential to the discussion of coordination and agreement which is provided in chapter 6. In basic terms, some feature values are changed as a result of coordination. For instance, the cardinality of a coordinate NP differs from the cardinality of the individual singular conjuncts. The coordinate NP is plural.[12] Similarly, the Person value of a coordinate NP is not necessarily the same as the Person value of the individual conjuncts. In LFG terms, the values of Person are perceived as a closed set description. Closed set descriptions mention all the elements of a set, for example, the values of a certain feature in a certain language. For instance, the set description of Person would look like the one in (21).

(21)
$$(\text{PERS}) = \begin{Bmatrix} \{\text{S}\} \\ \{\text{H}\} \\ \{\text{S,H}\} \\ \{\} \end{Bmatrix}$$

Where {S} refers to the speaker, {H} refers to the hearer, {S,H} refers to the hearer and the speaker, and {} refers to neither the speaker nor the hearer (third person). The speaker refers to themselves as first person, and refers to the hearer as second person. The combination of the speaker and the hearer is first person (plural). Thus, *I* is a first person

[12] With the exception to cases where the reference is a single person *My friend and colleague is late.*

pronoun, and is represented as {S}. *You* is a second person pronoun and is represented as {H}. Finally, the combination of *I* and *You* is a combination of {H} and {H}, so *we* is a second person pronoun and is represented as {S,H} (Dalrymple, 2001, p. 158). This conforms with the predominance theory of Anderson (1992). Anderson (1992) discussed feature resolution as a problematic case of agreement and pointed out that some dimensions give rise to problems. Anderson (1992) also identified that the Person feature follows some sort of predominance. The First Person $(1)^{st}$ person goes over the 2^{nd} person over the 3^{rd}. In addition to Person resolution, some languages like Icelandic observe Gender resolution as in the coordination of a masculine noun and a feminine noun, which yields an NP which is neuter: M + F = N. Additionally, Corbett (2006) states that feature resolution in Slovene yields a masculine NP in all cases of coordination except for the coordination of feminine nouns. M+M = M, M + N = M, M + F = M, N + N = M, F + F = F, as in the examples below.[13]

(22) *Milk-a* *in* *njen-o* *tele* *sta* *bi-l-a* *zunaj*
Milka(F)-SG and her-N.SG calf(N)[SG] AUX.3DU be-PST-M.DU outside
'Mila and her calf were outside' (Corbett, 2006, ex.39,p. 24)

In (22), the verb *bi-l-a* 'be' is marked for the masculine gender agreeing with the coordinated noun phrase which is made up of a feminine noun *Milk-a* 'Milka' and a neuter noun *tele* 'calf'. Similarly, the fact that a coordinate NP consisting of two or more

[13]Transcription and glossing as in original source.

conjoined NPs triggers different agreement patterns is evident in Serbian/Croatian according to Wechsler and Zlatić although both nouns share the same value of gender, which is neuter and both are singular.[14]

(23) *Njegovo pismo i nalivpero su bili/*bila na stolu.*
his.NT.SG letter.NT.SG and fountain-pen.NT.SG AUX.PL be.M.PL/*be.NT.PL on table
'His letter and the fountain pen were on the table.' (Wechsler and Zlatić, 2003, p. 6).

(23) presents the fact that agreement patterns are different in the context of coordination. The noun *pismo* 'letter' and the noun *nalivpero* 'fountain-pen' are both of the same features and conjoined by the use of a conjunction *i* 'and'. However, the main verb *bili* 'are' is masculine not agreeing in gender with the individual features of the conjuncts but agrees with the resolved features. I present more analysis of coordination and agreement patterns with conjoined NPs in chapter 6. Resolution agreement is discussed in chapter 6 in more detail including the treatment of resolution agreement in the work of Hristov (2012); Belyaev et al. (2015), among many others.

[14]Transcription and glossing as in original source.

2.1.4.2 Canonical agreement

The view of agreement as a linguistic phenomenon includes the discussion of canonical cases of agreement as viewed by Corbett (2006). The simplest syntactic pattern is the canonical pattern when the target matches the controller in its features and values and is "redundant" rather than "informative" (Corbett, 2006); consequently, any deviation from the canonical pattern is a case of mismatch, which is, in most cases, due to restrictions either on the target or the controller. Canonical instances are "the best and clearest example"; yet,"not necessarily what is normal or common" (2006:10). Canonical agreement is evident in MSA (Modern Standard Arabic) in examples like the ones below. Notice that the adjective agrees with the head noun in GENDER and NUMBER.

(24) *ʔal-bint-u* *ʔar-rāʔiʕ-at-u*
def! (**def!**)-girl.F.SG-NOM DEF-great-F.SG-NOM
'The great girl.' MSA

(25) *ʔal-ban-āt-u* *ʔar-rāʔiʕāt-u*
DEF-girl.F-PL-NOM DEF-great-F.PL-NOM
'The great girls.' MSA

The head noun *ʔal-bint-u* 'girl' is in agreement with the feminine singular adjective *ʔar-rāʔiʕ-at-u* 'great' in (24). The same applies to the agreement in (25) where the plural head noun *ʔal-ban-āt-u* 'girls' triggers feminine plural agreement on the modifier *ʔar-rāʔiʕāt-u* 'great'. Canonical agreement exists in other languages, where nouns and

adjectives inflect for GENDER and NUMBER, like Italian, for example (*cf.* Corbett, 2006: 9, examples (14-17)). I discuss canonical agreement patterns in PA in chapter 3.

2.1.4.3 Resorting to default features

Corbett (2006) considers any deviation from the canonical case of agreement to be a mismatch. There are cases of mismatches where default features are the last resorts in agreement. Default forms are usually used when "there is no controller with the necessary features" (Corbett, 2006:96). A clear example of this comes from Romanian, as adopted from Corbett (2006).[15]

(26) *e evident că a venit*
is clear[M.SG] that has come
'it is clear that s/he came.' (Corbett, 2006, ex.14, p. 149)

In (26), the subject clause lacks the features of gender (it can been argued that there is no subject). However, the predicate *evident* 'clear' is masculine which is the default value for the feature gender. Another more interesting example comes from Romanian regarding modifying a 'non-word'.[16]

(27) *un bum puternic*
INDEF.M.SG "boom" strong[M.SG]
'a loud boom.' (Corbett, 2006, ex.15, p. 149)

[15]Transcription and glossing as in original source.
[16]Transcription and glossing as in original source.

The adjective *puternic* 'strong' modifies *bum* 'boom', so does the article *un* 'a'. Yet, they are both marked for masculine which is the default marker for gender in Romanian.

Resorting to default features in cases of non-canonical agreement is important in the discussion of the agreement patterns observed in PA as I show in chapter 3.

2.1.4.4 Agreement factors

Chapter 4 introduces the poly-factorial model. The new model proposes the implementation of a number of factors to account for all the agreement patterns obtained in PA with a focus on the speaker's perception to explain cases where the controller allows a choice of the agreement pattern. Chapter 4 discusses the agreement factors that are relevant to the agreement patterns in PA. However, this section introduces the agreement factors that are available typologically. It is worth mentioning that this section introduces linguistic factors only; in other words, there is no discussion of the perception factor in this section as I discuss the view of agreement as a linguistic phenomenon here. However, the discussion of perception and the effect of perception-related factors in agreement is introduced in section 2.3 which discusses the view of agreement as a cognitive phenomenon.

Nevertheless, there are many factors affecting the choice of agreement patterns between the head and its modifier or the predicate and its argument. The important factors to consider when working on agreement are the controllers, the targets, the domains, the features,

and the conditions (Corbett, 2006). It is established that the controller is the lexical item that triggers agreement on the target, which is the lexical item upon which agreement is determined. In LFG, the constraints of agreement are decided by the target in the lexical entry. Notwithstanding, the controller and its target(s) are the constituents of agreement. An agreement domain delimits whether agreement is noun phrase internal (a head and its modifier) or external (a predicate and its argument), which are mapped to CONCORD and INDEX; respectively.[17] In some other cases, agreement can be clausal (anaphoric agreement between the pronoun and its antecedent) and is argued to map to a pragmatic feature of the noun in HPSG (Wechsler and Zlatić, 2003). Domains are very important as the choice of features in agreement is affected by the domain. For example, a verb agrees with the noun in person but not case; i.e., case is a noun phrase-internal features unlike person which is of an external domain. Therefore, CONCORD features of a noun reflect the CNG (case, gender, number) features whilst INDEX features include PNG (person, number and gender) features of a nominal.[18] As for agreement conditions, these include any permissible non-morphological fact affecting the pattern, including animacy, as in Latin nouns, for instance. Corbett (2006, p. 252) states that gender resolution in Latin depends on animacy; thus, when conjoining two nouns of different gender, the resolved NP gender is masculine when the noun phrase

[17]There are exceptional cases where INDEX acts NP-internally and I argue this is the case with nouns triggering deflected agreement pattern in PA. I discuss this in more detail in chapter 6.

[18]Full discussion of CONCORD and INDEX is provided in chapter 6 and the discussion of the split of CONCORD and INDEX of some nouns including the split in PA is provided in chapter 5.

refers to human and neuter when the NP refers to a non-human.[19] Additionally, agreement conditions include constituent precedence (word order) as in Modern Standard Arabic in (28)–(31). In MSA, verb agreement is affected by the word order; in SVO order, the verb shows full agreement in number and gender with the plural human noun as in (28), and (30). However, changing the order into VSO, the verb shows partial agreement; that is agreement in gender only, with the plural human noun as in (29) and (31) adopted from Chekili (2004, p. 35).[20] The fact that MSA verb agreement is affected by word order is referred to in the literature as "subject-verb agreement asymmetry (SVAA)" (Soltan, 2006, p. 240).

(28) *l-ʔawlaad-u* *xaraj-uu* *(not:*xaraj-a)*
DEF-boys-NOM went.out-3PL.M went.out-3SG.M
'The boys went out.' (Chekili, 2004, p. 35)

(29) *l-banaat-u* *xaraj-na* *(not:*xaraj-at)*
DEF-girls-NOM went.out-3PL.F went.out-3SG.F
'The girls went out.' (Chekili, 2004, p. 35)

In (28), the verb *xaraj-uu* 'left' shows agreement in gender and number with the noun *l-ʔawlaad-u* 'boys'. Similarly, in (30), there is full agreement on the verb *xaraj-na* 'left'. Both sentences are in SVO order which requires a full agreement in MSA.

(30) *xaraj-a* *l-ʔawlaad-u* *(not:*xaraj-uu)*
went.out-3SG.M DEF-boys-NOM went.out-3PL.M

[19] Corbett's (2006) use of animacy is linguistic referring to living/human versus non-living/non-human. However, I discuss animacy beyond linguistics in section 2.3 from a cognitive view.
[20] Transcription and glossing for examples (28)-(31) as in original source.

'The boys went out.' (Chekili, 2004, p. 35)

(31) *xaraj-at* *l-banaat-u* *(not:*xaraj-na)*
went.out-3SG.F DEF-girls-NOM went.out-3PL/F
'The girls went out.' (Chekili, 2004, p. 35)

In (29) and (31), there is partial agreement (agreement in gender only) because the predicate precedes the argument.

Continuing with the factors affecting agreement typologically, agreement patterns between the nouns and the modifying adjectives are affected if there is a coordination structure either involving the noun phrase or the modifiers. The effect of coordination involves the discussion of multiple concepts including feature distributivity, split and joint readings, accidental versus natural coordination, and CONCORD and IDNEX features. I provide a detailed discussion of all these concepts in chapter 6. Nevertheless, examples (32) and (33) show the effect of coordination on agreement in English. In (32), the verb *is* is singular with a singular NP *my neighbour* as opposed to a plural predicate *are* in (33) following a coordinated NP.

(32) *My* *neighbour* *is* *eat-ing* *dinner.*
1SG.**poss!** (**poss!**) SG AUX.SG.**pres!** (**pres!**) eat-**prog!** (**prog!**) SG

(33) *My* *neighbour* *and* *his* *wife* *are* *eat-ing*
1SG.POSS SG **conj!** (**conj!**) 3SG.M.POSS SG.F AUX.PL.PRES eat-PROG
dinner.
SG

In (32), the verb *is* agrees with the head noun *neighbour* and is singular. On the other hand, in (33), the verb *are* agrees with the coordinated noun phrase which has a total cardinality of two (plural); thus, the verb *are* is plural.

Coordination affects the use of the definite article in German as in (34). The lack of the definite article in (34) is justified due to the natural coordination process of bringing together *Sonne und Mond* 'sun and moon'. Natural coordination occurs when two entities normally go together; i.e., a coordination of the two elements is common to the extent they are considered one unit. On the other hand, accidental coordination occurs between items that do not normally go together. In German, the definite marker can be omitted from natural coordination (34) but not accidental coordination structures (35).

(34) *Sonne und Mond*
Sun and moon
'the sun and the moon' (Dalrymple and Nikolaeva, 2006, ex.30, p. 831)

(35) *der Mond und ein Sechser*
the moon and a sixpence
'the moon and sixpence' (Dalrymple and Nikolaeva, 2006, ex.29, p. 831)

The effect of natural versus accidental coordination is not evident in all languages. I show in chapter 6 that this distinction is not reflected in the syntax of PA. By the same token, the distinction of accidental and natural coordination is not reflected in English with *could* as in (36).

(36) He could read and swim

He could read and write

On the other hand, in English, the infinitival marker *to* can be omitted between verbs coordinated naturally. In (37), *to* is omitted because *read and write* is considered a natural coordination structure; whereas *to* is used in cases of accidental coordination structures as in (38).

(37) He was able to read and write.

(38) He was able to read and to swim.

Based on the above, natural and accidental coordination are structure-specific as well as language specific.

To conclude, this section provided a discussion of the linguistic factors of agreement typologically which include factors related to the controller, the target, the domain, and other agreement environments; as in coordination. This concludes the view of agreement as a linguistic phenomenon. I provided a discussion of the agreement mechanisms throughout various frameworks in section 2.1.1 and I stated that I analyse agreement through the co-specification of the features of the controller by the targets in an LFG framework. Additionally, LFG predicts that the agreement constraints are stated in the lexical entry by the target and it expects matching of the features between the target and the controller for

agreement to take place. I also briefly introduced the concepts of CONCORD and INDEX to be discussed in more detail in chapter 6. I compared Corbett's (2006) semantic and syntactic agreement to INDEX and CONCORD in section 2.1.2.2. The Agreement Hierarchy by Corbett (2006) was discussed in detail in section 2.1.2.3. This is essential for the analysis of the agreement patterns in PA. I compare the agreement hierarchy to the distance factor in the following section 2.2. Moreover, I discussed the fact that agreement can operate either in the NP-internal domain or in the NP-external domain in section 2.1.3 and I showed that CONCORD is considered an NP-internal feature while INDEX is an NP-external feature (with some exceptions). Feature resolution is discussed in details in section 2.1.4.1. Cases of canonical agreement were presented in 2.1.4.2. Furthermore, I discussed the resorting to default features mechanism laid out by Corbett (2006) in section 2.1.4.3. Finally, section 2.1.4.4 discussed the agreement factors affecting the agreement patterns cross-linguistically. The next section discusses the view of agreement in Arabic varieties.

2.2 Agreement as viewed in Arabic Vernaculars

Agreement in Arabic including MSA and spoken vernaculars has received much attention recently. This section discusses the important contributions regarding the phenomenon of agreement in the work of Aoun et al. (1994); Corbett (1983); Belnap (1991, 1993, 1999); Proc-

hazáka and Gabsi (2017); Bettega (2017, 2018); D'Anna (2017); Ritt-Benmimoun (2017); Fassi Fehri (2018) among many others. Scholars studying agreement in Arabic provided a descriptive discussion of agreement particularly the patterns triggered by plural nouns. I provide an introduction to the main agreement patterns that exist in most Arabic dialects in section 2.2.1.1. Additionally, I provide evidence in section 2.2.1.2 that deflected agreement in PA meets the criteria for *agreement ad formam* according to Corbett (2006) which was discussed earlier in section 2.1.2.2; consequently, full/strict agreement meets the criteria for *agreement ad sensum*. A discussion of the factors affecting agreement in Arabic is provided in section 2.2.2, which includes a discussion of distance, plural forms, and animacy. In section, 2.2.2.1, I compare the discussion of the distance factor in Arabic in recent literature to the Agreement Hierarchy by Corbett that was discussed earlier in section 2.1.2.3. Since plural nouns received much attention in Arabic, I discuss plural noun forms and the effect on agreement in section 2.2.2.2. Additionally, a view of the effect of animacy on agreement in PA is provided in section 2.2.2.3.

2.2.1 Main Agreement Patterns in PA

Section 2.2.1.1 provides a discussion of the main agreement patterns referred to when studying agreement in Arabic varieties. Section 2.2.1.2 provides evidence that Corbett's (2006) syntactic and semantic agreement reflect deflected and strict agreement in Arabic; respec-

tively.

2.2.1.1 Deflected and Strict Agreement

Before I explain the correspondence between strict and deflected agreement onto agreement as sensum and agreement as formam, respectively; I introduce the strict and deflected agreement patterns in Arabic varities. There are two main agreement patterns existent in Arabic between a head and a modifier (Ferguson, 1989; Belnap, 1999; Ryding, 2005; Bettega, 2017; D'Anna, 2017, among many others). These include the strict agreement pattern and the deflected agreement pattern. According to Ferguson (1989), the strict pattern exists when the features of the controller are "copied" onto the target. In other words, both the controller and the target have the same features, as in (39). On the other hand, the deflected pattern occurs when the plural controller triggers feminine singular on the target, as in (40). Both examples are in Omani Arabic and are adopted from Bettega (2017).[21]

(39) *əl-mumarriḍ-āt* *fēn-hən*
ART=nurse-PL.F where=**pron!** (**pron!**).3PL.F
'The nurses, where are they?' (Bettega, 2017, ex.Second Person (2),p. 159)

The marker on the pronoun *hən* 'them' is plural feminine and it agrees with the plural feminine controller *əl-mumarriḍ-āt* 'nurses' in number and gender; therefore, the agreement pattern in (39) is strict.

[21] Transcription and glossing as in original source.

(40) *əl-awādəm* *illi* *məttaxxar-a* *ʕal-ā* *d-dwām*
ART=person.PL **rel!** (**rel!**) be.late-SG.F PREP **art!** (**art!**)=work
'The people who are late for work' (Bettega, 2017, ex.1,p. 158)

The agreement pattern in (40) is deflected because the target *məttaxxar-a* 'late' is singular feminine despite the fact that the controller *əl-awādəm* 'persons' is plural.

Scholars studying Arabic agreement state that strict agreement patterns are triggered by human plural nouns (exceptions apply) whereas deflected agreement patterns are triggered by non-human plural nouns (Belnap, 1999; Bettega, 2017). Bettega (2017) explains that the case presented in (40) is an exceptional case in Omani Arabic since a plural human noun triggers deflected agreement. However, I presented the example in (40) because it is not uncommon in PA for some human plural nouns to trigger deflected agreement. In fact, I call the class of noun that triggers either deflected or strict agreement the doublet nouns. I discuss doublet nouns in chapters 3, 4, and I provide an LFG analysis of the behaviour of doublet nouns in chapter 5. It should be mentioned that throughout my thesis I use the term full agreement pattern to refer to agreement where the target and the controller agree in all the features. I consider the strict agreement pattern subsidiary to full agreement. The reason I use the term full agreement is because I discuss the behaviour of singular nouns in PA in terms of agreement patterns and the term strict agreement is mainly used by Scholars studying Arabic agreement to the agreement pattern triggered by plural nouns.

Unlike the case in Omani Arabic, Ritt-Benmimoun (2017, p. 266) shows that in Tunisian Arabic, deflected agreement can be triggered by feminine human plural nouns "[w]hen talking about a group with a non-defined number of women or when describing something that (all) women usually do", as opposed to strict agreement which is triggered when there is "a well defined number of women". In addition, Ritt-Benmimoun (2017) indicates that plural feminine nouns trigger masculine agreement in younger generations, which she justifies according to a sociological factor. Some scholars (Blanc, 1970; Versteegh, 1984) argue that non-human plurals can trigger strict agreement and they consider this the norm. However, most recent studies show that non-human plural nouns in most Arabic dialects trigger deflected agreement on the target, as in Cairene Arabic (Belnap, 1991, 1993, 1999), Omani Arabic (Bettega, 2017), and Fezzāni Arabic (D'Anna, 2017). I show in chapter 3 that non-human plural nouns in PA can actually trigger either plural or singular on the target and I explain this through perception. Finally, I also show that in PA there is a third pattern of agreement which I call kind-noun agreement in chapter 3. Nevertheless, the fact that agreement is very varied in Arabic dialects makes it a fuzzy and complex subject to study. Nevertheless, there are certain factors that affect the agreement patterns in general which I discuss in section 2.2.2.

However, before I discuss the factors, I provide evidence below that plural agreement triggered by non-human plural nouns in PA is semantic and deflected agreement is syntactic

according to Corbett's (2006) definition of syntactic and semantic agreement.

2.2.1.2 Evidence that plural agreement triggered by non-human nouns is semantic

This section supports my claim that the plural agreement triggered on further targets of a plural non-human noun conforms with Corbett's (1979) hierarchy and is considered a semantic agreement according to the definition by Corbett (2006). To start with, it has been argued that plural non-human nouns trigger deflected agreement (singular feminine) on the targets in most dialects. However, in PA, non-human plural nouns can also trigger plural markers on the target, as in (41).

(41) *ʔit-tuffaħ-āt* *ʔiz-zaky-āt*
DEF-apple-PL.F DEF-delicious-PL.F
'The delicious apples.'

In (41), the plural head noun *ʔit-tuffaħ-āt* 'apples' triggers feminine plural agreement on the target *ʔiz-zaky-āt* 'delicious'.

For a plural non-human noun to trigger plural on the targets, there should be certain conditions. In other words, plural agreement triggered by plural non-human nouns is context-based, and subject to other factors including distance and individuation. Nevertheless, Belnap (1993) provides examples in Cairene Arabic of a non-human noun triggering plural agreement as in (42).[22]

[22]Glossing and transcription as in Belnap (1993).

(42) *šiwayyit ḥagaat... miš bi-tartiib 'ahammiyyit-ha... wi-ba^{c}deen nišuuf 'iza*
few things not by-rank importance-their(F.SG) and-afterward I-see if
kunna nirattib-hum
I-were I-order-them(PL)
"...a few things...not in order of their importance...and afterward I'll see if I were ordering them." (Belnap, 1993, ex. 16, p. 86)

In (42), the head noun *ḥagaat* 'things' is plural and triggers plural agreement on the target *nirattib-hum* 'order them'. Belnap (1993) explains the plural agreement on the final target only (not the first target) due to the distance from the main controller. In other words, because the target is far form the controller, the target is marked for plural. I provide more discussion of the factor distance in section 2.2.2.1.

In fact, Belnap's (1993) hypothesis conforms with Corbett's hierarchy that states that semantic agreement increases monotonically moving rightwards the hierarchy (*cf.* section 2.1.2.3). A plural marker with a plural inanimate noun is based on the semantics. Recall the expected pattern with plural inanimate nouns is singular feminine (deflected).[23] In addition, Belnap (1993) claims that the percentage of deflected agreement decreases moving rightwards on the hierarchy; yet, the decrease is not necessarily monotonic. So far, this supports the claim that plural agreement triggered by plural non-human nouns is semantic. It is worth

[23]Some might argue that deflected agreement (singular feminine) is actually semantic since it is justified through considering the inanimate plural an indefinite mass/non-individuated whilst plural agreement is considered syntactic in their opinion as it is a co-specification of features. However, I disagree with this theory; it is more the norm for the controller to trigger syntactic agreement; whereas, semantic agreement requires justifications.

mentioning that Belnap states it is not clear whether deflected agreement is syntactic or semantic (a concern shared by D'Anna (2017)). I, on the other hand, consider and treat deflected agreement as syntactic.

In (42), the distance factor between the controller and the target was said to affect the agreement pattern obtained, Belnap (1993) considers the functional basis to distance between the controller and the target to relate to information recoverability. It is feasible that the speaker picks the default marker as a matter of difficulty in recovering the features of the controller (Barlow and Ferguson, 1988). Corbett states that speakers resort to default markers in cases of agreement mismatches or difficulties. I consider the resort to default to be supportive to the fact that deflected agreement is syntactic. Singular is the default number value in Arabic and that is the value the speakers use in challenging cases of agreement. Singular agreement is used on targets of plural nouns that convey a meaning of non-individuation, with non-human nouns, with kind nouns and other challenging controllers. This is considered additional evidence that deflected agreement is syntactic;

Nevertheless, the argument that deflected agreement is semantic is justified by the definition of semantic agreement in the work of Anderson (1992); Corbett (2006); Wechsler and Zlatić (2003). In basic terms, syntactic agreement occurs when the target follows the controller in its value(s) either as full or partial agreement. However, semantic agreement occurs based on the meaning the controller denotes, as in having a plural marker on an adjective modifying a dual noun (Arabic adjectives and verbs do not inflect in dual). In other words, syntactic agreement is consistent with the controller's form, while semantic agreement is consistent with the controller's meaning (Corbett, 2006). Since an inanimate plural head noun triggers a singular feminine marker on the target; it is not agreeing either partially or fully with the morphological features of the head noun. Therefore, based on the claim deflected agreement is semantic, Belnap's claim that targets closer in distance to inanimate plural nouns have higher tendency to observe deflected agreement does not conform with Corbett's Hierarchy. Nevertheless, my claim deflected agreement is syntactic supports Corbett's hierarchy.

therefore, when plural agreement is triggered instead of deflected, the agreement pattern is semantic.

To conclude, this section provided a discussion of the two main agreement patterns observed in Arabic dialects which are the strict pattern and the deflected pattern. The section also showed that there is an amount of diversity and variety in Arabic vernaculars with the patterns triggered by non-human nouns. Some of this change is due to sociological factors while others are due to distance. I discuss factors affecting agreement in Arabic in the next section.

2.2.2 Factors Affecting Agreement in Arabic Varieties

In section 2.1, I presented the factors that affect agreement patterns typologically according to Corbett's (2006) view. However, this section focuses on the factors that are relevant to the agreement patterns obtained in Arabic. The main factors are distance 2.2.2.1, plural forms 2.2.2.2, humanness 2.2.2.3, and individuation 2.2.2.4. Bettega (2017) indicates that there are many factors affecting agreement in Omani Arabic which he divides into (i) controller-dependent and (ii) target-dependent. I follow a similar approach and discuss the factors that affect agreement in PA in chapter 4.

2.2.2.1 Distance

Scholars studying Arabic agreementtalk about the distance between the controller and the target. According to Belnap (1993); Bettega (2017), this refers to the actual distance between the controller and the target "expressed in terms of phonological words, from a minimum of 1" (Bettega, 2017, p. 157). I established that most studies about agreement in Arabic focus on the agreement patterns triggered by the plural noun since the agreement patterns triggered by singular nouns in Arabic are straightforward. Nevertheless, plural nouns that have a human referent; i.e., plural human nouns, trigger full agreement in number and gender in most dialects (except for some dialects in Tunisian Arabic (Ritt-Benmimoun, 2017) as explained above, and non-human animate controllers in Fezzāni Arabic (D'Anna, 2017, p. 110)). Therefore, distance is studied between a plural non-human noun and the target(s). Belnap (1993, 1999); D'Anna (2017); Bettega (2017, 2018) state that the further the target is from the plural non-human controller, the more plural agreement is triggered on the target as in (43) in Fezzāni Arabic adopted from D'Anna (2017).[24]

(43) *idā-kān hu rāžel gāder ižīb l-umm l-ulēd sūriyya u*
if he man wealthy 3.MBring.SG to-mother DEF-child.DIM shirt and
məlḥəfa u l-ḥ^{a}wāyž mətāʕ-^{e}t ḍafṛ eṛ-ṛās
veil and DEF-thing.PL GEN-F.SG plait DEF-head
'If he (i.e. the husband) is a wealthy man, he brings to the newborn's mother a shirt, a veil and the necessary things to plait her hair.' (D'Anna, 2017, ex.29,p. 116)

[24]Transcription and glossing as in original source.

In (43), the plural inanimate noun *l-ḥ^{a}wāyž* 'things' triggers singular feminine agreement on the adjacent target *mətāʕ-^{e}t* 'of'. However, distance between the controller *l-aġrāḍ* 'things' and the target pronoun *hən* 'them' in (44) triggers plural agreement in Omani Arabic adopted from Bettega (2017).[25]

(44) *smaʕ-nī* *ana* *bāġy-a*
listen.**imp!** (**imp!**).2SG.M=PRON.1SG PRON.1SG want.**part!** (**part!**)-SG.F
a-naqq *u-a-xtār* *l-aġrāḍ*
PRES.1SG-pick CONJ=PRES.1SG-choose ART=thing.PL
bi-nafs-i *yaʕn-ī* *twaddī-nī* *maʕā-ak*
prep! (**prep!**)=same=PRON.1SG that is PRES.2SG.M-bring PREP=PRON.2SG.M
u-aštrīhən
CONJ=PRES.1SG-buy-PRON.3PL.F
'Listen, I want to pick and choose the things by myself, I mean, bring me with you and I will buy them.' (Bettega, 2017, ex.19,p. 170)

In (44), there is further distance between the controller and the target which explains the plural number on the target as opposed to the singular in (43).

Belnap (1993, 1999); Bettega (2017); D'Anna (2017) count the actual number of words between the controller and the target and provide a nice table of their findings. Nevertheless, the distance factor can be linked to the Agreement Hierarchy presented earlier which states that certain domains increase the likelihood of semantic agreement. See my discussion in section 2.2.1.2 earlier on the matter. Corbett's (1979) reference to distance does not refer to

[25] Transcription and glossing as in original source.

the number of lexical elements between the controller and the target. Nevertheless, Belnap (1993) provides data in Cairene Arabic, as in (45) below.[26] In (45), the controller is the plural noun *ḥagaat* 'things' which triggers two distinct markers of the agreement on the various targets of the controller. There are two targets of the controller each with a different marker. Belnap explains the first target *-ha* 'she' is six words from the head *ḥagaat* 'things'; whilst, *-hum* 'they' is eleven words distant.

(45) *šiwayyit ḥagaat... miš bi-tartiib 'ahammiyyit-ha... wi-baᶜdeen nišuuf 'iza kunna nirattib-hum*
few things not by-rank importance-their(F.SG) and-afterward I-see if I-were I-order-them(PL)

"...a few things...not in order of their importance...and afterward I'll see if I were ordering them." (Belnap, 1993, ex. 16, p. 86)

In (45), the head noun *ḥagaat* 'things' requires feminine singular agreement on the pronoun *-ha* 'she' in *'ahammiyyit-ha* 'their importance' reflecting deflected agreement for plural inanimate nouns. However, the other pronoun *-hum* 'they' is further in distance to the head noun and the speaker uses plural agreement on the pronoun *-hum* 'they' in *nirattib-hum* 'I order them' to modify the plural inanimate noun *ḥagaat* 'things'.

[26] Glossing and transcription as in Belnap (1993).

2.2.2.2 Plural forms

The second factor affecting the agreement patterns in Arabic is the plural from of the noun. This is a controller-related factor. In Arabic, plural forms are of two types (Ryding, 2005): sound plural forms and broken plural forms. The difference lies in the changes to the inner structure of the singular noun. Forms that involve internal structure change are known as broken plural forms as opposed to sound plural forms. It is noted in the literature that sound plural forms trigger plural agreement in most cases Belnap (1993, 1999); Bettega (2017); D'Anna (2017); Ritt-Benmimoun (2017). There are some exceptional cases which are affected by other factors, like distance for example. Bettega (2017) classifies the noun phrases according to the plural form into broken or sound and provides statistics to the number of plural versus deflected agreement occurrences with the nouns *(cf.) Bettega (2017, table1,p. 158).* Additionally, Bettega shows that in Omani Arabic plural agreement is categorically triggered by human broken plural forms, which is not the case in PA. Human broken plural forms in PA are classified as doublet nouns and trigger either plural or singular.

"[D]istributive and group" (Zabbal, 2002, p. 53), are the two interpretations of a broken plural noun. Zabbal claims that the production of the two different meanings of the broken plural are different. In other words, a distributive broken plural is formed through the use of an **s-plural** (singular plural) morpheme as opposed to the use of a **g-morpheme**

(group plural) for the production of a group plural.[27] The g-plural always triggers feminine singular agreement whereas the s-plural triggers plural agreement. Moreover, some broken plural nouns, have a singular interpretation "a result of re-lexicalisation of the broken plural" (Zabbal, 2002, p. 65). Zabbal calls these plural forms "secondary plurals". William Wright's (1933) view of broken plurals or what he refers to as 'plurales fracti' compares broken plurals to sound plurals in that the former denotes a collective view of a number of individuals which are all feminine since they have a similar approach to abstract nouns. William Wright's (1933) considering feminine singular to be the properties of broken plural nouns supports my claim to consider singular feminine triggered by broken plurals syntactic agreement.

Therefore, the interpretation of the plural into collective[28] or distributive is significant in deciding upon the agreement pattern. A plural denoting several individuals triggers plural agreement. On the other hand, a broken plural triggers singular agreement. Zabbal (2002, p. 56) provides the following example in English.

(46) The children built a raft (Zabbal, 2002, ex.2(a), p. 56)

According to Zabbal, a group reading of (46) suggests the total number of rafts being built is one, as opposed to a distributive reading: each child built a raft.

[27] A singular broken plural is a broken plural noun that is interpreted as a mass which triggers singular markers on the target as opposed to a group broken plural noun interpreted to refer to individual members and triggering plural on the targets.

[28] This means a singular interpretation not a collective noun.

Moreover, one can interpret the plural through the agreement pattern obtained. In other words, a singular marker on the verb in (48) adopted from Zabbal (2002) denotes a group reading.[29]

(47) *ʔinna T-Tullaab katab-**uu** maqaal*
PART the-student.PL write.PERF-3.**masc!** (**masc!**).PL article
'The students [each] wrote an article' Lebanese,(Zabbal, 2002, ex. 5a., p. 57)

The plural noun *T-Tullaab* 'the students' triggers plural agreement on the target *katab-uu* 'wrote'. Plural markers denote a distributive reading of the plural.

On the other hand, (48) denotes a group reading of the plural *T-Tullaab* 'the students' as the target is singular *katab-at* 'wrote'.[30]

(48) *ʔinna T-Tullaab katab-**at** maqaal*
PART the-student.PL write.**perf!** (**perf!**)-3.FEM.SG article
'The students wrote an article [together]' Lebanese,(Zabbal, 2002, ex. 5b., p. 57)

The above distinction also exists in Syrian Arabic as Cowell (1964, p. 432) states in the examples he provides. However, despite PA being in the same group with Lebanese and Syrian, a similar behaviour does not exist to the same extent in PA. I consider the Human factor to override other factors; thus, singular feminine agreement with a plural human noun is not possible except with certain nouns: *ʔawlād* 'boys', *rʒāl* 'men', and *ʃabāb* 'guys'

[29]Transcription and glossing as in original source.
[30]Transcription and glossing as in original source.

which I group as doublet nouns. Nevertheless, a group reading with plural nouns like *ṭullāb* 'students' is achieved in PA through the use of quantifiers as in (49) below.

(49) *əṭ-ṭullāb* *katab-u* *maqāl* *waħad*
DEF-student.PL write.PRF.PST-3.PL article.SG.M one.SG.M
'The students wrote one article.'

(49) posits two readings: a distributive reading as in: each student wrote one article, or a group reading: the students together wrote one article. Having a singular marker on the verb *katab-u* 'wrote' with the subject *əṭ-ṭullāb* 'students' is ungrammatical as in (50). This is the only agreement pattern allowed with *əṭ-ṭullāb* 'students.

(50) **əṭ-ṭullāb* *katb-at* *maqāl* *waħad*
DEF-student.PL write.PRF.PST-3.PL article.SG.M one.SG.M
'The students wrote one article.'

(50) is ungrammatical because *əṭ-ṭullāb* 'students cannot trigger singular agreement.

However, compare (49) to (51) below, and notice the use of the quantifier *kul* 'all' to achieve a group reading

(51) *əṭ-ṭullāb* *kul-hum* *katab-u* *maqāl* *waħad*
DEF-student.PL all-PL.M write.PRF.PST-3.PL article.SG.M one.SG.M
'The students, all of them, wrote one article.'

The only possible reading of (51) is the group reading as in: all the students together wrote one article.

To conclude, the plural form of the noun affects the agreement pattern triggered: sound plural forms mostly trigger plural agreement whereas broken plural forms are subject to interpretation and can trigger deflected or strict agreement in some Arabic dialects.

2.2.2.3 Humanness

Humanness is a big factor of agreement in Arabic. Basically, human nouns categorically trigger plural agreement with a few exceptions that depend on the dialects as shown in the discussion earlier. Non-human nouns that are animate may trigger plural in some dialects like Fezzāni Arabic, and can trigger deflected agreement in other dialects like PA. However, non-human inanimate nouns mostly trigger defected agreement.

2.2.2.4 Individuation

There are many exceptional cases to the agreement patterns triggered by the factors above which is due to the overlapping of factors. For instance, a plural noun in Arabic can be interpreted to have a mass referent; therefore, treated as a singular noun and triggers singular agreement. Scholars studying Arabic agreement do not discuss the details of individuation but they acknowledge its effect on agreement. However, Prochazáka and Gabsi (2017) provide an exhaustive list of nouns in Tunisian Arabic and the patterns triggered based on factors like individuation and concreteness. By the same token, Hanitsch (2011) provide a

discussion in Damascene Arabic regarding abstractness and other properties of inanimate plural nouns along with the agreement patterns triggered.

To conclude, this section provided a discussion of the view of agreement in the work of scholars studying Arabic agreement. Agreement is viewed as a syntactic phenomenon that is affected by other factors including sociological factors. Scholars studying Arabic agreement focus their research on plural nouns and identify two agreement patterns: strict and deflected. They also study the factors that affect the agreement patterns; yet, they acknowledge these factors intertwine which makes agreement a complex phenomenon. The main relevant point from this view is that plural forms affect agreement patterns as well as the effect of individuation. All these factors are applied to PA agreement patterns in chapter 4. The next section discusses the view of agreement by cognitivists.

2.3 Perception and agreement as viewed in Cognitive Linguistics

This section studies the view of agreement as a cognitive act and in the work of some scholars (Comrie, 1975; Khan, 1984; Comrie, 1989; Dahl and Fraurud, 1996; Yamamoto, 1999; Brustad, 2000; Haspelmath, 2007, 2013; Bamyacı et al., 2014).[31] Agreement is perceived both as an indicator of someone's language style and as a linguistic phenomenon. In other words,

[31]It is worth mentioning that labelling the view presented in this section as cognitive does not suggest that agreement is not also linguistic. The view in this section takes cognitive factors into consideration and analyse the agreement patterns through this approach.

this view considers agreement a window on the speaker's mind-style; the speaker's choice of the agreement pattern tells much about the speaker's perception of the lexical items in the sentence. Typologically speaking, the effect of cognition on agreement is not usually discussed; many authors (Anderson, 1992; Corbett, 2006; Wechsler and Zlatić, 2003, among many others) consider agreement a matter of syntax, morphology or semantics. However according to Barlow and Ferguson (1988), there is a close connection between agreement and cognition; as a result, it is the speaker who really controls the agreement patterns obtained, not a head noun (Belnap, 1991), which makes agreement more of a cognitive act. In fact, Brustad (2000, p. 54) claims that "lexical items do not control agreement" and it is the speaker who "determines the semantic or pragmatic content" and chooses the agreement pattern.

I refer to cognition as perception to avoid a misconception with the field of cognitive linguistics. Perception (Cognition) includes salience, the notion of animacy, definiteness, and the individuation of a noun (interpretation of pluralisation). These notions may differ cross-linguistically and across speakers due to different cultural and personal matters. For example, the effect of perception and personalisation is discussed in assigning gender to new words in a study by Flaherty (2001). Flaherty speaks of how "the language gender system creeps into perception". The study shows that in some languages, the perception of the gender of some objects can be retrieved depending primarily on the attributes of the objects

in question (Hofstätter, 1963) as cited in (Flaherty, 2001, p. 19).

In fact, agreement may function as a secondary marker or classifier. For languages whose inflectional morphology marks a singular/plural distinction, agreement may function to indicate the classification or the perception of referents by the speaker. Agreement can indicate the plural interpretation either as a group or a collection (Barlow and Ferguson, 1988) since this distinction affects the agreement pattern obtained. That is, the relationship between cognition and agreement is a two-way street with cognitive factors affecting the choice of the agreement patterns, and agreement working as an indicator of the speaker's perception/state of cognition.

Some semantically plural nouns indicate an interpretation of collectivity where the noun is perceived to refer to a group or a collection, while others indicate an individuated meaning. In some varieties of English, at least in British English, the collective noun of *committee* can refer to the whole group dealing with all the members of the committee as one unit. Thus, an English speaker might singular agreement or plural agreement, as in (52).

(52) *The committee has/have agreed.* (Corbett, 2006, p. 2)

Collective nouns in some varieties of English allow the option of using either the singular or the plural marker on the verb. It depends on the meaning of the collective noun as intended by the speaker; i.e., if the collective noun refers to one group of individuals (collective reading), it requires a singular marker on the verb compared to when the

conceptualised meaning refers to individual members of the group (individual reading), which requires a plural marker on the verb. This concept was pretty much covered in the previous section. Corbett (2006) considers the choice in (52), a matter of semantics. On the other hand, I consider the interpretation of the plural of the noun a cognitive matter due to the fact that individuality is indicated by the following factors according to Belnap (1993) which are considered cognitive.

I discuss below some of the main concepts related to agreement in the perception-related view. These concepts relate and link to the factors discussed in the previous two models. Section 2.3.1 discusses animacy beyond the linguistic view which is different to the view by Corbett (2006), or the view by scholars studying Arabic agreement. Section 2.3.2 discusses salience and individuation in relation to agreement.

2.3.1 Animacy

The concept of animacy in linguistics goes beyond the fact of living versus non-living; animacy in linguistics is rather a continuum. Comrie (1989, p. 178) considers animacy as "an extra-linguistic conceptual property" and defines it as a hierarchy of degrees of animacy from the highest to the lowest as in: human >animal >inanimate with more or less fine distinctions between the components applied in various languages. For example, first and second person are frequently treated as more animate than the third person (Comrie, 1989,

p. 179). Animacy interacts with many parameters including but not restricted to, individuality, topicality, definiteness, semantic roles, and number. Comrie (1989, p. 181) considers a correlation between animacy and number in that number can either lower or raise animacy levels of a given noun. For instance, in Russian, plurality increases the likelihood of a noun phrase taking the special animate accusative ending. However, in Polish, plurality decreases the likelihood of a noun phrase taking the special animate accusative ending. On the other hand, in other languages, animacy can affect the existence versus the non-existence of number distinction. It is more common for nouns with higher animacy to have the distinction as compared to nouns with lower animacy (Comrie, 1989, p. 182). This distinction can be explained relating to individuality; where higher animate nouns are perceived as individuals; thus, countable whilst lower animate nouns can be perceived as 'an indeterminate mass'.[32] The existence of arbitrary correlations between other features and animacy is a proof of "the salience of animacy as a conceptual distinction" (Comrie, 1989).

Languages typically tend to mark plurality according to animacy (Comrie, 1989). For example, in Ancient Greek, Persian, Georgian (Comrie, 1989) and PA singular verbs agree with plural noun phrases that are lower in animacy, whereas plural verbs show agreement with higher animate plural nouns. Thus, the hierarchy of animacy can override grammatical relations. Animacy also affects the choice of gender. For instance, Oneidas use the masculine

[32]All factors affecting agreement are intertwined in such way that it is impossible to discuss one factor in isolation to the rest, and the boundaries are not clear between them.

gender when they tell tales where animals are anthropomorphised as opposed to the use of FZ (feminine gender) for animals in other contexts (Abbott, 1984).[33] As a result, animacy is a great indicator of speakers' perception; hence, its effect on agreement. According to Yamamoto (1999, p. 67), entities with higher animacy trigger "special linguistic markings and occupy salient positions in clauses and discourse." Not all animates are equally animate; therefore, Haspelmath's (2013) hierarchy of animacy presents the fine distinctions between certain noun categories.

(53) The Animacy Hierarchy:

Speaker >addressee >3rd person >kinship terms >other humans >higher animals >lower animals >discrete inanimates >non-discrete inanimates

(Haspelmath, 2013)

The animacy hierarchy is specific to cultures and languages, and levels of animacy are subject to get higher and lower based on many parameters which are not discussed here. Some languages make finer distinctions within the categories of the animacy hierarchy. In some cases, these distinctions are, as in Ritharngu "where the special accusative pronominal affix is used for humans and higher animals, while the affix is not used for lower animals, and inanimates" (Comrie, 1989, p. 189). Other languages, like Yidiny (Comrie, 1989), have rather a continuum than clear-cut distinctions. In PA, the data show food lexemes are at a

[33]Check Abbott (1984) for more details on the three gender values/markers of Oneida.

higher level than animals. I propose the following hierarchy for PA although proposing an animacy hierarchy is out of the scope of this thesis.

Human >Food Items >Animals >Inanimates [34]

Nevertheless, in some Arabic varieties (and RPA, and Bedouin dialects in PA) certain animal lexemes receive higher animacy levels. For instance, D'Anna (2017, p. 112) records "[t]he great consideration in which *horses* are held in the Bedouin environment"; the reason they control plural agreement in Fezzāni Arabic as in (57) below adopted from (D'Anna,

[34]Food items are placed higher than animals on the hierarchy of PA; the reason speakers of PA usually opt for plural agreement with food nouns as in the examples below.

(54) *ʔit-tuffaħ-āt* *ʔiz-zaky-āt*
DEF-apple-PL.F DEF-delicious-PL.F
'The delicious apples.' RPA

In (102), the plural head noun *ʔit-tuffaħ-āt* 'apples' triggers feminine plural agreement on the target *ʔiz-zaky-āt* 'the delicious'. If *ʔit-tuffaħ-āt* 'apples' followed the same rules as other non-human nouns, the most common agreement pattern triggered should be the deflected pattern.

(55) *ʔit-tuffaħ-āt* *ʔiz-zaky-īn*
DEF-apple-PL.F DEF-delicious-PL
'The delicious apples.' UPA

Similar to (102), (55) observes plural agreement between the head noun *ʔit-tuffaħ-āt* 'apples' and the target *ʔiz-zaky-īn* ' delicious' in UPA dialect which does not distinguish gender in the plural.

(56) *ʔit-tuffaħ-āt* *ʔiz-zaky-e*
DEF-apple-PL.F DEF-delicious-SG.F
'The delicious apples.' Less Common

Deflected agreement does exist with food items, though this pattern is less common in PA. In (56), the head noun *ʔit-tuffaħ-āt* 'apples' controls feminine singular agreement on the target *ʔiz-zaky-e* 'delicious'.

2017).[35]

(57) *iżi* *s-səbīb* *yūguṛnu* *b-ez-zōz* *w* *iżu*
3.M.come.SG DEF-horses 3.fasten.M.PL by-DEF-two and 3.come.M.PL
lāħd-īn *ʕāl eż-żāʕfa* *w* *idayyeru*
ACT.**ptcp!** (**ptcp!**).gallop-M.PL on DEF-palanquin and 3.move.away.M.PL
mən-ha *ġādi*
from-her there
'The horses arrive in pairs, galloping to the palanquin and moving away from it.'
(D'Anna, 2017, ex.23, p. 112).

In (57), the animal plural noun *s-səbīb* 'horses' triggers plural agreement on *yūguṛnu* 'fasten', *iżu* 'come', *lāħd-īn* 'galloping' and *idayyeru* 'move away'. It is worth mentioning there is not enough data to explain the singular marker on the verb *iżi* 'come' which could possibly be due to word order.

Finally, there is a link between animacy and the following linguistic phenomena (Comrie, 1989; Croft, 1990; Yamamoto, 1999). First, animacy affects number distinction; there is a correlation between higher animacy and overt singular versus plural distinction in noun phrases. For example, in Tiwi *wu ɾalaka* 'young girl' has the plural forms *wawu ɾalakawi* 'young girls'. On the other hand, the inanimate noun *waliwalini* 'ant/ants' has no distinction in number (Osborne, 1974). Moreover, there is a correlation between animacy and overt case marking. It has been debated in the literature that a highly animate noun determines a separate accusative case (Comrie, 1989) as in (Yamamoto, 1999). Moreover, in

[35] Glossing and transcription as in original source.

some languages like Russian, the animate/inanimate distinction can be initiated by different case markers on the noun (Wierzbicka, 1988). Initial word order is determined by animacy. Basically "the more strongly animate X is, the more likely it is to precede Y" (Leech et al., 1994). In Shona, for example, the animacy degree of the noun affects word order; so, human nouns precede non-human nouns, and inanimate nouns follow non-human nouns. Any change in order yields ungrammaticality. Additionally, animacy has an effect on subjecthood selection. Itagaki (1985) argues that the distinction between animate and inanimate nouns has a more significant statistical reading related to subjcethood than the distinction between human and animal nouns.[36] Finally, topicality is correlated with animacy. Similar to subjecthood, "noun phrases with animate/human reference are more topical than those with inanimate/non-human reference" (Yamamoto, 1999).

Based on the above, the effect of animacy on agreement is strong and is achieved through the various linguistic phenomena that are dependable on animacy. The next section discusses salience and individuation.

[36]There are other facts affecting Subjecthood as in topicality, and other cognitive factors as the speaker's perception and New information, etc. (*cf.* (Kuno and Kaburaki, 1977; Itagaki and Prideaux, 1983) and others).

2.3.2 Salience and Individuation

Similar to animacy, salience is a perception-related aspect of human language and involves the prominence of a word/a phrase in speech. Salience affects the agreement patterns obtained in some languages as "[t]he more salient the referent (human beings, for example) the more likely it is that plural agreement will obtain" (Belnap, 1999, p. 175). Belnap (1999) states that distinction in number and plural marking is a feature of salient nouns which is similar to the approach towards animacy. Thus, the highly animate nouns like nouns referring to humans will be marked for plurality for the aforementioned reasons, and will have a more salient position than other nouns in the same context. Salience or textual prominence affects the feature of individuation which also affects animacy, as shown in Khan's (1984) hierarchy.

Table 2.1: Khan's (1984) hierarchies of individuation as cited in (Brustad, 2000)

	Individuated/Salient	**non-individuated/Non-salient**
1.	Definite	Indefinite
2.	Non-reflective	Reflexive component
3.	Specific	Generic
4.	Concrete	Abstract
5.	Qualified	Unqualified
6.	Proper	Common
7.	1^st $>2^n$d $>3^r$d >Human	Inanimate
8.	Textually prominent	Incidental

The hierarchy of Individuation or Salience was developed to explain the qualities that account for object marking and agreement pronouns in Semitic. Nouns are more salient in an "immediate environment" (Brustad, 2000). Brustad modifies the above hierarchy into a continuum and lists the following features that affect individuation (Brustad, 2000, p. 24). Agency which includes animacy as well as definiteness and specificity versus genericness: having a specific entity in the speaker's mind. In addition, textual or physical prominence, qualification: "modification of the noun with adjectives", and quantification versus collectivity: numbers 2-20 specifying the cardinality of the noun are individuation characteristics.

A noun is considered individuated if it meets some or all of the features mentioned above.

Salience can account for cases like (58) below that were explained earlier as the result of the distance between the controller and the target.[37] It might, as well, be the case of textual prominence, as the head noun *ḥagaat* 'things' is in deflected agreement with *ʔahammiyyit-ha* 'their importance'. Whereas, the noun *ḥagaat* 'things' is more salient in the second clause which explains the plural agreement in number in *nirattib-hum* 'I order them'.

(58) *šiwayyit ḥagaat... miš bi-tartiib ʾahammiyyit-ha... wi-baᶜdeen nišuuf ʾiza kunna nirattib-hum*
few things not by-rank importance-their(F.SG) and-afterward I-see if I-were I-order-them(PL)
"...a few things...not in order of their importance...and afterward I'll see if we were ordering them." (Belnap, 1993, ex. 16, p. 86)

Regardless of the factor, the choice of the agreement pattern in (58) provides information regarding the state of individuation, the level of animacy and the state of salience for the noun *ḥagaat* 'things'.

To conclude, this section provided discussion of the view of agreement as a cognitive act. This view considers agreement an indicator of the speaker's perception and allows for the non-linguistic factors to control the agreement patterns obtained. The main perception-related factors are animacy and salience and individuation. I showed in this section that a

[37] Glossing and transcription as in Belnap (1993).

noun that has higher levels of animacy, individuation and salience triggers plural agreement as opposed to a noun with low animacy and salience levels which triggers singular agreement. The perception-related factors align very well with the linguistic factors discussed by Corbett (2006) earlier and I showed that some of the data in Arabic dialects are analysed through perception-related factors.

2.4 Models Summary and Conclusion

This chapter provided an introduction to three main models of agreement in the literature. Section 2.1 provided a discussion of the view of agreement as a linguistic phenomenon. The first view considers agreement a syntactic act which is affected by other linguistic factors. I provided a discussion of the various mechanisms of agreement that are applied in various frameworks in section 2.1.1 and I established that this thesis follows the LFG co-specification mechanism of analysis agreement. Moreover, I provided a discussion of the Agreement Hierarchy in section 2.1.2.3, as well as the types of agreement in section 2.1.2, which included the discussion of NP-internal agreement and NP-external agreement as well as CONCORD versus INDEX and syntactic versus semantic agreement.

The second view of agreement in section 2.2 provided a discussion of the view of agreement in the work concerning Arabic. I showed that agreement in Arabic is a complex matter due

to the variety of choices that are affected by linguistic factors. Section 2.2.1.1 provided a discussion of the two main agreement patterns in Arabic: the strict pattern and the deflected pattern. I provided evidence in section 2.2.1.2 that the deflected pattern is syntactic according to the definition by Corbett. Section 2.2.2 provided a summary of the factors affecting the agreement patterns as documented by scholars studying Arabic agreement including distance 2.2.2.1, animacy 2.2.2.3, and individuation 2.2.2.4. I showed that the distance factor aligns with the Agreement Hierarchy. It is true that the Agreement Hierarchy is not about the mere distance between the elements of agreement; however, I provided evidence that the distance factor which applies to agreement patterns in Arabic is parallel to the agreement hierarchy as semantic agreement increases monotonically moving rightwards on the hierarchy.

The final view of agreement in section 2.3 presents facts related to the view of agreement as a cognitive act that both indicates the speaker's perception and is affected by the speaker's perception. I provided discussion of animacy in section 2.3.1, and a discussion of salience and individuation in section 2.3.2.

Chapter 3

An Overview of Agreement in Palestinian Arabic

This Chapter gives an introduction to Palestinian Arabic (henceforth; PA), the focus language of this study: its history, origin, and language family. Section 3.1.1 discusses the morphology of PA including the variance in plural forms inflection between Urban Palestinian Arabic (henceforth; UPA) and Rural Palestinian Arabic (henceforth; RPA), gender and plural formation in nouns and adjectives. Section 3.1 provides details of the syntactic structure of PA including the main word order, various possible structures. Details about agreement patterns are discussed in section 3.2 including the (i) canonical cases, and (ii) cases that require extra analysis and can trigger more than one marker on the target as the case with adjectives modifying plural non-human nouns. Finally, section 3.5 shows how the application of the different agreement models discussed in chapter 2 fails to analyse all the

agreement patterns a speaker uses in PA. Conclusion of the whole chapter follows in section 3.6.

3.1 The Language

Palestinian Arabic is a spoken Arabic vernacular which is in its essence a variation of Modern Standard Arabic. Due to the political condition of the country, Palestinian Arabic also includes a high degree of Hebrew. The usage and integration of Hebrew is not identical across all areas of Palestine. Some cities experience a larger exposure due to location and politics. Thus, the percent of Hebrew influence on Palestinian Arabic varies across the country, but is inevitable; in fact, Palestinians living in the north (the so-called "state of Israel") learn and use Hebrew as a second language at least "out of expedience" (Amara, 1999, p. 85). The effect of both Modern Standard Arabic and Hebrew on the morphology and syntax of Palestinian Arabic is never to be ignored. In fact, some scholars study an "Educated Spoken Arabic" variety (Owens and Bani-Yasin, 1987) which is a variety of Arabic intermediate between Spoken Arabic and MSA. Other scholars refer to this language as "the intermediate language" or "the language of the intellectuals" (Versteegh, 2014, p. 236). Educated Spoken Arabic might show different agreement patterns. Nevertheless, I discuss agreement patterns in general in Palestine without specific reference to the educated

vernacular only. Throughout the thesis, a proper indexation of the examples as to whether they are ESP, PA might not be always feasible, especially for examples taken from the corpus (Corpus for Palestinian Arabic (Curras), 2016) and other social media sources due to the fact that the written form of Arabic does not necessarily reflect the phonological differences which can indicate the dialect. Therefore, it is challenging to label the examples according to the dialect. The same applies to the distinction between UPA and RPA.

3.1.1 Morphology

Arabic is a Semitic language (Kaye, 2009; Versteegh, 2014) in the same group with Hebrew (Horesh, 2014, p. 23), Aramaic, and Amharic. It is the official language of the Middle East with some variations between countries. The language underwent standardisation from the pre-Islamic era through the Islamic era until now. Modern Standard Arabic (MSA) is the language of written Arabic media, e.g., newspapers, books, journals, street signs, and advertisements – all forms of the printed word. It is also the language of public speaking and news broadcasts on radio and television (Ryding, 2005; Versteegh, 2014). Thus, Modern Standard Arabic has to be taught at schools starting from age 5/6 up to age 18 for a comprehensive cover of the syntax and morphology of the language.[1] Depending on the level of the education of the speaker and the area they live in, the morphology of Modern

[1] True for Palestine, at least, and some other countries.

Standard Arabic (MSA) and modern Hebrew might feed in the morphology of Palestinian Arabic which is the reason why examples from MSA are included in this study. In addition, speakers' judgements for PA might differ based on their MSA competence.

Palestinian Arabic is one variety of Arabic spoken as a native tongue in the Palestinian lands.[2] It is considered a Levantine dialect and it is in the same group with the Jordanian, Syrian and Lebanese dialects with slight differences between them.[3] Most of the population of Palestine are learners of Modern Standard Arabic. The surveys I have conducted show that most speakers of PA rely on their knowledge of MSA for the formation of the morphology of the language. The researcher is a native speaker of PA West Bank Urban dialect. The following section gives more details about (i) gender and number in general typologically, and in PA in particular; (ii) marking and formation processes through suffixation and (iii) the relevant differences between PA and MSA in that regard.

In addition, Palestinian Arabic can be grouped into three major dialects (according to the area where the language is spoken) due to the political situation of the country, which made it less easy for the three areas to mingle; hence exchange and communicate in person. Therefore, there is the Gaza Strip dialect (which obtains some features of Egyptian Arabic (Horesh, 2014, p. 13)), the West Bank dialect, and the Northern dialect in the occupied

[2]See (Horesh, 2014, p. 18) on the terminology. I agree on using the term "PA" to cover the dialect in the study.

[3]See Al-Wer (2013, p. 261–262) in Owens (2013) for more details on Jordanian and Palestinian Arabic.

lands, the "1948 lands". The last two dialects are very similar as claimed by Horesh (2014); yet, with some differences. As mentioned earlier, the dialect spoken in the "1948 lands" is highly influenced by Hebrew which affects the morphology and the syntax of PA in this area. I spotted different agreement patterns obtained in the "1948 lands" dialect. However, this study will focus on the dialect spoken in the West Bank; which can be further distinguished into sedentary (urban and rural) and the Bedouin dialect.

3.1.2 Number and Gender Systems

Languages undergo a change in their number and gender systems. Number is a nominal feature and it refers to the cardinality of the word it is associated with; i.e., the number of items/entities involved in the event or description of the word.[4] The values of number differ cross linguistically. English, for instance, distinguishes two values of number; namely, the singular (referring to one entity) and plural (referring to two or more entities) forms and meanings. Other languages might have more than two values of number, as in: singular >dual >trial/paucal >plural. MSA distinguishes three values for number: singular (one entity), dual (two entities) and plural (three or more entities) of all nouns and adjectives (verbs also inflect for the three values of number and usually agree with the nominal number values).[5] PA distinguishes mainly between three values: singular, dual and plural in all

[4]Corbett (2000) distinguishes two categories of number: the nominal and the verbal category of number.
[5]More on agreement in section 3.2

nouns and between two values: singular and non-singular (two or more) in adjectives and verbs. I use the term non-singular (two or more) to include dual (two) and plural (three or more), since Arabic recognises three number values; a reader might expect a similar number system amongst the targets.

Similar to number, gender is a nominal feature. Gender is a mechanism to classify nouns into classes where gender is reflected in the behaviour of the nouns (Hockett, 1958). In other words, nouns are grouped in classes of genders according to similar behaviour of the nouns in terms of morphology and syntax. Gender systems vary cross-linguistically. They can be absent in some languages and pervasive in others with some languages expressing a binary system of masculine versus feminine values; as Arabic (without any particular association with natural sex) which recognises masculine and feminine gender values. Other languages add a third value of a neuter gender as in Serbian/Croatian and some other Slovene varieties, among many other varieties. Hunzib is a language of five genders (Van den Berg, 2005). However, some Bantu languages have up to 23 different genders/classes of nouns (Katamba, 2003). Gender association, on the one hand, might be of semantic reasoning corresponding to a real distinction of sex. For example, *man* refers to the masculine gender; hence the assigning of the masculine value to the word whereas *woman* is of a feminine gender. On the other hand, gender can be assigned based on the morphology or the phonology of the language. Some languages apply more than one mechanism in gender assignment (Corbett,

1991, p. 8). In fact, MSA employs both mechanisms in gender assignment. Every noun that has a reference to a female human being is considered feminine. On the other hand, there are some morphological and phonological properties which when found in a lexeme specify the lexeme as feminine. This includes the [-a] ending in the majority of nouns. This is essential for this thesis as I argue that some gender assigning rules are inherited in PA from MSA. Moreover, some PA speakers pass the MSA gender assignment rules to PA.[6] The feminine gender in Arabic varieties carries out many functions; in fact, according to Fassi Fehri (2018), the feminine gender in Arabic (MSA and colloquial) "connects strongly to *individuation, quantity,* or *size*" despite the sex-based typology. Feminine also expresses "*evaluation* (depreciative, appreciation, endearing, etc.), *perspectivization* of plurality, and contributes to *performativity*". In fact, Fassi Fehri (2018) lists 9 uses of Gender which I do not cover here.

[6]I conduct a survey which is presented in Appendix A to provide evidence on PA speakers using MSA gender assignment rules in PA.

Nevertheless, what one language considers masculine; for instance, is not necessarily masculine in another language. For example, in English *sun* and *moon* are underspecified for gender; while in Modern Standard Arabic *ʃams* 'sun' is feminine and *qamar* 'moon' is masculine. In contrast, French *soleil* 'sun' is masculine and *lune* 'moon' is feminine (Shay, 2008, p. 19).[7] It should be mentioned that every Arabic noun in context manifests at least three features in vernacular Arabic; these include: definiteness, number and gender; whereas, nouns manifest five features in MSA: definiteness, case, gender, number, and humanness. Gender

[7]Consider the following examples as evidence on different gender assignment rules cross-linguistically. For instance, I can argue for the gender specification above by checking the agreement markers in the examples below.

(59) See the sun? It is shiny.

(60) See the moon? It is bright.

The underlined pronouns in (59) are examples of anaphoric agreement. The use of the pronoun *it* instead of *he* (M.Singular (SG)) or *she* (F.SG) indicates that *sun* and *moon* are underspecified in gender in English.

Unlike in English, in Arabic, *sun* and *moon* are referred to with pronouns indicating gender.

(61) *ʃāyif* *iʃ-ʃams* *ʔ hiyye* *ṭālʕ-a*
see.**actp!** (**actp!**).PTCP.SG.M DEF-sun.SG.F ? PRO.3.SG.F up.ACTP.PTCP-SG.F
'see the sun? It is up.'

The noun *iʃ-ʃams* 'sun' in (61) requires a feminine pronoun *hiyye* 'she' and triggers feminine agreement on the predicate *ṭālʕ-a* 'up'. (Some might argue that *ṭālʕ-a* 'up' is in agreement with the pronoun *hiyye* 'she' not with the noun *iʃ-ʃams* 'sun'. I discuss the marking of *ṭālʕ-a* 'up' to further support the argument for gender specification for *iʃ-ʃams* 'sun'.)

(62) *ʃāyif* *il-ʔamar* *ʔ huwwe* *ṭālʕ*
see.ACTP.PTCP.SG.M DEF-moon.SG. M ? PRO.3.SG.M up.ACTP.PTCP-SG.M
'see the moon? It is up.'

il-ʔamar 'moon' in (62) is masculine by virtue of a masculine pronoun *huwwe* 'he' and a masculine predicate *ṭālʕ* 'up'.

assignment is "semantically arbitrary" except for human nouns and nouns referring to other creatures where gender association "conforms with natural gender" (Ryding, 2005, p. 119).

Al-Sharkawi (2014) studies the development of gender in the Arabic dialects and states that dual number is "lost in the second and third persons of imperfective and perfective verbs". Moreover, the category of gender "is reduced in the urban dialects...[and nouns] lost gender distinction in the second and third persons plural". As a matter of fact, the reduction and loss in gender distinction in the plural extends to most Urban dialects of most Arabic varieties; "'[these groups do] not have a feminine plural agreement on the clause and sentence levels" (Al-Sharkawi, 2014, p. 92). In extension, this means that the pronoun *hum* 'they.PL' is no longer considered to have masculine reference only.

(63) *il-wlād* *hallaʔ* *iʒ-ū* *hummə* *kān-ū* *b-il-ʒāmiʕ*
DEF-boy.PL.M now come.PAST.PRF-3.PL PRO.3.PL be.PAST-3.PL in-DEF-mosque
'The boys have just arrived. They were at the mosque.' UPA

Notice how the verb *iʒ-ū* 'came' and the pronoun *hummə* 'they' are not marked for masculine in UPA, although the targets are in agreement with the noun *il-wlād* 'boys. Similarly, in (64), the same form of these targets is used in agreement with the feminine noun *il-banāt* 'girls'.

(64) *il-banāt* *hallaʔ* *iʒ-ū.* *hummə* *kān-ū* *b-il-ʒāmiʕ*
DEF-girl.PL.F now come.PAST.PRF-3.PL PRO.3.PL be.PAST-3.PL in-DEF-mosque
'The girls have just arrived, they were at the mosque.' UPA

The controller *il-banāt* is plural feminine and triggers plural agreement on the controllers *iʒ-ū hummə kān-ū* 'came, they were'.

Examples (63) and (64) show the use of one morphological form of the third plural pronoun to refer to either gender in UPA; *hummə* 'they', which is the result of gender development in Arabic urban dialects. On the other hand, 3.PL pronouns in RPA still retain gender distinction as shown through the use of different morphological forms of the 3.PL pronoun in (65) *hummə* 'they.M' and in (66) *hinnə* 'they.F'.

(65) *il-wlād* *hallaʔ* *iʒ-ū* *hummə* *kān-ū*
DEF-boy.PL.M now come.PAST.PRF-3.PL.M PRO.3.PL.M be.PAST-3.PL.M
b-il-ʒāmiʕ
in-DEF-mosque
'The boys have just arrived. They were at the mosque.' RPA

Notice the glossing in (65). Since RPA is a gender-distinguishing dialect, the same forms used in (63) are specified for gender in (65). By the same token, (66) is the rural equivalent of (64).

(66) *il-banāt* *hallaʔ* *iʒ-in.* *hinnə* *kān-in*
DEF-girl.PL.F now come.PAST.PRF-3.F.PL PRO.3.F.PL be.PAST-3.F.PL
b-il-ʒāmiʕ
in-DEF-mosque
'The girls have just arrived, they were at the mosque.' RPA

Example (64) uses a feminine 3.PL pronoun *hinnə* 'they.F' in reference to *il-banāt* 'girls'.

Having said this, this study includes examples from both UPA and RPA due to the interesting patterns of agreement found in the dialects. To reiterate, this section provided a detailed discussion of PA. I discussed the fact that there are various dialects in PA with certain agreement patterns available to certain dialects only. I provided details of the morphological system in MSA and PA including the discussion of number and gender systems in PA. I stated that the default features of a nominal are masculine singular with each noun manifesting gender, number and definiteness features in PA. Furthermore, I showed that nominals in PA inflect for two gender values and three number values whilst adjectives and verbs inflect for two number values only. The next section provides more details concerning the inflectional system.

3.1.3 The Inflectional System in PA and MSA.

I established earlier that each noun in MSA and in PA manifests certain properties including gender and number. However, the assignment of these features to the noun can differ between PA and MSA. This section provides an overview of the inflectional (morphology) rules in PA and MSA. The default form of a given noun in MSA is singular masculine which can be, with most nouns (except for inanimate nouns which are either inherently masculine or feminine), further inflected to display a singular feminine noun by adding [-a], or other phonological allophones, and any of the number values in the language. Recall MSA nouns

can be dual. A singular noun is inflected through suffixation to form a dual noun. I do not provide details of the dual suffixes in MSA due to the fact each nominal case has a certain dual suffix. The main point is that MSA singular nouns can be inflected into dual and into plural. One of the key features that affect the inflection of nouns in MSA into plural nouns is the feature of humanness (See Ryding (2005) for further details). A singular human noun in MSA can be inflected into masculine dual, masculine plural, feminine singular, feminine dual, and feminine plural. PA, similarly to MSA, observes three types of plural forms; sound masculine, sound feminine, and broken plural forms (explained below in more detail).[8]

Table 3.1 below shows the inflection mechanism applied in the formation of nominative forms in MSA of the noun *ʕamil* 'worker'; the same mechanism applies to the inflection of adjectives describing human nouns in MSA, as well.[9] Non-human nouns differ in the absence of sound feminine plural forms regardless of the gender of the singular non-human noun, as in table 3.2 below.[10]

Table 3.1: Arabic Nouns: Gender & Number in MSA

Noun	Masculine (NOM)	Feminine (NOM)	Meaning
Singular	ʕāmil-un	ʕāmil-at-un	worker
Dual	ʕāmil-ān	ʕāmil-at-ān	two workers
Plural	ʕāmil-ūn	ʕāmil-āt-un	more than two workers

[8]The discussion of gender specification and broken plurals is presented later in this chapter.

[9]Notice that the suffix has different forms in genitive and accusative cases; Each noun (regardless of the number and gender) in MSA can be suffixed to either of the three cases: the nominative [-u], the accusative [-a], and the genitive [-i]. However, this study is more concerned with PA, but a curious reader can refer to Ryding (2005) for more details.

[10]Non-nominative forms are not listed for ease of reference and due to the fact this thesis focuses on spoken Arabic varieties which lost phonological case markers.

Table 3.2: Arabic (Nominative) Non-human Nouns: Gender & Number in MSA

Singular Noun	Dual	Plural
kitāb-un	kitāb-ān	kutub-un
book.SG.M-NOM	book-DU.NOM	book.PL-NOM
ṭawil-at-un	ṭawil-at-ān	ṭawil-āt-un
table-SG.F-NOM	table-F-DU.NOM	table-PL.F-NOM
mirwaħ-at-un	mirwaħ-at-ān	marāwiħ-u
fan-SG.F-NOM	fan-F-DU.NOM	fan-PL-NOM

On the other hand, the inflection of nouns in PA is different from MSA considering gender specification issues with some plural nouns in PA and the lack of overt case marking in PA. The inflection mechanism applied to human nouns in MSA is also applied to adjectives as shown in table 3.3.

Table 3.3: Adjective Inflection in MSA

Adjective	Masculine (Nominative (NOM))	Feminine (NOM)	Meaning
Singular	sarīʕ-un	sarīʕa-t-un	'fast': modifies one entity
Dual	sarīʕ-ān	sarīʕa-t-ān	'fast': modifies two entities
Plural	sarīʕ-ūn	sarīʕāt-un	'fast': modifies 3^{+} fast entities

Table 3.4 provides examples of the pluralisation of two human nouns in PA. Notice the absence of endings (case markers) on the noun. Moreover, in PA, adjectives do not represent duality which explains the paradigm in table 3.5. Finally, gender assignment is associated with humanness; which is the reason for the existence of one non-singular form in table 3.6.

Notice in table 3.6 the absence of all non-singular forms except the masculine plural form. This applies to adjectives modifying non-human nouns.

Table 3.4: Plural Formation in PA

Noun	Masculine	Feminine	Meaning
Singular	muhandis	muhandis-ə	one engineer
Dual	muhandis-ēn	muhandis-t-ēn	two engineers
Plural	muhandis-īn	muhandis-āt	more than two engineers

Table 3.5: Adjective Inflection in PA

Adjective	Masculine (NOM)	Feminine (NOM)	Meaning
Singular	sarīʕ	saīʕa-a	one fast person
Dual	-	-	-
Plural	sarīʕ-īn	sarīʕāt	2^{+} fast persons

3.1.4 Plural Formation

So far, I discussed the fact that PA nouns have three number values which a noun can be inflected for. However, the pluralisation process is not very simple; in fact, there can be more than one plural form of a noun. Moreover, each plural form can trigger a certain agreement pattern. In order to understand pluralisation in PA, I have to discuss the process in MSA. There are two main processes for plural formation in MSA; sound plural formation (through suffixation), and broken plural formation (through an internal change to the vowel). To add to the complexity, MSA has various patterns for broken plural formation with each pattern applying to a specific phonological arrangement, what Arabic grammarians label as "templates"; "[t]here are thirty-two different vocalic patterns associated with the broken plural" (Zabbal, 2002, p. 15). Templates are sequences of vocalic patterns with each template having specific inflection properties. Broken plural templates differ according

Table 3.6: Adjective (modifying non-human nouns) Inflection in PA

Adjective	Masculine (NOM)	Feminine (NOM)	Meaning
Singular	sarīʔ	saīʔa-a	one fast element
Dual	-	-	-
Plural	sarīʔ-īn	-	2^{+} fast element

to the phonology of the singular form bearing in mind that it is feasible for some nouns in MSA to have two (or more) different plural forms with subtle semantic differences.[11] This usually happens when the singular noun has two broken plural forms with one denoting 'a plural of paucity' and the other expressing the plural of the many (Ryding, 2005, p. 148). For example, *nahr* 'river.SG.M' is pluralised both as *ʔanhur* 'river.PL'/ *ʔanhār* 'river.PL' or *nuhūr* 'river.PL'. The first plural form *ʔanhur* 'river.PL' is a plural of paucity (Ryding, 2005) meaning a few rivers. The semantic differences are bleached in PA, and the three forms are used interchangeably with proper use of quantifiers, if necessary to specify paucity. However, the form *ʔanhār* is more common than the others in PA with no specific reasoning or justification.

Similar to *nahr* 'river', *kātib* 'writer.M.SG' can be broken pluralised in MSA into *kuttāb* 'writers' or *kataba* 'writers' with a semantic difference. The former; *kuttāb* 'writers', means a group of writers; while the latter; *kataba* 'writers' refers to a specific group of writers known to script one thing; for example, the writers of the Holy Qur'an. (See Ryding (2005, p. 132) for more details and examples). In regard to the process of plural formation in PA,

[11] This could be two or more broken plural forms or a broken plural form and a sound plural form.

speakers tend to shuffle the various patterns of pluralisation in the language bleaching out all or some of the semantic differences. Thus, all the plural forms of *nahr* 'river' are used interchangeably: *ʔanhār* 'rivers' and *ʔanhur* 'rivers'.

Another difference between PA and MSA in terms of plural inflection lies in the fact that kind nouns are treated differently in PA and MSA; some singular nouns in MSA indicate a plural meaning as in *ɣubz* 'bread.SG$_k$.M' ('k' for kind).[12] However, unlike English, these nouns can be pluralised in MSA yielding a plural of paucity, so, *ʔaɣbāz* 'bread.PL' meaning a small amount of bread loaves. In PA, the singular kind noun is used indicating a plural meaning with no reference to the amount, thus, triggering singular agreement on the targets of the kind noun. In other words, the noun is singular morphologically and syntactically, but plural semantically. Speakers of PA use the form *ɣubz* 'bread.SG$_k$.M' and modify, if necessary, the meaning with a proper use of quantifiers to indicate paucity. The discussion of kind nouns is important to the study of agreement as kind nouns trigger a certain agreement pattern on their target unlike the agreement patterns triggered by other nouns. In fact, I consider the distinction of noun into kind nouns and other types one of the agreement factors in PA. [13]

It is worth mentioning that with some other kind nouns in MSA, a single entity can be initiated through generating a feminine singular form of the noun by the addition of the

[12]The underscript 'k' $_k$ indicates the noun refers to the general kind not a single entity.

[13]This topic is revisited in more detail and in reference to Fassi Fehri's (2018) distinction of "committee groups" versus "collection groups" later.

feminine suffix [-a] forming a "singulative" (Fassi Fehri, 2018) in which the feminine "plays the same role as an individualising classifier" (Fassi Fehri, 2018, p. 4). *baqar* 'cow.SG$_k$.M' is a singular kind noun with a broken plural form of paucity *ʔabqār* 'cow.PL'. However a single cow is *baqar-a* 'cow.SG$_u$.F' ('u' for unit) with a sound feminine plural *baqar-āt* 'cow-PL.F'.[14,15] Nevertheless, The patterns are different in PA. *baqar* 'cow.SG$_k$.M' is a singular kind noun, *baqar-a* 'cow.SG$_u$.F' is a single entity/unit noun with one plural form (of both singular forms): *ʔabqār* 'cow.PL'. Some speakers in PA use the form *baqar-āt* 'cow-PL.F' with no semantic differences. But *ʔabqār* 'cow.PL' is more common.

To provide evidence on PA speakers' distinction of the different plural forms of a noun, I conducted a survey on the interpretation and the use of the forms *baqar-a* 'cow.SG$_u$.F', *ʔabqār* 'cow.PL', and *baqar* 'cow.SG$_k$.M' in PA. I present the survey including the data and interpretation of the results in Appendix A. The survey reflects the views of PA speakers including the fact that they consider certain contexts for each of the forms above. More interestingly, they consultants who participated in the survey indicated a semantic difference between the forms. Most consultants acknowledged the fact they base their judgements on MSA.

The extension of MSA language rules to PA by literate speakers is more the norm. In fact, I conducted another survey that studies gender assignment to nouns in PA. The consultants

[14]The underscript 'u' $_u$ indicates a single unit of the kind.
[15]There are subtle semantic differences between the two plural forms outside the scope of this thesis.

were presented with a list of words and were asked to assign a gender value for each of the nouns. The majority of the consultants based the gender of the plural nouns on the gender of the corresponding singular form. It should be noted that it is not necessarily the case in PA for plural nouns to acquire the gender of the singular counterpart. I believe the finding that PA speakers assigned a gender value to plural non-human nouns is quite important for the thesis. The findings of this survey should not be extended to other Arabic vernaculars. I present the survey including the nouns, data and analysis of the results in Appendix B.

Previous scholars (Belnap, 1999; Bettega, 2017; Fassi Fehri, 2018) argue that nouns with broken plural forms show no gender distinction (in the plural) in the spoken dialects, despite the gender value assigned to the singular form. For instance, *kursi* 'chair.SG' is masculine in the singular; but shows no gender distinction in its broken plural form *karāsi* 'chairs.PL'. In other words, (Belnap, 1999; Bettega, 2017; Fassi Fehri, 2018) consider *kursi* 'chair.SG' to trigger masculine agreement according to the gender value of *kursi* 'chair.SG', which is masculine. On the other hand, since they claim *karāsi* 'chairs.PL' is not specified for gender, it does not trigger a certain gender value on its target.[16]

To sum up, this section discussed the inflectional system in PA including the different suffixes applied to a nominal to instantiate different gender and number values.[17] More

[16]The fact that *karāsi* 'chairs.PL' triggers singular feminine does not mean it is feminine. The marker in agreement with *karāsi* 'chairs.PL' is the singular. I explain the association of feminine and singular in Chapter 4.

[17]Gender is established to be an inflectional category in Arabic.

focus was provided on the formation of plural forms, and I showed that some nouns have more than one plural form with or without semantic differences. Additionally, I stated that there are two main plural forms in PA: the sound plural form which is gender-distinguishing and the broken plural form which is underspecified for gender. The next section introduces the main agreement patterns in PA.

3.2 Agreement Patterns

This section discusses the various agreement patterns found in PA between the head and its modifier(s), as well as, the predicate and the subject. The target usually agrees with the controller in number and gender (and definiteness) in PA.[18] There are three main patterns obtained in PA: the full agreement pattern section 3.2.1, the deflected agreement pattern section 3.2.2, and the kind-noun agreement pattern section 3.2.3. It should be noted the patterns discussed in the following section apply to Arabic varieties only and are used by scholars studying agreement in Arabic only (*cf.* chapter 2, section 2.2.1.1 for the correspondence between agreement patterns in Arabic and agreement ad formam and agreement as sensum.)

[18]Not much focus is put on definiteness in this thesis.

3.2.1 Full agreement

This pattern (also known as strict agreement in the work of Al-Jarf (2016); Bettega (2017); D'Anna (2017); Ritt-Benmimoun (2017); Prochazáka and Gabsi (2017)) is obtained when the target and the controller share the same values of their features; for instance, both the noun and the modifier are masculine plural. This pattern is common with masculine human head nouns. However, there are some exceptions to this rule and these are usually discourse-driven. Consider the following example (in UPA) illustrating the full agreement pattern. In (67) below, the controller is the indefinite sound plural masculine noun *muhandis-īn* 'engineers' which is modified by the plural masculine adjective *ʃaṭr-īn* 'good'.

(67) *hād l-bēt ʃuġul muhandis-īn ʃāṭr-īn*
this DEF-house.SG.M work.SG.M engineer-PL.M.GEN good-PL.M
'This house is the work of some good engineers.' UPA

The pattern illustrated in (67) is the full pattern which is common with human nouns in PA, especially with masculine controllers.

3.2.2 Deflected agreement

This pattern (Al-Jarf, 2016; Bettega, 2017; D'Anna, 2017; Ritt-Benmimoun, 2017; Prochazáka and Gabsi, 2017) is obtained when a plural head noun (regardless of its gender) controls a feminine singular target. This is common with inanimate and non-human plu-

ral nouns taking into consideration this is not always the case and other patterns can be discourse-driven. In (68), the agreement pattern is deflected; which is found in many spoken Arabic varieties (Al-Jarf, 2016; Bettega, 2017; D'Anna, 2017; Ritt-Benmimoun, 2017, and many others)

(68) *il-karāsi* *l-kbīr-e* *ktīr* *ġāly-e*
DEF-chair.PL DEF-big-SG.F very expensive-SG.F
'The big chairs are very expensive'. UPA

In (68), the broken plural controller *il-karāsi* 'chairs' is modified by the singular feminine adjective *l-kbīr-e* 'big'. This pattern is very common with non-human nouns, broken plural nouns and plural nouns with collective referencing. In addition to the modifier *l-kbīr-e* 'big', the predicate ġāly-e 'expensive' is also feminine singular as per deflected agreement.

3.2.3 Kind-noun agreement

I use this term to refer to cases where a semantically plural noun controls masculine singular agreement on the target. In (69) below, the singular kind noun (morphologically singular, semantically plural) *namil* 'ants' is modified by a singular masculine adjective *iz-zġīr* 'small' as per kind-noun agreement.

(69) *ʔana* *b-axāf* *min* *n-namil* *z-zġīr*
PRO.1.SG 1.SG-fear.**indic!** (**indic!**) from DEF-ant.SG.M DEF-small.SG.M
'I am afraid of small ants (general (collective) reference).' UPA

Kind-noun agreement as in (69) occurs when the target agrees with the morphological features of the controller, as opposed to semantic agreement that refers to agreement with the semantic features of the controller; i.e., if the target *iz-zġīr* 'small' in (69) were to agree semantically, one should end up with a plural marker on the adjective as in (70) below.

(70) **ʔana b-axāf min in-namil iz-zġār*
PRO.1.SG **ipfv!** (**ipfv!**)-1.SG-fear.INDIC from DEF-ant.SG.M DEF-small.PL
'I am afraid of small ants.'

The reason (70) is marked with an asterisk is because the only agreement pattern triggered by kind nouns is the kind-noun pattern. Examples (67–70) show NP-internal agreement. To conclude, this section presented examples of the common agreement patterns in PA which are full agreement, deflected agreement and kind-noun agreement. The next section provides details concerning canonical and non-canonical cases of agreement in PA.

3.3 (Non)Canonical agreement patterns in PA

In the following sections, I describe the agreement patterns found in PA in two groups; canonical patterns refer to the cases which are considered the clearest and simplest (Corbett, 2006). Additionally, they are the syntactically simplest pattern when the target matches the controller in its features and values; in addition, they are "redundant" rather than "informative" (Corbett, 2006). On the other hand, the second group, referred to as *non-*

canonical cases, includes what is considered to be a deviation from the canonical patterns and can fall under predictable or un-predictable "mismatches" (Corbett, 2006).[19] It is worth mentioning that deviations occur due to factors related to both or either of the controller or the target (Corbett, 2006), and can also be discourse-driven or affected by the speaker's perception.

3.3.1 Canonical patterns

These patterns, in most Arabic varieties, are common with all singular nouns, and most plural human nouns (especially masculine ones), and some plural non-human nouns in certain RPA dialects, as shown in the examples below both in UPA and RPA explaining the differences between these two dialects (only in the plural forms of the adjectives). Section 3.3.1.1 provides examples of canonical patterns triggered by masculine human nouns. Canonical patterns triggered by feminine human nouns are provided in section 3.3.1.2. Finally, section 3.3.1.3 provides examples of non-human nouns triggering canonical agreement patterns in PA.

[19] I refrain from using the term *mismatches* as I believe these cases are grammatical according to the grammar of the language and are highly predictable. All these cases can be analysed by the poly-factorial model of agreement I propose, as opposed to some of the cases Corbett's model fails to analyse. More details in section 3.5

3.3.1.1 Masculine Human Nouns

Masculine human nouns are known to show full agreement patterns in all their number values as below. In (71), the masculine singular adjective *ṭawīl* 'tall' modifies the common proper name *ʔaħmad* 'Ahmed' as per full agreement.

(71) *ʔaħmad* *eṭ-ṭawīl*
Ahmed.SG.M DEF-tall.SG.M
'Tall Ahmed.' UPA/RPA

In (71), all elements have the same marking; singular masculine. The above pattern applies to both UPA and RPA.

By the same token, dual masculine human nouns control full agreement on their modifiers as in (72).[20] Recall that spoken Arabic varieties (including PA) have lost dual formation suffixes in adjectives and verbs.

(72) *walad-ēn* *ṭwāl*
boy.**dual!** (**dual!**).M tall.PL
'Two tall boys.' UPA/RPA

In (72), there is no distinction between UPA and RPA due to the fact the form ṭwāl 'tall'

[20]Some might argue this is a case of mismatch since the noun and the modifiers show different number values. It is worth mentioning that in PA and other Arabic varieties, number system in lexical items other than nouns includes two number values only: singular and plural. Nevertheless, I do not label the case in (72) a mismatch as I consider dual subsidiary to non-singular. In other words, both the modifier and the head noun in (72) show non-singular values.

exists in both dialects, and is broken plural which some scholars consider a form underspecified for gender.[21]

Finally, consider (73) and (74) below on full agreement between a plural masculine human head noun and its modifier.

(73) *ʔawlād ṭwāl*
boy.PL.M tall.PL
'Tall boys.' UPA

Example (73) in UPA features a plural adjective *ṭwāl* 'tall' modifying the plural noun *ʔawlād* 'boys'. Similarly, Rural PA exhibits the same pattern in (74).

(74) *ʔawlād ṭawīl-īn/ṭwāl*
boy.PL.M tall-PL.M/.PL
'Tall boys.' RPA

Notice the existence of both forms of the plural (a gender non-distinguishing broken plural form *ṭwāl* 'tall' and a gender distinguishing sound masculine form *ṭawīl-īn* 'tall') in RPA.[22]

3.3.1.2 Feminine Human Nouns

This section provides examples of the canonical agreement patterns observed with feminine human nouns. A full pattern is observed in (75).

[21] See section 3.1.4 for the discussion.
[22] See (Alhailawani, 2018) for similar examples in Jordanian Arabic.

(75) *maryam* *eṭ-ṭawīl-e*
Mary.SG.F DEF-tall-SG.F
'The tall Mary.' UPA/RPA

In (75), the proper name *maryam* 'Mary' is modified by the singular feminine adjective *eṭ-ṭawīl-e* 'tall'. This pattern is evident in both UPA and RPA. Similarly, dual feminine human nouns observe full agreement in RPA, as in (76).

(76) *bint-ēn* *ṭawīl-āt*
girl-DUAL.F tall-PL.F
'Two tall girls.' RPA

Rural speakers use a feminine sound plural form of the adjective *ṭawīl-āt* 'tall' to modify non-singular (in this case, dual) feminine nouns. On the other hand, the non-distinguishing dialect of UPA, uses a broken form of the adjective *ṭwāl* 'tall' as in (77).

(77) *bint-ēn* *ṭwāl*
girl-DUAL.F tall.PL
'Two tall girls.' UPA

Although this dialect does not permit the use of a morphologically marked feminine adjective, (77) is considered full agreement due to the fact the target *ṭwāl* 'tall' and the controller *bint-ēn* 'girls' agree in all the morphological features. Finally, a plural feminine noun *banāt* 'girls' in RPA controls a plural feminine adjective *ṭawīl-āt* 'tall' as in (78). It is

interesting how speakers of RPA form a sound feminine plural form of almost all singular nouns, when most UPA speakers use broken forms, as in (80) below.

(78) *banāt* *ṭawīl-āt*
girl.PL.F tall-PL.F
'Tall girls.' RPA

In (78) in RPA, the adjective is specified for gender and agrees with the controller *banāt* 'girls'. Compare this to the pattern in UPA in (79) and notice the glossing on the adjective *ṭwāl* 'tall' which is underspecified in gender.

(79) *banāt* *ṭwāl*
girl.PL.F tall.PL
'Tall girls.' UPA

The head noun *banāt* 'girls' is modified by the plural adjective *ṭwāl* 'tall' as per full agreement.

In an informal conversation I had with a bus driver in Palestine who speaks Rural PA, the driver used feminine plural in all the occurrences with the word *banāt* 'girls'. More interestingly, the speaker produced sound feminine plural forms for words that are normally broken pluralised in PA.[23] For instance, (80) was recorded by the author.

[23]The speaker is from the suburbs of Shweika, a town near to the city of Tulkarem.

(80) *ʔay qasam-an b-il-lā ʔil-banāt kulh-in habl-āt*
filler oath-**acc!** (**acc!**) in-DEF-God DEF-girl.F.PL all-PL.F fool-PL.F
'I swear to God, all girls are fools.'

Despite the sexist opinion of the driver above, the use of sound feminine plural in all nouns as in *banāt* 'girls' and targets as in *habl-āt* 'fool', and *kulh-in* 'all of them' in the rural dialect is quite interesting because it shows the capacity of gender assignment to plural nouns in RPA as opposed to UPA. On the other hand, the adjective *ʔahbal* 'fool.SG' is masculine singular and is broken pluralised to *hubul* 'fool.PL' in all urban dialects and most rural dialects. (80) and other examples show the behaviour of RPA dialects, and the commitment to gender specify all forms of the plural.

3.3.1.3 Non-human nouns

This section presents the patterns triggered by non-human nouns in PA. Canonical patterns are not restricted to human nouns only. In fact, all singular nouns in PA observe this pattern as seen in the following examples. (81) below shows full agreement between the head *ħṣān* 'horse' and its modifier *sarīʕ* 'fast'.

(81) *ħṣān sarīʕ*
horse.SG.M fast.SG.M
'A fast horse.'

The singular masculine head noun *ħṣān* 'horse' is modified by a singular masculine

adjective *sarīʕ* 'fast' matching all its features. By the same token, a feminine singular head noun *ʔuṭṭ-a* 'she-cat' is modified by a feminine singular adjective *sarīʕ-a* 'fast' as per full agreement.

(82) *ʔuṭṭ-a* *sarīʕ-a*
cat-SG.F fast-SG.F
'A fast cat'

In (82), full agreement is observed between the elements of the sentence. Thus, singular animal nouns observe full agreement with their modifiers and predicates. Full agreement is also observed with singular inanimate nouns as in (83).

(83) *ʔiʃ-ʃaʒar-a* *ʔil-ʕāly-e*
DEF-tree-SG.F DEF-high-SG.F
'The tall tree.'

I see in (83) how the singular feminine noun *ʔiʃ-ʃaʒar-a* 'tree' is modified by the singular feminine adjective *ʔil-ʕāly-e* 'tall' as per full agreement.

Similarly, I observe the same pattern with the inanimate noun *ṭawl-a* 'table' in (84).

(84) *ṭawl-a* *ṭawīl-e*
table-SG.F tall-SG.F
'A big table.'

In (84), the adjective is feminine *ṭawīl-e* 'tall' following the head noun *ṭawl-a* 'table' in all its features.

This section provided examples of the canonical agreement patterns found in RPA and UPA including singular head nouns and their modifiers and predicates, as well as non-singular human nouns. Recall that scholars studying agreement in Arabic use the term strict agreement pattern to refer to agreement patterns triggered by plural nouns that trigger plural markers on the targets. I use the term full agreement to refer to strict agreement patterns in addition to the agreement pattern triggered by singular nouns in PA on singular targets. In addition, singular non-human nouns trigger full agreement. The following section is concerned with nouns triggering non-canonical patterns in PA: deflected section 3.3.3 and kind-noun section 3.2.3 patterns.

3.3.2 Non-canonical Patterns

This section provides examples and discussion of all the cases in PA where agreement *deviates* from the canonical/full agreement pattern. These include cases where the plural head noun is modified or controls singular agreement on the target; as well as, cases of mismatching gender values between the controller and the target. These patterns are common with non-human and inanimate plural nouns as well as some human nouns as shown in the examples below. Non-canonical cases include the deflected pattern section 3.3.3 and the syntactic pattern.

Kind-noun agreement was covered in section 3.2.3. Basically, kind-noun00000 agreement

is triggered by nouns of kind which are singular morphologically but have a plural reference, as in *ba?ar* 'cow.SG$_k$.M. Kind nouns trigger singular masculine on their targets. See example (69) presented earlier.

3.3.3 Deflected Agreement

This section provides examples containing deflected agreement in PA. Section 3.3.3.1 discusses deflected agreement triggered by plural animal nouns. Section 3.3.3.2 provides examples triggered by plural inanimate nouns illustrating deflected agreement. Finally, section 3.3.3.3 discusses some human nouns that trigger deflected agreement.

3.3.3.1 Animal nouns

First of all, non-human nouns; i.e., nouns referring to animals and other animates usually trigger singular feminine agreement on the targets. This is a common pattern in most Spoken Arabic varieties, and Belnap (1999); Bettega (2017); D'Anna (2017); Ritt-Benmimoun (2017) (and many others) provide examples in Cairene Arabic, Omani, Fezzāni Arabic, and Tunisian; respectively, on the same matter. The explanation behind this behaviour is due to the effect of animacy and individuation on agreement which is covered in more detail in chapter 4. Similarly, speakers of PA follow the same behaviour observed in the languages above. (85) demonstrates deflected agreement in PA.

(85) *ʔaħṣine sarīʕ-a*
horse.PL fast-SG.F
'Fast horses.' UPA/RPA

The feminine singular adjective *sarīʕ-a* 'fast' modifies the plural animal noun *ʔaħṣine* 'horses' reflecting deflected agreement. The fact that plural animal nouns trigger deflected agreement on their targets does not necessarily mean that animal nouns are considered feminine. Recall my earlier discussion concerning gender assignment in PA section 3.1.3, and refer to Appendix A for the survey conducted on this matter. However, I explain the association between singular and feminine in chapter 4. This pattern applies to all UPA dialects and most RPA dialects. It is worth mentioning that in some RPA towns and villages, speakers opt for full agreement on the adjective modifying the plural animal noun, as in (86) below from the dialect of Tubas.[24] I explain in chapter 4 why I think this is the case with similar examples.

(86) *ratʃāḍḍ-āt ʕinna b-il-ħakūra baladiyy-āt*
hen-F.PL have.1.PL in-DEF-farm.F.SG local-F.PL
'We have some local hens in the farm here.' RPA, (Sukaj, 2017)

Despite the common behaviour found in PA with animal nouns, the sound feminine plural head noun *ratʃāḍḍ-āt* 'chickens' is modified by a sound feminine plural adjective *baladiyy-āt* 'local' as per full agreement. (86) offers further support on RPA commitments

[24]The use of the particular noun *ratʃāḍḍ-āt* 'chickens' indicates the place in Palestine this example is picked from.

to full agreement and gender specification. Thus, at least in RPA, plural animal nouns trigger deflected agreement or full agreement on their modifiers; therefore, placed intermediary between human noun and inanimate nouns which is also reflected on the animacy hierarchy in PA.

3.3.3.2 Inanimate nouns

Similar to plural animal nouns, plural inanimate nouns observe deflected agreement in PA as in (87).

(87) *ṭawl-āt* *ħilw-e*
table-PL.F beautiful-SG.F
'Beautiful tables.'

The head noun *ṭawl-āt* 'tables' is modified by a singular feminine adjective *ħilw-e* 'beautiful' as per deflected agreement. In (88) a singular feminine adjective *kbīr-e* 'big' is used to modify the plural inanimate noun *ħʒāra* 'stones'.

(88) *ħʒāra* *kbīr-e*
stone.PL big-SG.F
'big stones'

In (88), the head noun *ħʒāra* 'stones' is plural and it triggers feminine singular on the

target *kbīr-e* 'big'.[25] Similar to inanimate plural nouns, borrowed nouns into Arabic, regardless of their animacy status, require feminine agreement in their plural forms, as in (89).

(89) *ʔil-mubayl-āt* *ʔil-ġaly-e*
DEF-mobile.phone-PL.F DEF-expensive-SG.F
'The expensive mobile phones'

In (89), the inanimate borrowed noun *ʔil-mubayl-āt* 'mobile phones' triggers deflected agreement on the modifying adjective *ʔil-ġaly-e* 'expensive'. It is worth mentioning that most borrowed nouns in PA have a sound feminine plural (ending in [-*āt*]).

3.3.3.3 Human nouns

So far, I have provided examples of the deflected agreement pattern with animal and inanimate head nouns (non-human nouns). However, these are not the only cases where this pattern is observed. Speakers of PA obtain the deflected pattern, as well, with some human nouns as shown in the following examples. This section provides examples of human nouns triggering non-canonical patterns instead of the canonical patterns covered in section 3.3.1 Patterns.

[25] Some speakers might argue that *ħʒāra* 'stones' is feminine for two reasons. Firstly, the ending [-a] is commonly mistaken for a feminine singular inflection, which is not the case here. Recall the discussion of gender assignment in 3.1.2. In addition, some speakers marked *ħʒāra* 'stones' feminine based on the agreement pattern the noun *ħʒāra* 'stones' triggers.

Additionally, this section introduces what I call 'doublet' nouns in PA. These are plural nouns with human reference; yet, they do not trigger canonical agreement patterns. Doublet nouns can trigger either deflected agreement SG.F on their targets, or plural agreement. I show in chapter 4 that this behaviour is due to individuation. Moreover, in chapter 5, I use the doublet noun *ʃabāb* 'guys' to study the behaviour of doublet nouns and provide an LFG analysis. In some cases, doublet nouns can trigger the singular agreement and the plural agreement pattern on two targets in the same sentence. I call this pattern of agreement the 'two-some' pattern.[26]

(90) *iʃ-ʃabāb ṭafrān-e w miʃ m-lāqy-e ʃuġul b-il-balad*
DEF-guy.PL.M penny.less-SG.F CONJ NEG PASS.PTCP-find-SG.F work in-DEF-city
'Guys are penny-less and haven't found jobs in the city.' RPA, (Sukaj, 2017)

In (90), the plural masculine human noun *ʃabāb* 'guys' controls feminine singular on both predicates *ṭafrān-e* 'penny-less' and the passive participle *m-lāqy-e* 'found'. [27] The pattern in (90) is one pattern observed with *ʃabāb* 'guys'. It should be noted, the word *ʃabāb* 'guys' can be underspecified for gender when it has mixed gender reference as in male and female guys. Nevertheless, the entity in (90) is glossed masculine due to the context. However, the same noun *ʃabāb* 'guys' can also trigger plural agreement as in (91).

[26]This is different from Wechsler and Zlatić's (2003) hybrid nouns or Wechsler's (2011) mixed agreement which are discussed in detail in chapter 6. Hybrid nouns are consistent in their CONCORD and INDEX feature sets; whereas, nouns that observe that two-some pattern do not observe a split between INDEX and CONCORD, and rather have two indices with the possibility of INDEX acting NP-internally.

[27]Chapter 5 is dedicated to the discussion of the word *ʃabāb* 'guys' and provides an LFG analysis of it.

(91) *iʃ-ʃabāb* *niʒħ-ū*
DEF-guy.PL.M succeed.PAST.PRF-3.M.PL
'The guys succeeded in (their national exams)' RPA, (?)

In (91), the noun *ʃabāb* 'guys' triggers plural agreement on the verb *niʒħ-ū* 'succeeded'. The pattern in (91) is the other pattern triggered by *ʃabāb* 'guys' and other doublet nouns in PA.

Previously, it was said that human nouns mostly controlled full agreement; where the target and the controller match in all their features. As a result, cases like (90) above are considered interesting throughout this thesis. I argue in chapter 4 that this is possible due to the effect of individuation and collectivity. Briefly, the speaker's perception of the plural controller either as a group (collective reading) or an individuated group of items/entities affects the number marker on the target. An individuated noun controls a plural target. The above distinction of collective versus individuated interpretations of the plural is common with doublet human nouns in PA; these include *ʃabāb* 'guys', *zlām* 'men', *rʒāl* 'men', *nās* 'people' (to name but a few) due to the possibility of reference to a group or individuals. I provide examples of these nouns showing they trigger a two-some pattern: either singular or plural.

(92) *ʔiʃ-ʃabāb* *ṣara-t* *bid-ha* *t-hiʒ* ... *ʔalla*
DEF-guy.PL.M become-PRF.F.SG want-F.SG 3.F.SG-leave.IPFV ... God
y-ʕīn-hum *ʕala ħayāt-hum*
3.SG.M-help-PL.M on life.F.SG-PL.M

'The guys want to leave/migrate from the country, May God help them with their lives' (Corpus for Palestinian Arabic (Curras), 2016)

In (92), the head noun is the plural masculine noun *ʔiʃ-ʃabāb* 'guys'. In *ṣara-t* 'became', the suffix /-t/ is feminine singular as per deflected agreement which might indicate a collective interpretation of the plural; as in, all the guys want to leave/migrate. The same pattern occurs in the suffixes on the verbs *bid-ha t-hiʒ* 'want to leave'. However, the pronouns in the second clause are marked for plural masculine as per full agreement although their antecedent is the same head noun *ʔiʃ-ʃabāb* 'guys' which might be an indicator of an individuated reading.[28] I provide deeper analysis of this variation in chapters 4 and 5. However, the main point of (92) is to show the behaviour of doublet nouns.

This section presented examples of canonical and non-canonical cases in PA. Canonical agreement patterns occur with singular nouns and most human nouns in PA. However, non-canonical patterns are triggered by plural non-human nouns, kind nouns, and doublet human nouns.

[28]This shift in the agreement patterns can also be explained due to distance and specificity, as explained in chapter 4.

3.4 The behaviour of plurative nouns

Finally, the behaviour of pluratives in agreement should be taken into consideration for the discussion of interesting patterns. According to Fassi Fehri (2018), plurative expressions "have the same gender morpheme [as a singular feminine] *-at* [and form] *a group* or a collection individual from a singular or a plural of individuals".[29] Thus, plurative expressions refer to nouns that have group reference; i.e., plural meaning although they follow the morphological rules applied to the formation of singular feminine nouns. Pluratives are formed from either a singular form as in "*muʕtazil-at* 'Mutazilites'; the (so named) theologian thinker group"' (Fassi Fehri, 2018, p. 4); or a broken plural form as in "*barbar* 'berber kind$_k$SG'; 'berbers.PL' → *baraber* 'berbers' → *baraber-at* 'berbers (as a group)"' (Fassi Fehri, 2018, p. 5) and the result is normally interpreted as an integrated whole (Fassi Fehri, 2018, p. 10). *baraber-at* 'berbers is the plurative form. Interestingly, in MSA, pluratives trigger singular feminine which conforms with the morphology of the form: ending in the feminine singular morpheme *[-at]* as in the following example:

(93) *il-muʕtazil-at-u* *qāl-at...*
DEF-Mutazilite-F.SG-NOM say.PAST.PRFV-3.F.SG...
'The Mutazilites said ...' MSA

In (93) above, the subject *il-muʕtazil-at-u* 'The Mutazilites' triggers feminine singular

[29] Emphasis in original source

agreement on *qāl-at* 'said'. This is always the case in MSA regardless of the word order, as in (94).

(94) *qāl-at* *il-muʕtazil-at-u* ...
say.PAST.PRFV-3.F.SG DEF-Mutazilite-F.SG-NOM ...
'The Mutazilites said ...' MSA

In (94), although the verb *qāl-at* 'said' precedes the subject *il-muʕtazil-at-u* 'Mutazilites', the agreement is feminine singular. The agreement pattern triggered by *il-muʕtazil-at-u* 'Mutazilites' is considered an example of syntactic agreement (agreement ad formam) as it conforms to the meaning of syntactic agreement where the target agrees with the morphological features of the controller despite the semantic features of the controller not being identical. Unlike MSA, PA speakers tend to use a plural marker on targets of pluratives agreeing with the semantic meaning of the expression as in (95).

(95) *il-muʕtazil-ə* *ħak-u...*
DEF-Mutazilite-F.SG say.PAST.PRFV-3.PL...
'The Mutazilites said ...'

In (95), the post-nominal verb *ħak-u* 'said' is plural agreeing with the subject *il-muʕtazil-ə* 'Mutazilites'. Since the pattern in (95) applies to pluratives only, I can call it the plurative agreement pattern. In PA, the word order of the subject and the verb does not affect plurative agreement, as in (96).

(96) *ħak-u* *il-muʕtazil-ə* ...
say.PAST.PRFV-3.PL. DEF-Mutazilite-F.SG..
'The Mutazilites said ...'

In (96) , the predicate *ħak-u* 'said' shows plurative agreement with the subject *il-muʕtazil-ə* 'Mutazilites' despite the VSO order.

This section introduced the plurative agreement pattern which is exclusive to plurative nouns in PA only. The following section answers the question why I claim that we need a new model to study the agreement patterns in PA.

3.5 Why The Need For A New Model

In chapter 2, I discussed the three models that analyse the agreement patterns typologically and cross-linguistically. This section provides a brief recap of these models and shows how they fail in analysing all the patterns presented in PA, so far.

To start with, I divided the models into three main views: the linguistic view, the Arabic agreement view, and the perception-related (cognitive) view. I show how the following examples are analysed applying these perspectives. Syntacticians and linguists (Bresnan and Mchombo, 1987; Corbett, 1979; Aoun et al., 1994; Dalrymple and Kaplan, 2000; Wechsler and Zlatić, 2003; King and Dalrymple, 2004; Chekili, 2004; Heycock and Zamparelli, 2005; Dalrymple and Nikolaeva, 2006; Corbett, 2006; Kuhn and Sadler, 2007; Dalrymple and

Hristov, 2010) view agreement as a linguistic phenomenon. They focus their analysis on the distinction between syntactic features, semantic features, and pragmatic (semantic) features of the controller and the target. The other view by scholars studying Arabic agreement mainly D'Anna (2017); Ritt-Benmimoun (2017); Bettega (2017, 2018) discuss agreement in Arabic vernaculars only; therefore, they look at features applicable only to Arabic although some of the facts presented in the former view also apply to Arabic. However, the Arabic agreement model is concerned with the factors of both the controller and the target that affect the agreement choice paying more attention to plural controllers. This view does not provide an analysis as to why certain patterns happen as much as it acknowledges the factors affecting the patterns obtained. Finally, perception-related schools (i.e, cognitivists) like in the studies of Khan (1984); Comrie (1989); Yamamoto (1999); Brustad (2000) discuss extra-linguistic facts related to agreement; like the roles of animacy, salience and individuation typologically to account for certain agreement patterns. Their main claim is that agreement can be controlled by the speaker as it is an indicator of the speaker's mind-style. The following example (97) is analysed by the three models above:

(97) *fī* *nās* *b-t-qūl* *...*
there people PROG.PRS-3.F.SG-say ...
'There are people saying ...' (Corpus for Palestinian Arabic (Curras), 2016), RPA

In (97), the head noun *nās* 'people' triggers feminine singular agreement on the target

b-t-qūl 'says'.[30] Formal linguistics schools consider this a co-specification of features between the controller *nās* 'people' and the target *b-t-qūl* 'says' in that the verb agrees with the index feature of the controller.[31]. The Arabic agreement and perception-related views link this agreement pattern to the fact that the noun *nās* 'people' has a collective (non-individuated) reference which requires a singular agreement despite the fact it is a human noun which usually requires full agreement. In other words, the three models approach the agreement pattern differently and assign different factors that explain the pattern obtained. While the models complement each other and are compatible, my main argument in this thesis, that through forming a comprehensive model that applies the notions in the formal linguistics approach to agreement as well as taking into consideration the factors specific to Arabic agreement, agreement patterns in PA are better understood. That is to say, most studies concerning agreement in Arabic vernaculars do not apply the notions of CONCORD and INDEX, to name but a few. I aim to show the great benefit of applying formal linguistics approach to PA agreement in this thesis.

In other words, each of the perspectives provides an analysis of the patterns and they successfully account for describing the pattern in (97). However, I claim that for a better understanding of all data sets of agreement patterns in PA, all three perspectives should be

[30] *nās* 'people' is not glossed as singular feminine for the purpose of this example. Consider the index and the concord features of a given noun identical unless stated otherwise.

[31] "[A]greement in constraint-based theories is treated as multiple specification of compatible feature values by a controller and a target" (Hristov, 2012, p. 24)

merged. This is due to the fact that in some cases the perspectives on their own cannot provide enough information about the patterns. See (98) and notice the different agreement pattern on the targets. The head noun *in-nās* 'the people' triggers plural agreement on the targets which is different from the pattern the noun *in-nās* triggered in (97).

(98) *masak-īn in-nās illi māt-u*
poor-PL.M DEF-people.SG.F REL die.PST.PRF-PL.M
'Poor are those people who have died.' (Corpus for Palestinian Arabic (Curras), 2016)

In (98), the head noun *in-nās* 'the people' triggers plural agreement on both *masak-īn* 'poor' and *māt-u* 'died'.[32] A distinction between CONCORD and INDEX features of the controller *nās* 'people' will not answer the question due to inconsistency as I show in chapter 5. However, LFG (and HPSG) will most likely suggest the existence of two entries of *nās* 'people' with one entry triggering feminine singular and the other triggering plural on the targets. Moreover, Corbett's Agreement Hierarchy which discusses the effect of domain on agreement does not account for the different agreement patterns in (98) and (97). This is due to the fact that both examples have the same positions of the target (see the agreement hierarchy in chapter 2) and the fact that the noun *in-nās* 'the people' can trigger either singular or plural on the same target, which is not covered by Corbett's

[32]It is not clear in the Corpus for Palestinian Arabic (Curras) (2016) which dialect this example is from. However, if this example is obtained in UPA, there is no gender distinction in the plural for the adjective *masak-īn* 'poor', or the plural marker on the verb *māt-u* 'died'. Otherwise, the analysis is the same.

Hierarchy.

On the contrary, the view of scholars studying Arabic agreement discusses the distinction between the two examples through appealing to dialectal differences or the distance factor. None of them is applicable in this case. Finally, perception-related models distinguish between an individuated interpretation of *nās* 'people' and a collective reading, which provides the required tools to analyse (98) and (97). Individuated *nās* 'people' triggers plural agreement as opposed to a deflected agreement triggered by the collective reading of *nās* 'people'. Consequently, this differs from the LFG account which suggests two entries through suggesting one lexical entry open to two interpretations.

What one model fails to describe, another provides the tool for. Therefore, it is necessary to merge all three models to account for PA agreement. I analyse the case in (98) through proposing a split in the indices of the noun (LFG concept) which is filtered into singular or plural through the perception (cognitive concept). I posit an [IND] restriction in chapter 5 in an attempt to merge the models together and I provide a more detailed analysis.

As shown above, one model is not sufficient to account for all the agreement cases in PA. Therefore, I propose a poly-factorial perspective that explains the cases mentioned in line with: Corbett's Extended Agreement Hierarchy, and the LFG view of CONCORD and INDEX features, and their distribution. In addition, I account for extra-linguistic factors like animacy, individuation and salience. Finally, morphological factors affecting agreement in

Arabic including controller-related (type of the head noun, plural type, etc.) and target-related (adjective taxonomy, plural type, etc.) factors are taken into consideration. Such a model is sufficient to account for any agreement case in PA, as in (99) below.[33]

(99) *yamma min-k-in int-in niswān ṭulkarem fiʃ iʃi*
oh,my from-2-F.PL 2-F.PL woman.F.PL Tulkarem(city) NEG thing
b-i-flat min ʔidī-k-um ʔint-in bi-t-xawf-u
PROG.PRS-3.M.SG-slip from hand.DU-2-M.PL 2-F.PL PROG.PRS-2-frighten-M.PL
'You, women of Tulkarem, nothing slips off your hands. You are scary.' RPA

In (99), the speaker (male) addresses one lady and uses feminine plural agreement on the targets *min-k-in* 'from you' and *int-in* 'you' preceding the controller *niswān* 'women' as well as one target following *ʔint-in* 'you'.[34] However, the controller triggers plural masculine on very distant targets *ʔidī-k-um* 'your hands', and *bi-t-xawf-u* 'frightening'.

The plural pattern in example (99), on the targets *min-k-in* 'from you', *int-in* 'you', and *ʔint-in* 'you' is canonical in RPA as human nouns show full agreement. This conforms to the views made by scholars studying Arabic agreement in Chapter 2. In addition, and according to Corbett's hierarchy of agreement, Chapter 2 targets in attributive positions tend to observe syntactic agreement with their controllers. This provides extra support to obtain the plural pattern on the targets above. Nevertheless, in regard to the plural masculine agreement on *ʔidī-k-um* 'your hands' and on the verb *bi-t-xawf-u* 'frightening',

[33]This example was recorded by the author.
[34]This conversation was recorded by the researcher.

this is due to distance (A claim supported by scholars studying Arabic agreement and perception-related models in Chapter 2) as further targets show partial agreement (usually agree in number). Finally, personal pronouns (according to Corbett's hierarchy) have a higher likelihood to agree semantically with the controller. As a result, the second personal pronoun *ʔint-in* 'you' shows feminine plural agreement. The analysis of example (99) above shows how the proposed new agreement model (which is a combination of the pre-existing models) is successful in explaining agreement patterns in PA. It goes without saying that one should allow space for any individual or dialectal variations; however, this is beyond the concern of the current study.

3.6 Conclusion

This chapter is concerned with PA, the main language of this study. I discussed some details of the language itself including some facts about the morphology and the syntax of PA. Two surveys presented in this chapter showed the different plural forms used by PA speakers and shed light on gender assignment to plural nouns and broken plural forms in PA. Section 3.2 discussed the three agreement patterns found in PA with the use of each pattern with certain head nouns. I divided agreement cases into canonical cases, (the full agreement pattern) and non-canonical cases (deflected agreement, kind-noun agreement, plurative agreement

and two-some agreement). Finally, I have argued for a new model of agreement analysis to include linguistic views, perception-related views, and views related to other Arabic dialects to fully incorporate all the various agreement patterns in PA.

The chapter discussed fine details regarding the morphology of nouns and plural formation in MSA and PA including the differences within these languages. The chapter presented a detailed discussion of nouns of kind and singleton nouns along with the various agreement patterns associated with these types. Furthermore, this chapter discussed 3 main agreement patterns: the full, the deflected, and syntactic pattern in both UPA and RPA with both a modifier and a predicate of a certain noun. Moreover, the chapter provided detailed discussion of the behaviour of PA nous with discussion of unpredictable and exceptional cases like with *nās* 'people', *ʃabāb* 'guys' that trigger more than one agreement pattern. The chapter briefly touched on the notion of individuation which is discussed more in the next chapter.

In addition, the chapter introduced pluratives and provided examples in MSA and PA to account for the different agreement patterns. MSA leans towards syntactic agreement with pluratives; whilst PA triggers plural agreement. Finally, the previous models of agreement introduced in the previous chapter worked in isolation of each other and only discussed the factors in separation. No model provided an extensive study and analysis of challenging patterns taking into consideration every issue discussed in this thesis. The following chapter

4 discusses the factors affecting agreement in PA.

Chapter 4

The Poly-factorial Model of Agreement

Chapter 2 discussed three models that deal with agreement and the issues each model proposes a solution for. The three models were identified as a linguistic model which discusses syntactic and semantic factors related to the phenomenon of agreement section 2.1, as well as a perception-related model which acknowledges the speaker's perception in obtaining the agreement patterns in section 2.2. Finally, the view of scholars studying Arabic agreement in relation to agreement in PA was discussed in section 2.3 in full detail. Chapter 3 provided evidence that the agreement patterns in PA cannot be understood through one view only and proposed merging the three models into one new model: the poly-factorial model of agreement in section 3.5. The poly-factorial model contributes to the study of agreement through the acknowledgement of linguistic and non-linguistic elements involved in the

agreement pattern obtained.

This chapter is dedicated to the discussion of the poly-factorial model of agreement through the discussion of the many factors affecting the agreement patterns obtained in PA. I provide evidence in this chapter that perception is a strong factor and it has a major effect on the agreement patterns in PA. Chapter 4 studies the following factors: controller-related factors in section 4.1, target-related factors in section 4.2 and factors related to both the controller and the target in section 4.3. Controller-related factors are discussed in section 4.1.1 which studies the effect of humanness section 4.1.1.1 and animacy section 4.1.1.2 on the agreement patterns in PA. Section 4.1.2 provides a discussion of the information shown by the morphological facts of a noun including the singular form section 4.1.3 and the plural form section 4.1.4, as well as a discussion of individuation and salience section 4.1.5. In regard to target-related factors which are discussed in section 4.2, these include the effect of word order on agreement section 4.2.1. Section 4.3 discusses the effect of distance on agreement. Finally, a conclusion of all the factors discussed in this chapter is provided in section 4.4 which concludes that factors intertwine in a way that makes them very dependent on each other; thus, it is rare to find an agreement pattern where only one factor is responsible.

4.1 Controller-related factors

This section studies the factors related to the controller which can affect the agreement patterns in PA. The controller throughout the thesis is assumed to be the head noun (either single head noun or a coordinated set of nouns). These controller-related factors include semantic facts like the humanness feature of a nominal discussed in section 4.1.1.1, and animacy discussed in section 4.1.1.2. It is worth mentioning that animacy is considered both a semantic and a extra-linguistic element, the reason I discuss it separate from humanness. Moreover, the controller-related factors include the discussion of morphological factors like facts related to the singular form of the noun section 4.1.3, or the plural form section 4.1.4. In addition, the discussion of extra-linguistic factors like individuation and salience is provided in section 4.1.5.

4.1.1 Humanness and Animacy

I discuss humanness and animacy together in one section due to the relation between these two concepts, as in all human nouns are animate.[1] However, it should be noted that my discussion of animacy in this chapter extends beyond the living versus non-living definition. I consider animacy a perception-related element whereas humanness is an inherent semantic fact of the noun. I show in section 4.1.1.1 that human nouns trigger full agreement on their

[1]Subject to exclusion of non-living human reference.

modifiers. On the other hand, non-human nouns trigger deflected agreement. Furthermore, in section 4.1.1.2, I show that nouns higher in animacy trigger full agreement whereas lower animate nouns trigger deflected agreement. Finally, I provide a new animacy hierarchy available to PA to account for the full agreement patterns found with nouns with food reference. I propose that food nouns are higher in animacy to animal and inanimate nouns.

4.1.1.1 Humanness

The effect of the feature humanness on agreement is evident through the distinctive agreement patterns available to human nouns only. For instance, the plural pattern of agreement in PA (plural marker on the target) is triggered mainly by plural human nouns; whereas the existence of a plural non-human noun triggers deflected agreement (feminine singular) on the targets. Table 4.1 below provides a summary of the main patterns as triggered by a plural noun on a modifier according to the humanness feature of the head noun. I ignore cases of singular head nouns as they trigger singular modifiers regardless of the humanness feature of the nominal. The reader should keep in mind there are some exceptions to most cases. Example (100) shows the different agreement patterns (deflected and plural) triggered by the different controllers *il-klāb* 'dogs' and *l-wlād* 'boys' ; respectively.

(100) *il-klāb* *b-tu-hrub* *w* *l-wlād* *bi-rkuḍ-ū*
DEF-dog.PL PROG.PRS-3.SG.F-escape CONJ DEF-boy.PL.M PROG.PRS-run-3.PL.M
'The dogs are escaping and the boys are chasing them.' RPA

Table 4.1: Summary of Agreement Patterns between a single plural noun and a single modifying adjective in PA

Noun Type	**Noun Features**	**Adjective Features**	**Pattern**
Human in an Subject Verb (SV) structure	PL.**M !** (**M !**) PL.Feminine (F)	PL.M PL (Urban) PL.F (Rural) SG.F (certain contexts)	full full full deflected
Non-Human Animate	PL	SG.F	deflected
Inanimate	PL	SG.F	deflected

In (100), the non-human noun *il-klāb* 'dogs' triggers feminine singular agreement on the verb *b-tu-hrub* 'escaping' reflecting deflected agreement. On the other hand, the human noun *l-wlād* 'boys' trigger plural masculine (full agreement) agreement on the verb *bi-rkuḍ-ū* 'running'.

The effect of humanness is not limited to the effect on the agreement patterns in PA. Humanness is taken into consideration in all Arabic vernaculars and it extends to affect plural formation in Arabic (Ryding, 2005) among other morphological formation processes. In other words, human nouns are the only nouns available for a sound plural formation.[2] In addition, humanness is acknowledged by scholars studying Arabic agreement in their study of some Arabic vernaculars like Cairene Arabic (Belnap, 1993), Fezzāni Arabic (D'Anna, 2017), Tunisian Arabic (Ritt-Benmimoun, 2017), and Omani Arabic (Bettega, 2017, 2018) to have an effect on the agreement patterns obtained in these languages. Interestingly, non-human nouns in these languages observe a similar behaviour to non-human nouns in PA.

[2]Plural formation is discussed in section 3.1.4.

4.1.1.2 Animacy

The discussion of animacy as viewed by cognitivists (Yamamoto, 1999; Brustad, 2000) who consider animacy perception-related; and the view by Comrie (1989); Haspelmath (2013) which treats animacy as a linguistic component is covered in section 2.3.1. Nevertheless, the concept of animacy in linguistics goes beyond the fact of living versus non-living; it is rather of a continuum. Animacy can affect agreement patterns obtained through the effect of animacy on number marking. For instance, in some languages like Chucki, animacy can affect the existence versus the non-existence of number distinction. It is more common for nouns with higher animacy to have the distinction as compared to nouns with lower animacy (Comrie, 1989, p. 182). Based on the parameters of animacy and on the agreement patterns triggered by certain noun categories, I propose the following animacy hierarchy for PA following the distinctions in Haspelmath's (2013) animacy hierarchy.

(101) Human >Food Items >Animals >Inanimates

Notice there is no fine distinction among human nouns in PA in terms of person; for instance. Similarly, there is no distinction between higher and lower animals or inanimates. The placement of human nouns higher in hierarchy (101) than non-human nouns conforms with the agreement patterns found in PA; plural human nouns trigger plural markers on the targets. However, the reason food items are placed higher than animals comes from the

fact that food items can trigger plural agreement on the target as opposed to animal nouns that trigger deflected agreement (feminine singular). See example (102) below that shows a plural marker on the modifier *ʔiz-zaky-āt* 'delicious'.[3]

(102) *ʔit-tuffaħ-āt* *ʔiz-zaky-āt*
DEF-apple-PL.F DEF-delicious-PL.F
'The delicious apples.' RPA

In (102), the plural head noun *ʔit-tuffaħ-āt* 'apples' triggers feminine plural agreement on the target *ʔiz-zaky-āt* 'delicious'. If *ʔit-tuffaħ-āt* 'apples' followed the same rules as other non-human nouns, the modifier should be singular feminine. Similar to the consideration of food items in PA in regard to animacy, D'Anna (2017, p. 112) records "[t]he great consideration in which horses are held in the Bedouin environment"; the reason the noun category of *horse* controls plural agreement in Fezzāni Arabic as in (103)[4] below adopted from (D'Anna, 2017).

(103) *iži* *s-səbīb* *yūguṛnu* *b-ez-zōz* *w* *ižu*
3.M.come.SG DEF-horses 3.fasten.M.PL by-DEF-two and 3.come.M.PL
lāħd-īn *ʕāl ež-žāʕfa* *w* *idayyeru* *mən-ha* *ġādi*
ACT.PTCP.gallop-M.PL on DEF-palanquin and 3.move.away.M.PL from-her there
'The horses arrive in pairs, galloping to the palanquin and moving away from it.'
(D'Anna, 2017, ex.23, p. 112).

[3]It is worth mentioning that food items can exist with a deflected agreement pattern triggered on the target but this is less common and is contextually-driven.
[4]Glossing and transcription as in original.

In (103), the animal plural noun *s-səbīb* 'horses' triggers plural agreement on *yūguṛnu* 'fasten', *ižu* 'come', *lāħd-īn* 'galloping' and *idayyeru* 'move away'. Recall that in PA, animal nouns trigger deflected agreement.

Due to the fact that the animacy hierarchy is subject to changes in a certain language, Yamamoto (1999) and Fowler (1977) consider the effect of animacy on agreement to be an indicator of someone's 'mind-style', which displays the person's prejudices and perspectives, which is similar to the case of food items in PA. In addition to the effect of animacy on number marking, animacy can affect gender marking, as well. I argue that the reason feminine is associated with the singular number in deflected patterns is due to animacy and I claim is typologically parallel to PIE (Proto-Indo-European). suffixes.[5] The argument that feminine association with singular is due to animacy is supported in the work by Hanitsch (2011).[6] The (2011) study on Damascan Arabic discusses the different patterns observed in the dialect in regards to plural non-human controllers. According to Hanitsch, the gradual abandonment of gender distinction in the plural of adjectives extends to non-human agreement.

The effect of animacy is considered in other Arabic varieties, as well. For instance, in Fezzāni Arabic D'Anna (2017) claims inanimate plural nouns control both feminine and

[5]The choice of the masculine gender endings for human nouns versus a feminine ending for inanimate nouns is discussed in Luraghi (2009). She discusses the development of feminine gender in Proto-Indo-European Languages, where she studies the development of the constructed suffix *[-*h₂]*. Luraghi argues the suffix evolved into a vowel ending as feminine/class marker and a neuter plural suffix.

[6]I'd like to thank Dr. Yuni Kim (University of Essex), and Julia Heimann (University of Essex) for the help in the translation of the paper.

masculine plural agreement on their targets, with the feminine the more "prevalent choice and the **original** one" (my emphasis) whilst 'masculine plural is "innovative" (D'Anna, 2017, p. 117). Additionally, Ritt-Benmimoun (2017) studies the effect of animacy on Tunisian Arabic, and argues that the use of the masculine plural with inanimate plural controllers is due to "sociolinguistic factors ... given that no purely grammatical reason can be adduced".

To sum up, animacy affects agreement patterns in PA through affecting number marking and gender marking; consequently, section 4.1.1.2 shows that higher animate nouns trigger full agreement whereas lower animate nouns trigger deflected agreement. The effect of animacy conforms with the effect of humanness (discussed in section 4.1.1.1) as in human nouns which trigger full agreement as opposed to non-human nouns trigger deflected agreement. In PA, human nouns are highly animate; therefore, full agreement is observed. By the same token, less animate noun are non-human nouns which trigger deflected agreement. Section 4.1.1.2 also provided evidence that nouns referring to food items should be moved up the hierarchy of animacy (101) (higher than animal nouns) in PA since food items observe full agreement as opposed to animal nouns that observe deflected agreement.

4.1.2 Morphological Information

In addition to humanness and animacy 4.1.1,controller-related factors include the facts provided by the head noun morphology. I discuss the relation of the information represented by

the morphological facts of the controller and how it affects the agreement patterns obtained in PA. Section 4.1.3 provides details regarding the fact that agreement patterns depend on the type of the singular head noun. I show that certain nouns trigger a particular pattern; for instance, kind nouns trigger kind-noun agreement only. I describe 6 types of singular nouns in PA. Moreover, section 4.1.4 studies the effect of the type of the plural on the agreement of nouns. I show that broken plural nouns trigger deflected agreement whilst sound plural nouns trigger plural agreement.

4.1.3 The singular form of the controller

This section discusses the fact that some singular nouns in PA are not semantically singular; therefore, triggering plural agreement on the targets; which is similar to the case of collective nouns in British English. I present 6 types of singular nouns that exist in PA (and other Arabic varieties including MSA). Each of the types obtains a number of features and triggers a specific agreement pattern. I describe the agreement pattern observed in relation to kind nouns 4.1.3.1 which trigger kind-noun agreement, group nouns 4.1.3.2 which can trigger either singular or plural agreement, mass nouns 4.1.3.3, which trigger deflected agreement, count nouns 4.1.3.4 which trigger deflected or plural agreement, *furniture*-like nouns 4.1.3.5 which trigger singular agreement, and *nās* nouns 4.1.3.6 which trigger plural deflected agreement in PA.

4.1.3.1 Kind Nouns

This is the first noun type discussed in this section. Kind nouns are singular morphologically but express a "mass" interpretation with reference to a kind; most kind nouns refer to animals. In PA, all kind nouns require a singular masculine marker on their modifiers as in (104) below . Kind nouns are distinctive because they trigger singular masculine agreement unlike other animal nouns which trigger deflected agreement on the target.

(104) *baʔar* *sarīʕ*
cow.SG$_k$.M fast.SG.M
'Fast cows (general meaning).'

The head noun *baʔar* 'cow' is singular morphologically; thus, it triggers a singular masculine adjective on its target *sarīʕ* 'fast'. This pattern was introduced in section 3.2.3 as the kind-noun agreement pattern.

4.1.3.2 Group Nouns

The second type of singular nouns in PA is known as "Group nouns" (Barker, 1992; Zabbal, 2002), which include nouns that are singular morphologically; yet, they make a reference to a group of members (hence the name 'group').[7] Group nouns are different from kind nouns because they trigger either singular or plural agreement. Moreover, group nouns can

[7]Group nouns might be referred to as collective nouns in other works. I do not use the term collective to avoid confusion with a collective reading which is a singular reading.

denote either a collective reading or an individuated reading; the latter reading triggers plural agreement as in (105) as opposed to collective readings that trigger singular markers on the target in (106). Group nouns in PA include the noun *farīq* 'team'. In (105) below, the target *m-itħasn-īn* 'getting better' is plural reflecting an individuated reading of the group noun *farīq* 'team'.

(105) *farīq* *nāblis* *m-itħasn-īn* *ktīr*
team.SG.M Nablus.GEN PASS.PTCP-get.better-PL very
'The football team of Nablus is getting very much better.' UPA

The example in (105) shows an individuated reading which triggers plural agreement. Unlike (105), the head noun *farīq* 'team' triggers singular masculine agreement in (106).

(106) *wiṣil* *il-farīq* *la-n-niha?iyy-āt*
arrive.PST.PFV.3.SG.M DEF-team.SG.M to-DEF-final-PL.F
'The team has got to the finals.'

The verb *wiṣil* 'arrived' is singular masculine agreeing with the collective reading of the noun *farīq* 'team'. It is worth mentioning the agreement patterns observed in (105) and (106) are obtained regardless of the word order of the constituents in both examples.

4.1.3.3 Mass Nouns

This section discusses the third type of singular nouns in PA. Mass nouns refer to substances that do not have distinct members of its constituent; these nouns do not have a plural of

their own, like *water*.[8] According to Zabbal (2002, p. 1) these nouns are singular in form but neither have singular or plural meaning. Nevertheless, mass nouns trigger singular agreement on the targets and cannot be pluralised.

(107) *ʔil-may* *in-ʔaṭʕ-at* *il-yōm*
DEF-water.SG PASS-cut.PST.PRF-3.SG.F DEF-today
"The water was cut today. (as in no water)"

The head noun *ʔil-may* 'the water' denotes a substance with indistinct (uncounted) members; thus triggering singular agreement on the target *in-ʔaṭʕ-at* 'was cut'.

4.1.3.4 Count Nouns

The fourth type of singular nouns in PA includes count nouns. Unlike mass nouns, count nouns are formed of distinct members and they can be pluralised (Zabbal, 2002). Count nouns in PA trigger full agreement if the count noun has human reference (108) and deflected agreement for non-human target nouns (109) .

(108) *ʔil-wlād* *ḍāʕ-ū* *il-yōm*
DEF-boy.PL lose.PST.PRF.3-PL DEF-today
"The boys got lost today."

In (108), the head noun *ʔil-wlād* 'boys' triggers plural agreement on its target *ḍāʕ-ū* 'lost'. Unlike (108), *ʔil-kutub* 'books' triggers deflected agreement in (109).

[8] Also known as collective in Zabbal's (2002) work.

(109) *ʔil-kutub* *ḍāʕ-at* *il-yōm*
DEF-book.PL lose.PST.PRF-SG.F DEF-today
"The books were lost today."

The verb ḍāʕ-at 'lost' is singular feminine agreeing with the collective reading of the head noun *ʔil-kutub* 'books'.

4.1.3.5 *Furniture*-like Nouns

This is the fifth type of singular nouns in PA. In basic words, *furniture*-like nouns have a meaning of individuation and have distinct members yet cannot be pluralised (Zabbal, 2002, p. 86-87). Thus, *furniture*-like nouns trigger singular agreement in PA.

(110) *ʔil-ʔaθāθ* *wiṣil* *il-yōm*
DEF-furniture.SG.M arrive.PST.PRF.3.SG.M DEF-today
"The furniture arrived today."

The head noun *ʔil-ʔaθāθ* 'furniture' triggers singular agreement on *wiṣil* 'arrived'.

4.1.3.6 *nās* Nouns

I show in this section that the noun *nās*'people' in PA triggers either deflected agreement or plural agreement on the target.[9] Example (111) shows the two possible agreement patterns with the noun *nās* 'people'.[10]

[9]See (Fassi Fehri, 2018, p. 15) for a discussion of 'committee groups' and "collection" groups. The noun *nās* 'people' meets all the requirements for community group which explains its behaviour in triggering either deflected or plural agreement.

[10]This example was recorded by the author produced by a native Palestinian from Tulkarem.

(111) *kān-ū* *in-nās* *fuqara* *maʕ-hā-ʃ* *t-ākul*
be.PST-3.PL DEF-people poor.PL PREP-3.SG.F-NEG 3.SG.F-INDIC.eat
'People were poor, they had nothing to eat.' RPA

The noun *nās* 'people' observes two agreement patterns on different targets: plural on the pre-nominal predicate *kān-ū* 'were', plural on the post-nominal modifier *fuqara* 'poor', and singular on the pronoun *maʕ-hā-ʃ* 'not with her'.

So far, I have described 6 types of singular nouns in PA each with their features and the agreement patterns each type triggers. I provide a summary of the 6 types in table 4.2 below.

Table 4.2: Summary of types of singular nouns in PA and the agreement patterns triggered by them

Noun Type	**Example**	**Agreement Triggered**
Kind noun	*baʔar* *cow*	singular masculine
Group nouns	*farīq* *team*	singular or plural based on individuation
Collective nouns	*may* *water*	singular feminine
Count nouns	*ktāb* *book*	singular by singular forms plural or singular by plural forms based on individuation
Furniture-like nouns	*ʔaθāθ* *furniture*	singular masculine
nās-like nouns	*nās* *people*	singular or plural depending on context

This section included the discussion of singular nouns in PA. The next section 4.1.4 describes the relation between the types of plural in PA and the agreement triggered.

4.1.4 The plural form of the controller

Continuing with the effect of morphology on agreement, this section presents the fact that the type of the plural form of the head noun plays a role in the agreement pattern obtained. I show in this section that there are two main types of the plural form a noun can have: sound plural form 4.1.4.1 and broken plural form 4.1.4.2. Moreover, I provide evidence that sound plural forms trigger full agreement patterns whilst broken plural forms trigger deflected agreement patterns and in some cases, broken plurals trigger plural agreement which is subject to their plural interpretation.[11]

4.1.4.1 Sound plural forms

The term 'sound' refers to the fact that there is no alteration of the internal structure of a form following a morphological process. In other words, a sound plural noun is formed through the addition of a suffix to the singular noun form without any changes in the internal structure of the singular form. For instance, the singular form *muhandis* 'engineer' is pluralised into *muhandis-**īn*** 'engineers' through the addition of the suffix *[**īn**]* without any alteration to the stem *muhandis* 'engineer. Sound plural forms are either feminine or masculine based on the gender of the singular form the suffixes attach to. Moreover, a masculine sound plural form is formed through the addition of the suffix *[**īn**]*; whereas a

[11] In addition to sound plural forms and broken plural forms, some nouns have a plural of the plural form (Zabbal, 2002; Ryding, 2005). However, these forms are outside the scope of this thesis.

sound feminine plural form is formed by the addition of the suffix */**ā**t/*. The fact that each gender has a specific suffix to form a sound plural form provides a gender value to the plural form; i.e., a masculine plural and a feminine plural. Gender specification is essential in terms of agreement since the plural form triggers full agreement with the relevant gender values so-specified between the controller and the target. Finally, sound plural forms are available with human nouns.[12] Feminine sound plural forms are available to non-human feminine nouns, borrowed nouns, and loan words in PA.[13] In (112), the sound plural form *muhandis-**īn*** 'engineers' triggers full agreement.

(112) *muhandis-īn ħilw-īn*
engineer-PL.M handsome-PL.M
'Handsome engineers (Might also mean nice engineers.)'

The ending [*-īn*] on *muhandis-īn* 'engineers' in (112) indicates this is a sound masculine plural form which triggers a similar ending on the modifier *ħilw-īn* 'handsome' as per full agreement. In fact, a deflected marker would render the sentence ungrammatical as in (113).

(113) **muhandis-īn ħilw-e*
engineer-PL.M handsome-SG.F
'Intended: Handsome engineers.'

[12]Except the words *ʃabāb* 'guys', *wlād* 'boys', and *zlām* 'men'.
[13]See Ryding (2005, p. 129-156) for a discussion of sound plural forms in MSA.

I provided examples in section 3.3.1 that show agreement with sound plural forms including feminine sound plural forms. The main point is that sound plural forms trigger full agreement on the targets.

4.1.4.2 Broken plural forms

Unlike sound plural forms, broken plural forms involve the change of the internal vowel patterns within the noun (the singular form). For example, the singular form *kt**ā**b* 'book' becomes *k**u**t**u**b* 'books' in the plural form. Notice the change of the internal vowels of the singular form. Broken plurals are available to abstract nouns, nouns of professions, and most non-human nouns. Finally, due to the change of the internal structure of the singular form, broken plural nouns are unspecified for gender; therefore, broken plural nouns trigger feminine singular (deflected agreement).[14] The broken plural head noun in (114) requires deflected agreement.

(114) *klāb* *ħilw-e*
dog.PL pretty-SG.F
'Pretty dogs.'

The head noun *klāb* 'dogs' triggers feminine singular on the modifier *ħilw-e* 'pretty'.

There are two possible interpretations of a broken plural: either the reference to a group of

[14]See Appendix A for a survey conducted on broken plural forms and their gender specification according to PA speakers. The survey shows that some PA speakers choose to assign gender marking to broken plural forms according to the gender of the singular form.

entities as one unit as seen in (114) which triggers deflected agreement or the reference to individuated group which triggers plural agreement as in (115) below. The reference to an individuated group requires contextual evidence.

(115) *klāb* *ħilw-īn*
dog.PL pretty-PL
'Pretty dogs.'

The head noun *klāb* 'dogs' triggers plural agreement on the modifier *ħilw-īn* 'pretty' reflecting an interpretation of the broken plural noun *klāb* 'dogs' as having reference to an individuated group.

To sum up, section 4.1.4 showed that agreement patterns depend on the type of the plural form of the head noun. Sound plural nouns (discussed in section 4.1.4.1) trigger full agreement on the targets whilst broken plural forms (discussed in section 4.1.4.2) trigger deflected agreement or plural agreement depending on the interpretation of the broken plural as either a reference to a group or to individuated members, respectively.

4.1.5 Individuation and Salience

Continuing with the controller-related factors on agreement, this section discusses the effect of individuation and salience on the agreement patterns obtained. I consider both individuation and salience perception-related elements and I discuss them together due to the relation

between individuation and salience. I show in this section that more salient nouns are more likely to have an individuated interpretation; consequently, more salient nouns (individuated nouns) trigger plural agreement. By the same token, less salient nouns are interpreted as a mass (non-individuated); thus, less salient nouns (non-individuated nouns) trigger singular agreement on the targets.

To start with, salience involves the prominence of a word/phrase in speech. Belnap (1999) acknowledges the effect of salience on agreement in Cairene Arabic as in "[t]he more salient the referent (human beings, for example) the more likely it is that plural agreement will obtain." (Belnap, 1999, p. 175). This is also true of PA. Moreover, Belnap (1999) states that distinction in number and plural marking is a feature of salient nouns; consequently, number marking affects agreement as in plural cardinality of a noun triggers plural agreement as opposed to singular cardinality which triggers singular agreement. Salience is related to individuation; nouns with individuated reference are more salient than nouns which are less individuated. In addition, more salient plural nouns have individuated reference as opposed to less salient plural nouns that can have non-individuated reference. There are certain features of a noun that make the noun more salient ; for example definite nouns are considered more salient than indefinite nouns. Khan (1984) provides the following hierarchies of individuation and salience in table (4.3).

Table 4.3: Khan's (1984) hierarchies of individuation and salience

	Individuated/Salient	Non-individuated/Non-salient
1.	Definite	Indefinite
2.	Non-reflective	Reflexive component
3.	Specific	Generic
4.	Concrete	Abstract
5.	Qualified	Unqualified
6.	Proper	Common
7.	1^{s}t $>2^{n}$d $>3^{r}$d >Human	Inanimate
8.	Textually prominent	Incidental

The individuation interpretation of plural nouns involves either the reference to a group of non-individuated members (one mass) which triggers singular agreement, or the reference to a group of individuated members which trigger plural agreement. The interpretation of the individuation of a plural noun is available to broken plural nouns in PA as discussed in section 4.1.4.2.

To conclude, this section described the effect of salience and individuation on agreement. Individuated and more salient nouns trigger plural agreement as opposed to non-individuated and less salient nouns that trigger singular agreement. In addition, this section concludes

all the controller-related factors in PA which involve the effect of humanness and animacy in section 4.1.1, the effect of the noun's morphological facts in section 4.1.2, and the effect of salience and individuation in section 4.1.5. Ultimately, a head noun triggers plural agreement on the target if any or all of the following features apply: the noun has human reference 4.1.1.1, the noun is a high animate 4.1.1.2, the noun belongs to a type that triggers plural agreement 4.1.3, the noun is either of a sound plural or a broken plural form with individuated reference 4.1.4.2, the noun is salient and individuated 4.1.5. Otherwise, a head noun triggers singular agreement in the rest of cases. The next section provides details regarding target-related factors.

4.2 Target-related factors

Continuing with the factors affecting agreement patterns in PA, this section describes the factors that are target-related; i.e, factors related to modifiers and verbs. Section 4.2.1 discusses the effect of constituent order on verb agreement. I show that PA always observes full agreement patterns on the verbs in an SVO order with human subjects; whereas, VSO orders trigger either singular agreement or plural agreement on the verb. Moreover, I show that with non-human subjects, singular feminine agreement is triggered on the verbs in an SVO order; whereas, Verb Subject (VS) orders trigger plural verbs.

4.2.1 Word Order

This section provides evidence that word order of a subject and a verb in PA affects agreement. It should be mentioned that change of word order does not affect modifier agreement since adjectives in PA are post-nominal.[15] In other words, there is not a case where adjectives are pre-nominal. Additionally, I only discuss cases of plural nouns (subjects) as agreement with singular nouns is not affected by a change of word order. Unlike adjectives, verbs in PA can occur pre-nominally or in a post-nominal position. The verb's relative position to the subject in a sentence affects the agreement pattern obtained. Section 4.2.1.1 studies the agreement patterns available in an SVO structure. Agreement patterns observed in a VSO structure are provided in section 4.2.1.2.

4.2.1.1 Agreement patterns observed in an SVO structure

This section discusses the agreement patterns observed in an SVO structure. I show that post-nominal verbs are plural when the subject has human reference (116), and are singular with subjects with non-human reference (117).[16] The plural noun *ir-rʒāl* 'men' precedes the verb *fataħ-u* 'opened' in (116).

(116) *ʔarbaʕ rʒāl* *fataħ-ū* *sūbermārkit*
four man.M.PL open.PST.PFV-3.M.PL super.market.SG.M

[15] I only discuss adjective agreement in this thesis although modifiers can include demonstratives, as well.
[16] (117) was produced by a native UPA speaker.

'Four men opened a super market together.' (Corpus for Palestinian Arabic (Curras), 2016)

In (116), the verb *fataħ-u* 'opened' agrees in gender and number with the preceding plural masculine noun *rʒāl* 'men'. In (117), the verb is singular feminine in an SVO structure with a non-human subject.

(117) *is-sayyar-āt wiṣl-at*
DEF-car-PL.F arrive.PST.PFV-3.SG.F
'The cars have arrived.' UPA

In (117), the verb *wiṣl-at* 'arrived' follows the plural subject *is-sayyar-āt* 'cars'.

4.2.1.2 Agreement patterns observed in a VSO structure

This section provides examples of the agreement patterns observed in an VSO structure. I show that human nouns in an VSO structure trigger either plural agreement (118) or singular agreement (119). It should be mentioned that the singular agreement pattern triggered in (119) is less common. In fact, the Corpus for Palestinian Arabic (Curras) (2016) has very few examples of this pattern. Moreover, I show that non-human nouns in an VSO structure trigger a plural marker on the verb (120).

(118) *wiṣl-ū iʃ-ʃabāb*
3.arrive.PST.PRFV.M-PL DEF-guy.PL
'The guys have arrived.' (Corpus for Palestinian Arabic (Curras), 2016)

The noun *iʃ-ʃabāb* 'guys' triggers plural agreement on the preceding verb wiṣl-ū 'arrived' in (118).

(119) *daxl-at* *il-banāt*
enter-PST.PFV.3.SG.F DEF-girl.PL.F
'The girls entered.'

In (119), the verb *daxl-at* 'entered' precedes the plural noun *il-banāt* 'girls', and the verb *daxl-at* 'entered' is marked for singular feminine.

(120) *harab-u* *il-bisas*
escape.PST.PFV-3.PL DEF-cat.PL
'The cats escaped.'

In (120), the verb *harab-u* 'escaped' shows plural agreement when preceding the plural noun *il-bisas* 'cats'; unlike the singular agreement observed in an SVO structure (117).

So far, in PA, plural nouns trigger plural agreement on preceding verbs (VSO) structures with human and non-human subjects (section 4.2.1.2). In addition, non-human subjects in VSO structures can trigger singular agreement on preceding verbs which is a less common pattern in PA (section 4.2.1.2). On the other hand, human nouns trigger plural agreement on following verbs in SVO structures (section 4.2.1.1); whilst, plural non-human nouns trigger singular agreement in SVO structures (section 4.2.1.1).[17] Table (4.4) below gives a summary

[17]Exceptions apply like with the word *nās* 'people' which can trigger either singular or plural on the verbs in either structure.

of the subject verb agreement patterns with different humanness values and different word orders.

Table 4.4: Plural Subject Verb Agreement Patterns in PA: Summary

Subject Type	**Structure**	**Agreement type**
Human Subject	SV	Plural verb
	VS	Plural Verb or Singular Verb (singular is less common)
Non-human Subject	SV	Singular feminine Verb
	VS	Plural Verb

This section concludes target-related factors. The next section 4.3 provides details concerning factors involving both the target and the controller.

4.3 Factors related to both the controller and the target

This section provides details about the distance factor section 4.3.1. Distance, referring to the distance between the controller and the target, affects the agreement pattern obtained. I show that in PA further targets (from the controller) observe plural marking even if the controller triggers singular agreement on nearer targets.

4.3.1 Distance

This section provides evidence that in PA, the greater distance between the target and the controller, the more 'resorting to defaults'- agreement the target observes. I provide evidence

that PA observes similar agreement patterns with distant controllers to the ones observed in Cairene Arabic (Belnap, 1993). Moreover, I show that distance, which is discussed by scholars studying Arabic agreement 2.2 actually conforms with The Agreement Hierarchy by Corbett (1979) discussed in section 2.1.

Recall that in section 2.2, Belnap (1993); Bettega (2017); D'Anna (2017) considered the actual distance between the controller and the target in Cairene Arabic, Omani Arabic and Fezzāni Arabic; respectively. In other words, they counted the number of lexical items between the controller and the target and provided a summary of the results to what they consider far from the controller or close to the controller depending on the number of items between the two ends (controller and target). Additionally, Belnap (1993); Bettega (2017); D'Anna (2017) show in their work that these versions of Arabic trigger plural agreement on further targets. However, Corbett (1979) in his study of distance 2.1 did not consider the number of items between the controller and the target. Nevertheless, Corbett (2006) considers a further target to show what he calls semantic agreement. In other words, the likelihood of semantic agreement increases with distant targets. I show in this section that PA resorts to plural marking with further targets regardless of the agreement pattern triggered by the head noun on nearer targets.[18] In (121), the plural head noun *ʔiʃ-ʃabāb* 'guys' triggers

[18]Section 2.2.1.2 provided evidence that I consider plural agreement on further targets (including plural agreement on further targets of non-human controllers in Belnap's (1993) study to be semantic by the definition of Corbett (1979, 2006).

singular feminine agreement on nearer targets and plural agreement on further targets reflecting the fact that distance between the controller and the target affects the agreement patterns obtained. It should be mentioned that some nouns including the noun *ʔiʃ-ʃabāb* 'guys' trigger either plural or singular on their targets regardless of the word order. In other words, the word order factor is not applicable in the case of these nouns. The group also includes *wlād* 'boys' and *zlām* 'men' which are also considered doublet nouns and trigger a two-some pattern, as explained earlier.

(121) *ʔiʃ-ʃabāb ṣara-t bid-ha t-hiʒ ... ʔalla*
DEF-guy.PL.M become-F.SG.PRF want-F.SG 3.F.SG-leave.IPFV ... God
y-ʕīn-hum ʕala ħayā-t-hum
3.SG-help-PL on lifeF.SG-PL.M
'The guys want to leave/migrate the country, May God help them in their lives'
(Corpus for Palestinian Arabic (Curras), 2016)

In (121) the head noun *ʔiʃ-ʃabāb* 'guys' triggers deflected agreement on the closer targets as in *ṣara-t* 'became', *bid-ha t-hiʒ* 'want to leave'. On the other hand, the further targets are marked for plural *y-ʕīn-hum* 'help them' and *ħayā-t-hum* 'their lives'. Similarly, distance affects agreement with non-human nouns as in (122).[19]

(122) *fī ktīr ʔaʃyāʔ muhimm-ə lamma ʔahl-ī thaʒʒar-ū*
there very thing.PL important-SG.F when family.SG-POSS expel.PAST.PRF-3.PL
tarakū-hum b-il-bēt
leave.PAST.PRF-3.PL.(NOM)-3.PL(ACC) in-DEF-house.

[19]Recorded by the author.

'There are many important things that when my parents were expelled (out of their lands) (had to) leave behind.'

In (122), the head noun *ʔaʃyāʔ* 'things' is plural and it triggers deflected agreement on the near target *muhimm-ə* 'important'. On the other hand, the further target *hum* 'they' is plural.[20]

To sum up, this section discusses the effect of distance between the controller and the target in PA on the agreement patterns. I do not provide an actual count of the number of lexical items between the controller and the target. Moreover, I showed that further targets of plural nouns show plural marking.

4.4 Conclusion

This chapter provided a discussion of the factors affecting agreement patterns in PA. Some of the factors are controller-related section 4.1 and others are related to the target section 4.2. In addition, there are some factors that involve both the controller and the target section 4.3. Controller-related factors included a discussion of humanness 4.1.1.1, animacy 4.1.1.2, types of singular nouns in PA 4.1.3, types of plural forms in PA 4.1.4, and the effect of salience and individuation on agreement 4.1.5. A human, animate, plural noun in PA triggers plural

[20]The fact that the further target is a pronoun does not affect the agreement pattern in this case here although it does in other cases according to Corbett's hierarchy.

agreement on modifiers and verbs. However, a non-human plural noun triggers deflected agreement on modifiers and verbs unless the verb is in an VSO order. Target-related factors included the discussion of word order in PA 4.2.1. I showed that word order allows plural non-human nouns to trigger plural agreement instead of the deflected pattern provided the verb is pre-nominal. Additionally, I showed that plural non-human nouns can trigger plural agreement on verbs provided the verbs are distant from the controller 4.3.1. In fact, the discussion of distance 4.3.1 showed that further targets reflect default agreement which, in PA, is plural regardless of the agreement triggered on near targets.

Chapter 5

An LFG Analysis of the agreement patterns triggered by the noun 'guys'.

Chapter 3 provided a description of the syntactic and morphological facts of PA along with the agreement patterns obtained in the language. The main agreement patterns include: the full agreement pattern (including the strict pattern) discussed in section 3.2.1 which states that plural nouns trigger plural targets, the deflected agreement pattern discussed in section 3.2.2 reflecting the fact that some plural nouns trigger singular feminine markers on the targets in PA, the kind-noun agreement pattern discussed in section 3.2.3 which included examples of kind nouns triggering singular masculine on the target, the plurative pattern discussed in section 3.4 which reflects the singular feminine marker triggered by plurative

nouns and the two-some agreement pattern 3.3.3.3 which I claim to be triggered by doublet nouns like *ʃabāb* 'guys', *wlād* 'boys', *zlām* 'men', and *nās* 'people'. I identified doublet nouns as nouns that trigger either feminine singular or plural on the targets based on the individuation of the noun. Two-some patterns refer to two possible agreement patterns (plural or singular) triggered by doublet nouns in PA.

Chapter 4 provided a discussion of the controller-related factors 4.1, the target-related factors 4.2, and the factors involving both the controller and the target 4.3 like the distance factor 4.3.1. I showed in chapter 4 that the model of agreement I propose accounts for linguistic factors (for instance, humanness 4.1.1.1, the noun's morphological information 4.1.2 and word order 4.2.1,) and perception-related factors (for instance, animacy 4.1.1.2 and individuation 4.1.5). Moreover, I account for all the factors provided in the three agreement models discussed in chapter 2. For instance, my discussion of distance 4.3.1 conforms with Corbett's (1979) Agreement Hierarchy and Belnap's (1999) work on Cairene Arabic. I discussed these models in detail in chapter 2. In addition, I discussed in section 2.2.1.2 how the distance factor according to the Arabic agreement view 2.2 conforms with the Agreement Hierarchy 2.1.

This chapter 5 provides discussion and analysis in LFG of the noun *ʃabāb* 'guys'. Section 5.1 provides an introduction to the noun *ʃabāb* 'guys' including a description of its morphology. I show in the section that the noun *ʃabāb* 'guys' is one of the doublet nouns which

triggers the two-some pattern on targets. A detailed description of the two-some agreement patterns observed with the noun *ʃabāb* 'guys' is provided in section 5.2 including the singular pattern 5.2.1, the plural pattern 5.2.2, and examples from the Corpus for Palestinian Arabic (Curras) that might point towards a mixed agreement pattern 5.2.3. I show in this chapter that LFG can account for this behaviour through positing a new restriction on the INDEX feature of the noun *ʃabāb* 'guys' 5.3.3. In addition, I show that the noun *ʃabāb* 'guys' does not observe a split in the CONCORD and INDEX features 5.3.1; this is a fact I extend to PA, in general. PA, unlike Serbian/Croatian does not manifest the split of CONCORD and INDEX in nouns and rather observes two indices. I also provide evidence to reject a possible two entries of the noun *ʃabāb* 'guys' in the lexicon 5.3.2. Finally, a conclusion of the main points of chapter 5 is provided in section 5.4.

5.1 Introduction and the Morphology of *ʃabāb* 'guys'

I identified the noun *ʃabāb* 'guys' as a doublet noun in section 3.3.3.3 due to the fact that the noun *ʃabāb* 'guys' triggers either singular feminine agreement or a plural agreement on the modifiers.[1] Factors discussed in chapter 4 are not the reason behind this pattern.[2] The

[1]I earlier identified that the deflected agreement pattern involves a feminine singular marker on the target. I want to confirm here that the two-some pattern refers to two possible markers on the targets: feminine singular and plural. Referring to the two-some singular feminine as deflected is technically correct; however, the two-some pattern is merely driven by perception.

[2]Recall that in PA word order affects the agreement patterns observed with the head nouns 4.2.1; for instance. However, *ʃabāb* 'guys' triggers a two-some pattern regardless of the word order.

two-some pattern is triggered by the fact that number value of doublet nouns is subject to interpretation; therefore, resulting in a singular or a plural number. Recall, I identify the pattern triggered by the word *ʃabāb* 'guys' as the two-some pattern. I show in this chapter that the perception of the plural meaning of the noun *ʃabāb* 'guys' as either individuated or non-individuated licenses the agreement patterns triggered by the noun *ʃabāb* 'guys'.[3][4] Section 5.2.1 below provides examples of the singular agreement pattern triggered by the noun *ʃabāb* 'guys' followed by section 5.2.2 which provides plural agreement examples and section 5.2.3 studies the one case where the noun *ʃabāb* 'guys' triggers mixed agreement on the targets.

[3]What applies to the noun *ʃabāb* 'guys' is applicable to all doublet nouns which include *ʃabāb* 'guys', *wlād* 'boys', *zlām* 'men', and *nās* 'people'. The fact that plural nouns in PA are subject to different number values due to the perception of the plural does not mean that all nouns in PA are considered doublet nouns due to the fact that other plural NPs have a particular agreement pattern they trigger mostly. For instance, plural human nouns normally trigger plural targets, and plural non-human nouns mostly trigger singular feminine targets unless, of course, other factors affect the agreement pattern obtained.

[4]There is a homophonous word *iʃ-ʃabāb* 'age of youth.SG.M' which refers to the age of youth and is masculine singular. Therefore, *iʃ-ʃabāb* 'age of youth' triggers masculine singular on all targets; not to be confused with *ʃabāb* 'guys'. I do not provide any discussion of this entry.

5.2 Agreement Patterns observed with the noun *ʃabāb* 'guys'

5.2.1 *ʃabāb* 'guys' triggering singular targets

In (123) below, the head noun *ʃabāb* 'guys' is modified by the adjective *iṭ-ṭaib-e* 'nice'.[5] Notice the singular marker on the adjective *iṭ-ṭaib-e* 'nice' which reflects the fact that the noun *ʃabāb* 'guys' is interpreted to have a non-individuated reference. Similarly in (124), the verb *ʔiʒa-t* 'came' is singular preceding the non-individuated *ʃabāb* 'guys'. Recall, word order does not affect agreement patterns triggered by *ʃabāb* 'guys'.

(123) *iʃ-ʃabāb* *iṭ-ṭaib-e*
DEF-guy.PL.M DEF-nice-SG.F
'The nice guys.' (non-individuated)

(124) *ʔiʒa-t* *iʃ-ʃabāb* *mbāriħ*
come.PST.PRF-3.SG.F DEF-guy.PL yesterday
'The guys came yesterday.' (non-individuated)

Non-individuation of the plural of the word *ʃabāb* 'guys' is reflected through the singular agreement on the targets in (123) *iṭ-ṭaib-e* 'nice', and in (124) *ʔiʒa-t* 'came'. Factors other than individuation are not involved in the agreement patterns with the noun *ʃabāb* 'guys'. For instance, the change of subject-verb order from VSO in (124) to SVO in (125) does not

[5]Throughout the thesis, the definiteness feature of the noun *ʃabāb* 'guys' is to be ignored unless otherwise specified. Therefore, I discuss *ʃabāb* 'guys' and *iʃ-ʃabāb* 'the guys' interchangeably. I also drop the DEF everywhere but the glossing in the examples. Definiteness in PA does not play a role in agreement.

affect the agreement patterns obtained. This goes against the word order effect that was discussed with other NPs including human and non-human nouns in chapter 4.

(125) *ḍāʕ-at* *iʃ-ʃabāb*
lost.PST.PFV-3-SG.F DEF-guy.PL.M
'the guys got lost.' (non-individuated)

The verb *ḍāʕ-at* 'got lost' is singular feminine in (125) in a VSO order and it reflects the fact that the noun *ʃabāb* 'guys' is non-individuated. By the same token, predicate coordination does not affect agreement triggered by the noun *ʃabāb* 'guys'. Notice the singular marker on all verbs in (126).

(126) *iʃ-ʃabāb* *ʔiʒa-t* *w* *ṭawwal-at* *walla*
DEF-guy.PL come.PST.PRF-3.SG.F CONJ stay.PST.PRF-3.SG.F God
'The guys came and stayed a while, I swear.' (non-individuated)

In (126), both post-nominal verbs *ʔiʒa-t* 'came' and *ṭawwal-at* 'stayed a while' are singular feminine showing agreement with the noun *ʃabāb* 'guys'. So far, I provided examples of singular agreement patterns triggered by *ʃabāb* 'guys', 5.2.2 provides examples of the plural agreement pattern triggered by *ʃabāb* 'guys' with both NP-internal and NP-external targets.

5.2.2 *ʃabāb* 'guys' triggering plural targets

In (127) below, the word *ʃabāb* 'guys' triggers plural masculine on the adjective *l-muhandis-īn* 'engineers' in reference to an individuated group of male engineers. Similarly, in (128), the verb *rāħ-u* 'went' is plural. Similar to the singular pattern observed in 5.2.1, word order does not affect the predicate plural agreement (129).

(127) *iʃ-ʃabāb* *l-muhandis-īn*
DEF-guy.PL.M DEF-engineer-PL.M
'The engineers.' (Individuated), RPA

(128) *rāħ-u* *iʃ-ʃabāb* *ʕal ʔahwe*
go.PST-3.PL.M DEF-guy.PL.M to DEF-coffeeshop.SG.F
'The guys went to the coffee shop.' (Individuated), RPA

(129) *iʃ-ʃabāb* *rāħ-u* *ʕal ʔahwe*
DEF-guy.PL.M go.PST-3.PL.M to DEF-coffeeshop.SG.F
'The guys went to the coffee shop.' (Individuated), RPA

The plural masculine noun *ʃabāb* 'guys' triggers plural masculine markers on the targets in (127) – (129). The RPA label justifies the gender specification in the plural of the adjective *l-muhandis-īn* 'engineers' and the verb *rāħ-u* 'went'. So far, the examples presented either the singular or the plural pattern triggered on the target. However, section 5.2.3 discusses the two examples in PA where the noun *ʃabāb* 'guys' triggers a mixed agreement pattern. In other words, one target is plural whilst the other target is singular.

5.2.3 *ʃabāb* 'guys' triggering mixed agreement

ʃabāb 'guys' can trigger mixed agreement on the modifiers and the verbs.[6] For instance, in (130) below, the verb *ʔiʒ-u* 'came' is plural whilst the modifier *iṭ-ṭaib-e* 'nice' is singular; both are targets of the same controller *ʃabāb* 'guys' and show a non-identical feature-value in agreement with the noun *ʃabāb* 'guys'. It is also unclear whether the noun *ʃabāb* 'guys' in (130) has an individuated or a non-individuated reading due to the different number marking on the targets.

(130) *ʔiʒ-u* *iʃ-ʃabāb* *iṭ-ṭaib-e*
come.PST.3.PL DEF-guy.PL.M DEF-nice-SG.F
'The nice guys came.'

In (130), the adjective *iṭ-ṭaib-e* 'nice' is singular feminine modifying the head noun *ʃabāb* 'guys'; whereas, the verb *ʔiʒ-u* 'came' is plural masculine. The first possible justification of the agreement in (130) is attributed to the idiosyncrasy of *iṭ-ṭaib-e* 'nice'. Therefore, I argue that *ʃabāb* 'guys' is individuated by virtue of plural predicate *ʔiʒ-u* 'came'.

[6] Wechsler (2011) discusses mixed agreement for Polite Plural Generalization where "any second person 'polite plural' pronouns, used honorifically for a single addressee, control syntactic (plural) agreement on all person targets, while non-person-agreeing targets such as predicate adjectives vary across languages, between syntactic and semantic number agreement." However, in PA, mixed agreement with *ʃabāb* 'guys' does not manifest consistent markers on the targets. For instance, plural markers can be triggered on either the predicate or the modifier. The key point is that each of the targets observes distinct markers in relation to the same controller. Nevertheless, Wechsler and Zlatić (2003) use the term 'hybrid nouns' for nouns in Serbian/Croatian that observe a 'mixed agreement' pattern. Nevertheless, the noun *ʃabāb* 'guys' does not share enough characteristics to be labelled a hybrid noun. For more details on hybrid nouns, see (Wechsler and Zlatić, 2003).

It should be mentioned that mixed agreement pattern with *ʃabāb* 'guys' is not common. In fact, I could not find any example in the Corpus for Palestinian Arabic (Curras) (2016) where *ʃabāb* 'guys' triggers mixed agreement. Therefore, I treat the case in (130) as a special case due to the idiosyncrasy with the adjective *iṭ-ṭaib-e* 'nice'. In other words, based on the speaker judgement on examples similar to (130) (where *ʃabāb* 'guys' triggers plural on the predicate and singular on an adjective other than *iṭ-ṭaib-e* 'nice'), the adjective *iṭ-ṭaib-e* 'nice' is the only adjective this pattern occurs with as in the ungrammatical example in (131).

(131) **ʔiʒ-u iʃ-ʃabāb l-ʔawiyy-e*
come.PST.3.PL DEF-guy.PL.M DEF-strong-SG.F
'The strong guys came.'

Nevertheless, I found the example below on Twitter via a native PA speaker which indicates mixed agreement.[7] In (132), the verb *iʒa-t* 'came' is singular and *ħukkām* 'rulers' is plural.

(132) *iḏa iʒa-t ʃabāb ħukkām, kul id-dinya*
if come.PST-3.SG.F guy.PL.M ruler.PL, every DEF-life.SG.F
b-tit-ɣayyar
PROG-PRES.3.SG.F-change
'Lit: If men rulers came the whole life will change.'

intended: 'If men became rulers, the whole life will change.' Twitter

[7]The speaker was discussing an educational institution run by ladies.

The example in (132) shows the possibility of having a mixed agreement pattern with the head noun *ʃabāb* 'guys'. An analysis that considers *ħukkām* 'rulers' to have an interpretation as a non-individuated entity is not satisfactory; simply, because *ħukkām* 'rulers' functions as an adjective here, and adjectives in PA are not subject to the individuation/non-individuation interpretation that is applicable to nouns. In other words, the individuation factor affects the semantics of the plural noun in Arabic which is reflected through the agreement observed on the targets: modifiers and predicates. Therefore, the only explanation for (132) is that this is mixed agreement. Due to the scarcity of similar examples, I do not treat *ʃabāb* 'guys' as a noun that triggers mixed agreement; rather, I consider *ʃabāb* 'guys' as a doublet noun triggering two-some agreement. I provide an analysis of the two-some agreement pattern from an LFG perspective in the following section.

5.3 Understanding two-some agreement patterns with *ʃabāb* 'guys'

So far, I showed that *ʃabāb* 'guys' can trigger either singular or plural on the targets regardless of other factors like domain or word order resulting in a two-some agreement pattern. Additionally, there is the slight possibility that *ʃabāb* 'guys' might trigger either plural or

singular on either target resulting in a mixed agreement pattern.[8] I address the issue that *ʃabāb* 'guys' is a doublet noun in this section, and I use the possibility of *ʃabāb* 'guys' triggering mixed agreement to provide evidence to reject the split of the features of CONCORD and INDEX of the noun *ʃabāb* 'guys'. One of the possible solutions to this puzzle relates to LFG and the split of CONCORD and INDEX. I reject an analysis along these lines and I provide evidence against it in section 5.3.1. On the other hand, it could be possible that the word *ʃabāb* 'guys' has two separate entries in the lexicon; each with unique features. I also reject the two possible entries proposal in section 5.3.2. A more satisfactory analysis lies in the effect of individuation on the noun *ʃabāb* 'guys' . I explain how positing an individuation restriction on the INDEX feature of *ʃabāb* 'guys' could potentially answer the puzzle provided in section 5.3.3.

5.3.1 Rejecting the separation/split of CONCORD and INDEX features proposal

The fact that *ʃabāb* 'guys' triggers either singular or plural might be tempting to think of a possibility (along the lines of Wechsler and Zlatić's (2003) analysis with *deca* nouns) of having a separate and two different sets of CONCORD and INDEX features of the noun *ʃabāb*

[8]The difference between mixed agreement and two-some agreement lies in the consistency and the clear split of INDEX and CONCORD features of a noun. A noun that triggers mixed agreement patterns such the Single Conjunct Agreement (SCA) noun *deca* 'children' has a distinct set of CONCORD features that is always triggered NP-internally and another set of INDEX features triggered on NP-external targets. On the other hand, the noun *ʃabāb* 'guys' which triggers a two-some agreement pattern can trigger either plural or singular on the NP-internal targets and either plural or singular on the NP-external targets and does not observe distinct sets of CONCORD or INDEX but rather observes two indices which are affected by individuation.

'guys' where the modifier shows agreement with the CONCORD features of the noun and the verb co-specifies the INDEX features of the noun. Recall from section 2.1, that CONCORD is more associated with the morphology and is specified with the NP-internal targets; whereas, INDEX is more semantic-related and acts NP-externally. I reject this proposal based on the predictions it implies. First, the split proposal predicts that PA nouns or at least some of them (including the word *ʃabāb* 'guys') show a separation between their CONCORD and INDEX features with each controlling agreeing forms of the appropriate targets. The proposal presumes consistency across the targets which involves a distinct set of CONCORD features that act on all modifiers and a distinct set of INDEX features on predicates. Consistency also indicates that the features identified as CONCORD are related to morphology which ensures the distinction from the INDEX features.

Following the analysis of Wechsler and Zlatić (2003), the word *ʃabāb* 'guys', can be said to have the features presented in (133): a plural CONCORD based on the morphological features, and a singular INDEX based on the semantics of a non-individuated reading.

(133)
$$\begin{bmatrix} \text{CONCORD} & \begin{bmatrix} \text{NUMBER} & pl \\ \text{GENDER} & m \end{bmatrix} \\ \text{INDEX} & \begin{bmatrix} \text{NUMBER} & sg \\ \text{GENDER} & f \end{bmatrix} \end{bmatrix}$$

However, based on an individuated reading of the noun *ʃabāb* 'guys', INDEX is plural as in (134) whilst CONCORD remains plural as reflected by the morphological features of the noun.

(134)
$$\begin{bmatrix} \text{CONCORD} & \begin{bmatrix} \text{NUMBER} & pl \\ \text{GENDER} & m \end{bmatrix} \\ \text{INDEX} & \begin{bmatrix} \text{NUMBER} & pl \\ \text{GENDER} & m \end{bmatrix} \end{bmatrix}$$

So far, there are two possible combinations of the sets of CONCORD and INDEX for the word *ʃabāb* 'guys' in PA which are based on the morphological facts of the noun, the semantic interpretation of the plural into individuated or not, and the markers on the targets. The fact that there is no consistency in the features associated to either CONCORD or INDEX is not ideal in terms of the split of features between CONCORD and INDEX of the same noun. While CONCORD and INDEX features are usually identical, in cases of split each has a clear set of features that is co-specified with the appropriate targets. Therefore, I reject a split in the features of the CONCORD and INDEX of the noun *ʃabāb* 'guys'.

Inconsistency is a strong reason to reject a split in the features of *ʃabāb* 'guys'. Moreover, the fact that *ʃabāb* 'guys' can also observe a single agreement pattern with mixed domain targets supports rejecting this proposal as in (135) and (136) below . All the targets in

(135) are feminine singular reflecting a non-individuated reading. Similarly, all the targets in (136) are plural indicating an individuated reading of the noun *ʃabāb* 'guys' .

(135) *iʃ-ʃabāb* *iṭ-ṭaib-e* *bid-ha* *t-ʕīʃ*
DEF-guy.PL.M DEF-good-F.SG want.PRS.IPFV-F.SG 3.F.SG-PRS.IPFV-live
"The good guys want to live."

(136) *iʃ-ʃabāb* *iṭ-ṭaib-īn* *bid-hum* *y-ʕīʃ-u*
DEF-guy.PL.M DEF-good-PL want.PRS.IPFV-PL 3.M-PRS.IPFV-live-PL
"The good guys want to live."

Examples (135) and (136) reflect the fact that the doublet noun *ʃabāb* 'guys' can observe single agreement pattern across all targets which means that all the targets observe the same marking either plural or singular according to the individuation of the noun. In addition to the single agreement pattern, there is a possibility, although unlikely, that the noun *ʃabāb* 'guys' triggers different markers on different targets according to the mixed agreement pattern.

To summarise, the claim for the existence of a split in the CONCORD and INDEX features within some nouns in PA is rejected as there is, yet, not much support for this claim. First of all, this split is not consistent throughout all the occurrences of words like *ʃabāb* 'guys'. Unlike the case with Serbian/Croatian with *deca*-type nouns which always control feminine singular on NP-internal targets and non-finite predicate phrases, and neuter plural on pronouns (Wechsler and Zlatić, 2003, p. 50), *ʃabāb* 'guys' does not have one set of

features for determiners and modifiers, and another for verbs and pronouns. In other words, not every NP-internal target of *ʃabāb* 'guys' is plural masculine, nor is every NP-external target singular feminine. Finally, nouns that observe a CONCORD and INDEX split as with *deca*-nouns in Serbian/Croatian do not trigger one agreement patterns across all targets instead of triggering a mixed agreement pattern. Nevertheless, *ʃabāb* 'guys' triggers the same markers on all targets. Therefore, the first proposal of a split in the features of the noun *ʃabāb* 'guys' is rejected.

5.3.2 Rejecting the two entries proposal

As an alternative to the split of features proposal and in order to account for the various patterns triggered by the noun *ʃabāb* 'guys', one might claim the existence of two entries of *ʃabāb* 'guys'. The fact that some occurrences of *ʃabāb* 'guys' trigger singular feminine on the modifiers, and other occurrences of *ʃabāb* 'guys' trigger plural masculine on modifiers might suggest the existence of two homophonous entries for *ʃabāb* 'guys'. Positing such a proposal, as uneconomical as it sounds, might explain cases where all targets observe the same pattern: single agreement; but it fails to explain mixed agreement cases, although the mixed agreement cases are very rare.

The proposal of two entries is rejected as it violates the economic rule of language. In addition, I agree with Wechsler and Zlatić that "positing two homophonous words is clearly

stipulative and uneconomical" Wechsler and Zlatić (2003, p. 43). Unlike Wechsler and Zlatić, I do not find positing two subtypes of the word an alternative to the two entries proposal.[9] Positing two homophonous words is similar in its effect to proposing two entries in the lexicon. After all, the two homophonous words will have two distinct entries in the lexicon. Thus, the proposal of having two distinct entries of the word *ʃabāb* 'guys' is, similar to the proposal of the two homophonous words' proposal, uneconomical and both are rejected in relation to account for the agreement patterns triggered by *ʃabāb* 'guys'.

5.3.3 The [IND] restriction proposal

As an alternative to the proposals above, and to solve the conflict of having various agreement patterns triggered by the noun *ʃabāb* 'guys' on the targets, I propose a restriction: the IND (individuation) restriction on the INDEX number for the word *ʃabāb* 'guys'. Basically, this restriction allows the individuality interpretation of the plural to override the default number of the noun; consequently, allowing two possibilities: singular INDEX or plural INDEX . The reason I introduced the restriction on the INDEX set of features only, not on the CONCORD set, is due to the fact that INDEX is associated with semantics while CONCORD correlates with morphology. Positing the [IND] restriction on the INDEX feature only does not affect

[9]Wechsler and Zlatić (2003) propose defining two subtypes of the noun class in SCA referred to as type *noun-II*. *Noun-II* in Serbian/Croatian is considered problematic to the phenomenon of agreement as it is feminine morphologically but shows masculine CONCORD and INDEX features or feminine CONCORD and masculine INDEX. See Wechsler and Zlatić (2003, p. 36–44) for a more detailed discussion.

the plural interpretation of the word *ʃabāb* 'guys'. After all, whether the noun *ʃabāb* 'guys' is perceived as individuated or not has nothing to do with the morphological features of the noun and is rather a semantic feature (and perception-related). Nevertheless, to argue for cases of singular NP-internal targets modifying the plural noun *ʃabāb* 'guys', I take into account the possibility for an INDEX feature to act on NP-internal targets. In other words, I consider an exceptional case where INDEX is co-specified with NP-internal targets.[10] Recall that the default INDEX number feature of the word *ʃabāb* 'guys' is identical to its CONCORD: plural. However, the IND restriction allows for a non-individuated interpretation of the plural; thus allowing for a hard value to override the default resulting in a singular INDEX number. Since this restriction applies to INDEX only, it results in one CONCORD feature and one of two possible INDEX features.

[10]There is, of course, the possibility that CONCORD is exceptionally overwritten as feminine singular informed by the INDEX and this is a satisfactory proposal. However, I consider INDEX to act NP-internally and I implement this analysis in chapter 6.

(137)
$$\begin{bmatrix} \text{CONCORD} \begin{bmatrix} \text{NUMBER} & pl \\ \text{GENDER} & m \end{bmatrix} \\ \text{INDEX}_I \begin{bmatrix} \text{NUMBER} & pl \\ \text{GENDER} & m \end{bmatrix} \\ \text{INDEX}_\Phi \begin{bmatrix} \text{NUMBER} & sg \\ \text{GENDER} & f \end{bmatrix} \end{bmatrix}$$

INDEX$_I$ refers to the case where the [IND] restriction applies and the noun *ʃabāb* 'guys' is interpreted as an individuated group of members; hence, plural in meaning. Thus, both the default value and the hard value are identical. However, INDEX$_\Phi$ refers to the case where the hard value is singular and it overrides the plural default value due to the [IND] restriction being in place and a non-individuated interpretation of the noun *ʃabāb* 'guys' .

The positing of feature restriction as tools for analysis in cases of mixed/irregular agreement patterns was introduced by Wechsler and Zlatić (2003, p. 62) in the discussion of certain situations where there is a lack of grammatical gender present in the sentences provided in French and Serbian/Croatian; hence, affecting the agreement patterns in question. Wechsler and Zlatić (2003, p. 62) provide the restrictions in HPSG. Similarly, the [IND] restriction applies for plural nouns where the individuation of the plural plays a role in the agreement pattern through affecting the cardinality of the noun. In cases of singular nouns,

the restriction can still be declared rendering a non-individuated interpretation which, in the cases of singular nouns, is redundant.

Positing the [IND] restriction on the INDEX feature creates several predictions in terms of the agreement patterns triggered by the noun *ʃabāb* 'guys'. First, section 5.3.3.1 shows that INDEX$_\phi$ requires a singular target to match the non-individuated reading of the noun *ʃabāb* 'guys' by analysing a case where the target is a singular modifier through considering INDEX to act NP-internally. Next I provide an analysis of plural agreement with the noun *ʃabāb* 'guys' through the [IND] restriction in section 5.3.3.2; consequently positing a constriction on the INDEX number to be plural and spreading plural to CONCORD. By the same token, the [IND] restriction analyses cases with plural modifier agreement. Mixed agreement cases where targets have different features are analysed through applying the [IND] restriction to INDEX only and through a violation in the CONCORD-INDEX correlation in section 5.3.3.3.

First of all, in most cases, the CONCORD and INDEX features of the word *ʃabāb* 'guys' are identical: plural due to the fact that both point towards a plural interpretation of the noun *ʃabāb* 'guys' which triggers a plural agreement as in (138).

(138) *iʒ-ū* *iʃ-ʃabāb* *l-mnāħ*
come.PAST-3.PL DEF-guy.PL.M DEF-nice-PL
'The nice guys came.'

In (138), the controller *ʃabāb* 'guys' triggers plural agreement on all its targets. This is in

line with the relationship diagram where morphology correlates with CONCORD, CONCORD and INDEX are identical and they both correlate with semantics.

MORPHOLOGY ⇔ CONCORD ⇔ INDEX ⇔ SEMANTICS

On the other hand, cases of singular targets in agreement with the plural noun *ʃabāb* 'guys' as well as cases of mixed agreement can be analysed through applying the IND restriction and are discussed, each case individually, in the following sections. It is worth mentioning that HPSG analysis is not within the scope of this thesis; hence, not provided.

5.3.3.1 The [IND] restriction requiring singular agreement

This section analyses the first case of agreement between the noun *ʃabāb* 'guys' and an adjective modifying it. The same analysis provided in this section applies to a singular predicate as a target for a non-individuated *ʃabāb* 'guys'. The only difference in the analysis between a modifier and a predicate is that in the case with predicate agreement, there is no need to discuss the CONCORD feature; nevertheless, the same analysis applies. In (139), the modifier *il-ɣaniyyeh* 'rich' is singular which reflects a non-individuated reading of the noun *il-ɣaniyyeh*.

(139) *iʃ-ʃabāb* *il-ɣaniyy-eh*
DEF-guy.PL.M DEF-rich-SG.F
'The rich guys.'

In (139) with the non-individuation interpretation, the [IND] restriction applied to the INDEX number of the noun *ʃabāb* 'guys' requires the number value of the modifier to be singular to match the non-individuated interpretation according to the speaker's perception. Therefore, a conflict between the plural default value of the INDEX number and the singular hard value identified by the [IND] restriction arises resulting in the hard value overriding the default value. According to the restriction, INDEX number is singular. Consequently, I propose that INDEX functions internally which is not impossible according to LFG scholars (see King and Dalrymple (2004) on NP-internal INDEX).

In other words, the CONCORD and INDEX features of the noun *ʃabāb* 'guys' in (139) are as in (140). Notice the INDEX in the *f*-structure below is the restriction-declared INDEX, through the use of the subscript ϕ.

(140)
$$\begin{bmatrix} \text{CONCORD} & \begin{bmatrix} \text{NUMBER} & pl \\ \text{GENDER} & m \end{bmatrix} \\ \text{INDEX}_{\Phi} & \begin{bmatrix} \text{NUMBER} & sg \\ \text{GENDER} & f \end{bmatrix} \end{bmatrix}$$

(141)

ʃabāb	'guys'	(↑ CONCORD NUM)	=	PL
		(↑ CONCORD GEND)	=	M
		(↑ $INDEX_{\Phi}$NUM)	$=_c$	SG
		(↑ $INDEX_{\Phi}$GEND)	=	F
ɣaniyyeh	'rich'	((Adjunct (ADJ) ∈ ↑) $INDEX_{\Phi}$NUM)	=	SG

In (141), the head noun's INDEX number is constrained to be singular through the individuation restriction. As explained above, the features in (140) provide an analysis for cases like the one in (139). The analysis above also justifies the reason why the [IND] restriction is introduced on the INDEX only. This analysis can be extended to cases of deflected agreement, also.

5.3.3.2 The [IND] restriction requiring plural agreement

The second pattern of agreement triggered by the noun *ʃabāb* 'guys' requires a plural marking on the targets according to an individuated reading. In this section, I provide the analysis for a predicate agreement (142) which is also extendable to modifier agreement by virtue of INDEX features being identical to CONCORD features.

(142) *iʃ-ʃabāb* *nisy-ū* *ʕassāf* *w* *lli* *ʒāb* *ʕassāf* *bas*
DEF-guy.PL.M forget.PST-3.PL.M Assaf CONJ REL bring.PST.3.SG.M Assaf when
ʃāf-ū *l-ʔaħmar*
see.PST-3.PL.M DEF-red

'The guys forgot all about Mohammad Assaf (the singer) when they saw the girl in red.' ?

In (142), the noun *ʃabāb* 'guys' triggers plural agreement on the verbs *nisy-ū* 'forgot' and *ʃāf-ū* 'saw'. These two targets are both NP-external and agree with the INDEX features of the noun. Thus, I argue that the INDEX features of the noun *ʃabāb* 'guys' in (142) are plural which are identical to those of the CONCORD of the same noun. The agreement pattern shown in (142) can be analysed through the [IND] restriction, as well. Since the speaker's perception matches the default semantic number of the noun *iʒa-t* 'came', there is no need for the [IND] restriction to allow the override of hard values over default values. Both hard and default values are identical. As a result, the four components of agreement match as shown in the diagram (143) which depicts a case where all features involved in agreement correlate with each other.

(143) MORPHOLOGY ⇔ CONCORD ⇔ INDEX ⇔ SEMANTICS

(144)

ʃabāb	'guys'	(↑ CONCORD NUM)	=	PL
		(↑ CONCORD GEND)	=	M
		(↑ INDEX$_I$ NUM)	=$_c$	PL
		(↑ INDEX$_I$ GEND)	=	M
nisy-ū	'forgot'	(↑ Subject (SUBJ) INDEX$_I$ **NUM)!** (**NUM)!**)	=	PL

The entries in (144) provide the information that the INDEX number of the noun phrase is constrained to be plural; in other words, the noun phrase is perceived as an individuated plural. The same analysis applies to plural modifiers with the noun *ʃabāb* 'guys'.

5.3.3.3 The [IND] restriction with mixed agreement

Although I acknowledge the fact that there is little evidence that the noun *ʃabāb* 'guys' triggers mixed agreement patterns in PA, I provide analysis for the example found on Twitter (145) which observes singular agreement on the predicate *iʒa-t* 'came' and plural agreement on the modifier *ħukkām* 'rulers' through the application of the [IND] restriction. I show in this section that positing the [IND] restriction can account for all cases of agreement including cases of mixed agreement.

(145) *iḏa iʒa-t ʃabāb ħukkām, kul id-dinya*
if come.PST-3.SG.F guy.PL.M ruler.PL, every DEF-life.SG.F
b-tit-ɣayyar
PROG-PRES.3.SG.F-change
'Lit: If men rulers came the whole life will change.'
intended: 'If men became rulers, the whole life will change.' Twitter

It is obvious that the NP-internal target shows different features from the NP-external target. In other words, there is a violation in the correlation between CONCORD and INDEX of (145). Cases like (145) may be diagrammed as in (146).

(146) MORPHOLOGY ⇔ CONCORD ‖ INDEX ⇔ SEMANTICS

As seen in (146), CONCORD correlates with morphology, and the NP-internal modifier *ħukkām* 'rulers' is plural masculine. On the other hand, INDEX correlates with the non-individuated semantic interpretation of the plural of the noun *ʃabāb* 'guys' triggering singular feminine on the verb *iʒa-t* 'came'. I consider cases like (145) exceptional as I could not find similar behaviour with other examples in Corpus for Palestinian Arabic (Curras) (2016) or other social media. Nevertheless, I assume a constraint on the noun phrase requiring a plural CONCORD and a singular INDEX as in (147).

(147)

ʃabāb	'guys'	(↑ CONCORD NUM)	=	PL
		(↑ CONCORD GEND)	=	M
		(↑ $INDEX_{\Phi}$NUM)	$=_c$	SG
		(↑ $INDEX_{\Phi}$GEND)	=	F
ħukkām	'rulers'	((ADJ ∈ ↑) CONCORD NUM)	=	PL
iʒa-t	'came'	(↑ SUBJ $INDEX_{\Phi}$NUM)	=	SG

To conclude, the noun *ʃabāb* 'guys' can trigger either a singular marker on the targets, a plural marker, or a mixed agreement pattern. Section 5.3.3 provided an LFG analysis of each of these patterns through positing an [IND] restriction on the INDEX number of the noun *ʃabāb* 'guys' . Section 5.3.3.1 analysed the singular pattern triggered by the noun *ʃabāb* 'guys' through the study of a case of a singular modifier. I propose that the [IND]

restriction in case of a singular marker restricts the semantics to a non-individuated reading; consequently, a singular INDEX number. By virtue of proposing that INDEX works NP-internally, singular markers on the modifiers are allowed. By the same token, the [IND] restriction explained the cases of plural agreement triggered by the noun *ʃabāb* 'guys' on the targets through an analysis of a plural predicate in section 5.3.3.2. The fact that INDEX is plural which is identical to CONCORD allows plural agreement on either of the modifiers or the predicates. Finally, section 5.3.3.3 studied the mixed agreement case of a plural modifier and a singular predicate which involves separate and individual constraints in the lexical entry of the noun phrase to license the mixed agreement pattern. Section 5.3 introduced three possible proposals to account for the two-some (and the mixed) agreement patterns triggered by the noun *ʃabāb* 'guys'. Section 5.3.1 provided evidence to reject the possibility of having a split in the features of CONCORD and INDEX of the noun *ʃabāb* 'guys'. The proposal is rejected due to the inconsistency it predicted in terms of the features involved according with NP-internal and NP-external targets. Additionally, section 5.3.2 rejected the possibility of having two entries of the noun *ʃabāb* 'guys' due to the violation of the principle of economy of language. Finally, an alternative solution was provided in section 5.3.3 which involved the introduction of an individuation restriction [IND] posited on the INDEX number

of the noun *ʃabāb* 'guys'; therefore, having two coexisting indices of the noun.[11]

5.4 Conclusion

This chapter studies the doublet noun *ʃabāb* 'guys' which is considered interesting in PA in relation to agreement due to the two-some agreement pattern it triggers. *ʃabāb* 'guys' triggers either singular or plural markers on its targets and on very rare occasions the noun *ʃabāb* 'guys' can trigger mixed agreement patterns where each target observes different markers of agreement. Section 5.1 provided an introduction the morphology of the noun *ʃabāb* 'guys' and included examples of the singular (non-individuated) pattern 5.2.1, plural (individuated) pattern 5.2.2, and mixed agreement pattern 5.2.3. This chapter provided an analysis in LFG through the discussion of CONCORD and INDEX features and concludes that PA is not a language that observes a split in the features of CONCORD and INDEX 5.3.1; rather, have two coexisting indices of the noun *ʃabāb* 'guys'. The behaviour of *ʃabāb* 'guys' is analysed through positing an [IND] restriction on the INDEX feature of the noun *ʃabāb* 'guys' 5.3.3. As a result, the noun *ʃabāb* 'guys' has either a singular INDEX_{ϕ} or a plural one

[11] There is also the possibility of two extra proposals. First, I propose the possibility of having two syntactic representation of the noun *ʃabāb* 'guys' due to the fact that *ʃabāb* 'guys' manifests the morphological features of masculine plural which map to either singular or masculine plural. Therefore, the agreement patterns triggered by the noun *ʃabāb* 'guys' are relevant to the syntactic representation. Alternatively, one could think of a grammaticalised form of *ʃabāb* 'guys' which lacks its morphological markers. This means the agreement pattern obtained explains the features of the noun as either gender specified or non-specified and either plural or singular (individuated versus non-individuated reference). This is similar to Wechsler's (2011) lack of Phi features proposal. I do not provide more details of this proposal; either.

INDEX$_I$. Finally, I reject the proposal of having two homophonous entries of the noun *ʃabāb* 'guys' where one entry is singular and the other is plural in section 5.3.2.

Ultimately, the behaviour and analysis of *ʃabāb* 'guys' extends to include the analysis of other doublet nouns *wlād* 'boys', *zlām* 'men' and *nās* 'people'. The discussion in LFG in this chapter is necessary as a preparation for the following chapter 6 which discusses agreement in PA in cases of coordination in the noun phrase as well as coordination in the modifiers.

Chapter 6

Coordination and Agreement in Palestinian Arabic

The discussion of agreement in PA extends to include cases of coordination, in addition to the discussed agreement patterns between a predicate and its argument(s), and head-modifier agreement cases. I focus on coordinated NPs modified by a single adjective and a single noun modified by a coordinate AdjP.[1] Either case has a certain set of agreement features and rules that are discussed in this chapter.

In chapter 3 earlier, I provided detailed discussion of the single controller single target

[1]One should also consider a case of coordinated NPs modified by a coordinated set of adjectives which is not discussed in this thesis. However, the patterns are predicted and similar to either case discussed here. In addition, I ignore cases of predicate and verb coordination.

agreement in PA studying the various agreement patterns including the full pattern 3.2.1, the deflected pattern 3.2.2, and kind-noun pattern 3.2.3. One of the main points covered in chapter 3 is the two-some agreement pattern triggered by doublet nouns; like the word *ʃabāb* 'guys' which triggers either singular feminine or plural on the targets depending on the individuation of the plural form 3.3.3.3. Chapter 4 provided details of the controller-related factors 4.1, target-related factors 4.2, and factors involving both the controller and the target 4.3. Chapter 4 contributes to the study of agreement through the acknowledgement of linguistic and non-linguistic factors affecting the agreement patterns obtained; which I refer to as a poly-factorial model of agreement. Chapter 5 discussed the behaviour of doublet nouns through the analysis of the noun *ʃabāb* 'guys' from an LFG perspective. The main conclusion is that PA accounts for the two-some agreement pattern through positing an [IND] (individuation) restriction on the INDEX of the nouns known as doublet nouns 5.3.3. The [IND] restriction results in either a singular INDEX or a plural one based on the interpretation of the noun as either non-individuated or individuated; respectively. The relevant INDEX feature is co-specified with the predicate for a predicate-subject agreement. Moreover, chapter 5 provided evidence that PA does not observe a set of CONCORD features that is distinct from the set of INDEX features for the same controller 5.3.1 and rather observes multiple coexisting indices. Nevertheless in PA, CONCORD is co-specified with NP-internal targets and is associated with morphology whereas INDEX is co-specified with NP-external

targets and is semantic-related. Finally, in chapter 5, I briefly discussed that it could be possible for INDEX to act NP-internally.

It has been established that coordination is one of the syntactic factors affecting agreement patterns cross-linguistically. In fact, many scholars (Belnap, 1991; Corbett, 2000; Dalrymple and Kaplan, 2000; Corbett, 2006; Hristov, 2012; Belyaev et al., 2015, amongst many others) discuss coordination and agreement in various languages, such as Egyptian Arabic, Russian, Hindi, Italian, Serbian/Croatian, Polish, and German. Similarly, this chapter studies the semantic variation and the different agreement patterns in PA in cases of coordination of coordinated noun phrases and coordinated modifiers.

Data sets in this chapter are analysed through an LFG view; I analyse NP-internal and NP-external agreement in reference to the features of CONCORD and INDEX following the work of Wechsler and Zlatić (2003); Dalrymple and Kaplan (2000); Alsina and Arsenijević (2012b,a); Belyaev et al. (2015) amongst many others. Additionally, I discuss the distributivity of CONCORD in PA and provide evidence that CONCORD in PA is considered distributive. Moreover, an analysis of the split/joint interpretation of the coordinated sets is provided. I show that in PA, split readings are possible when the number marking on the head noun (plural) is different from the number marking on the individual adjectives of the coordinated AP (each adjective is singular). However, it is also possible to have a split reading with similar number marking on the head noun. Finally, I provide a discussion of single-conjunct

agreement with predicates in PA.

Section 6.1.1 below provides an introduction to the LFG framework in general, and the agreement phenomenon and its view in LFG as a co-specification of features between the controller and the target. Furthermore, section 6.1.2 provides an introduction to coordination discussing the main characteristics, and coordination types (accidental and natural coordination). I present a discussion of ellipsis and coordination 6.2 providing valid reasons for rejecting ellipsis as an analytical tool for the examples provided in PA in section 6.2.1. In addition, a discussion of coordination in LFG 6.3 along with the discussion of distributive versus non-distributive features 6.3.2, and joint versus split readings 6.3.1 is provided. Section 6.3.3 provides a discussion of single-conjunct agreement in LFG as this is relevant to the discussion of the agreement patterns between a coordinated NP and a pre-nominal verb in PA. Section 6.4 is a detailed analysis of PA agreement patterns involving coordinated constructions and provides an analysis for cases of single NPs modified by coordinated APs 6.4.1 as well as cases of NP coordination in PA 6.4.2 both with predicate agreement 6.4.2.1 including single-conjunct agreement patterns, and modifier agreement 6.4.2.2. Finally, section 6.5 provides an overall summary of the chapter.

6.1 Introduction

6.1.1 Introduction to LFG

This section is an introduction to the syntactic framework of LFG in (Bresnan, 2001; Dalrymple and Hristov, 2010; Kazana, 2011; Börjars et al., 2019, amongst many others). LFG (Lexical Functional Grammar) is a non-derivational or non-transformational approach to syntax (Bresnan, 2001; Dalrymple, 2001). Within this framework, syntacticians appeal to some constraints and lexical entries of the words which are used to analyse the agreement patterns in a language. Moreover, LFG assumes a functional structure (f-structure) and a constituent structure (c-structure) as a means of syntactic representation in addition to other structures such as argument structure (a-structure), information structure (i-structure), semantic structure (σ-structure), morphological structure (m-structure), and phonological structure (p-structure).

A c-structure in LFG resembles the phrase-structure trees in other theories (Hristov, 2012); it is a hierarchical organisation of words into phrases and is based on X-bar theory (Dalrymple, 2001, p. 7). On the other hand, an f-structure is an abstract organisation representing structures between predicates and arguments in addition to functional relations of the internal structure of the sentence. F-structures are represented as "attribute-value matrices enclosed in square brackets" (Hristov, 2012) where the grammatical functions are

features and the lexical items performing that function are values of that feature. A matrix represents a function between an attribute and a value (Kazana, 2011).[2]

6.1.2 Agreement in LFG

Analysing agreement within LFG follows a "codescriptive approach" (Belyaev et al., 2015, p. 11) where both the target and the controller contribute to the agreement features in question. In other words, agreement is a specification (or multiple specification) of the features compatible between the controller and the target (Hristov, 2012). Additionally, in most constraint-based theories, the constraints for agreement are placed by the predicates (verbs, for instance) on the features of their arguments as shown in the lexical entries of the predicates.[3] For example in (148) below, the verb *play-s* is marked (with the singular *-s*) to reflect the fact that its subject is a singular third person. The subject must carry the same feature-values: has the singular value for the number feature and be a third person, as shown in the verb's lexical entry.

(148) SUBJ play-s chess.

(149)
$$\begin{array}{llll} \textit{plays} \quad \text{V} & (\uparrow \text{SUBJ NUM}) & = & \text{SG} \\ & (\uparrow \text{SUBJ Person (PERS)}) & = & 3 \end{array}$$

[2]examples of f-structure in LFG are presented in 6.1.2. See example (181) for a c-structure in LFG.

[3]For more on agreement and LFG, see (Pollard and Sag, 1994; Bresnan, 2001; Wechsler and Zlatić, 2003; Dalrymple and Hristov, 2010; Kazana, 2011; Hristov, 2012).

Based on above, example (150) is grammatically correct; whereas, example (152) and example (154) are not.

(150) John play-s chess.

The lexical entry of *John* in (151) shows that it has the features required by the constraints on the verb in (149).

(151)
John	N	(↑ NUM)	=	SG
		(↑ PERS)	=	3

Any subject that fulfils the requirements of the verb (3.SG) is grammatically correct; as in *John* in (150) which is (3.SG); therefore, (150) is grammatically correct.

(152) * I play-s chess.

The subject *I* in (152) is 1.SG which does not match the person feature required by the verb *plays* as shown in (153).

(153)
I	PRO	(↑ NUM)	=	SG
		(↑ PERS)	=	1

Similarly, in (154), the number value for the subject does not meet the constraints laid out by the verb in (149).

(154) *They play-s chess.

The use of *They* (3.PL) in (154) is grammatically incorrect; as *they*, as shown in (155) does not meet the number constraint specified by the verb *plays*.

(155)
$$\begin{array}{llll} \textit{They} & \text{PRO} & (\uparrow \text{NUM}) & = \text{PL} \\ & & (\uparrow \text{PERS}) & = 3 \end{array}$$

LFG represents predicate-argument agreement through a series of equations known as phrase structure rules as well as at the f-structure level. The f-structure for the elements in example (150) above is in (156) below.

(156)
$$\begin{bmatrix} \text{PRED} & \text{'PLAY <SUBJ, OBJ >'} \\ \text{TENSE} & \text{PRES} \\ \text{SUBJ} & \begin{bmatrix} \text{PRED} & \text{'JOHN'} \\ \text{NUM} & \text{SG} \\ \text{GEN} & \text{M} \end{bmatrix} \\ \text{Object (OBJ)} & \begin{bmatrix} \text{PRED} & \text{'CHESS'} \\ \text{NUM} & \text{SG} \end{bmatrix} \end{bmatrix}$$

LFG captures the subject-verb agreement in (150) through the following equations

(157)

plays:	(f SUBJ PERS)	= 3
	(f SUBJ NUM)	= SG
John:	(f PERS)	= 3
	(f NUM)	= SG

The equations in (157) indicate that both elements of agreement have the same feature-values. In fact, the (f SUBJ PERS) displays the fact that the predicate imposes a restriction on the person value of its argument. Since the values of all the relevant features match, agreement is in place. On the other hand, compare the equations in (159) which represent the elements in example (154) above repeated below as (158).

(158) *They play-s chess.

(159)

plays:	(f SUBJ PERS)	= 3
	(f SUBJ NUM)	= SG
They:	(f PERS)	= 3
	(f NUM)	= PL

The value of (f SUBJ NUM) is different from (f NUM) which means the restriction by the verb is not met by the subject; hence, (158) is ungrammatical.

The f-structure in (160) captures the different feature-values between the predicate and the subject in (158).

(160)
$$\begin{bmatrix} \text{PRED} & \text{'PLAY <SUBJ, OBJ >'} \\ \text{TENSE} & \text{PRES} \\ \text{SUBJ} & \begin{bmatrix} \text{PRED} & \text{'THEY'} \\ \text{NUM} & \text{PL} \end{bmatrix} \\ \text{OBJ} & \begin{bmatrix} \text{PRED} & \text{'CHESS'} \end{bmatrix} \end{bmatrix}$$

It is clear that the feature-values of the predicate and the argument do not match. The verb *plays* requires a third singular subject; whereas, the subject *they* is third plural. Due to the mismatch between the feature-values, the sentence is ungrammatical. Predicate-argument agreement is captured in LFG through the constraints placed by the verb on the features of the controller, and failure to meet the constraints yields ungrammaticality. However, predicate-argument and head-modifier agreement do not involve only simple cases and the approach presented so far can be considered oversimplified (Börjars et al., 2019). In fact, there are many examples cross-linguistically that suggest a more complicated syntactic analysis as in the case of one controller having two different sets of features, or one controller triggering more than one agreement pattern as with *ʃabāb* 'guys' in PA.

I established that the LFG approach to agreement is different to other transformational theories. First, LFG uses the co-descriptive approach to agreement; which entails that the two elements participating in agreement; (i.e., the controller and the target), both provide

information, partially, about the items; as opposed to other theories of feature copying or displacing of information of one element into another either syntactically or semantically.[4] Moreover, LFG provides a solution to some of the over-complicated issues through the implementation of the notion of an NP-internal set of agreement features and an NP-external set of agreement features; also known as CONCORD and INDEX; respectively in the analysis of agreement. [5,6]

Wechsler and Zlatić (2003, p. 11), in HPSG, state that INDEX contain the PNG (person, number, gender) features of a noun and are considered as semantic and pragmatic aspects of the noun. As opposed to INDEX, CONCORD presents the morphosyntactic features of an inflected controller including NGC (number, gender, case) features (Wechsler and Zlatić, 2003). For example, in (161) below, the noun *this man* has the CONCORD features M.SG and the INDEX features 3.M.SG as presented in (162).

(161) *This man sleep-s*

[4]For a discussion of other theories and why LFG is more applicable to coordination, see (Hristov, 2012, p. 24-25)

[5]Wechsler and Zlatić (2003, p. 16) argue that in some cases INDEX act NP-internally while CONCORD is external to the NP.

[6]It should be mentioned that the distinction of CONCORD and INDEX features of a nominal is also provided in HPSG. However, this thesis is concerned with an LFG view.

(162)
$$\begin{bmatrix} \text{CONCORD} & \begin{bmatrix} \text{GENDER} & M \\ \text{NUMBER} & SG \end{bmatrix} \\ \text{INDEX} & \begin{bmatrix} \text{GENDER} & M \\ \text{NUMBER} & SG \\ \text{PERSON} & 3rd \end{bmatrix} \end{bmatrix}$$

Of course, not every language chooses to display the features of CONCORD and INDEX morphologically and phonologically. In most cases, the features of both CONCORD and INDEX are identical; hence, indistinguishable. In (163) adapted from Wechsler and Zlatić (2003, ex.17, p. 16), the head noun *knjiga* 'book' triggers feminine singular agreement on the determiner *Ov-a* 'this' and the modifier *star-a* 'old' and it also triggers feminine singular agreement on the verb *pala* 'fall', and third singular on the auxiliary *je*.[7]

(163) *Ov-a* *star-a* *knjiga* *je* *pa-l-a.*
this-F.SG old-F.SG book(F.SG) AUX.3SG fall-**pprt!** (**pprt!**)-F.SG
'This old book fell.' (Wechsler and Zlatić, 2003, ex.17, p. 16)

Wechsler and Zlatić (2003, p. 17) provide the following f-structure for the noun *knjiga* 'book'.

[7] Transcription and glossing of (163) as in original source.

(164)
$$\begin{bmatrix} \text{CONCORD} & \begin{bmatrix} \textsc{Gender}\ (\text{GEND}) & F \\ \text{NUM} & SG \\ \text{CASE} & NOM \end{bmatrix} \\ \text{INDEX} & \begin{bmatrix} \text{GEND} & F \\ \text{NUM} & SG \\ \text{PERS} & 3 \end{bmatrix} \end{bmatrix}$$

The f-structure in (164) shows an identical set of features shared between the CONCORD and the INDEX of the inflected noun *knjiga* 'book'; which is considered an intersection of the features of the CONCORD and the INDEX (Wechsler and Zlatić, 2003, p. 16). It is worth mentioning that Wechsler and Zlatić (2003) use the data in (163) to support the fact that INDEX features can act NP-internally, as well; since both features in (163) are identical; it is not clear which set of features of the controller the verb agrees with.

On this note, the traditional notion concerning CONCORD and INDEX indicates that CONCORD is an NP-internal feature; which is co-specified between the noun and the modifiers, demonstratives and all NP-internal elements of agreement. INDEX ; however, is considered an NP-external feature to act upon Subject-verb agreement and all elements involved in an NP-external agreement. However, King and Dalrymple (2004) provide evidence and discuss the fact that in some languages, INDEX can function NP-internally, too. It is not always the case

for CONCORD and INDEX features to match, and in some languages like Serbian/Croatian (Wechsler and Zlatić, 2003; Alsina and Arsenijević, 2012b,a; Hristov, 2012), the same controller triggers different agreement patterns on the adjectives (NP-internal agreement) and verbs (NP-external agreement): they require different values of the same feature amongst the modifiers and the verbs. As a result, there are CONCORD-INDEX mismatches with these nouns. These nouns are known as 'hybrid nouns' and are considered problematic in terms of their agreement patterns (Wechsler and Zlatić, 2003; Corbett, 2006; Alsina and Arsenijević, 2012b,a). For instance, in (165), the noun *deca* 'children' controls singular agreement on the adjective *dobra* 'good', and plural agreement on the auxiliary and the verb *su došla* 'came' (Wechsler and Zlatić, 2003, ex.2, p. 5).[8]

(165) *Ta* *dobra* *deca* *su* *došla.*
that.F.SG good.F.SG children.(F.SG) AUX.3PL come.PPRT.**nt!** (**nt!**).PL
'Those good children came.' (Wechsler and Zlatić, 2003, ex.2, p. 5)

The controller *deca* 'children' triggers singular feminine agreement on the demonstrative *ta* 'that' , and the modifier *dobra* 'good' whilst it triggers plural agreement on the auxiliary *su* 'do' and neuter plural agreement on the verb *došla* 'came'.

Wechsler and Zlatić (2003) point out that *deca*-type nouns in traditional Serbian/Croatian grammar books are plural semantically and feminine singular morphosyntactically. Recall

[8]Transcription and glossing as in original source.

that the feature of INDEX is associated more with the semantic aspect of the controller; whilst, the CONCORD features associate with the morphosyntactic aspect. As a result, the "puzzle" in (165) (of *deca* 'children' triggering different patterns) is solved through appealing to different sets of CONCORD and INDEX features of the collective noun *deca* 'children'. For NP-internal targets, *deca*-type nouns trigger F.SG; in addition, they trigger N.PL on pronouns, finite verbs and finite auxiliaries. Finally, *deca*-type nouns trigger either F.SG or N.PL on participles "an indeterminate form" (Wechsler and Zlatić, 2003, p. 51). Wechsler and Zlatić (2003) provide the following CONCORD and INDEX values for *deca*-type nouns.

(166)
$$\begin{bmatrix} \text{CONCORD} & \begin{bmatrix} \text{NUMBER} & SG \\ \text{GENDER} & F \end{bmatrix} \\ \text{INDEX} & \begin{bmatrix} \text{NUMBER} & PL \\ \text{GENDER} & NT \end{bmatrix} \end{bmatrix}$$

The structure in (166) shows different values for CONCORD and INDEX.

Serbian/Croatian *deca*-type nouns support the idea of the split between CONCORD and INDEX features of the same controller as shown in the work of Wechsler and Zlatić (2003); Alsina and Arsenijević (2012b,a). The pattern where the features of CONCORD and INDEX are not identical is not very common typologically, and is documented in very few languages as in the work of Wechsler and Zlatić (2003); Hristov (2012). Unlike Serbian/Croatian, PA

does not observe different sets of CONCORD or INDEX of a nominal. I provided evidence to support multiple co-existing indices claim in section 5.3.1 in the previous chapter. In addition, Chapter 5 provided an analysis of two cases of mixed agreement triggered by the noun *ʃabāb* 'guys' and concluded that due to the scarcity of mixed agreement with *ʃabāb* 'guys' , the two examples are considered a case of idiosyncrasy. Additionally, I provided an analysis of the pattern triggered by the noun *ʃabāb* 'guys' which is different from the mixed agreement pattern triggered by *deca*-nouns in Serbian/Croatian. *ʃabāb* 'guys' triggers either a singular or a plural marker on the targets with all the targets observing the same marker. This pattern was accounted for in section 5.3.3 through positing an [IND] restriction on the INDEX feature of the noun *ʃabāb* 'guys'. Since INDEX is semantics-related, the interpretation of the noun *ʃabāb* 'guys' as individuated leads to a plural INDEX_I. By the same token, a non-individuated *ʃabāb* 'guys' has a singular INDEX_ϕ.

To conclude, section 6.1.1 provided an introduction to LFG as the framework of this chapter. I discussed facts related to *c*-structures and *f*-structures. Moreover, I established that agreement is treated in LFG as a co-specification of features between the target and the controller and that constraints on agreement are set by the predicate 6.1.2. A discussion of CONCORD and INDEX features of the nominals was provided along with examples in Serbian/Croatian explaining the distinctive behaviour of "hybrid nouns". Finally, I established that PA *ʃabāb* 'guys' do not observe the characteristics of 'hybrid nouns' and rather act

as doublet nouns which observe a split in theINDEX and follow an [IND] restriction. The following section provides an introduction to coordination.

6.1.3 Introduction to Coordination

Up to this point, the thesis presented examples of single cases of agreement only: cases of a single controller with one or more non-coordinated targets. In this chapter, I include examples of cases of coordination and discuss the agreement patterns present with coordination through the discussion of and reference to INDEX, CONCORD, distributivity, ellipsis, joint reading, and split reading. The effect of coordination on agreement is documented and discussed in various languages (Dalrymple and Nikolaeva, 2006; Hristov, 2012; Belyaev et al., 2015) among many others. Linguists have discussed the change in agreement patterns caused by present cases of coordination. For instance, Dalrymple and Nikolaeva (2006) document that in Finnish, coordination allows different number markers on the noun and the coordinated set of adjectives. An understanding of coordination in LFG is essential in discussing coordination and agreement.

6.1.3.1 General Introduction

Haspelmath (2007, p. 1) defines coordination as a term referring to a construction involving two or more than two same-type units that form a larger unit while still holding the

same semantic relations with surrounding elements (Haspelmath, 2007). For instance, (167) and (168) are examples of coordination whereas (169) and (170) are not.

(167) The boy and the girl are happy.

(168) I bought some meat and I cooked it yesterday.

In (167), both conjuncts *boy* and *girl* hold the same function: subject which licences the coordination structure. In (168), both coordinates *I bought some meat* and *I cooked it* are clauses.

(169) *The boy and ate their food.

(170) *He was running and the big truck.

The reason (169) and (170) are grammatically incorrect is due to the fact that the two coordinated units do not have the same grammatical function in the sentence. Having the same grammatical functions is essential in the formation of coordinated structures. In (169), assuming the two coordinates are *the boy*, and *ate their food*. The former coordinate is an NP functioning as the subject whilst the second coordinate is a VP; thus, they are of different functions. Similarly in (170), if the first coordinate is *He*, the subject noun phrase is incompatible for coordination with the other NP *the big truck* that is not a subject. Alternatively, one can consider the two coordinated units in (170) to be the verb phrase *was running* and the NP *the big truck* (which still does not allow coordination). It is worth

mentioning that it is not necessary to expect the combined units to be of the same syntactic category; rather, the equivalence of grammatical relations is what matters as in both coordinates function the same (Hristov, 2012, p. 15). Therefore, "functional likeness" between the coordinates is what matters (Huddleston and Pullum, 2006, p. 200-201) as shown in the examples below as adapted from Huddleston and Pullum (2006).

(171) The article was *very long* and *of little relevance* (Adjectival Phrase (AdjP) + Prepositional Phrase (PP)).

(Huddleston and Pullum, 2006)

Example (171) demonstrates functional likeness as one of the syntactic properties of coordination. Coordination of the adjectival phrase *very long* and the PP *of little relevance* is allowed because both phrases function as a predicative complement. Further support for the functional likeness property of coordination is presented in the examples below (172-

174) adapted from Huddleston and Pullum (2006).[9]

(172) I invited *the manager* and *several staff members*.

(173) I invited *the manager*.

(174) I invited *several staff members*.

(Huddleston and Pullum, 2006, ex.4)

Examples (173) and (174) demonstrate that *the manager* and *several staff members* observe the same grammatical function both being the object, which consequently licenses the structure in (172).

Early approaches to coordination considered it to be endocentric and outside the framework's generalisations which made it receive a special treatment. Carston and Blakemore

[9]In terms of distinctive syntactic properties of coordination, Huddleston and Pullum (2006, p. 200-201) state that in a coordinated structure, there is no limit grammatically to the number of coordinates. Additionally, a requirement for syntactic likeness of the coordinates is required to allow coordination. Moreover, fronting of either the coordinator or the coordinate is disallowed. By the same token, Yuasa and Sadock (2002) state that in coordination, the categorical information of the sister nodes forming the coordinated structure "percolates" to the mother node and that coordinate constituents are co-heads. Furthermore, coordination is reversible as in the order of the constituents does not affect the truth conditions of the sentence. Forming a wh-question containing only one of the conjuncts results in a CSC violation (Coordinate Structure Constraint). In addition, there are restrictions on backward pronominalisation which are sensitive to semantic structure. However, there can be any number of coordinates in a coordination structure. Finally, there is a possibility of wide-scope negation with coordination. For examples supporting these characteristics, the reader is instructed to refer to (Yuasa and Sadock, 2002) for a detailed analysis of the characteristics in relation to Japanese. Moreover, see Yuasa and Sadock (2002) for a distinction between coordination and pseudo-coordination.

(2005) summarise the different coordination treatments in different theories including X-bar theory, minimalism, and other frameworks. I do not provide an extensive discussion of the coordination analysis in theories other than LFG. Within LFG, coordination is argued to be exocentric and I discuss the LFG approach in more detail below. Notwithstanding, an interested reader is to consult (Carston and Blakemore, 2005) for a comparison between the theories in regard to their treatment of coordination.

6.1.3.2 Coordination, Types

More relevant to the discussion concerning agreement in cases of coordination is the discussion of natural and accidental conjunction. Although this distinction does not affect agreement in Palestinian Arabic, I provide a brief introduction to the difference between natural and accidental coordination below. I provide examples in PA in this section to explain coordination types in PA. The reason I discuss natural and accidental coordination in this thesis is to make sure all the possible factors affecting agreement in a coordination environment are covered and accounted for. It is worth mentioning; nevertheless, that coordination includes conjunction (use of *and*), disjunction (*or*), and adversative coordination (Haspelmath, 2007, p. 22). I present examples more concerned with conjunction rather than the other two types of coordination. Conjunction also extends to two semantic types: nat-

ural and accidental conjunction (also referred to as natural and accidental coordination.).[10] Natural coordination refers to the coordination structure of two items that usually go together and form one "conceptual unit" (Haspelmath, 2007, p. 24) like *man and woman*. Natural conjuncts are usually referred to as binominal as they generally are consistent of two units (items) (Haspelmath, 2007).

The fact that the items in a natural coordination structure form a conceptual unit makes them linked so tightly that the coordinate structure can be received as one word; i.e., "**a coordinative compound**" (Haspelmath, 2007, p. 23). Natural coordination is considered a dependent of cultural factors; thus; potentially, leading to variation across languages. What one culture considers one unit conceptually is not necessarily the same for another culture. On the other hand, accidental coordination is a construction formed when two or more elements are joined by a proper conjunction, like *pen and pan*; for instance, the two coordinates (*pen*) and (*pan*) do not usually go together. Similarly for *pen, pan, and bowl*.

This distinction between natural and accidental coordination is essential in the analysis of coordinate structures as some features are applicable to natural coordinates only. In Finnish, for instance, the use of a plural adjective with a coordinate structure is allowed with natural coordination and disallowed with accidental coordination (Dalrymple and Nikolaeva, 2006). Dalrymple and Nikolaeva (2006) also show that other languages are affected syntactically

[10] See (Huddleston and Pullum, 2006, p. 200) on the terminology.

by the semantic distinction between accidental and natural coordination. Furthermore, the distinction between the two types of coordinate structures affects the scope of elements distributed over the individual conjuncts (Haspelmath, 2007, p. 23). For example, German leaves out determiners in cases of natural coordination as in (175) whereas this is disallowed in cases of accidental coordination as in (176) below adopted from Dalrymple and Nikolaeva (2006, p. 831).

(175) *Sonne und Mond.*
sun and moon
'the sun and the moon' (Dalrymple and Nikolaeva, 2006, ex.30, p. 831) Natural Coordination

(176) *der Mond und ein Sechser*
the moon and a sixpence
'the moon and sixpence' (Dalrymple and Nikolaeva, 2006, ex.29, p. 831) Accidental Coordination

The syntactic distinction between natural and accidental coordination is not existent in all languages. Natural and accidental coordination is a semantic feature that is not necessarily reflected in the syntax or morphology of the language. Palestinian Arabic; for instance, observes no syntactic or morphological means to distinguish between natural and accidental coordination, as shown in the examples below. Notice the plural agreement on the target in (177) and (178) despite the different coordination type.

(177) *iʃ-ʃams w l-ʔamar ʔāyā-t rabbāniyə*
DEF-sun.SG.F CONJ DEF-moon.SG.M sign.F-PL godly
'The sun and moon are Godly signs (proofs on existence).' Natural Coordination

In (177), the predicate *ʔāyā-t* 'signs' is plural.

(178) *il-ʔamar w n-nūr nādr-īn bi-h-al-waʔit*
DEF-moon.SG.M CONJ DEF-light.SG.M rare-PL PREP-this-DEF-time.SG.M
'It is rare to have the moon and the light these days.' Accidental Coordination

In (178), the predicate *nādr-īn* 'rare' is plural. Both in (177) and (178), the syntactic properties of the sentence are alike. Regardless of the components of the coordinate structure, the targets are plural, and there is no morphological difference. There might be a small difference in prosody but that's not the concern of this thesis.

This section provided a discussion of natural and accidental coordination and showed that the effect of coordination type on syntax is not existent in all languages. The next section discusses the relation between ellipsis and coordination.

6.2 Coordination and Ellipsis

Generally, discussions of coordination include discussions of ellipsis. This is due to the fact that certain coordinated structures can be created through certain processes of deletion and operations of material extraction.; for instance, gapping and right node raising structures

(Carston and Blakemore, 2005, p. 355). It is worth mentioning that in some cases of coordination, an analysis of underlying ellipsis can be provided. In fact, some theories of syntax assume that a coordinate structure is derived through "constituent reduction" (Hristov, 2012, p. 21). In addition, Kaplan and Maxwell (1995) state that Coordinate Reduction Transformation is the basis for forming a coordinate structure although it is flawed in terms of the characteristics it implies as they show in their work.

Baker (1995) groups coordination and ellipsis together in one discussion as he states ellipsis occurs when at least two sentences are joined using what is known in traditional grammar as coordinating conjunctions provided the two sentences are identical. The two sentences are identical in all the items except for the subject and the end phrase; consequently, resulting in the deletion of the identical units (Baker, 1995, rule 60, p. 518). Huddleston and Pullum (2006) also talk of "Gapping or Gapped Coordination". In essence, the motivation behind ellipsis is language economy: sentences should not be redundant and identical items do not need to be repeated (Haspelmath, 2007, p. 38) which is a shared motivation with coordination. Actually, the rule of Ellipsis can refer to any process from resulting in a missing part to certain constructions (Merchant, 2019). The joint motivation of coordination and ellipsis are relevant to the discussion in this chapter as I provide evidence to reject ellipsis as an analytical tool for coordination cases present in this chapter. Additionally, I show that ellipsis is used to analyse one particular example of agreement in the context of coordination

in PA: a dual noun modified by two singular coordinated adjectives 6.4.1.2. Nevertheless, I reject ellipsis as an analytical tool to analyse cases of different number markings on the controller and the targets of a coordinated set as I explain in 6.2.1.

6.2.1 Rejecting Ellipsis

It might be argued that some cases of coordination are rather cases of ellipsis. I argue against using ellipsis as an analysis tool for the following reasons. Firstly, ellipsis is rejected due to conflicting number values on the two modifying adjectives in cases of ellipsis. Ellipsis predicts that two coordinated adjectives can each have different number marking; however, different number marking between coordinate adjectives is considered ungrammatical. In this section, I provide evidence that ellipsis is not satisfactory for the analysis in cases of coordination. Finally, I show that the structure qualifying for an ellipsis analysis is in cases of coordination of incompatible adjectives; for instance, *the old and new stations*.[11] Some adjectives are incompatible with a coordination structure due to their contradicting meaning.[12] To clarify, I analyse (179) in terms of coordination and a possible underlying ellipsis in (180) as follows.

(179) *l-maħaṭṭ-āt* *ṣ-ṣgīr-e* *w* *l-ʔadīm-e*
DEF-station.F-PL DEF-small-F.SG CONJ DEF-old-F.SG

[11] I save the discussion of ellipsis in the case of dual noun modified by singular coordinated adjectives to section 6.4.1.2.

[12] To clarify, the meaning is fine if the *old and new stations* involves two or more stations.

'The small and old stations.'

In (179), the head noun *l-maħaṭṭ-āt* 'stations' is modified by a coordinated structure of two singular modifiers *ṣ-ṣgīr-e w l-ʔadīm-e* 'small and old'. According to theories of constituent reduction, (180) is the underlying sentence for (179) in cases of ellipsis.

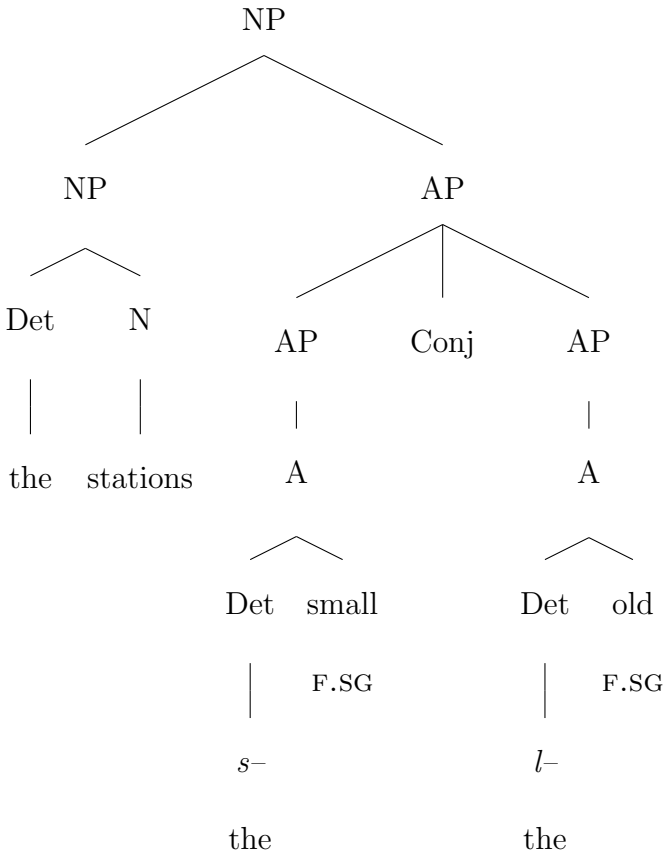
(180) *l-maħaṭṭ-āt* *ṣ-ṣgīr-e* *w* *l-maħaṭṭ-āt* *l-ʔadīm-e*
DEF-station.F-PL DEF-small-F.SG CONJ DEF-station.F-PL DEF-old-F.SG

'(Lit.) The small stations and the old stations.'

'The small and old stations.'

The same agreement pattern that is present in (179) exists in (180) with each noun: *l-maħaṭṭ-āt* 'stations' is modified by a singular modifier *ṣ-ṣgīr-e* 'small' and *l-ʔadīm-e* 'old'. Recall that non-human plural nouns in PA can be modified by singular feminine adjectives. The tree diagrams of (179) and (180) are as follows:

(181) Coordination (179)



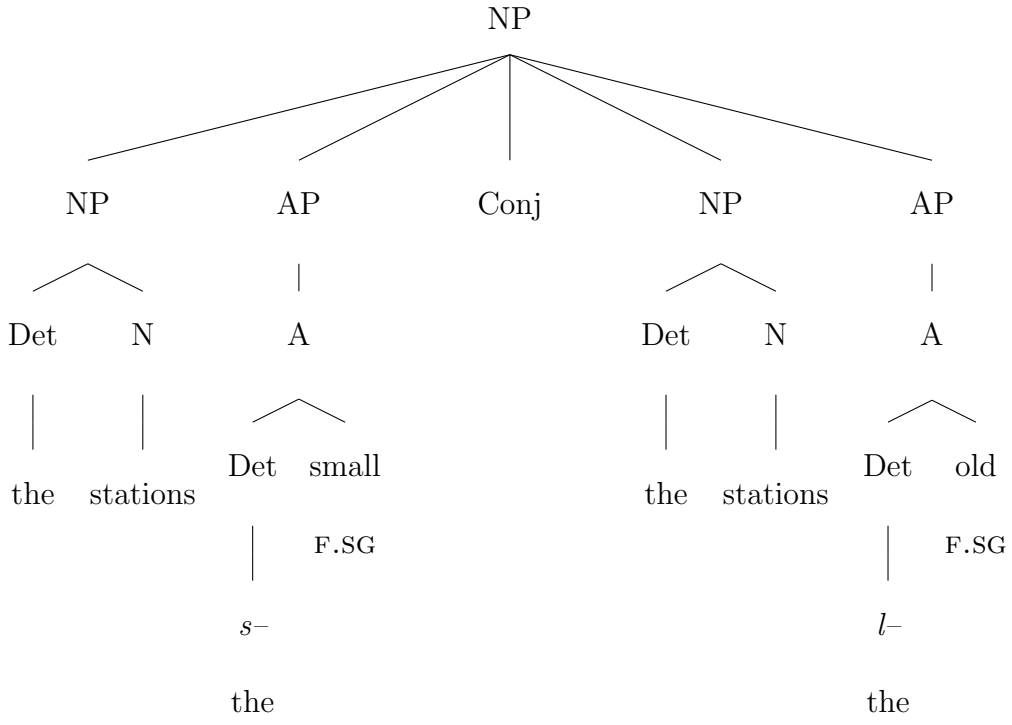
Ellipsis predicts the number value of one coordinate is independent of the other coordinate; therefore, having different number values on the adjectives of the coordinated set modifying a noun phrase. For instance, ellipsis predicts (182) which is ungrammatical in PA.

(182) **l-maħaṭṭ-āt ṣ-ṣgīr-e w l-ʔdām*
DEF-station.F-PL DEF-small-F.SG CONJ DEF-old.PL
'The small and old stations.'

Sentences like (182) are ungrammatical in PA due to the variation in number marking on the modifiers. Basically, the difference in number marking on the adjectives points

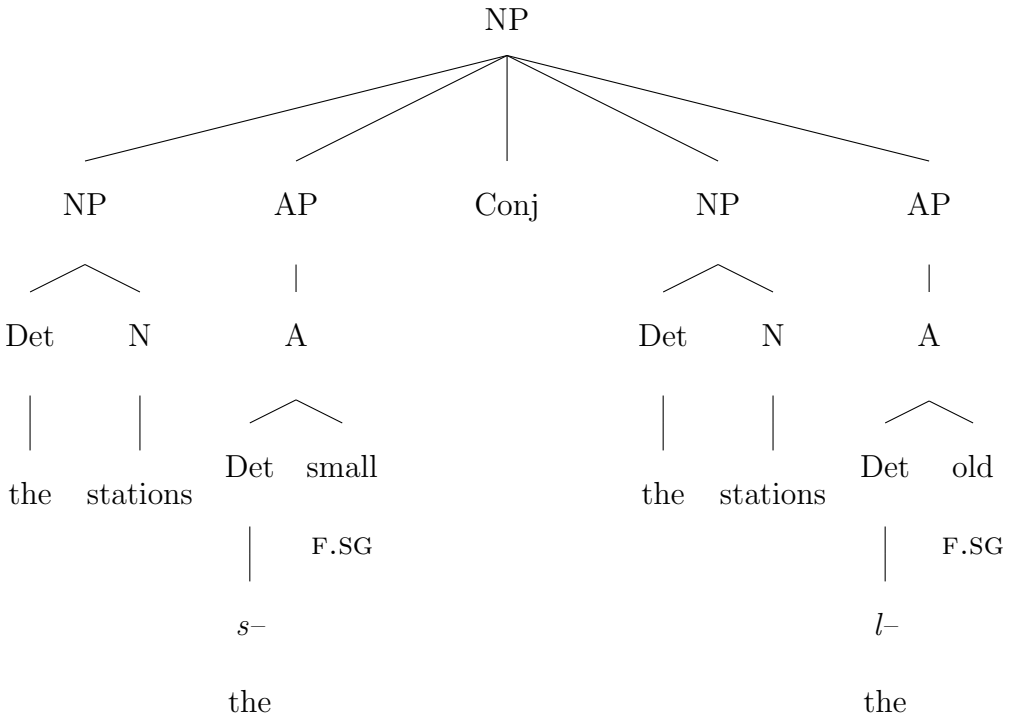
potentially to a different head noun agreement; recall, that number marking in PA is affected by perception. It is incoherent to think of the head noun *l-maħaṭṭ-āt* 'stations' to have both an individuated and a non-individuated interpretation at the same time (to agree with the relevant target). Nevertheless, considering the *c*-structure below, this structure allows for a different individuation features of the head noun; subsequently, different markers of the adjectives. In other words, (182) is allowed in cases of ellipsis.

(183) Ellipsis (180)



In the case of (183), ellipsis predicts the possibility of having different number values for each adjective; therefore, allowing structures like (182), which is considered ungrammatical in cases of coordination.

Ellipsis (182)



Another reason for rejecting ellipsis lies in the fact that ellipsis cannot be applied to cases of coordinated adjectives modifying a dual noun. It is very straightforward to run the analysis through LFG and figure out the *c*-structure, for sentences like (184) below.

(184) *l-maħaṭi-ṭ-ān* *ṣ-ṣg̱īr-e* *w* *l-ʔadīm-e*
DEF-station-DUAL DEF-small-F.SG CONJ DEF-old-F.SG
'The two small and old stations.'

The overall cardinality in (184) is two. Thus, if I treat this like a case of ellipsis, the overall cardinality will be 4 as in (185).

(185) *l-maħaṭi-ṭ-ān* *ṣ-ṣg̱īr-e* *w* *l-maħaṭi-ṭ-ān* *l-ʔadīm-e*
DEF-station-DUAL DEF-small-F.SG CONJ DEF-station-DUAL DEF-old-F.SG

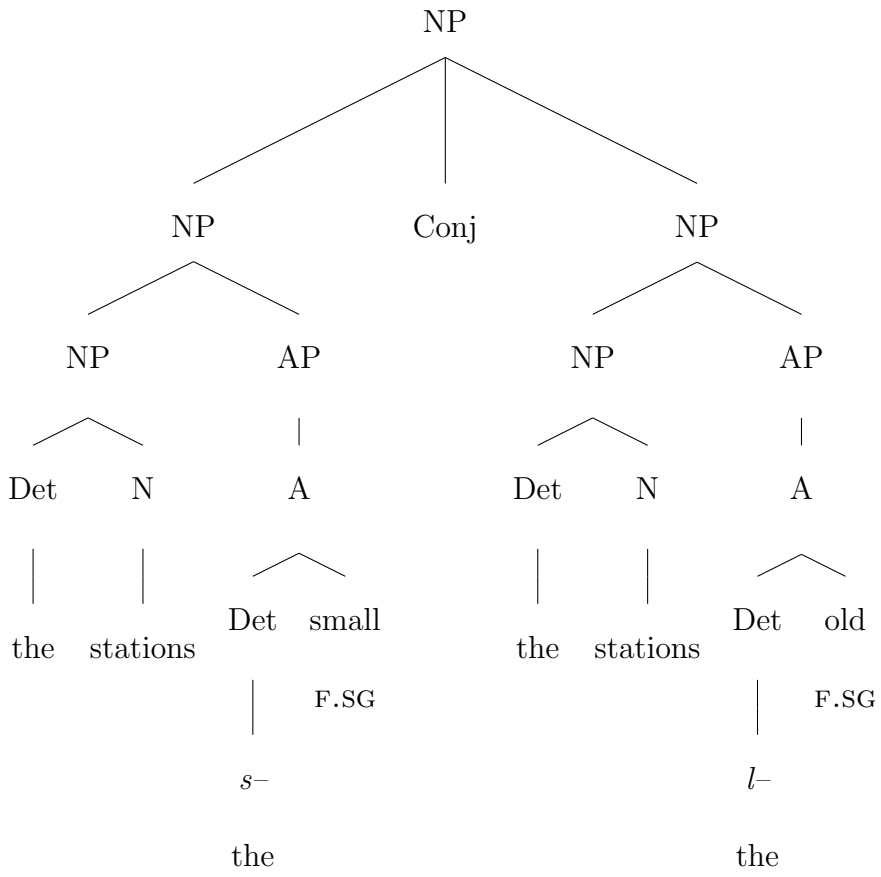
'The two small and the two old stations.'

In (185), there are two separate nouns being conjoined which affects the overall semantics of the sentence. Thus, ellipsis predicts that (184) and (185) are identical in the overall cardinality; however, this is not the case. In fact, the total cardinality of (184) is two; whereas, (185) has a cardinality of four. This fact is considered another piece of evidence against ellipsis.

On the other hand, ellipsis would succeed in explaining cases of incompatible adjectives modifying a non-human plural noun, as in (186). The term incompatible refers to two adjectives whose meanings contradict each other when coordinated together. For example, *old and new* are considered incompatible together in a coordinate structure since an object cannot be both old and new simultaneously. Based on this, a structure that involves *and* and involves two incompatible adjectives, can be considered to be formed through ellipsis.

(186) *l-maħaṭṭ-āt* *ṣ-ṣgīr-e* *w* *l-kbīr-ə*
DEF-station.F-PL DEF-small-F.SG and DEF-big-F.SG
'The small and big stations.'

Ellipsis (186)



The analysis above shows that ellipsis and coordination make different predictions about the semantics of coordinated adjectives; therefore, I reject ellipsis as a tool of analysis in structures of single nouns modified by coordinated adjectives. Another reason for rejecting ellipsis to analyse coordination lies in the fact represented by (187) and (188). Using ellipsis to analyse the coordinate structure *Taliban reconciliation* and *peace talks* results in conflicting interpretations when repeating the phrase *the most important issue is* as in (188).

(187) *In this strategy, the most important issue is Taliban reconciliation and peace talks as*

President Obama mentioned in his speech. (Hristov, 2012, ex.22, p. 169)

(188) ?*In this strategy, the most important issue is Taliban reconciliation and the most important issue is peace talks as President Obama mentioned in his speech.* (Hristov, 2012, ex.22, p. 169)

Repeating *the most important issue is* results in a "pragmatically anomalous proposition" (Hristov, 2012). Finally, another reason to reject ellipsis is because ellipsis cannot be applied to cases of reciprocal dependants like the subject *John and Mary* in (189).

(189) *John and Mary resemble each other*

(190) **John resembles each other.*

(191) **Mary resembles each other.*

Aoun et al. (2009) also discuss coordination in cases of reciprocal dependants in Moroccan and Lebanese Arabic. They show that a singular verb with two conjoined subjects (reciprocal dependants) is 'ill-formed' due to the fact that when the verb is singular as in (192) in Lebanese Arabic, neither of the coordinate subjects has access to the verb. Aoun et al. (2009) refer to reciprocal dependents as 'number-sensitive items' (NSIs) (Aoun et al., 2009, p. 670).[13] Predicate agreement with reciprocal dependent subjects requires plural markers

[13]Example (192) is transcribed and glossed as in original source.

on the verb as in (193). I provide a discussion of the behaviour of reciprocal dependants in PA in section 6.4.2.1 which includes examples of coordinate NP and predicate agreement.

(192) **lta¯a kariim w marwaan*
met.3MS Karim and Marwan
'Karim and Marwan met'. (Aoun et al., 2009, ex.7b, p. 670)

(193) *lta¯o kariim w marwaan*
met.3P Karim and Marwan
'Karim and Marwan met'. (Aoun et al., 2009, ex.10b, p. 671)

Other verbs that require reciprocal dependency between their coordinated subjects include *resemble, meet*, and Aoun et al. (2009) include *come (together), sit (together)* in the list of the verb with NSI. Similar to Lebanese and Moroccan Arabic, and English in terms of the plural requirement on the verb of reciprocal dependent subjects, Hristov (2014, p. 5) provides examples in Bulgarian which I do not provide here due to space limitations.

To conclude, this section provided evidence for rejecting ellipsis as an analytical tool for various reasons. Firstly, ellipsis predicts the coordination of adjectives with incompatible meaning for conjunction like *old and new* as well as ellipsis resulting in "pragmatically anomalous proposition" due to repeating the identical material. Moreover, ellipsis predicts the possibility to have different number marking on the adjectives in the coordinate structure. Ellipsis also predicts a higher cardinality number than the number indicated by conjunction. Finally, ellipsis cannot predict cases of coordination between reciprocal dependent subjects.

Thus, the rest of the examples of coordination in this chapter will not be treated as cases of ellipsis.[14] The next section provides an introduction to the discussion of coordination from an LFG point of view.

6.3 Introduction to Coordination in LFG

This section provides an introduction to coordination in LFG; coordination is considered exocentric in LFG, which means none of the coordinates in the coordinate set is considered the head of the structure. Moreover, LFG treats coordinate structures as sets. The f-structure of a coordinated structure consists of a set of individual f-structures of the coordinated elements. Coordination involves the distributivity of some of the features which are stated over the coordinate set to the members of the set. For instance, in *He bought and ate an apple*, the subject *he* and the object *an apple* distribute over the coordinate set *bought and ate*. The discussion of distributivity is linked to the discussion of the possible readings of a coordinated set: joint reading versus a split reading. Consider the two examples below.

(194) The old and new stations.

(195) The old and damaged stations.

The interpretation of (194) reads as two separate sets of stations with one set A old and

[14]Except for the one case of dual noun modified by singular coordinated adjectives in section 6.4.1.2.

another set B new. This is known as a split reading and it is due to the fact that the features of the head noun *stations* distribute to the members of the coordinated set [*old and new*], see the f-structure in (196) which involves two sets, each with the PRED 'STATION' following the split reading analysis by Belyaev et al. (2015).

(196)
$$\begin{bmatrix} \text{CONJ} & \text{AND} \\ \left\{ \begin{bmatrix} \text{PRED} & \text{'STATION'} \\ \text{ADJ} & \left\{ \begin{bmatrix} \text{PRED} & \text{'OLD'} \end{bmatrix} \right\} \end{bmatrix}, \begin{bmatrix} \text{PRED} & \text{'STATION'} \\ \text{ADJ} & \left\{ \begin{bmatrix} \text{PRED} & \text{'NEW'} \end{bmatrix} \right\} \end{bmatrix} \right\} \end{bmatrix}$$

On the other hand, in (195), there is a joint reading of the coordinated set as one set of stations that are both old and damaged at the same time. See the f-structure in (197) and notice the one PRED that is not distributed to the members of the set. Discussion of agreement constraints for split and joint readings follows in section 6.3.1.

(197)
$$\begin{bmatrix} \text{PRED} & \text{'STATION'} \\ \text{ADJ} & \left\{ \begin{bmatrix} \text{CONJ} & \text{AND} \\ \left\{ \begin{bmatrix} \text{PRED} & \text{'OLD'} \end{bmatrix} \right. & \\ \left. \begin{bmatrix} \text{PRED} & \text{'DAMAGED'} \end{bmatrix} \right\} & \end{bmatrix} \right\} \end{bmatrix}$$

I provide more discussion and examples along with Belyaev et al.'s (2015) analysis in section 6.3.1. I use examples from PA to discuss the distributivity of CONCORD over a coordinated set through the semantic interpretation provided by the joint/split reading distinction. I provide evidence that the feature CONCORD is distributive in PA.

6.3.1 Split and Joint reading: Discussion

This section provides a discussion of the difference of the joint and split reading in terms of coordination. A coordination structure can be interpreted to have either a joint reading or a split reading. In basic terms, a joint reading of a coordinated adjectival phrase arises when the modified noun has both properties described by the modifying adjectives i.e., the noun is said to be modified by both adjectives at the same time. On the other hand, a split reading happens when one of the modifying adjectives applies to part of the noun phrase and the other modifying adjective applies to the rest of the nominal. In other words, the

two adjectives do not describe the noun phrase together.

Split readings are associated with resolving agreement patterns. It means that the overall cardinality of the coordinate structure is decided by the union of the individual cardinality of the conjuncts. Resolving agreement is agreement with the features associated with the set as a whole rather than features associated with the individual members of the set. Unlike spit readings, joint readings associate with non-resolving agreement. Non-resolving agreement involves the features of the individual members of the coordinate set; members of coordination have identical feature values in cases of non-resolving agreement; otherwise, single-conjunct agreement might be possible.[15] For instance, in *My friend and colleague*, if the phrase refers to one person in total: overall cardinality is 1, the number value of this phrase is singular, and this is non-resolving agreement that happened due to the intersection of the individual properties of the conjuncts as per the joint reading. In other words, the number marking on the verb is co-specified by the singular number of each conjunct *friend* and *colleague*. Therefore, the predicate is singular as in *My friend and colleague is late*. On the other hand, if *my friend and colleague* refers to two different persons due to a split reading, the agreement is resolving and is plural. Thus, the verb is plural in *My friend and colleague are late*. It is worth mentioning that the adjectives in coordination have to be semantically compatible for a joint or a split reading. For example, the adjective *old*

[15] Discussion of single-conjunct agreement is provided in section 6.3.3.

and the adjective *new* are incompatible for a joint reading: an item cannot be old and new simultaneously. In some languages, the semantic reading of the coordination is reflected in the morphology or the syntax of the language. I provide more details in regard to joint reading in section 6.3.1.1 and in regard to split reading in section 6.3.1.2 below.

6.3.1.1 Joint Reading

Joint reading is interpreted through property intersection. For instance, in (198) below adopted from Heycock and Zamparelli (2005), the subject is described as having both properties: *short* and *fat*.

(198) My uncle is short and fat. (Heycock and Zamparelli, 2005, ex.3, p. 2)

In (198), the coordination of the predicates *short and fat* reflects a joint reading, as in: *my uncle is both short and fat* (short and fat at the same time). By the same token, Heycock and Zamparelli argue for a joint reading in (199) below.

(199) My friend and colleague was late. Heycock and Zamparelli (2005, ex.5, p. 2)

Sentence (199) is an example of a joint reading reflected in the syntax, in this case verbal agreement. Thus, supposing the friend in (199) is known as John, (200) is true.

(200) John was late.

In regards to agreement, coordination, and joint reading, Belyaev et al. (2015) study Italian, Russian, and Hindi. They discuss the joint reading in the following examples in Italian.

(201) *la vecchia e piccola stazione*
the.SG old.SG and small.SG station.SG
'the old and small station.' Belyaev et al. (2015, ex.1, p. 3)

(202) *le vecchie e piccole stazioni*
the.PL old.PL and small.PL station.PL
'the old and small station(s).' Belyaev et al. (2015, ex.2, p. 3)

In (201) above, there is a single station that is both old and small and in (202), there are sets of stations each of which is old and small; both reflecting a joint reading of the coordinate structure. Belyaev et al. (2015) clarify this construction is available both with singular and plural nouns in Italian; provided the adjectives are compatible for a joint reading. Italian observes pre-nominal and post-nominal modifiers; thus, in addition to the constructions in Italian above, Belyaev et al. (2015) state the following constructions also license a joint reading in Italian.

Based on table 6.1, patterns of full agreement in Italian give rise to joint readings regardless of the linear order or the position of the adjectives in relation to the modified noun in Italian. Notice how the agreement markers in place are essential in regards to the reading interpretation of the coordinate structure, similar to my earlier discussion of verb agreement

Table 6.1: AP coordination and joint reading in Italian (Belyaev et al., 2015)

Position	Adjective 1	Adjective 2	Noun
prenominal	singular	singular	singular
	plural	plural	plural
postnominal	singular	singular	singular
	plural	plural	plural

and joint reading in English. Compare the Italian examples to the English subject-verb agreement with coordinate NP in *My friend and colleague is happy* and notice the singular number on each of *my friend*, *colleague* and *is*. I show in section 6.4.2.2, that in PA joint reading arises in cases of single noun coordinated adjective agreement when all the elements (noun and each of the adjectives) observe the same number marker. Similar to Italian, Russian observes joint reading when all the elements are matching in the agreement marker, as shown in table 6.2.

Table 6.2: AP coordination and joint reading in Russian (Belyaev et al., 2015)

Adjective 1	Adjective 2	Noun
Singular	Singular	Singular
Plural	Plural	Plural

To sum up, this section discussed joint reading and showed that in a number of languages; Italian, Russian, English and PA, joint reading arises when the controller and the targets observe similar number marking. Additionally, I showed that joint reading is applicable to both coordination in the NP (English, for instance) as well as coordination in the modifiers

(Italian, for instance). The next section provides examples about split reading.

6.3.1.2 Split Reading

As opposed to the joint interpretations above, some coordination structures reflect a split reading. This applies to both cases of coordinated nouns and cases of coordinated modifiers. Compare the two sentences. In some cases, split reading is reflected in the syntax of the language, and I show below that split reading arises when the marking on the targets and the controller is different. Split reading involves resolution agreement.

(203) My friend and colleague was late.

(204) My friend and colleague were late.

Sentence (204) describes two separate persons as being late reflecting a split reading; whilst (203) discusses the lateness of one person only reflecting joint reading. Notice the different number marking between (203) and (204). Split reading in (204) requires a plural predicate as it is resolving agreement with the features of the coordinate set as a whole. Nevertheless, consider (206) below. Notice that English limits the syntactic effect of joint reading to singular agreement.

(205) My friend and colleague was late.

(206) My friend and colleague worked here.

Due to the morphology of the English language, and the fact that past tense verbs do not inflect for number, there is a possibility that sentence (206) refers to a split reading or a joint reading, which is not clear from the morphosyntactic facts in the sentence due to the syncretism of English regarding past tense verbs. In languages/constructions where Number is marked on the verbs, split reading is captured via a plural agreement, as in (207).

(207) My friend and colleague work here.

In (207) and due to the plural number marking on the verb, the reading of the coordination is split not joint. Following on with the explanation of split reading, table 6.1 can be updated to table 6.3 to include cases of split reading in Italian, as well (as in Belyaev et al. (2015)).[16] By the same token, table 6.2 is updated to table 6.4 to include split reading cases in Russian.

This section showed that split reading, in some languages, involves morphosyntactic facts like the plural present verb agreement with a coordinate singular subject in English. It also showed that split reading involves feature resolution. Moreover, this section provided an introduction to the joint and split reading (interpretation) of a coordinated set. The next

[16]I do not comment on the adjective position in regards to the nominal in Italian due to irrelevance to the discussion in PA; PA observes only the post-nominal position for modifiers.

Table 6.3: AP coordination and split/joint reading in Italian (Belyaev et al., 2015)

Position	Adjective 1	Adjective 2	Noun	Split	Joint
prenominal	singular	singular	singular	+	+
	plural	plural	plural	+	+
	(Singular	Singular	Plural)	-	-
postnominal	singular	singular	singular	+	-
	Plural	Plural	Plural	+	+
	Singular	Singular	Plural	-	+

Table 6.4: AP coordination and split/joint reading in Russian (Belyaev et al., 2015)

Adjective 1	Adjective 2	Noun	Split	Joint
Singular	Singular	Singular	+	+
Plural	Plural	Plural	+	+
Singular	Singular	Plural	+	-

section provides a discussion of distributivity of features in LFG including the representation in f-structures, and phrase structure rules.

6.3.2 Feature distributivity in LFG: discussion

This section discusses the representation of distributive features in LFG. In LFG, some features are non-distributive to members of a set. If a feature over a set is independent of the features of the individual members of the set; this feature is said to be non-distributive. For instance, Person, Number and Gender features according to Dalrymple and Kaplan (2000, p. 778) are non-distributive features and are the property of the whole coordinate

structure. These features do not distribute to the individual conjuncts. Recall that in section 5.1 in the previous chapter, I discussed that Person, Number, and Gender features are considered INDEX features of a nominal. Consequently, the INDEX features of a nominal are not distributed to members of a coordinate set.[17] On the other hand, if the feature is distributive, it is associated with the individual members of the set "and not with the set itself". It is also essential that all members of the set have the same feature (Belyaev et al., 2015, p. 11). Case and Noun class are distributive features according to Dalrymple and Kaplan. These features are checked for each conjunct. Recall that case is a CONCORD feature as discussed in section 5.1. Therefore, CONCORD is considered a distributive features as opposed to non-distributive INDEX (Dalrymple and Kaplan, 2000, p. 837) as shown in the f-structure for coordinated singular nouns in (208). [18]

[17] I; however, discuss the possibility of a non-resolving NP-internal INDEX feature in PA in section 6.4.1.3. Non-resolving features are distributive features in case of identical feature values across all conjuncts.

[18] (208) is adopted from Dalrymple and Kaplan (2000, p. 837).

(208)
$$\begin{bmatrix} \text{INDEX} & \begin{bmatrix} \text{NUM} & \text{PL} \end{bmatrix} \\ \left\{ \begin{bmatrix} \text{CONCORD} & \begin{bmatrix} \text{NUM} & \text{SG} \end{bmatrix} \\ \text{INDEX} & \begin{bmatrix} \text{NUM} & \text{SG} \end{bmatrix} \end{bmatrix}, \begin{bmatrix} \text{CONCORD} & \begin{bmatrix} \text{NUM} & \text{SG} \end{bmatrix} \\ \text{INDEX} & \begin{bmatrix} \text{NUM} & \text{SG} \end{bmatrix} \end{bmatrix} \right\} & \end{bmatrix}$$

Notice in (208), that singular CONCORD is associated with each member of the set of the coordinated nouns since CONCORD is a distributive feature; whereas, plural INDEX is non-distributive and is associated with the set as a whole; resolving feature. The coordinate structure as a whole inherits the singular CONCORD feature by virtue of CONCORD distribution. This explains singular demonstratives with a coordinate NP in English. By the same token, the whole set has a plural INDEX due to a non-distributive INDEX; thus, predicates are plural with coordinate NP in English, as in (209).

(209) *This boy and girl are eating cake.*

Notice the singular marking on the demonstrative *this* due to a distributive CONCORD, and the plural verb *are* due to a resolving non-distributive INDEX in (209). See the constraints of agreement in (210) below.

(210)

This	SPEC	(↑ CONCORD NUM)	=	SG
boy	N	(↑ CONCORD NUM)	=	SG
		(↑ INDEX NUM)	=	SG
girl	N	(↑ CONCORD NUM)	=	SG
		(↑ INDEX NUM)	=	SG
girl	N	(↑ CONCORD NUM)	=	SG
are	V	(↑ SUBJ INDEX NUM)	=	PL

To explain how Person is a non-distributive feature, consider the following example in English:

(211) *You and John are late.*
Pronoun (PRO).2.SG CONJ 3.SG.M 2.PL

The sentence in (211) has the constituent structure *you and John* with the first member *you* demonstrating the value second person and the second conjunct *John* is third person. However, the verb *are* places a constraint on the subject so that the subject is at least plural as shown in the lexical entry in (212).

(212)

you	PRO	(↑ CONCORD NUM)	=	SG
		(↑ INDEX PERS)	=	2
John	N	(↑ CONCORD NUM)	=	SG
		(↑ INDEX PERS)	=	3
and	CONJ	(↑ INDEX NUM)	=	PL
		(↑ INDEX PERS)	=	2
are	V	(↑ SUBJ INDEX NUM)	=	PL
		(↑ SUBJ INDEX PERS)	=	2

Belyaev et al. challenge the notion that CONCORD is always distributive in a later work on Hindi, Russian, and Italian. They show that in some languages, like Russian, CONCORD can be non-distributive whilst it can be both distributive and non-distributive in languages like Italian.[19] I argue in this chapter that PA has a distributive CONCORD. Belyaev et al. use feature distribution to analyse cases of coordination. In basic terms, they assume that there are different language rules for coordination of adjectives based on the reading of coordination: either joint or split. They consider the main difference between split and joint reading to be structural ambiguity, which is explained on the level of the phrase-structure rules and at the f-structure level. Moreover, they consider coordination structures which reflect joint reading to have a similar structure to other coordination structures treated as

[19]See Belyaev et al. (2015) for the implementation of non-distributive CONCORD in Italian.

sets. On the other hand, split reading coordination structures are treated as separate f-structures with each adjective being a modifier within one conjunct (each conjunct includes the PRED). I provide the f-structures of joint and split reading according to Belyaev et al. (2015) below.

A coordinate structure reflecting a joint reading (213) has the f-structure in (214). Notice in (214), the coordinated structure is included as a set. The phrase-structure rule for the joint reading is in (215). (215) is the LFG rule for coordination, where the set inherits the features of the members of the set. Agreement in (213) between the head noun *stazione* 'station' and the coordinate structure *vecchia e piccola* 'old and small' is due to a distributive CONCORD feature in Italian. The singular CONCORD number of the noun *stazione* 'station' is distributed to each adjective of the coordinate set; therefore, each adjective is singular.

(213) *la* *vecchia e* *piccola* *stazione*
the.SG old.SG and small.SG station.SG

'the old and small station(s).' Belyaev et al. (2015, ex.1, p. 3)

(214)
$$\begin{bmatrix} \text{PRED} & \text{'STATION'} \\ \text{CONCORD} & \begin{bmatrix} \text{NUM} & \text{SG} \end{bmatrix} \\ \text{INDEX} & \begin{bmatrix} \text{NUM} & \text{SG} \end{bmatrix} \\ \text{ADJ} & \left\{ \begin{bmatrix} \text{CONJ} & \text{AND} \\ \left\{ \begin{bmatrix} \text{PRED} & \text{'OLD'} \end{bmatrix} \right. \\ \left. \begin{bmatrix} \text{PRED} & \text{'SMALL'} \end{bmatrix} \right\} \end{bmatrix} \right\} \end{bmatrix}$$

(215)
$$\begin{array}{lcccc} \text{AP} & \rightarrow & \text{A}^{+} & \text{Conjunct (Cnj)} & \text{A} \\ & & \downarrow \in \uparrow & \uparrow = \downarrow & \downarrow \in \uparrow \end{array}$$

Italian split reading as in (216) has the f-structure in (217), and the phrase-structure rule in (218) as adopted from Belyaev et al. (2015, p. 17). The argument in (216) works through resolving CONCORD. The noun phrase has a plural CONCORD resulting from feature resolution; therefore, CONCORD can be non-distributive in Italian. A distribution of the PRED feature to the coordinate structure results in two f-structures. Each of adjectives marked for singular agreeing with a singular PRED.

(216) *la* *bandiere rossa* *e* *bianca*
the.PL flag.PL red.SG and white.SG
'the red and white flags. (two flags total: one red, one white) (Belyaev et al., 2015,

ex.5, p. 4)

In (216), the noun phrase consists of a head noun *bandiere* 'flags' and a coordinate set of modifiers *rossa e bianca* 'red and white'.

(217)
$$\begin{bmatrix} \text{CONCORD} & \begin{bmatrix} \text{NUM} & \text{PL} \end{bmatrix} \\ \text{INDEX} & \begin{bmatrix} \text{NUM} & \text{PL} \end{bmatrix} \\ \text{CONJ} & \text{AND} \\ \left\{ \begin{bmatrix} \text{PRED} & \text{'FLAG'} \\ \text{CONCORD} & \begin{bmatrix} \text{NUM} & \text{SG} \end{bmatrix} \\ \text{ADJ} & \left\{ \begin{bmatrix} \text{PRED} & \text{'RED'} \end{bmatrix} \right\} \end{bmatrix}, \begin{bmatrix} \text{PRED} & \text{'FLAG} \\ \text{CONCORD} & \begin{bmatrix} \text{NUM} & \text{SG} \end{bmatrix} \\ \text{ADJ} & \left\{ \begin{bmatrix} \text{PRED} & \text{'WHITE'} \end{bmatrix} \right\} \end{bmatrix} \right\} \end{bmatrix}$$

(218)

Adjectival Phrase (AP) →	Adj$^+$	Cnj	Adj
	$\downarrow \in$ (%C ADJ)	$\uparrow = \downarrow$	$\downarrow \in$ (%C ADJ) %C
	%C $\in \uparrow$	($\uparrow$ INDEX NUM) = PL	%C $\in \uparrow$

The structure in (218) requires the overall INDEX number of the phrase to be plural, which explains the annotation on (Cnj). Moreover, the local name %C which is present for each adjective allows the adjective to occupy the ADJUNCT set ($\downarrow \in$ (%C ADJ)) which ensures that each of the conjuncts has an adjunct set with a modifier through requiring each of the adjectives to introduce a member of the set representing a coordinate structure (%C $\in \uparrow$) (Belyaev et al., 2015).

To conclude, this section discussed the formalisation of split and joint readings related to agreement between a single NP and a coordinated modifier in LFG. I showed that feature distributivity explains joint reading, and split readings are explained through feature resolution and PRED distribution. The next section studies single-conjunct agreement in LFG.

6.3.3 Single-Conjunct Agreement

Cases of coordinated NPs and predicate agreement can include a single-conjunct agreement pattern which exists in VSO order in PA. I provide examples and analysis of PA SCA in section 6.4.2.1. However, this section provides a general introduction to the treatment of SCA in LFG. Single-conjunct agreement is discussed by Wechsler and Zlatić (2003); Kuhn and Sadler (2007); Dalrymple and Hristov (2010) among many others. SCA refers to the agreement pattern where the target agrees with the features of one conjunct only instead

of the features of the whole coordinate phrase, as opposed to resolving agreement (which involves the resolution of the features of the members of the coordinate structure), and unlike non-resolving agreement which involves agreement with the identical individual features of the members of the coordinate structure. For instance, in (219) in Czech, the predicate *seděla* 'was sitting' is marked for singular feminine reflecting the single-conjunct agreement between the predicate *seděla* 'was sitting' and the noun *kočka* 'cat' only instead of the whole coordinate structure *kočka a pes* 'cat and dog'.[20] It is also important to notice that SCA happens with the nearest conjunct in the case presented in (219) instead of the further conjunct *pes* 'dog'.

(219) *Na rohožce seděla kočka a pes.*
on mat was.sitting.FSG cat.FSG and dog.MSG
'The cat and dog were sitting on the mat.' (Kuhn and Sadler, 2007, ex.1, p. 2)

Therefore, SCA occurs when the features of one conjunct control the agreement external to the coordinate structure. However, in some languages, like Welsh, SCA occurs along other agreement patterns like resolution, as in (220).

(220) *Gwelaist ti a'th frawd eich hunain*
saw-2SG 2SG and-2SG brother 2PL self
'You and your brother saw yourselves.' Kuhn and Sadler (2007, ex.,2 p. 2)

In (220), there are two agreement patterns involved: the single-conjunct agreement between

[20]Transcription and glossing as in original source.

the first conjunct *ti* 'You' with the verb *Gwelaist* 'saw', and the resolved agreement between the coordinate NP as a whole (2PL) and the reflexive pronoun object. To add to the available patterns in languages that observe SCA agreement, Portuguese demonstrates double edged single conjunct agreement (Kuhn and Sadler, 2007) as in (221).[21]

(221) *Os mitos e lendas brasileiras*
the.MPL myth.MPL and legend.FPL Brazilian.FPL

(Kuhn and Sadler, 2007, ex.16 b., p. 9)

Double edged SCA is demonstrated in (221) through the agreement on the items external to the coordinate structure. The coordinate structure is formed of the masculine plural *mitos* 'myths', and the feminine plural *lendas* 'legends'. The pre-nominal *Os* 'the' shows agreement with the leftmost conjunct *mitos* 'myths', and is masculine plural. However, the post-nominal *brasileiras* 'Brazilians' is feminine plural agreeing with the rightmost conjunct *lendas* 'legends'.

Kuhn and Sadler (2007) explain they propose a description-based approach to account for cases of single-conjunct agreement.[22] Moreover, they explain one of the problems with previous models is that sets are unordered; so they propose a "more structured representation for the collection of conjunct f-structures ... 'local f-structure sequences' (*lfsq*'s) (Kuhn and

[21] Transcription and glossing as in original source. Source does not provide translation.

[22] For an analysis of other proposals and the issues associated with previous proposals, see Kuhn and Sadler (2007).

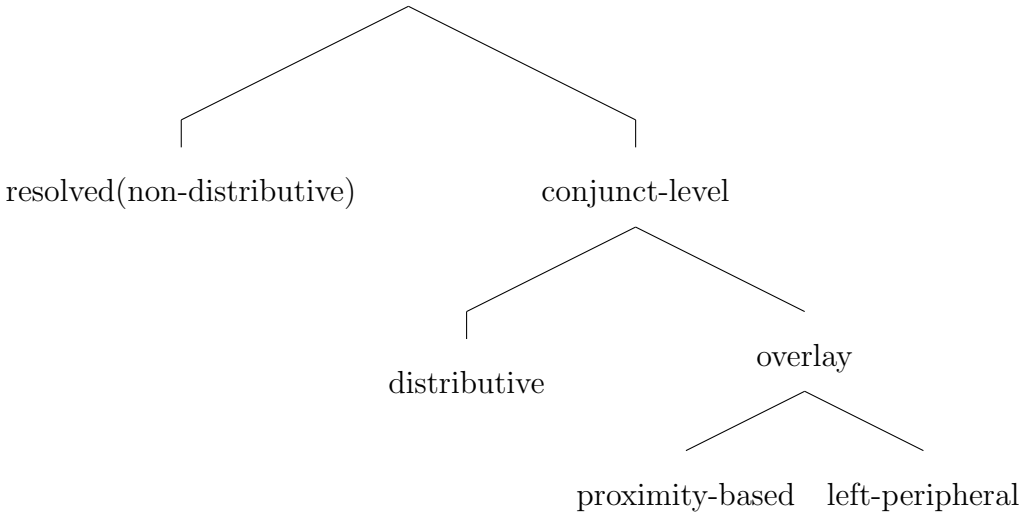
Sadler, 2007, p. 15). The *lfsq*'s are proposed so that there is a way in the f-structure to pick up the features of the individual conjuncts (either the first or the last conjunct). The challenge of LFG's traditional treatment of coordination at the f-structure level is that it predicts a resolution of the features of the conjuncts. Thus, based on a traditional treatment of coordination, the f-structure for (219) is in (222).[23] Notice the resolution for the gender and number features of the conjuncts in (222).

(222)
$$\begin{bmatrix} \text{PRED} & \text{'SIT' <SUBJ >'} \\ \text{SUBJ} & \begin{bmatrix} \text{CONJ} & \text{AND} \\ \text{GEND} & \text{M} \\ \text{NUM} & \text{PL} \\ \left\{ \begin{bmatrix} \text{PRED} & \text{'CAT'} \\ \text{GEND} & \text{F} \\ \text{NUM} & \text{SG} \end{bmatrix}, \begin{bmatrix} \text{PRED} & \text{'DOG'} \\ \text{GEND} & \text{M} \\ \text{NUM} & \text{SG} \end{bmatrix} \right\} \end{bmatrix} \end{bmatrix}$$

Notice in (222), the overall features of the subject are the resolved (calculated) features

[23] See (Kuhn and Sadler, 2007, p. 3) for different abbreviations in the f-structure.

of those of the conjuncts, as in F+M=M, and SG+SG=PL. Based on this prediction, (219) is ungrammatical as Kuhn and Sadler (2007) show this to be a challenge of older LFG models. To solve issues related to SCA agreement, the first step is to account for all the agreement possibilities available with coordination structures. Therefore, Kuhn and Sadler (2007) claim a finer distinction of the features affecting the conjunct-level and they provide the below typology of features.



Features of a coordinate structure can be resolved depending on non-distributive features like a resolved INDEX feature, for instance which involves feature calculation of the individual features of the conjuncts. On the other hand and at the conjunct level, features can be either distributive or overlay. Distributive features like CONCORD (in some cases) produce cases of full agreement, if morphologically applicable. However, the term overlay introduces the features of one conjunct only which can be chosen according to proximity of the target to the controller, or according to the leftmost element's features. To account for overlay

features, *lfsq*'s are introduced. Moreover, Kuhn and Sadler explain that account for the locality effect (in agreement), the position of the targets should be taken into consideration. Thus, they propose a way of reference to the sequence of elements. f_L and f_R refer to the leftmost element (first conjunct), and the right-most element (last conjunct); respectively. Finally, *lfsq*'s have an anchoring point in the higher mother node of the *c*-structure to exclude multiple exponence for a single coordination. Their coordination rule is given in (223) below.

(223)

NP	→	NP	CONJ	NP
		$\downarrow \in_{lfsq} \uparrow$	$lfsq(\uparrow, M^*)$	$\downarrow \in_{lfsq} \uparrow$
			$\uparrow = \downarrow$	

(Kuhn and Sadler, 2007, (37). p. 17)

Each of the conjunct NPs belongs to a local *f*-structure sequence which is placed in the higher node. Therefore, each of the conjuncts makes a reference to a local *f*-structure sequence (first, last). The *lfsq* has "a unique anchoring point" in the *c*-structure defining the mother node as *lfsq* anchoring point (Kuhn and Sadler, 2007, p. 17). Based on this, (219) has the following lexical entries (224).

(224)

was.sitting	V	(↑ SUBJ GEND)	=	F
cat	N	(↑ GEND)	=	F
dog	N	(↑ GEND)	=	M

By the same token, the double-edged SCA in (221) requires the constraints in (225).

(225)

the	(↑ GEND)	=	M
myths	(↑ GEND)	=	M
legends	(↑ GEND)	=	F
Brazilian	((ADJ ∈ ↑) GEND)	=	F

Following the work of Kuhn and Sadler, Dalrymple and Hristov (2010) introduce the use of constraints to account for single-conjunct agreement. They explain the model proposed by Kuhn and Sadler (2007) does not specify whether CONCORD or INDEX is involved in single-conjunct agreement. Dalrymple and Hristov suggest Kuhn and Sadler's (2007) typology of features is rather a typology of agreement patterns. Moreover, Dalrymple and Hristov (2010, p. 12) propose the use of functional metavariables; therefore, allowing reference to the peripheral conjuncts, as in f_R to refer to the right-most conjunct and f_L to refer to the left-most conjunct. Their notions have different definitions and include reference to coordinate structures and non-coordinate structures, too (see (Dalrymple and Hristov, 2010) for more details). According to their proposal, agreement requirements are stated so there is a reference to the peripheral conjuncts (either left $_L$ or right $_R$) in case of SCA, reference to the noun features in agreement (CONCORD or INDEX) both in cases of SCA and in cases of resolution and the possibility to include an optional SCA (through using parentheses).

- (f INDEX) refers to either the INDEX features of a non-coordinate phrase, or in cases of coordination, the resolved INDEX .

- (f_L INDEX) refers to either the INDEX features, of a non-coordinate phrase, or the features of the left-most (first conjunct). This notation indicates single-conjunct agreement is obligatory in cases of coordination.

- ($f_{(L)}$ INDEX): this is the same notion as above except the parentheses indicate optional single-conjunct agreement, in which case, the features in agreement are the resolved INDEX features.

- (f_R INDEX) refers to, with non-coordinate phrases, the INDEX feature, or the right-most features in cases of coordination.

- ($f_{(R)}$ INDEX): single-conjunct with right-most element is optional otherwise with non-coordinate phrases, INDEX features are in agreement.

- (f CONCORD) refers to either the CONCORD feature in cases of non-coordination, or the distributive CONCORD feature of each conjunct in cases of coordination.

- (f_L CONCORD) refers to the CONCORD features of a non-coordinate phrase, or the left-most conjunct.

- (f_R CONCORD) refers to the CONCORD features of a non-coordinate phrase, or the right-most conjunct.

Based on the notions above, Dalrymple and Hristov (2010) analyse example (220) from

Kuhn and Sadler (2007) repeated here as (226) and provide the f-structure in (228), and the lexical entry in (227).

(226) *Gwelaist ti a'th frawd eich hunain*
saw-2SG 2SG and-2SG brother 2PL self

'You and your brother saw yourselves.' Kuhn and Sadler (2007, ex.,2 p. 2)

(227) *gwelaist* 'SEE' $((\uparrow \text{SUBJ})_L \text{ INDEX PERS}) = 2$
$((\uparrow \text{SUBJ})_L \text{ INDEX NUM}) = \text{SG}$

The constraints on the subject disallow the resolved INDEX feature and require the features of the left-most element as per closest-conjunct agreement. Dalrymple and Hristov (2010, (36), p. 201) provide the following f-structure for example (226).

(228)
$$\begin{bmatrix} \text{PRED} & \text{'SEE'} & & \\ \text{SUBJ} & \left\{ \begin{bmatrix} \text{PRED} & \text{'YOU'} & \\ \text{INDEX} & \begin{bmatrix} \text{PERS} & 2 \\ \text{NUM} & \text{SG} \end{bmatrix} & \\ \text{CONCORD} & \begin{bmatrix} \text{PERS} & 2 \\ \text{NUM} & \text{SG} \end{bmatrix} & \end{bmatrix}, \begin{bmatrix} \text{PRED} & \text{'BROTHER'} & \\ \text{INDEX} & \begin{bmatrix} \text{PERS} & 3 \\ \text{NUM} & \text{SG} \end{bmatrix} & \\ \text{CONCORD} & \begin{bmatrix} \text{PERS} & 3 \\ \text{NUM} & \text{SG} \end{bmatrix} & \end{bmatrix} \right\} & \\ \text{PERS} & & 2 \\ \text{NUM} & & \text{PL} \end{bmatrix}$$

Dalrymple and Hristov do not comment on the fact that CONCORD in the f-structure contains a person feature and value although it is well-known that CONCORD includes Case Gender Number (CNG) (Case, Gender, Number) features whilst INDEX contains Person Gender

Number (PNG) (Person, Number, Gender) features.

To recapitulate, this section presented examples including SCA agreement across languages. SCA agreement can occur with either of the conjuncts (nearest-conjunct or furthest conjunct) or both conjuncts (double edged SCA). SCA can occur along resolved agreement in some languages and can involve either CONCORD or INDEX features. I provide a discussion of SCA in PA in section 6.4.2.1.

6.4 Coordination and Agreement in PA

So far, I have explained the following notions: the features of the noun in LFG which include CONCORD and INDEX features, which include (CNG) and (PNG) features; respectively. CONCORD is viewed as a distributive feature that acts NP-internally; however, some languages also observe a non-distributive CONCORD. On the other hand, INDEX is non-distributive and an NP-external feature although there is evidence that INDEX can act NP-internally, as well. Moreover, I discussed distributive and non-distributive feature formalisation in LFG. Distributive features over a coordinated set are distributed to each member of the set and are analysed in LFG through sets in the f-structure with each conjunct belonging to a set that inherits the features of the conjuncts. Distributive features give rise to non-resolving agreement patterns (agreement with each member of the set) and in cases of coordination

result in a joint reading. Non-distributive features are associated with the set as a whole instead of individual members of the set and result in resolution agreement (agreement with the overall features represented by the coordination set instead of the features of individual members) with the features of the whole coordinate phrase. In addition, split reading is a result of non-distributive features. Finally, I also discussed the formalisation of split and joint readings in LFG. Split readings are analysed through distributing the PRED feature to the coordinate adjectives so that there are two separate f-structures, each containing a PRED and an Adjunct. Joint readings are analysed similarly to cases of coordination with a set of one f-structure for Adjunct including the coordinate adjectives. These notions are applied in this section to provide analysis of cases of coordination in PA and the agreement patterns triggered. Section 6.4.1 discusses cases of single NPs modified by coordinated adjectives and section 6.4.2.1 studies cases of coordinate NPs and predicate agreement. Finally, section 6.4.2.2 discusses cases of coordinate NPs modified by single modifiers.

6.4.1 Coordinated sets of modifiers

This section presents various examples of agreement between a head noun and a coordinated set of modifiers. I only discuss cases of two conjuncts but the analysis is the same with more than two coordinates. Some examples include verbal and anaphoric agreement for further explanation and support. Section 6.4.1.1 discusses agreement between a singular

noun and a set of coordinated modifiers, section 6.4.1.2 studies agreement of dual NPs and coordinate modifiers, and section 6.4.1.3 provides examples including plural NPs modified by coordinated adjectives in PA.

The following patterns are found in PA in cases of single NPs modified by coordinated adjectives: singular nouns modified by two singular adjectives, dual nouns modified by two singular adjectives, dual nouns modified by two plural adjectives, plural nouns modified by two singular adjectives, and plural nouns modified by two plural adjectives. Throughout the analysis of coordination in this thesis, I do not assume an underlying ellipsis in the coordination structure. Refer to section 6.2.1 for the discussion of ellipsis and coordination. This is very important to the analysis. However, the only case of agreement where ellipsis is likely to be assumed is in the case of dual NPs modified by a set of coordinated singular adjectives in PA. On the contrary, cases of plural NPs modified by coordinated singular adjectives are solved through INDEX$_\phi$ distribution. It is very likely that cases of dual NPs modified by coordinated singular adjectives assume ellipsis. This is due to the fact that PA does not allow deflected agreement with dual NPs. In other words, a single dual noun does not trigger singular on single adjectives, as opposed to the case where a plural noun can trigger deflected agreement on single modifiers which is subject to the individuation interpretation. Recall that I treated deflected agreement in chapter 5 through placing constraints by the modifiers in the lexical entry of the adjectives to agree with the non-individuated INDEX of

the plural noun ((ADJ $\in \uparrow$) INDEX$_\Phi$NUM) $=_c$ SG. Therefore, my analysis of coordinated adjectives in PA is different from Belyaev et al.'s (2015) and does not involve different inner CONCORD and outer CONCORD values, as they show in their f-structure in (217) below for example (216).

There is not enough information provided in Belyaev et al. (2015) regarding agreement in Italian with single adjectives; therefore, it is not clear whether Italian allows deflected agreement with plural nouns modified by single adjectives. However, if deflected agreement is not possible in Italian, this explains the reason Belyaev et al. (2015) assume a PRED distribution in cases of split agreement where each modifier agrees with a singular distributed CONCORD. They explain the plural marker on the modified noun through assuming resolution in both CONCORD and INDEX. Nevertheless, Belyaev et al. (2015) do not provide a c-structure for their examples in Italian including cases of split reading triggered by coordinated singular adjectives modifying plural NPs and they claim they reject ellipsis but I do not see a way where an underlying ellipsis structure is not assumed that is relevant to the f-structure they provide.

6.4.1.1 Singular NPs

Singular NPs in PA trigger canonical full agreement across all targets, as in (229) below. Similar to Italian and Russian, full agreement in PA triggers a joint reading. The f-structure

of (229) is provided in (230).

(229) *l-maħaṭṭ-a* *iṣ-ṣgīr-e* *w* *l-ʔadīm-e*
DEF-station-F.SG DEF-small-F.SG and DEF-old-F.SG
'The small and old station.' Joint reading

This is a joint reading, non-resolving singular agreement, and can be analysed as follows.

This is analysed as a set of two adjectives in the f-structure.

(230)
$$\begin{bmatrix} \text{PRED} & \text{'STATION'} \\ \text{CONCORD} & \begin{bmatrix} \text{NUM} & \text{SG} \\ \text{GEN} & \text{F} \end{bmatrix} \\ \text{ADJ} & \left\{ \begin{bmatrix} \text{CONJ} & \text{AND} \\ \left\{ \begin{bmatrix} \text{PRED} & \text{'SMALL'} \end{bmatrix} \right\} & \\ \left\{ \begin{bmatrix} \text{PRED} & \text{'OLD'} \end{bmatrix} \right\} & \end{bmatrix} \right\} \end{bmatrix}$$

The lexical entry for the elements in (229) is as below.[24]

[24]The entry in (231) ignores the problem that arises when combining inside out agreement from an ADJ with coordination for simplicity.

(231)

maħaṭṭ-a	'station'	(↑ CONCORD NUM)	=	SG
		(↑ CONCORD GEN)	=	F
		(↑ INDEX NUM)	=	SG
		(↑ INDEX GEN)	=	F
ṣ̣g̣īr-e	'small'	((ADJ ∈ ↑) CONCORD NUM)	=	SG
		((ADJ ∈ ↑) CONCORD GEN)	=	F
ʔadīm-e	'old'	((ADJ ∈ ↑) CONCORD NUM)	=	SG
		((ADJ ∈ ↑) CONCORD GEN)	=	F

The lexical entry of the noun *maħaṭṭ-a* 'station' shows that the noun has singular and feminine features for both the CONCORD and INDEX which matches the constraints placed by the adjectives. The lexical entry of each adjective states that the adjective is an element in a set functioning as an adjunct which is an attribute of a higher f-structure that has the features number whose value is singular and gender whose value is feminine. The phrase structure rules for (229) above are in (232) below:

(232)

NP	→	NP		AP
		↑ = ↓		↓ ∈ ADJ
AP	→	A^+	Cnj	A
		↓ ∈ ↑	↑ = ↓	↓ ∈ ↑

In order to check for a possible split reading in the case of single noun modified by

coordinated singular adjectives, I provide the example (233) which includes adjectives whose meaning is incompatible with a joint reading *small* and *big*.

(233) *l-maħaṭṭ-a* *iṣ-ṣgīr-e* *w* *l-kbīr-e*
DEF-station-F.SG DEF-small-F.SG and DEF-big-F.SG
'The small and big stations.' [one small, one big] Split reading

In (233), the only reading available is the split reading. However, the agreement marking is the same as in (229) and is singular. Split reading is only allowed due to the use of incompatible adjectives. It is important to notice that structure-wise, CONCORD is distributive in (233) despite the split reading. It is also very important to notice that split reading in (233) arises only due to meaning-related issues (incoherent meaning when the adjectives *small* and *big* are conjoined) not due to structure-related issues. Therefore, (233) has the *f*-structure in (234). Notice this is the same *f*-structure in (229).

(234)
$$\begin{bmatrix} \text{PRED} & \text{'STATION'} \\ \text{CONCORD} & \begin{bmatrix} \text{NUM} & \text{SG} \\ \text{GEN} & \text{F} \end{bmatrix} \\ \text{ADJ} & \left\{ \begin{bmatrix} \text{CONJ} & \text{AND} \\ \left\{ \begin{bmatrix} \text{PRED} & \text{'SMALL'} \end{bmatrix} \right\} & \\ \left\{ \begin{bmatrix} \text{PRED} & \text{'OLD'} \end{bmatrix} \right\} & \end{bmatrix} \right\} \end{bmatrix}$$

The lexical entries of the elements in (233) are as follows:

(235)

maħaṭṭ-a	'station'	(↑ CONCORD NUM)	=	SG
		(↑ CONCORD GEN)	=	F
ṣ̣gīr-e	'small'	((ADJ ∈ ↑) CONCORD NUM)	=	SG
kbīr-e	'big'	((ADJ ∈ ↑) CONCORD NUM)	=	SG

Nevertheless, despite the fact that (229) and (233) have a distributive CONCORD and the same f-structure, (229) and (233) have different INDEX values, as in the examples below. (236) shows that the INDEX feature of the noun *maħaṭṭ-a* 'station' is singular due to a joint reading, whereas, INDEX is plural in (237) due to a split reading.

(236) *l-maħaṭṭ-a* *iṣ-ṣ̣gīr-e* *w* *l-ʔadīm-e* *sakkar-at*
DEF-station-F.SG DEF-small-F.SG and DEF-old-F.SG close.PST.PRF-3.F.SG
'The small and old station closed.' Joint reading

(237) *l-maħaṭṭ-a* *iṣ-ṣ̣gīr-e* *w* *l-kbīr-e* *sakkar-ū*
DEF-station-F.SG DEF-small-F.SG and DEF-big-F.SG close.PST.PRF-3.PL
'The small and big stations closed.' [one small, one big] Split reading

To conclude, singular NPs modified by coordinated singular adjectives in PA normally trigger a joint reading unless the adjectives coordinated are incompatible in meaning; in which case a split reading arises. The next section studies dual NPs modified by coordinated adjectives.

6.4.1.2 Dual Nouns

In PA, dual nouns trigger plural markers on the targets (both modifiers and predicates) as in (238). However, in cases of coordinated modifiers, dual nouns can trigger either singular or plural adjectives in coordination. First, I discuss single dual nouns modified by coordinated singular adjectives in PA, as in (239). I assume an underlying ellipsis structure for the case in (239), as in (240).

(238) *l-maħaṭṭi-t-ēn* *iṣ-ṣg̣ār*
DEF-station-F-DUAL DEF-small-PL
'The two small stations.'

In (238), the single dual noun *l-maħaṭṭi-t-ēn* 'stations' triggers plural on the modifier *iṣ-ṣg̣ār* 'small'.

(239) *l-maħaṭṭi-t-ēn* *iṣ-ṣg̣īr-e* *w* *l-ʔadīm-e*
DEF-station-F-DUAL DEF-small-F.SG and DEF-old-F.SG
'The two small and old stations.' [one old, one small] Split reading

(240) *l-maħaṭṭ-a* *iṣ-ṣg̣īr-e* *w* *l-maħaṭṭ-a* *l-ʔadīm-e*
DEF-station-F-SG DEF-small-F.SG and DEF-station-F-SG DEF-old-F.SG
'The small station and the old station.'

Dual nouns in PA can be modified by singular coordinated adjectives for a split reading only. Notice in (239) that the noun *l-maħaṭṭi-t-ēn* 'two stations' is dual and is modified by

a set of singular adjectives *ṣg̱īr-e* 'small' and *l-ʔadīm-e* 'old'. I treat this case only (the one represented in (239)) through ellipsis. Nevertheless, the features between the noun *l-maħaṭṭi-t-ēn* 'two stations' and the coordination structure *ṣg̱īr-e* 'small' and *l-ʔadīm-e* 'old' are resolved which means agreement relates to the features associated with the coordinated structure as a whole rather than the individual members of the coordinated structure. Consequently, the features of CONCORD are not distributed to the members of coordination. The noun *l-maħaṭṭi-t-ēn* 'two stations' has a dual CONCORD and a dual INDEX. Recall predicates are plural with dual nouns in PA. The lexical entry for the noun and the adjectives in (239) is as in (241).

(241)

maħaṭṭi-t-ēn	'two stations'	(↑ PRED)	=	'STATION'
		(↑ CONCORD NUM)	=	DUAL
		(↑ CONCORD GEN)	=	F
		(↑ INDEX NUM)	=	DUAL
w	'and'	(↑ Conj)	=	AND
		(↑ CONCORD NUM)	=	DUAL
ṣg̱īr-e	'small'	(↑ PRED)	=	'SMALL'
		((ADJ ∈ ↑) CONCORD NUM)	=	SG
ʔadīm-e	'old'	(↑ PRED)	=	'OLD'
		((ADJ ∈ ↑) CONCORD NUM)	=	SG

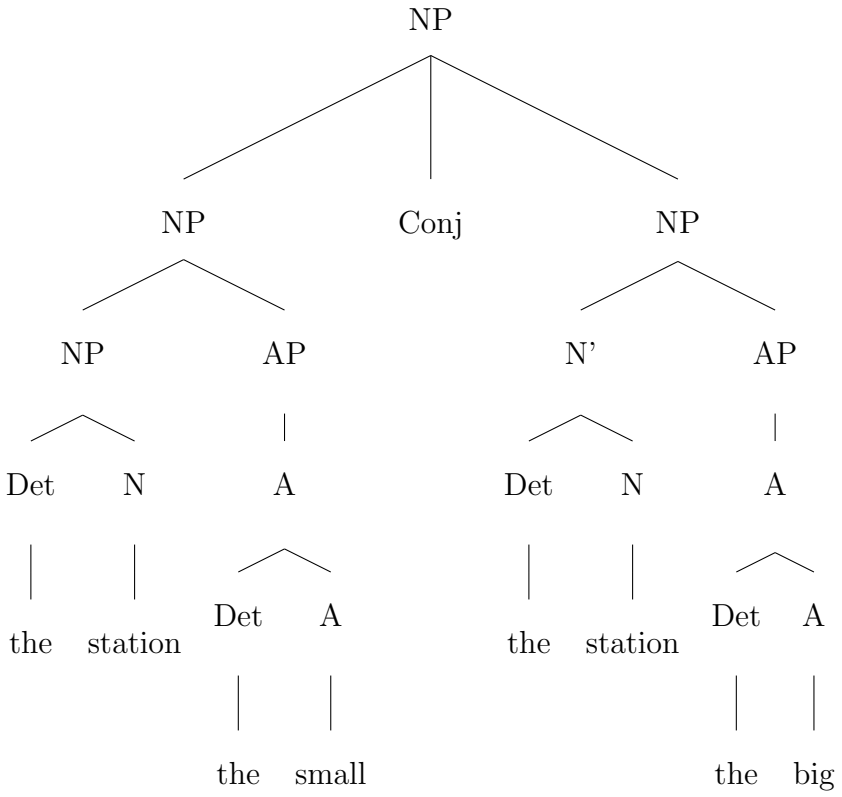
I achieve the individual singular marking on the modifiers in the lexical entry in (241) through an inside-out function ((ADJ $\in \uparrow$) CONCORD NUM) which means that each modifier is a member of the set ADJ which is an attribute of the higher f-structure which has a singular CONCORD. I label the inner f-structures in (242) for reference. Therefore, the lexical entry for *ṣg̱īr-e* 'small' can be re-written as (($f_2 \in f_4$) CONCORD NUM) = SG, and the lexical entry for *ʔadīm-e* 'old' is (($f_3 \in f_5$) CONCORD NUM) = SG. Moreover, I achieve the overall dual CONCORD in (239) through the constraint specified on the CONJ in the lexical entry for *and* ($\uparrow$ CONCORD NUM) = DUAL. The f-structure for example (239) is in (242).

(242)

$$
\begin{bmatrix}
\text{CONCORD} & f6\begin{bmatrix}\text{NUM} & \text{DUAL}\\ \text{GEND} & \text{F}\end{bmatrix}\\
\text{INDEX} & \begin{bmatrix}\text{NUM} & \text{DUAL}\end{bmatrix}\\
\text{CONJ} & \text{AND}\\
f1\left\{\begin{bmatrix}
f2\begin{bmatrix}\text{PRED} & \text{'STATION'}\\ \text{CONCORD} & \begin{bmatrix}\text{NUM} & \text{SG}\end{bmatrix}\\ \text{ADJ} & \left\{f4\begin{bmatrix}\text{PRED} & \text{'SMALL'}\end{bmatrix}\right\}\end{bmatrix}\\
f3\begin{bmatrix}\text{PRED} & \text{'STATION'}\\ \text{CONCORD} & \begin{bmatrix}\text{NUM} & \text{SG}\end{bmatrix}\\ \text{ADJ} & \left\{f5\begin{bmatrix}\text{PRED} & \text{'OLD'}\end{bmatrix}\right\}\end{bmatrix}
\end{bmatrix}\right\}
\end{bmatrix}
$$

Mapping the f-structure in (242) to the c-structure; the relevant c-structure for cases of split reading is provided in (243).

(243)



(243) looks like a case of ellipsis, and cases like (239) are the only cases treated through ellipsis. Therefore, the phrase-structure rule is in (244).

(244)

NP	→	NP	Cnj	NP
		(↓ CONCORD)= SG	↓ = ↑	(↓ CONCORD) = SG
			(↑ NUM) = DUAL	

NP	→	N	AP
		↑ = ↓	↓ ∈ (↑ ADJ)

The annotation of the Cnj in (241) ((↑ NUM) = DUAL) ensures plural marking on the predicate as in (245).

(245) *l-maħaṭṭi-t-ēn* *iṣ-ṣgīr-e* *w* *l-ʔadīm-e* *sakkar-ū*
DEF-station-F-DUAL DEF-small-F.SG and DEF-old-F.SG close.PST.PRF.3-PL
'The two small and old station closed down.' [one old, one small] Split reading

In (245), the verb *sakkar-ū* 'closed down' is plural agreeing with a dual INDEX of the noun *l-maħaṭṭi-t-ēn* 'two stations' in a split reading.

In cases of plural agreement on the coordinated adjectives modifying a dual noun, two readings are allowed. (246) below includes a dual noun modified by a set of two coordinated plural adjectives and both the joint and the split readings arise.

(246) *l-maħaṭṭi-t-ēn* *iṣ-ṣgār* *w* *l-ʔdām*
DEF-station-F-DUAL DEF-small-PL and DEF-old-PL
'The two small and old stations.' [one old, one small], [two stations, each small and old] joint and split readings

Regardless of the reading, the *f*-structure (247), lexical entries (248) and phrase-structure rules (253) for (246) are provided below. The reason both readings have the same structure is because the different readings do not arise due to the syntax and are rather dependent on the perception and semantic interpretation. In other words, regardless of the reading, the agreement constraints are the same.

(247)
$$\begin{bmatrix} \text{PRED} & \text{`STATION'} \\ \text{CONCORD} & \begin{bmatrix} \text{NUM} & \text{DUAL} \\ \text{GEND} & \text{F} \end{bmatrix} \\ \text{ADJ} & \left\{ \begin{bmatrix} \text{CONJ} & \text{AND} \\ \left\{ \begin{bmatrix} \text{PRED} & \text{`OLD'} \end{bmatrix} \right. & \\ \left. \left\{ \begin{bmatrix} \text{PRED} & \text{`SMALL'} \end{bmatrix} \right\} & \end{bmatrix} \right\} \end{bmatrix}$$

(248)

maħaṭṭi-t-ēn	'two stations'	(↑ PRED)	=	'STATION'
		(↑ CONCORD NUM)	=	DUAL
		(↑ CONCORD GEN)	=	F
		(↑ INDEX NUM)	=	DUAL
ṣ̣gār	'small'	(↑ PRED)	=	'SMALL'
		((ADJ ∈ ↑) CONCORD NUM)	=	≠ SG
ʔdām	'old'	(↑ PRED)	=	'OLD'
		((ADJ ∈ ↑) CONCORD NUM)	=	≠ SG

(249)

AP	→	Adj^+	Cnj	Adj
		↓ ∈ ↑	↓ = ↑	↓ ∈ ↑

To conclude this section, dual NPs in PA trigger plural markers on the coordinated mod-

ifiers which results in either joint or split readings. However, in cases where dual nouns are modified by singular coordinated adjectives, underlying ellipsis is assumed to explain the case.

6.4.1.3 Plural Nouns

This section discusses agreement with plural NPs modified by coordinated adjectives in PA. In this section, I discuss cases of full agreement on all the elements of agreement, and cases of deflected agreement on both modifiers. The only available reading in the case of plural NPs modified by coordinated singular adjectives is the split reading, as in (250).

(250) *l-maħaṭṭ-āt* *ṣ-ṣgīr-e* *w* *l-ʔadīm-e*
DEF-station.F-PL DEF-small-F.SG and DEF-old-F.SG
'The small and old stations.' [some old, some small] Split reading

In (250), the coordinated adjectives *ṣ-ṣgīr-e w l-ʔadīm-e* 'small and old' are marked for singular despite the fact that the head noun *l-maħaṭṭ-āt* 'stations' is plural. This agreement pattern can possibly reflect resolving agreement where CONCORD features of the noun are matched with the resolved number feature of the coordinated adjective. However, I show below it is a case of distribution of NP-internal INDEX.

Recall that it is grammatical for plural nouns to trigger singular feminine on their targets in PA. I identified this pattern as the deflected agreement pattern in section 3.2.2. In

addition, I proposed an [IND] restriction in section 5.3.3 which allows for a singular INDEX of a plural noun in PA provided the noun has a reference to a non-individuated group which I refer to as INDEX_{ϕ}. Moreover, I provided evidence that it is likely in PA for INDEX to act NP-internally. In this section, I apply these notions (deflected agreement formalisation, INDEX_{ϕ}, NP-internal INDEX) and I propose that NP-internal INDEX can be distributive in PA to explain the cases of agreement observed between a plural noun and singular coordinated modifiers, in PA. The *f*-structure of (250) is in (251) below.

(251)
$$\begin{bmatrix} \text{PRED} & \text{'STATION'} \\ \text{CONCORD} & \begin{bmatrix} \text{NUM} & \text{PL} \end{bmatrix} \\ \text{INDEX}_{\Phi} & \begin{bmatrix} \text{NUM} & \text{SG} \end{bmatrix} \\ \text{ADJ} & \left\{ \begin{bmatrix} \text{CONJ} & \text{AND} \\ \left\{ \begin{bmatrix} \text{PRED} & \text{'SMALL'} \end{bmatrix} \right. & \\ \left. \begin{bmatrix} \text{PRED} & \text{'OLD'} \end{bmatrix} \right\} & \end{bmatrix} \right\} \end{bmatrix}$$

I propose that the singular INDEX_{ϕ} acts NP-internally. This is different to the proposal by Belyaev et al. (2015) on the treatment of similar cases in Italian and Russian where they assume a PRED distribution. The distributed PRED has a singular CONCORD.[25] The lexical

[25] Refer to my discussion of this with example (216) above.

entries for (250) are in (252).

(252)

maħaṭṭi-t-āt	'stations'	(↑ PRED)	=	'STATION'
		(↑ CONCORD NUM)	=	PL
		(↑ CONCORD GEN)	=	F
		(↑ INDEX NUM)	=	SG
ṣ̣gīr-e	'small'	(↑ PRED)	=	'SMALL'
		((ADJ ∈ ↑) INDEX$_\Phi$NUM)	=	SG
ʔadīm-e	'old'	(↑ PRED)	=	'OLD'
		((ADJ ∈ ↑) INDEX$_\Phi$NUM)	=	SG

The INDEX feature is constrained to be singular to allow split readings in cases of co-ordinated adjectives modifying plural NPs which explains the constraining equation in the lexical entry of the noun *l-maħaṭṭ-āt* 'stations' in (252). Each of the adjectives agrees with the non-individuated INDEX feature which is singular.

(253)

AP	→	Adj$^+$	Cnj	Adj
		↓ ∈ (↑ ADJ)	↓ = ↑	↓ ∈ (↑ ADJ)
			(↑ INDEX$_\Phi$) = SG	

Singular INDEX$_\phi$ is also reflected in the singular predicate in (254).

(254) *sakkar-at* *l-maħaṭṭ-āt* *ṣ̣-ṣ̣gīr-e* *w* *l-ʔadīm-e*
close-PRF.PST-3.F.SG DEF-station.F-PL DEF-small-F.SG and DEF-old-F.SG
'The small and old stations closed.' [some old, some small] Split reading

Unlike (250), (255) observes both readings (joint and split).

(255) *l-maħaṭṭ-āt* *ṣ-ṣg̣ār* *w* *l-ʔdām*
DEF-station.F-PL DEF-small-PL and DEF-old-PL

'The small and old stations. [all are old and small] [some old, some small] Split and joint readings

The sentence in (255) can have either a split reading or a joint reading.

(256)
$$\begin{bmatrix} \text{PRED} & \text{'STATION'} \\ \text{CONCORD} & \begin{bmatrix} \text{NUM} & \text{PL} \end{bmatrix} \\ \text{ADJ} & \left\{ \begin{bmatrix} \text{CONJ} & \text{AND} \\ \left\{ \begin{bmatrix} \text{PRED} & \text{'SMALL'} \end{bmatrix} \right. & \\ \left. \begin{bmatrix} \text{PRED} & \text{'OLD'} \end{bmatrix} \right\} & \end{bmatrix} \right\} \end{bmatrix}$$

(257)

maħaṭṭ-āt	'stations'	(↑ PRED)	=	'STATION'
		(↑ CONCORD NUM)	=	PL
		(↑ CONCORD GEN)	=	F
ṣ̣gār	'small'	(↑ PRED)	=	'SMALL'
		((ADJ ∈ ↑) CONCORD NUM)	=	PL
ʔdām	'old'	(↑ PRED)	=	'OLD'
		((ADJ ∈ ↑) CONCORD NUM)	=	PL

To conclude, plural NPs can trigger either singular or plural on a coordinated set of adjectives. Singular coordinated adjectives produce split readings only; whilst full agreement produces either of the readings. To sum up the agreement patterns and coordination readings presented so far, see table (6.5) below.

Table 6.5: NP agreement with a set of coordinated adjectives in PA, and the split/joint interpretations

Head Noun Number Marker	Adjective 1 Number Marker	Adjective 2 Number Marker	Total Cardinality (Reading)
SG	SG	SG	Joint Reading
DUAL	SG	SG	Split Reading
DUAL	PL	PL	Joint and split Reading
PL	SG	SG	Split Reading
PL	PL	PL	Split/Joint Reading

Apparently, there is a relationship between the agreement pattern and the reading. In other words, the agreement marker on the individual adjectives within a set affects the semantic interpretation of the set and the sentence. For instance, in cases of coordinated sets of adjectives where each modifier observes a different number marker compared to the head noun, the only available reading is a split reading only. This is further evidence of the cause-effect relationship between interpretation (perception) and agreement. This supports the claim made in earlier chapters that the speaker determines the agreement pattern in the same way agreement affects the meaning. In this section, I provided evidence that CONCORD is distributive in PA and this explains cases of same number marking on the modifiers and the head noun. Additionally, I provided a discussion of distribution of internal INDEX features in cases of plural nouns agreement with singular coordinated adjectives. Ellipsis is used only in the discussion of dual nouns in PA and the agreement pattern with singular coordinated adjectives. Finally, PA observes a distributive CONCORD.

6.4.2 Coordinated sets of nominals

So far, I have discussed coordination in adjectives and provided an analysis in LFG of the various agreement patterns observed between a single noun and a coordinated set of modifiers. Additionally, I explained the difference between joint and split reading in the examples provided. I provided evidence in section 6.4.1 that CONCORD is distributive in PA

and that INDEX can act NP-internally. This section covers coordination of two nominals and the agreement patterns the coordination construction observes with the targets. It is worth mentioning the treatment of coordinated nominals in PA will not involve discussion of joint/split reading or natural/accidental coordination due to the lack of effect of these concepts on nominal coordination in PA.

6.4.2.1 Coordinate NPs and predicate agreement

This section discusses predicate agreement in cases of nominal coordination. There are two main patterns involving a coordinate NP-predicate agreement; the resolving agreement in Subject Verb Object (SVO) orders with the resolving INDEX feature of the coordinate structure, and the single-conjunct agreement with the features of the left-most conjunct in Verb Subject Object (VSO) orders. Observe (258) and the resolving agreement on the predicate *m-tʔaχr-īn* 'are late'.

(258) *il-bāṣ* *w* *l-qiṭār* *tʔaχar-ū*
DEF-bus.SG.M CONJ DEF-train.SG.M be.late-PST.3.PL
'the bus and the train are late.'

In (258), the noun *il-bāṣ* 'bus' is conjoined with the noun *l-qiṭār* 'train' and both function as the subject of the predicate *tʔaχar-ū* 'late'. Notice the predicate shows plural agreement reflecting a plural INDEX. The *f*-structure for (258) is in (259).

(259)
$$\begin{bmatrix} \text{PRED} & \text{'BE.LATE <SUBJ >'} \\ \text{TENSE} & \text{PAST} \\ \text{SUBJ} & \begin{bmatrix} \text{CONJ} & \text{AND} \\ \text{INDEX} & \begin{bmatrix} \text{NUM} & \text{PL} \end{bmatrix} \end{bmatrix} \\ & \left\{ \begin{bmatrix} \text{PRED} & \text{'BUS'} \\ \text{DEF} & + \\ \text{INDEX} & \begin{bmatrix} \text{NUM} & \text{SG} \end{bmatrix} \end{bmatrix}, \begin{bmatrix} \text{PRED} & \text{'TRAIN'} \\ \text{DEF} & + \\ \text{INDEX} & \begin{bmatrix} \text{NUM} & \text{SG} \end{bmatrix} \end{bmatrix} \right\} \end{bmatrix}$$

Notice in (259) that the INDEX feature of the whole coordinate structure is plural which means it is resolved of the individual singular INDEX of each of the nouns. The predicate agrees with the overall INDEX feature, as shown in the lexical entry in (260).

(260)

tʔaχar-ū	'be.late'	(↑ PRED)	=	'BE.LATE <SUBJ >'
		(↑ SUBJ INDEX NUM)	=	PL
		(↑ TENSE)	=	PAST
w	'and'	(↑ CONJ)	=	AND
		(↑ INDEX NUM)	=	PL
il-bāṣ	'bus'	(↑ PRED)	=	'BUS'
		(↑ INDEX NUM)	=	SG
qitār	'train'	(↑ PRED)	=	'TRAIN'
		(↑ INDEX NUM)	=	SG

Changing the order of the coordinated subject set and the verb in (258) to (261) affects the agreement marker on the predicate.

(261) *itʔaχar* *il-bāṣ* *w* *l-qiṭār*
be.late.PAST.3.M.SG DEF-bus.SG.M CONJ DEF-train.SG.M
'the bus and the train were late.'

The change of predicate agreement from plural to singular in a VSO order is predictable as I showed in chapter 4 that word order is a factor of agreement in PA. See section 4.2.1 for more details. The predicate *itʔaχar* 'late' shows singular agreement which means there is not a resolution agreement in place; otherwise, the agreement is plural. Instead of resolution, the predicate agrees with one conjunct only in (261), a pattern identified as

single-conjunct agreement (SCA). I show in this section that in PA, it is the nearest conjunct the predicate agrees with as per closest-conjunct agreement. I provide the f-structure in (262) below.

(262)
$$\begin{bmatrix} \text{PRED} & \text{`BE.LATE <SUBJ >'} \\ \text{TENSE} & \text{PAST} \\ \text{SUBJ} & \begin{bmatrix} \text{CONJ} & \text{AND} \\ \text{INDEX} & \begin{bmatrix} \text{NUM} & \text{PL} \end{bmatrix} \end{bmatrix} \\ & \left\{ \begin{bmatrix} \text{PRED} & \text{`BUS'} \\ \text{DEF} & + \\ \text{CONCORD} & \begin{bmatrix} \text{NUM} & \text{SG} \end{bmatrix} \\ \text{INDEX} & \begin{bmatrix} \text{NUM} & \text{SG} \end{bmatrix} \end{bmatrix}, \begin{bmatrix} \text{PRED} & \text{`TRAIN'} \\ \text{DEF} & + \\ \text{CONCORD} & \begin{bmatrix} \text{NUM} & \text{SG} \end{bmatrix} \\ \text{INDEX} & \begin{bmatrix} \text{NUM} & \text{SG} \end{bmatrix} \end{bmatrix} \right\} \end{bmatrix}$$

The predicate agrees with the subject's overall singular number as shown in the lexical

entries in (263).

(263)

t?aχar	'be.late'	(↑ PRED)	=	'BE.LATE <SUBJ >'
		(↑ SUBJ NUM)	=	SG
		(↑ TENSE)	=	PAST
w	'and'	(↑ CONJ)	=	AND
il-bāṣ	'bus'	(↑ PRED)	=	'BUS'
		(↑ CONCORD NUM)	=	SG
qitār	'train'	(↑ PRED)	=	'TRAIN'
		(↑ CONCORD NUM)	=	SG

To check the conjunct the predicate agrees with (right-most or left-most), I provide the example (264) below involving a feminine subject. Example (264) demonstrates leftmost agreement. (265) demonstrates left-most agreement after changing the conjunct order of (264).

(264) *it?aχar-at* *l-binit* *w* *l-walad*
be.late.PAST.3.F.SG DEF-girl.F.SG CONJ DEF-boy.M.SG
'The girl and the boy were late.'

In (264), the predicate *it?aχar-at* 'was late' is singular feminine agreeing with the INDEX features of the first element *l-binit* 'girl'. Cases like (264) show that SCA in PA is rather

agreement with the nearest conjunct, which is shown in (265) following the change of the conjunct order.

(265) *it?aχar* *l-walad* *w* *l-binit*
be.late.PAST.3.M.SG DEF-boy.M.SG CONJ DEF-girl.F.SG
'The boy and the girl were late.'

Based on the discussion above, the lexical entry for the verbs *it?aχar* 'was late' (264) and *it?aχar* 'was late' (265) is in (266) and (267); respectively. The constraining equation disallows SCA in SVO order and requires a pre-nominal verb. Additionally, I present the lexical entry for the NPs.

(266)

it?aχar-at	'be.late'	$((\uparrow \text{SUBJ})_L$ INDEX NUM)	=	SG
		$((\uparrow \text{SUBJ})_L$ INDEX GEND)	=	F
		$(\uparrow$ SUBJ) N-POSN)	$=_c$	Post V
l-binit	'girl'	$((\uparrow$ INDEX NUM)	=	SG
		$((\uparrow$ INDEX GEND)	=	F
		$((\uparrow$ INDEX)	$=_c$	LAGR
l-walad	'boy'	$((\uparrow$ INDEX NUM)	=	SG
		$((\uparrow$ INDEX GEND)	=	M

(267)

it?aχar	'be.late'	((↑ SUBJ)$_L$ INDEX NUM)	=	SG
		((↑ SUBJ)$_L$ INDEX GEND)	=	M
		(↑ SUBJ) N-POSN)	=$_c$	Post V
w	'and'	(↑ CONJ)	=	AND
	'and'	(↑ INDEX NUM)	=	PL
l-walad	'boy'	((↑ INDEX NUM)	=	SG
		((↑ INDEX GEND)	=	M
		((↑ INDEX)	=$_c$	LAGR
l-binit	'girl'	((↑ INDEX NUM)	=	SG
		((↑ INDEX GEND)	=	F

SCA agreement involves the discussion of agreement between a predicate and reciprocal dependent subjects. However, reciprocal dependants require a plural verb, as in (268) below. Recall my discussion of SCA in other languages including Lebanese Arabic in section 6.3.3 which concluded that reciprocal dependants require a plural verb. However, in PA, SCA can occur with reciprocal dependants, as well.

(268) *karīm w marwān iltaʔ-ū*
Karim.SG.M CONJ Marwan.SG.M meet.PAST.PRF-3.PL
'Karim and Marwan met' UPA

The sentence in (268) is grammatical because the verb *iltaʔ-ū* 'met' is plural which is a

requirement for verbs that require reciprocal dependants. The fact, the verb in (268) is post-nominal (in PA) is due to the fact that PA prefers singular agreement in pre-nominal verbs. Aoun et al. (2009) do not provide enough data to make an observation about word order in Lebanese and Moroccan Arabic.

Nevertheless, PA allows a singular verb with reciprocal dependants in addition to the plural predicate (268) as in the examples (269)–(271) below. It is important to notice here that although PA allows plural and singular agreement with predicates with reciprocal dependency (provided the proper word order for each pattern), ellipsis is not used to account for the singular agreement pattern in PA. (268) shows a plural marker on a post-nominal verb. On the other hand, PA also allows single-conjunct agreement on pre-nominal verbs with reciprocal dependants, as in (269). This pattern is claimed ungrammatical in languages like English, Lebanese and Moroccan Arabic (Aoun et al., 2009), and Bulgarian (Hristov, 2014). Despite the fact that Lebanese and Moroccan Arabic observe single-conjunct agreement (agreement with one of the coordinate subjects), the pattern in (269) in ungrammatical with NSI (number sensitive items) according to Aoun et al. (2009).[26]

(269) *ilta?-a* *karīm* *w* *marwān*
meet.PAST.PRF-3.SG.M Karim.SG.M CONJ Marwan.SG.M
'Karim and Marwan met' UPA

[26] Refer to section 6.3.3.

Lebanese and Moroccan Arabic require a plural marker on the pre-nominal verbs with reciprocal dependants. PA also allows resolution (plural) agreement as in (270) on pre-nominal verbs with reciprocal dependent subjects as opposed to the singular marker with non-reciprocal dependants as shown in (264) and (265) earlier.

(270) *ilta?-ū* *karīm* *w* *marwān*
meet.PAST.PRF-3.PL Karim.SG.M CONJ Marwan.SG.M
'Karim and Marwan met' UPA

Finally, (271) provides more evidence of single-conjunct agreement (singular agreement in this case) with one of the coordinate subjects (reciprocal dependants) as reflected by the feminine marker on the verb *ilta?-at* 'met' in agreement with the subject *karīm-ə* 'Karima' only. It should be mentioned that this pattern with reciprocal dependants is allowed in cases of pre-nominal subjects only.

(271) *ilta?-at* *karīm-ə* *w* *marwān*
PAST.PRF-3.SG.F Karima.SG.F CONJ Marwan.SG.M meet.
'Karima and Marwan met' UPA

To conclude, in PA, in a VSO order where the subject is a coordinate phrase, the verb shows single-conjunct agreement with the left-most conjunct except for reciprocal dependent subjects where plural verbs are also allowed. However, the verb resolves to plural agreement in an SVO order. Other examples of other Arabic vernaculars in Aoun et al. (1994) show

the same patterns exist in other versions of Arabic. The next section presents examples of modifier agreement with coordinate NPs.

6.4.2.2 Coordinate NPs and modifier agreement

This section discusses the agreement patterns in PA between a modifier and a coordinate noun. I show in this section that the behaviour of the modifier in respect to agreement with a coordinate noun is similar to the behaviour of modifiers with single plural NPs which was discussed in chapter 3. Plural NPs trigger either singular or plural modifiers whilst singular NPs trigger singular modifiers. Coordinate structures of singular NPs trigger plural agreement (unlike non-coordinated singular NPs), and coordinate NPs with plural conjuncts trigger either plural or singular. This is due to feature resolution with coordinate NPs and their modifiers. In other words, SCA is not available in PA for modifiers of coordinate NPs. First, I discuss agreement with a coordinate NP consisting of individual singular nouns as in (272).

(272) *il-bāṣ* *w* *l-qiṭar* *is-sarīʕ-īn*
DEF-bus.SG CONJ DEF-train.SG DEF-fast-PL
'The fast bus and train'.

In (272), the adjective *is-sarīʕ-īn* 'fast' is plural, agreeing with the resolved CONCORD feature of the coordinate phrase *il-bāṣ w l-qiṭar* 'bus and train'.[27] The *f*-structure of (272)

[27]One could also operate with a resolved NP-internal INDEX but for the sake of this example and since a verb is not existent, I operate with a resolved CONCORD.

is in (274). The lexical entry is in (275).

(273)

NP	→	NP		ADJ
		↑ = ↓		(↑ CONCORD) = PL
NP	→	NP+	Cnj	NP
		↑ = ↓	↑ = ↓	↑ = ↓

(274)

$$\left[\begin{array}{ll} \text{CONCORD} & \left[\text{NUM} \quad \text{PL}\right] \\ \left\{\left[\begin{array}{ll} \text{PRED} & \text{‘BUS’} \\ \text{CONCORD} & \left[\begin{array}{ll} \text{NUM} & \text{SG} \\ \text{GEND} & \text{M} \end{array}\right] \end{array}\right], \left[\begin{array}{ll} \text{PRED} & \text{‘TRAIN’} \\ \text{CONCORD} & \left[\begin{array}{ll} \text{NUM} & \text{SG} \\ \text{GEND} & \text{M} \end{array}\right] \end{array}\right]\right\} & \\ \text{ADJ} & \left\{\left[\text{PRED} \quad \text{‘FAST’}\right]\right\} \end{array}\right]$$

(275)

il-bāṣ	'bus'	(↑ PRED)	=	'BUS'
		((↑ CONCORD GEND)	=	M
		(↑ CONCORD NUM)	=	SG
l-qiṭar	'train'	(↑ PRED)	=	'TRAIN'
		((↑ CONCORD GEND)	=	M
		(↑ CONCORD NUM)	=	SG
w	'CONJ'	((↑ CONCORD GEND)	=	M
		(↑ CONCORD NUM)	=	PL
is-sarīʕ-īn	'fast'	(↑ PRED)	=	'FAST'
		((ADJ ∈ ↑) CONCORD NUM)	=	PL

A coordinate phrase consisting of two plural nouns triggers two types of agreement: plural (272) and singular (276).

(276) *il-bāṣ-āt* *w* *l-qiṭar-āt* *is-sarīʕ-a*
DEF-bus-PL CONJ DEF-train-PL DEF-fast-SG.F
'The fast buses and trains'.

In (276), the modifier *is-sarīʕ-a* 'fast' is singular reflecting a deflected agreement pattern with the coordinate structure *il-bāṣ-āt w l-qiṭar-āt* 'buses and trains'.[28] This pattern is analysed in a similar way to the analysis of deflected agreement pattern in chapter 5. This

[28]Recall that it is grammatical for inanimate plural nouns to trigger singular feminine markers on the modifiers; deflected agreement pattern.

involves a singular INDEX feature following the application of the [IND] restriction. The f-structure in (277) shows each conjunct has a plural CONCORD and a singular INDEX_{ϕ}. Recall, that I showed in chapter 5 that INDEX acts NP-internally in PA. However, notice that the INDEX for the whole coordinate structure is not resolved. It is unclear whether in (276), INDEX is non-resolved or whether this is a case of SCA agreement. I test for SCA in the examples below.

(277)
$$\begin{bmatrix} \text{CONJ} & \text{AND} \\ \text{CONCORD} & \begin{bmatrix} \text{NUM} & \text{PL} \end{bmatrix} \\ \text{INDEX}_{\Phi} & \begin{bmatrix} \text{NUM} & \text{SG} \end{bmatrix} \\ \left\{ \begin{bmatrix} \text{PRED} & \text{'BUS'} \\ \text{CONCORD} & \begin{bmatrix} \text{NUM} & \text{PL} \end{bmatrix} \\ \text{INDEX}_{\Phi} & \begin{bmatrix} \text{NUM} & \text{SG} \end{bmatrix} \end{bmatrix} \right. \\ \left. \begin{bmatrix} \text{PRED} & \text{'TRAIN'} \\ \text{CONCORD} & \begin{bmatrix} \text{NUM} & \text{PL} \end{bmatrix} \\ \text{INDEX}_{\Phi} & \begin{bmatrix} \text{NUM} & \text{SG} \end{bmatrix} \end{bmatrix} \right\} & \\ \text{ADJ} & \left\{ \begin{bmatrix} \text{PRED} & \text{'FAST'} \end{bmatrix} \right\} \end{bmatrix}$$

The lexical entries for (276) is in (278)

(278)

il-bāṣ-āt	'bus'	(↑ PRED)	=	'BUS'
		(↑ CONCORD NUM)	=	PL
		(↑ INDEX$_{\Phi}$NUM)	$=_c$	SG
l-qiṭar-āt	'train'	(↑ PRED)	=	'TRAIN'
		(↑ CONCORD NUM)	=	PL
		(↑ INDEX$_{\Phi}$NUM)	=	SG
w	'CONJ'	((↑ CONCORD GEND)	=	M
		(↑ INDEX$_{\Phi}$NUM)	=	SG
is-sarīʕ-āt	'fast'	(↑ PRED)	=	'FAST'
		((ADJ ∈ ↑) INDEX$_{\Phi}$NUM)	=	SG

An alternative to the non-resolved INDEX analysis, is the SCA agreement with the singular non-individuated *index* of one of the conjuncts. To test this hypothesis, I provide the ungrammatical examples (279)-(281) demonstrating SCA agreement with either of the conjuncts.[29] But first, it is essential to know that modifiers in PA are post-nominal only.

(279) **il-bāṣ-āt w l-qiṭar is-sarīʕ*
DEF-bus-PL.F CONJ DEF-train.SG.M DEF-fast.SG.M
'Intended: The fast buses and train'.

(280) **il-bāṣāt w l-qiṭar is-sarīʕ-a*
DEF-bus-PL.F CONJ DEF-train.SG.M DEF-fast-SG.F

[29]The examples are ungrammatical under the interpretation that the coordinate NP is modified not just one conjunct.

'Intended: The fast buses and train'.

In (279), the singular adjective *is-sarīʕ* 'fast' shows agreement with the right-most conjunct only *l-qiṭar* 'train' which is true in case it modifies this noun only; however, since the intended meaning of the sentence is that *is-sarīʕ* 'fast' modifies the whole NP, (279) is ungrammatical. By the same token, in (280) the adjective *is-sarīʕ-a* 'fast' is marked for feminine which is supposedly in agreement with the left-most conjunct *il-bāṣāt* 'buses'; however, the sentence is also ungrammatical.

(281) **il-muhandis-īn w il-muhandis-āt iʃ-ʃaṭr-īn*
DEF-engineer-PL.M CONJ DEF-engineer-PL.F DEF-good-PL.M
'Intended: the good male and female engineers.' RPA

For the same reason, (281) is ungrammatical considering the adjective *iʃ-ʃaṭr-īn* 'good' is in SCA with the last conjunct *il-muhandis-āt* 'engineers' due to the fact that RPA requires full agreement with human nouns. Thus, adjectives in PA co-specify the features of the coordinate structure as a whole and do not show agreement with the features of one conjunct only. Therefore, it is safe to rule out SCA in (277) above as shown in (279)-(281). (277) is rather agreement between the modifier and the unresolved INDEX of the NP.

In addition to the agreement pattern shown in (276) (a coordinate plural NP modified by a singular adjective), a coordinate noun phrase consisting of individual plural nouns can be modified by a plural adjective agreeing with a resolved plural CONCORD of the NP. Like said

earlier, one could also operate with a resolved INDEX that acts NP-internally instead of a resolved CONCORD.

(282) *il-bāṣ-āt w l-qiṭar-āt l-ʒdād*
DEF-bus-PL CONJ DEF-train-PL DEF-new.PL
'The new buses and trains'.

In (282), the coordinated phrase *il-bāṣ-āt w l-qiṭar-āt* 'buses and trains' is modified by the plural adjective *l-ʒdād* 'new'. This agreement can be analysed either due a distributive or non-distributive CONCORD.

Agreement in (282) is not SCA with either of the conjuncts, as shown in the ungrammatical SCA agreement in (283).

(283) **il-muhandis-īn w il-muhandis-āt iʃ-ʃaṭr-āt*
DEF-engineer-PL.M CONJ DEF-engineer-PL.F DEF-good-PL.F
'Intended: the good male and female engineers.' RPA

Agreement in (283) should rather be with the resolved gender and number features, as in (284).

(284) *il-muhandis-īn w il-muhandis-āt iʃ-ʃaṭr-īn*
DEF-engineer-PL.M CONJ DEF-engineer-PL.F DEF-good-PL.M
'Intended: the good male and female engineers.' RPA

In PA, the resolution of a masculine gender and a feminine gender is the masculine gender in RPA, and an underspecified plural in UPA, which explains why (284) is grammatical as

opposed to (283).[30] Based on the above discussion, agreement in PA between a plural modifier and a coordinate plural NP is resolved. I provide the f-structure for (282) in (285) and the lexical entry in (286).

(285)
$$\begin{bmatrix} \text{CONJ} & \text{AND} \\ \text{CONCORD} & \begin{bmatrix} \text{NUM} & \text{PL} \end{bmatrix} \\ \text{INDEX} & \begin{bmatrix} \text{NUM} & \text{PL} \end{bmatrix} \\ \left\{ \begin{bmatrix} \text{PRED} & \text{'BUS'} \\ \text{CONCORD} & \begin{bmatrix} \text{NUM} & \text{PL} \end{bmatrix} \\ \text{INDEX}_{\Phi} & \begin{bmatrix} \text{NUM} & \text{PL} \end{bmatrix} \end{bmatrix} \right. \\ \left. \begin{bmatrix} \text{PRED} & \text{'TRAIN'} \\ \text{CONCORD} & \begin{bmatrix} \text{NUM} & \text{PL} \end{bmatrix} \\ \text{INDEX}_{\Phi} & \begin{bmatrix} \text{NUM} & \text{PL} \end{bmatrix} \end{bmatrix} \right\} \\ \text{ADJ} & \left\{ \begin{bmatrix} \text{PRED} & \text{'NEW'} \end{bmatrix} \right\} \end{bmatrix}$$

[30] Notice that there is a difference in the modifier scope in (281) and (283) - (284)

(286)

il-bāṣ-āt	'bus'	(↑ PRED)	=	'BUS'
		(↑ CONCORD NUM)	=	PL
		(↑ INDEX NUM)	=	PL
l-qiṭar-āt	'train'	(↑ PRED)	=	'TRAIN'
		(↑ CONCORD NUM)	=	PL
		(↑ INDEX NUM)	=	PL
w	'CONJ'	((↑ CONCORD GEND)	=	M
		(↑ CONCORD NUM)	=	PL
		(↑ INDEX NUM)	=	PL
l-ʒdād	'new'	(↑ PRED)	=	'NEW'
		((ADJ ∈ ↑) CONCORD NUM)	=	PL

To conclude this section, I provided examples of sets of coordinated noun phrases and the agreement patterns the coordinated phrase triggers with modifiers. Singular Coordinated NPs trigger plural modifiers through resolved CONCORD (or NP-internal resolved INDEX). On the other hand, plural coordinated NPs trigger either singular modifiers through a non-resolved singular INDEX_{ϕ} or a plural modifier through resolved CONCORD. I also provided evidence that SCA is not available with modifiers in PA. Section 6.4.2.1 discussed the agreement patterns triggered by a coordinate NP on the predicates. To conclude, in PA, there are five main types of agreement with coordinated NPs. First, resolution INDEX with post-

nominal verbs example (258). Secondly, closest-conjunct agreement with pre-nominal verbs example (261)). Additionally, resolution CONCORD with modifiers of a singular coordinate NP (example (272). Resolved singular INDEX$_\Phi$with modifiers of a plural coordinate NP example (276). Finally, resolved CONCORD with plural coordinate NPs (282). Moreover, this section provided a formal analysis in LFG for the agreement patterns above.

6.5 Conclusion

This chapter is concerned with the discussion of coordination and agreement in PA. I show that PA demonstrates multiple possibilities of agreement patterns in respect to coordination. The chapter presented a discussion of coordination in LFG in section 6.3, including the discussion of accidental and natural coordination, distributive features of a nominal over a coordinate structure in section 6.3.2, and the difference between split and joint readings in section 6.3.1. The chapter rejects ellipsis as an analysis tool in section 6.2.1. Additionally, I provide discussion of SCA in LFG in section 6.3.3. Section 6.4 studies the various agreement patterns found in PA in respect to coordination. I provide examples of a single noun and the agreement triggered on a coordinate structure of adjectives in section 6.4.1 through the discussion of the different split/joint readings triggered by the agreement patterns which are summarised in table 6.5. Moreover, I show that INDEX acts NP-internally in PA which

explains singular marking on singular coordinated adjectives modifying a dual noun. Section 6.4.2.1 discusses the agreement patterns triggered on predicates by a coordinate NP and shows that word order plays a role in agreement. Predicates show plural agreement in SVO orders and singular in VSO orders. Finally, section 6.4.2.2 provides a discussion of the patterns triggered on adjectives modifying a coordinate NP.

Chapter 7

Conclusion and Future Remarks

This chapter provides a summary and conclusion to the main points covered in this thesis. The thesis is divided into 7 chapters. Chapter 1 provided an introduction to the structure, the framework and the research questions. Chapter 2 provided a summary of the three models that study agreement highlighting the main contributions of each model. The first model 2.1 discussed the view of agreement as a linguistic phenomenon which involved treating agreement as a syntactic phenomenon subject to certain factors. A discussion of various mechanisms of agreement was covered in detail in the chapter. Additionally, a discussion of the Agreement Hierarchy which states that the likelihood of semantic agreement increases with certain domains was provided. The distinction between syntactic and semantic agreement and relating this to the distinction between INDEX and CONCORD was covered

in section 2.1.2. Feature resolution in cases of coordination was covered in section 2.1.4.1, and the discussion of canonical cases of agreement 2.1.4.2 and the resorting to defaults in cases of a mismatch 2.1.4.3 are also discussed in the chapter. Finally, a detailed discussion of the linguistic factors affecting agreement is found in section 2.1.4.4.

The second model of agreement 2.2 provided a discussion of agreement as viewed by scholars studying Arabic agreement. Agreement is a complicated phenomenon in Arabic and is subject to many linguistic factors that are related to either the controller or the target. Additionally, context-based factors affect the patterns such as distance and salience. The final model 2.3 provided a discussion of the extra-linguistic model of agreement which treats agreement cognitively by appealing to concepts like animacy, salience and individuation. The main contribution of this model is to consider agreement an indicator of the speaker's mind-style as well as a phenomenon affected by the speaker's perception. Therefore, allowing room for the speaker's perception in the analysis of the agreement patterns.

Chapter 3 is an overview of agreement in PA. The chapter starts by providing details about PA in terms of morphology and syntax including discussion of the inflectional system in PA. An important discussion of the formation process of plural forms was covered in the chapter in order to account for the various patterns triggered by broken plural forms. The chapter provided a discussion of three agreement patterns in PA: the full pattern 3.2.1 which involves matching of the features between the controller and the target, the deflected pattern

40 triggered only by plural NPs and involves singular feminine markers on the targets, and the kind-noun pattern 3.2.3 applicable in the case of nouns of kind which trigger singular masculine on the targets. Additionally, the chapter discusses the plurative pattern triggered by pluratives in PA which trigger singular feminine on the targets. Finally, an introduction to the doublet nouns which trigger either singular or plural was provided. An important distinction of the humanness and animacy feature was applied in the chapter due to the different patterns triggered by human nouns. The chapter provides reasoning for the new model of agreement which merges the three models discussed in the previous chapter.

Chapter 4 introduces the poly-factorial model of agreement and discusses the factors affecting agreement in PA which are controller-related: humanness and animacy, morphological factors (which divides nouns into 6 types), and individuation. It also discussed target-related factors, like word order which affects verbal agreement in PA. Verbs show partial agreement in VSO orders whilst predicates show full agreement in SVO orders in PA. Finally, a discussion of the distance factor was provided.

Chapter 5 is an LFG analysis of the doublet nouns in PA through the analysis of the word *ʃabāb* 'guys'. The noun *ʃabāb* 'guys' triggers either plural or singular agreement on the modifiers which is justified through appealing to different individuation levels of the noun. If the noun is perceived as individuated, targets are plural, as opposed to singular targets with non-individuated readings of the noun *ʃabāb* 'guys'. This distinction was covered in

LFG through positing an [IND] restriction on the INDEX feature of the word *ʃabāb* 'guys'. Additionally, the chapter discusses the split of the features of CONCORD and INDEX in PA and argues against the split providing evidence that such a proposal is counter-productive.

Chapter 6 studies the effect of coordination on agreement in PA. PA allows a plural noun to be modified by two singular coordinated adjectives. The chapter argues against the use of ellipsis to analyse the coordination patterns and provides evidence that coordination in PA can be explained through appealing to some constraints in the lexical entry. An introduction to LFG, agreement in LFG, and coordination is provided at the beginning of the chapter. A discussion of the following concepts was also provided: joint versus split reading, feature distributivity and single-conjunct agreement. The chapter first studied cases of modifier coordination and discussed the patterns observed with singular NPs, dual NPs, and plural NPs. I showed that joint reading is achieved when the single noun and the individual coordinated adjectives have the same feature, as opposed to split reading which occurs in cases of resolution agreement. Ellispis was used only to account for the case of dual NPs modified by singular coordinate adjectives. Nevertheless, in the case of plural NPs modified by singular coordinated adjectives, an internal INDEX$_{\Phi}$feature was applied. The agreement patterns triggered by coordinated NPs were discussed, too. I showed that SCA and full agreement occur in PA with SCA preferred in VSO orders.

Chapter 7 is the conclusion chapter. There are four appendices in this thesis. Appendix

A introduces the on-line survey to study gender assignment in PA for broken plural nouns along with the results. Appendix B presents the second survey that studies the semantic differences with different broken plural forms in PA. Appendix C includes a discussion of adjective syncretism in PA. and Appendix D provides a taxonomy of some adjectives in PA.

7.1 Future Remarks

I have studied coordination as an environment of agreement and I presented the possible patterns obtained with a coordinated set of modifiers; however, colour adjectives were left out due to the very interesting patterns found when PA colour adjectives are conjoined. Throughout the datasets, I observed a different joint/split reading pattern amongst coordinated colour adjectives to the joint/split reading patterns observed with other coordinated adjectives. Therefore, a thorough reading in this is necessary. Furthermore, the short surveys I conducted concerning plural forms and broken plural forms in PA were conducted online with a small number of consultants providing answers. A bigger quantitative survey on these matters will be very helpful to understand the role of number and plural forms on agreement. Finally, the research concerning agreement in Palestinian Arabic will benefit from a parallel study in other Arabic vernaculars and from a larger data source such as conducting interviews.

Appendices

Appendix A

Survey 1

In a quick informal survey filled by native Palestinians (different dialects and regions, all with relevant MSA knowledge) the participants were asked to assign a gender to a list of nouns.[1] The list included broken plurals generated from singular masculine inanimate nouns as in *kursi* 'chair.SG.M' and *karāsi* 'chair.PL'. In addition, the list included broken plurals generated from singular feminine inanimate nouns as in *luʕb-e* 'toy-SG.F' and *ʔalʕāb* 'toy.PL'. Moreover, less common broken plurals were included as in *maʃārīb* 'drink.PL', the plural of *maʃrūb* 'drink.SG.M'. I included sound non-human plurals since the gender of these nouns is not questionable. The list included *ṭāwla* 'table.SG.F' and *ṭāwl-āt* 'table-PL.F', as

[1] Finding an illiterate speaker in Palestine, one who wasn't introduced to MSA rules was not an easy task provided the surveys were conducted online.

well as *murabbaʕ-īn* 'square shaped-PL.M', the plural of *murabbaʕ* 'square shaped.SG.M'.[2] Moreover, the list included sound human plural nouns as in *banāt* 'girl.SG.F' whose singular is *binit* 'girl.SG.F' and *muhandis-īn* 'engineer-PL.M', the plural of *muhandis* 'engineer.SG.M' as a way of monitoring the speaker's gender classification. These nouns are not controversial in their gender association. The results are in table A.1 below. The speakers were asked to identify their own gender when filling the survey. In table A.1, (% speakers) refers to the percentage of the speakers who made that choice. For instance, for the first word I*ɻāwl-āt* 'tables', 100% of the speakers who identified as males marked *ɻāwl-āt* "tables' as feminine. The majority of the female speakers marked the same form *ɻāwl-āt* 'tables' as feminine except for 10% of the female speakers who gave the word *ɻāwl-āt* 'tables' a masculine gender.

[2]The distinction between *murabbaʕ* 'square.SG.M' the noun and *murabbaʕ* 'square shaped.SG.M' the past participle functioning as an adjective was disambiguated through the plural. This form does not have a masculine counterpart; the [-a] is a feminine marker and is original, not the additional feminine suffix. The shape noun has one plural form only: sound feminine plural *murabbaʕ-āt* 'squares' as opposed to the past participle adjective which has two plural forms: *murabbaʕ-āt* 'square shaped-F.PL' and *murabbaʕ-īn* 'square shaped-M.PL'.

Table A.1: Gender of Broken Plurals in PA Results of the Survey. April 2019.

Plural Noun	**Plural Type**	**Gender of the plural**	**Gender of the singular**	**Gender by participants**	**Speaker's Gender**	**Speakers %**
ṭāwl-āt	Sound feminine plural	Feminine	Feminine *ṭāwl-āt*	F	F	90
					M	100
'tables'				M	F	10
					M	-
karāsi	Broken plural	No distinction	Masculine *kursi*	F	F	45
					M	16.6
'chairs'				M	F	55
					M	83.3
ʔalʕāb	Broken plural	No distinction	Feminine *luʕb-e*	F	F	70
					M	83.3
'toys'				M	F	30
					M	16.6
ʔaqāwīl	Broken plural	No distinction	Masculine *qawl*	F	F	55
					M	38.3
'talks'				M	F	45
					M	16.6
maʃārīb	Broken plural	No distinction	Masculine *maʃrūb*	F	F	30
					M	16.6
'drinks'				M	F	70
					M	83.3
maʃārīʕ	Broken plural	No distinction	Masculine *maʃrūʕ*	F	F	30
					M	16.6
'projects'				M	F	70
					M	83.3

banāt	Sound feminine	Feminine	Feminine *binit*	F	F	100
	plural				M	100
'girls'				M	F	-
					M	-
muhandis-īn	Sound	Masculine	Masculine *muhandis*	F	F	-
	masculine plural				M	-
'engineers'				M	F	100
					M	100

20 females and 6 males filled in the survey, all of them are from an educated background which is an important factor for agreement in PA. I split the speakers' responses according to their own gender because one's gender might affect the perception of the gender of an uncommon word as shown in a study by Flaherty (2001). 3 speakers (11.5%) (2 female, 1 male) of the 26 said they *think* broken plurals are "neutralised" in gender, and they linked this to the rules of MSA, but still assigned a gender to the noun. Recall Arabic versions do not have a value for neuter. However, the majority of the speakers matched the gender of the plural form to the gender of the singular form (70% of the group). Interestingly, the one male participant with this choice is a teacher of the Arabic language with higher knowledge of MSA compared to the rest of the male participants. Similarly, the 3 female speakers with this choice are with higher knowledge level in MSA than the rest of the group. The rest of the speakers used quantifiers and demonstratives to decide on the gender of the provided

nouns, and arrived at the decision that all the plurals except sound masculine plural are feminine as they use a feminine demonstrative.[3] They also provided the examples below.

(287) *hāy* *il-ʔaqawīl* ...
this.SG.F DEF-talk.PL ...
'These talks ...'

In (287), the demonstrative *hāy* 'this' shows feminine singular agreement reflecting deflected agreement with the inanimate abstract plural noun *il-ʔaqawīl* 'talks'.

The speakers also provided (288) and noticed the noun *iṭ-ṭāwl-āt* 'tables' triggered the same demonstrative triggered in (287); *hāy* 'this'. Based on (288), the speakers reached the decision that all broken plurals are feminine; however, the speakers were not alarmed by the use of singular demonstratives with plural nouns.

(288) *hāy* *iṭ-ṭāwl-āt* ...
this.SG.F DEF-talkPL.F ...
'These tables ...'

In (288), the noun *iṭ-ṭāwl-āt* 'tables' and the demonstrative *hāy* 'this' are feminine.

(289) *hadōl* *l-muhandis-īn* ...
this.PL DEF-engineer-PL.M ...
'These engineers...'

[3]Speakers were allowed a space to explain their choices.

Example (289) was also produced by the consultants as a justification for their answers.

In (289), some speakers pointed out that the use of the plural demonstrative *hadɔ̄l* 'these' matched with the sound masculine plural noun *l-muhandis-īn* 'engineer' because they identified *hadɔ̄l* 'these' as masculine. There is no feminine counterpart of *hadɔ̄l* 'these', though. The speakers who reported the task hard to complete (around 3%) based this on the claim that broken plurals do not distinguish gender in MSA, and that they use the underspecified demonstrative *hadɔ̄l* 'these' with all the nouns. Since the demonstrative is also "neutralised" (according to the speakers) in the plural, they said they guess the gender of the broken plural is masculine as the default gender in the language.

The one speaker that considered *hadɔ̄l* 'these' masculine considered all the broken plurals masculine including the sound feminine plural *it-tāwl-āt* 'tables' . The survey is short; thus, for future research, I might need more participants divided by dialects, gender, age and knowledge of MSA to get a bigger picture of gender perception in PA. However, this task shows that in the mindset of the majority of Palestinians, broken plurals have the same gender as their singular forms; yet, feminine singular markers on the modifiers are used as per deflected agreement.

Appendix B

Survey 2

18 native speakers participated in the survey about the use, meaning and difference between *baʔar* 'cow.SG$_u$.M' , *baʔar-a* 'one cow-SG.F' and *baʔar-āt* 'cows-PL.F'. To start with, 33.3% (3 male, 2 female) of the participants indicated that the use of *baʔar* 'cow.SG$_u$.M' is more common than the rest of forms. 11.1% (2 female) speakers commented that the form *baʔar-āt* 'cows-PL.F' does not exist in their dialect (Nablus dialect, urban) although others from the same dialect said they used it. Only 11.1% (1 female, 1 male) speakers said they used the broken plural form *ʔabqār* 'cows.PL' although this form comes from MSA and was not included in the survey. The answers to "What is the difference between *baʔar* 'cow.SG$_u$.M' and *baʔar-āt* 'cows-PL.F'?" varied as follows.

1. 17.8% speakers indicated that the form *baʔar* 'cow.SG$_u$.M' is used as the noun of the kind and to refer to cows in general with no specification of gender, use or function of the cows.

2. 55.5% participants used*baʔar* 'cow.SG$_u$.M' referring to a large group of cows that can not be counted, a herd which further supports the kind noun facts.

3. 22.2% participants interestingly indicated that the form *baʔar-āt* 'cows-PL.F' is specifically used for a reference to someone's cow. They gave examples in which they used *baʔar* 'cow.SG$_u$.M' for any cow(general reference), but *baʔar-āt* 'cows-PL.F' when they mentioned the farmer's cows; for example. All the examples provided by the consultants are discussed below.

4. 11.1% (1 male, 1 female) only referred to the use of *baʔar-āt* 'cows-PL.F' merely for feminine reference .

5. 5.5% (1 male) speakers only referred to *baʔar* 'cow.SG$_u$.M' use for masculine reference.

6. 61.1% speakers, as expected, touched on the fact that the form *baʔar-āt* 'cows-PL.F' is a plural of paucity building on the same fact from MSA. Some speakers used examples from the Holy Qur'an as a reference when the form *baʔar-āt* 'cows-PL.F' intentionally

indicated seven cows in Surah Yusif.[1]

7. 5.5% (1 female) speakers only said the form *baʔar-āt* 'cows-PL.F' is used to refer to cattle raised for dairy and meat production in farms, cow industry. Thus, the noun *baʔar-āt* 'cows-PL.F' is used with agricultural modifiers or reference.

8. An insignificant number of female speakers indicated the use of *baʔar-āt* 'cows-PL.F' for human reference only to speak with contempt and scorn.

To summarise, speakers of PA use singular kind nouns, like *baʔar* 'cow.SG.$_k$.M to refer to the kind and a big group of the referents, as in (290) below. On the other hand, the use of the singular feminine (singulative forms) indicates one single entity of the reference regardless of the gender as in (291). Finally, the feminine plural form indicates a plural of paucity (3-10) as well as a personal/specific reference, as in (292) and (293), these examples are provided by the consultants.

(290) *ʔil-baʔar* *ktīr* *bi-falasṭīn*
DEF-cow.SG$_k$.M many in-Palestine
'There are many cows in Palestine'

In (290), the form *ʔil-baʔar* 'cow.SG$_k$.M' is used in the general sense. The speakers did not use any targets in (290) to show agreement, but if they did; the agreement pattern would

[1]While it is true that *baʔar-āt* 'cows-PL.F' is a plural of paucity (3-10) cows, the reference to Surah Yusif is not the best example for the noun *baʔar-āt* 'cows-PL.F' is preceded by a number *sabʕ-a* 'seven.SG.M-ACC. Numbers (3-10) require plural morphology which leaves *baʔar* 'cow.SG$_u$.M' out of the question.

be singular masculine.

(291) *baʔar-a* *kbīr-e*
cow-SG$_u$.F large-SG.F
'A large cow.'

The example in (291) is a reference to one single entity; one cow. Therefore, *baʔar-a* 'one cow.SG.F' is modified by *kbīr-e* 'large' as per full agreement. The use of the form *bakar-āt* 'cows.PL.F' in (292) is a specific reference to the cows owned by a farmer, and PA speakers use the form *baʔar-āt* 'cow-PL.F' (with different allophonic versions) in this context. In (292), *bakar-āt* 'cow-PL.F' triggers plural as per full agreement by *ħal<l>āb-āt* 'milk-producing'. Recall that rural dialects distinguish gender in the plural, which explains the glossing on the predicate.

(292) *bakar-āt* *ʔabu* *ʔaħmad* *ħal<l>āb-āt*
cow-PL.F father.SG.F Ahmed milk.producing<APPL>-ACT.P.PTCP.PL.F
'The cows of Abu Ahmed are very milk-producing' RPA

The predicate is marked for plural feminine agreeing with the noun, *bakar-āt* 'cows.PL.F'. (293) uses the form *bakar-āt* 'cow-PL.F' which in this case is a plural of paucity referring to a few cows. *bakar-āt* 'cow-PL.F' shows full agreement with *bi-lʕab-in* 'playing'. Recall that rural dialects distinguish gender in the plural

(293) *ʃwyyit* *bakar-āt* *bi-lʕab-in*
few cow-PL.F IPFV.PRES-play-3.PL.F

'Few cows playing' RPA[2]

The example in (293) is provided by the consultants and it further supports the arguments above.

[2]It might be the case that since most farmers speak rural PA, this is the reason for the use of feminine plural *baʔar-āt* 'cow-PL.F'. Recall that 2 Nabulsi (urban PA) speakers denied the existence of this form.

Appendix C

Syncretism of Adjectives in PA

According to (Baerman et al., 2005), syncretism is the contrast in a language between an underlying system and its concrete realisation which can be the result of some diachronic developments, and it can be of various types depending on the items affected. In other words, syncretism yields identical cells within a certain morphosyntactic paradigm where identity is not the norm. Gender is susceptible to syncretism; in fact and according to Baerman et al. (2005, 82) 'where gender marking is morphologically distinct between singular and non-singular, gender syncretism is more the rule rather than the exception' . In Karata; for instance, masculine and feminine have distinct forms in the singular but have one single form in the plural. Therefore, this is a case of syncretism in the plural. This is known as a convergent system; a many-to-one relationship (Corbett, 1991) which is the case in PA.

In the tables (D.1 - D.2), one might notice most of the plural forms are broken plurals that do not distinguish gender in the plural form. While this is a true feature of the broken plural, in general, there are other factors affecting gender distinction. Taking a closer look at all the non-distinguishing adjectives from tables D.1 and D.2, it is noticeable that apart from colour adjectives and adjectives of shape, all other neutralised adjectives have the same phonetic template for their singular masculine form: CCV:C, so does their broken plural form. For example, *kbīr* 'big.M.SG' is CCV:C and is broken pluralised into *kbār* 'big.PL' of the form CCV:C, as well. Similar is the case with *mnīħ* 'good.M.SG' and *mnāħ* 'good.PL'. It might be argued; nevertheless, that humanness influences gender distinction in adjectives. However, this is not the case here. While humanness is truly one of the major factors affecting agreement, it is not a main factor affecting gender distinction in adjectives due to the simple fact that the neutralised adjectives are used to modify both human and non-human nouns alike. Consequently, animacy is out of the picture for the same reason.

The fact that all broken plurals in PA do not distinguish gender in the plural is worth investigating. Similarly, the plural forms of CCV:C adjectives do not distinguish gender. CCV:C adjectives have broken plural forms which might explain why they do not distinguish gender in their plural forms. Somewhere on the syncretism spectrum between neutralisation and uninflectedness lies canonical syncretism. I believe this is the case for the non-gender distinction in CCV:C forms in PA due to the fact that this feature is syntactically relevant

to the context and is present in other objects of the same group; i.e., other plural adjectives distinguish the gender in the plural.

That being said, and since CCV:C singular forms of adjectives do not form plural forms that distinguish gender, the agreement patterns between these modifiers and head nouns is not canonical, as in (294–301) below. In (294–297), the plural adjective *kbār* 'old' modifies the head noun regardless of its gender due to the syncretism in the morphology.

(294) *walad* *kbīr*
boy.SG.M old.SG.M
'An old boy.'

The singular head noun *walad* 'boy' is modified by the singular masculine adjective *kbīr* 'old' as per full agreement.

(295) *ʔwlād* *kbār*
boy.SG.M old.PL
'Old boys.'

In (295), the plural head noun *ʔwlād* 'boys' is modified by the plural non-distinguishing gender adjective *kbār* 'old'.

(296) *binit* *kbīr-e*
girl.SG.F old-SG.F
'An old girl.'

In (296), the feminine singular head noun *binit* 'girl' is modified by the feminine singular adjective *kbīr-e* 'old'.

(297) *banāt* *kbār*
girl.PL.F old.PL
'Old girls.'

Similar to (295), the plural adjective *kbār* 'old' that does not distinguish gender modifies the plural feminine head noun *banāt* 'girls'. I provide the following examples with non-human nouns.

(298) *kalb* *kbīr*
dog.SG.M old.SG.M
'An old dog.'

The non-human noun *kalb* 'dog' is modified by the adjective *kbīr* 'old' as per full agreement. On the other hand, I get feminine singular agreement with a plural non-human noun as in (299).

(299) *klāb* *kbīr-e*
dog.PL.M old-SG.F
'Old dogs.'

Deflected agreement between the non-human noun *klāb* 'dogs' and the modifier marks the adjective *kbīr-e* 'old' as singular feminine. Similar to non-human animate nouns, inanimate nouns observe the same pattern.

(300) *bēt* *kbīr*
house.SG.M old.SG.M
'An old house.'

In (300), the singular inanimate noun *bēt* 'house' is modified by the singular adjective *kbīr* 'old' as per full agreement.

(301) *byūt* *kbīr-e*
house.PL old-SG.F
'Old houses.'

Inanimate nouns require deflected agreement, so the head noun *byūt* 'houses' is modified by the singular feminine adjective *kbīr-e* 'old' in (301).

C.1 Neutralised Plural Adjectives

Finally, tables D.1 and D.2 demonstrate other neutralised plural adjective forms; adjectives of shape. These adjectives observe gender distinction in the singular whilst using singular feminine forms indicating plural and in agreement with plural nouns. Gender neutralisation can be attributed to the fact that these adjectives are by default modifiers of non-human nouns as in (302-304) below.

(302) *ṭawl-a* *murabbaʕ-a*
table-SG.F square.shaped-SG.F
'A square(shaped) table'

Notice, the full agreement with the singular head noun. Recall that inanimate nouns trigger deflected agreement even with sound feminine plural nouns.

(303) *ṭawl-āt murabbaʕ-a*
table-PL.F square.shaped-SG.F
'Square(shaped) tables'

(304) *karāsi murabbaʕ-a*
chair.PL square.shaped-SG.F
'Square(shaped) chairs'

Similar to (303), agreement is deflected in (304). In (302-304), I find murabbaʕ-a 'square shaped.SG-F' modifying all nouns regardless of the number or the gender. (305) below proves that humanness is one of the reasons adjectives of shape do not distinguish gender in the plural.

(305) **ʔawlād murabbaʕ-a/murabbaʕ-īn*
boy-PL.M square.shaped-SG.F/PL.M
'Square(shaped) boys'

The created sentence in (305) supports the claim that adjectives of shape can be inflected to distinguish gender in the plural provided the right context; i.e., modifying human nouns. Similarly, (306) has a mass interpretation.

(306) **banāt murabbaʕ-a*
girl-PL.F square.shaped-SG.F
'Square(shaped) girls'

(307) *banāt murabbaʕ-āt
girl-PL.F square.shaped-PL.F
"Square(shaped) girls" (RPA)

(307) indicates an individuated reading of the plural *banāt* 'girls' with the noun triggering full agreement.

(308) *banāt murabbaʕ-īn
girl-PL.F square.shaped-PL
'Square(shaped) girls' (UPA)

As explained earlier, dialectal variations allow the use of *murabbaʕ-īn* 'square shaped-PL' in urban dialects in (308).

In fact, shape adjectives are formed through generating the passive participle form of the template verb. Thus, it is not surprising to argue that this fact is what prevents gender differentiation in the plural form; it might be argued that participles can not be pluralised as part of the systemic language. However, table C.1 below proves otherwise.

Table C.1: Geometric Shapes in PA

Meaning	**Singular Form**	**Plural form**	**Notes**
Circle	daʔir-a (F)	dawāʔir	Broken plural
Triangle	muθallaθ (M)	muθallaθ-āt	Sound feminine plural
Square	murabbaʕ (M)	murabbaʕ-āt	Sound feminine plural
Rectangle	mustaṭīl (M)	mustaṭīl-āt	Sound feminine plural

As table C.1 shows, passive participle nouns (which function as adjectives) denoting shapes can be pluralised into broken plurals or sound feminine plurals which expostulates the previous claim. Extra evidence comes from (309-314) below which manifest the use of other passive participle nouns (and present participle nouns in (310)) modifying both human and non-human nouns. Therefore proving the fact that adjectives of shape show some sort of syncretism in the plural in terms of gender differentiation since all the adjectives in (309-314) are not adjectives of shape. It is worth mentioning that all these examples are in the urban dialect that does not distinguish gender in the plural, and a context where the plural has an individuated reading is to be assumed for the purpose of clarification only. The reader should take into consideration that other dialects in PA as well as other readings or contexts might induce other agreement patterns.

(309) *ʔil-m-asaʒ-īn* *il-m-ṭṭal<l>aʕ-īn*
DEF-PASS.PTCP-prison-PL.M DEF-PASS.PTCP-leave-<APPL>-PL
Lit. 'The prisoners that are let out'

'The free prisoners'.

In (309), the plural masculine noun *ʔil-m-asaʒ-īn* 'prisoners' is modified by the plural adjective *il-m-ṭṭal<l>aʕ-īn* 'freed' despite the fact that the adjective is formed as a passive participle. Similarly, (310) shows an active participle plural adjective *il-χ<ā>lṣ-īn* 'empty' modifying a plural noun *ʔil-kās-āt* 'cups' as per strict agreement.

(310) *ʔil-kās-āt* *il-χ<ā>lṣ-īn*
DEF-cups-F.PL DEF-empty<PRS.PTCP>-PL
'The empty cups.'

(311) *ʔiʃ-ʃabābīk* *il-ma-ftūħ-īn*
DEF-window.PL DEF-PASS.PTCP-open-PL
'The open windows'

The individuated reading of *ʔiʃ-ʃabābīk* 'windows' licences plural agreement on the adjective *il-ma-ftūħ-īn* 'open'. The rest of the examples have a human controller.

(312) *ʔl-wlād* *il-ma-ʔtūl-īn*
DEF-boy.PL DEF-PASS.PTCP-kill-PL
'The killed (murdered) boys.'

I have full agreement between *ʔl-wlād* 'the boys' and *il-ma-ʔtūl-īn* 'the killed'. By the same token, there is plural agreement between *ʔl-wlād* 'the boys' and the modifier *il-ma-ʒrūħ-īn* 'the injured' in (313).

(313) *ʔl-wlād* *il-ma-ʒrūħ-īn*
DEF-boy.PL DEF-PASS.PTCP-injure-PL
'The injured boys.'

(314) *ʔl-wlād* *il-ma-kl-īn* *hawa*
DEF-boy.PL DEF-PASS.PTCP-eat-PL air.SG.M
Lit. 'The boys who ate air'
'The screwed-up boys.'

(314) follows the same pattern, as well.

The fact that participle adjectives are plural modifying human nouns as in (309, 312 – 314) and non-human nouns as in (310 and 311) shows that humanness does not affect the pluralisation of participle adjectives.

That being said, adjectives of shape show syncretism in the plural towards gender distinction similar to colour adjectives and adjectives of the form CCV:C. In conclusion, the type of adjective affects the agreement pattern obtained in that certain adjectives do not distinguish gender in their plural forms. Apart from that, modifiers follow the agreement pattern triggered by the controllers in line with the afore-mentioned factors.

Appendix D

Adjective Taxonomy

Table D.1: Adjectives Taxonomy in PA

Adjective Classification	**Meaning**	**Singular Form**	**Plural form**	**Notes**
dimension	big(M) (F)	kbīr kbīr-e	kbār kbār	Broken plural, No Gender Distinction the plural.
	small (M) (F)	ṣ̣gīr ṣ̣gīr-e	ṣ̣gār ṣ̣gār	Broken plural, No Gender Distinction the plural.
	wide(M) (F)	wasiʕ wasʕ-a	wasʕ-īn wasʕ-āt	Sound masculine plural. Sound feminine plural.
	wide(M) (F)	wsīʕ wsīʕ-a	wsāʕ wsāʕ	Broken plural, No Gender Distinction the plural.
physical property	strong (M) (F)	ʔawi ʔawi-yy-e	ʔawi-yīn ʔawi-yy-āt	Sound masculine plural. Sound feminine plural.
	weak(M) (F)	dʕīf dʕīf-e	dʕāf dʕāf	Broken plural, No Gender Distinction the plural.
colour (object)	red (M) (F)	ʔaħmar (ħamra)	ħumur ħumur	Broken plural, No Gender Distinction the plural.
	black (M) (F)	ʔaswad sōda	sūd sūd	Broken plural, No Gender Distinction the plural.
colour (human)	blond(M) (F)	ʔaʃʔar ʃaʔra	ʃuʔur ʃuʔur	Broken plural, No Gender Distinction the plural.
	bronze(M) (F)	ħinṭi ħinṭiyy-e	ħinṭiyy-īn ħinṭiyy-āt	Sound masculine plural. Sound feminine plural.
age	old (M) (F)	kbīr kbīr-e	kbār kbār	Broken plural, No Gender Distinction the plural.
	young(M) (F)	ṣ̣gīr ṣ̣gīr-e	ṣ̣gār ṣ̣gār	Broken plural, No Gender Distinction the plural.

Table D.2: Adjectives Taxonomy in PA

Adjective Classification	**Meaning**	**Singular Form**	**Plural form**	**Notes**
value	good (M) (F)	mnīħ mnīħ-a	mnāħ mnāħ	Broken plural, No Gender Distinction in the plural.
	bad(M) (F)	ʕaṭil ʕaṭl-e	ʕaṭl-īn ʕaṭl-āt	Sound masculine plural. Sound feminine plural.
	beautiful (M) (F)	ħilu ħilw-e	ħilw-īn ħilw-āt	sound masculine plural. Sound feminine plural.
	ugly(M) (F)	biʃiʕ biʃʕ-e	biʃʕ-īn biʃʕ-āt	Sound masculine plural. Sound feminine plural.
shape	squared(M) (F)	murabbaʕ murabbaʕ-a	murabbaʕ-a murabbaʕ-a	No Gender Distinction, Feminine singular used for plural agreement.
	round(M) (F)	mdawwar mdawwar-a	mdwar-a mdwara	No Gender Distinction, Feminine singular used for plural agreement.
speed	fast (M) (F)	sarīʕ sarīʕ-a	sarīʕ-īn sarīʕ-āt	Sound masculine plural. Sound feminine plural.
	slow (M) (F)	baṭīʔ baṭīʔ-a	baṭīʔ-īn baṭīʔ-āt	Sound masculine plural. Sound feminine plural.

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