

The Grammaticalization of Auxiliary Verbs in Najdi Arabic: A Syntactic and DM Account

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Abstract: The present paper investigates grammaticalization of auxiliary verbs in Najdi Arabic. Different from what has been proposed in the literature that grammaticalization is taken to be a diachronic process, we argue that grammaticalization is a purely instant syntactic operation. The idea is that, grammatical items are basically generated by encoding -categorizing- their Roots \sqrt{XXX} as auxiliary, "functional", verbs in order to be able to express grammatical functions (i.e. Tense and Aspect). If, by contrast, the Root \sqrt{XXX} is intended to be used as a lexical item, it is encoded -categorized- by a category-assigning head to appear as a lexical item (i.e. main verbs in the current paper). The operation utilizes a combination of syntax proper and distributed-morphology processes.

Keywords: Arabic, grammaticalization, auxiliaries, syntax, distributed morphology, verbs.

التحول النحوي للأفعال المساعدة في اللهجة النجدية من منظور التركيب والصرف التوزيحي

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(قدم للنشر في ٢٨ / ١٢ / ١٤٤١هـ، وقبل للنشر في ٣ / ٣ / ١٤٤٢هـ)

ملخص البحث: يهدف هذا البحث إلى دراسة التحول النحوي للأفعال المساعدة في اللهجة النجدية، معتمداً في عملية التحول المقترحة على التركيبية الأدنوية ونظرية الصرف التوزيحي جنباً إلى جنب. وخلافاً لما سبقه من الأبحاث التي خلصت إلى أن التحول النحوي (أي: الفعل الأساسي بوصفه فعلاً مساعداً) هو نتاج لعملية تطور استغرقت حقبة من الزمن، فإن البحث الحالي يرى أن التحول النحوي هو نتاج لعملية تركيبية لحظية ينفذها الحاسب الذهني وذلك بترميز الجذر بمحددات وظيفية. وتحديداً، إذا كان الفعل في سياق يتطلب أن يكون مساعداً، فإنه يتم ترميز الجذر بالرمز المحدد للأفعال المساعدة (Aux). وبالمقابل، إذا كان السياق يتطلب بأن يكون الفعل رئيساً فإنه يتم ترميز الجذر برمز الأفعال الرئيسية (V).

الكلمات المفتاحية: التحول النحوي، الأفعال المساعدة، النظرية التركيبية، الصرف التوزيحي، الأفعال.

1 Introduction

This paper investigates the syntactic derivation of grammaticalized auxiliary verbs found in a variety of Arabic, precisely, Najdi Arabic (NA). It analyzes the syntactic position which those grammaticalized auxiliary verbs occupy as lexical items in particular structures and as functional items in other structures. It also differentiates between those lexical and functional items in light of the theory of Distributed Morphology (DM).

The term ‘grammaticalization’, also known as ‘grammaticization’, was first originated by the French linguist Meillet (1912), who was interested in examining some grammatical constructions to identify how grammatical categories appear. Grammaticalization refers to a universal linguistic phenomenon which results in lexical-to-functional shifts. As a result of grammaticalization, content words (i.e., nouns, verbs, adjective, and adverbs) attain grammatical characteristics and act in particular structures as functional words (e.g., future auxiliaries *will* and *be going to* in English). A considerable number of definitions of the term ‘grammaticalization’ are suggested. According to Lehmann (1985), grammaticalization is a linguistic process which “asserts itself in all the domains of grammar” (p.7). Heine et al. (2002) define grammaticalization as a unidirectional process which changes less grammatical forms to be more grammatical. According to Hopper and Traugott (2003), grammaticalization changes content words from being lexical items carrying lexical meanings to be functional words carrying grammatical meanings. As a part of grammaticalization, the grammaticalized items continue gradually to gain more grammatical functions over time.

Grammaticalization is remarkably robust in Arabic dialects including NA. Consider the words *gaʕad* ‘sat’ in (1) and *rah* ‘went’ in (2).

- (1) a. ?al-walad gaʕad ʕla ?al-kirsi
the-boy-*MS-3SG* on the-chair-*MS*
‘The boy sat on the chair.’ (Lexical item: NA)
- b. ?al-walad gaʕad jagra ?al-kitab
the-boy-*MS-3SG* PROG-*MS-3SG* read-*MS-3SG* the-book-*MS*
‘The boy was reading the book.’ (Functional item: NA)
- (2) a. ?al-walad rah le ?al-madrisah
The-boy-*MS-3SG* go-*MS-3SG* to the-school-*SG*
‘The boy went to school.’ (Lexical item: NA)
- b. ?al-awlad rah jagrun ?al-kitab
The-boys-*MS-3PL* FUT read-*MS-3PL* the-book-*SG*
‘The boys are going to read the book.’ (Functional item: NA)

In (1a), a physical posture of a person is described by the lexical *gaʕad* ‘sat’. In (2a), a kind of movement is expressed by the lexical *rah* ‘went’. However, those lexical meanings are not present in (1b) and (2b). Unlike the lexical *gaʕad* and *rah*, the functional *gaʕad* and *rah* are followed by the lexical verbs *jagra* and *jagrun* ‘read’.

The occurrence of those lexical and functional items raises a significant inquiry which calls for examining the syntactic derivation and the syntactic positions that those lexical and functional items occupy. In this paper, we examine the

grammaticalization of the following words in NA: *gaʕad*, *zalas*, *gam*, and *rah*. As the title indicates, this paper mainly gives a syntactic and DM account to the previously grammaticalized items. Investigating the grammaticalization of those words is hoped to significantly contribute to the understanding of how grammaticalized items are basically a product of linguistic operations rather than merely diachronically developed.

Our discussion of grammaticalization proceeds as follows; section 2 provides an overview of grammaticalization in the literature introducing non-generative and generative grammar views of grammaticalization, previous analyses of grammaticalization cross-linguistically and in Arabic varieties, and an analysis of the tense phrase (TP) in Arabic; section 3 introduces the research puzzle; section 4 provides syntactic and DM analyses of the examined grammaticalized words; section 5 concludes the discussion.

2 Grammaticalization in the literature

This section consists of four subsections. The first subsection provides a theoretical review of grammaticalization within non-generative and generative grammar approaches. The second subsection discusses previous studies that have examined grammaticalization cross-linguistically. The third subsection reviews studies that have given an account to grammaticalization in Arabic varieties. The last subsection analyzes the TP structure in Arabic.

2.1 Non-generative and generative grammar views

The term ‘grammaticalization’ is associated with the work of Meillet (1912) at the beginning of the 20th century; however, the concept of grammaticalization has been discussed in earlier work. It goes back to the 18th century with the French philosopher Condillac, who was followed by a considerable number of researchers Lehmann (2015). Concepts and explanations of grammaticalization were explained as the development of Latin-Romance grammatical constructions including “the development of articles, auxiliaries and indefinite pronouns” making a great contribution to the theory (ibid).

Grammaticalization is viewed differently in non-generative and generative grammar approaches. With the prominence of the functionalism around the 1930s, grammaticalization was seen as a historical phenomenon, in which new grammatical items were claimed to develop based on a pure diachronic process (Haspelmath, 2002).

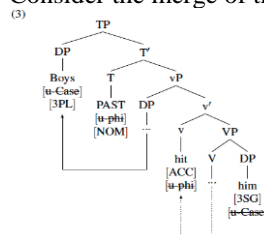
With the development of the structuralism in the mid of the 20th century, research in grammaticalization was clearly eliminated (Bobik, 2019). According to the structural approach, syntactic structures have a static system of rules which can only be defined in relation to each other.

Structural linguists believe in a great separation of the synchronic and diachronic dimensions. As a result of structural linguists' interest in the synchronic analysis of syntactic structures and their view of grammaticalization as a pure diachronic phenomenon, topics of grammaticalization were ignored during that period (Heine et al., 1991).

The relation between grammaticalization and the generative grammar approach developed by Chomsky is reported as a difficult relation (Van Gelderen, 2011). With the rise of the generative grammar in the late 1950s, studies of syntactic changes were not popular due to early generativists' great insistence on the autonomy of syntax.

Linguists' interest in the study of grammaticalization has started to grow again with the rise of the functional categories in the 1980s and the concept of features in the 1990s. The work of Lehmann (1991) was one of the influential generative works that has acknowledged grammaticalization. Heine et al. (1991) have given a great account to grammaticalization with an emphasis on grammaticalization as "an important parameter for understanding linguistic behavior" (p.27). There was also another influential work published by Heine and Reh (1984), who have studied grammaticalization synchronically and diachronically in a set of African languages.

One of the popular topics discussed in the context of generative grammar from the year 2000 until today is grammaticalization. The economy principles of Late Merge and Feature Economy, which are recently proposed within the Minimalist framework (Simpson and Wu, 2002; Wu, 2004; Van Gelderen, 2008a), have made it possible to describe grammaticalization. In the Minimalist program (Chomsky, 1995), it is claimed that phrases are structured by Move and Merge operations, internal and external Merge in the late Minimalism. It is also claimed that syntactic objects are encoded with features including tense features, Case features, EPP-features, and ϕ -features (i.e., number, person, and gender). Based on those claims, it is argued that Merge operation combines two bundles of features to merge two syntactic objects together under Agree. As a result of Merge, it is argued that "binary and hierarchical relationships between the merged elements" take place (Van Gelderen, 2008b, p.288). Consider the merge of the syntactic objects in (3).

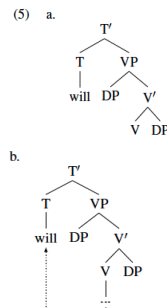


Within the Minimalist framework, Late Merge provides a considerable explanation of grammaticalization. It indicates that "it is less

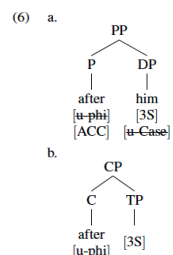
economical to merge early and then move than to wait as long as possible before merging once" (Van Gelderen, 2008b, p.290). The so-called Late Merge Principle (LMP) dictates two principles shown in (4).

- (4) a. "Merge as late as possible"
b. "Avoid internal Merge". (Van Gelderen, 2008b, p.290)

LMP explains different stages of grammaticalization. One of the stages includes the change of a specifier to a higher specifier such as the change of the noun *pas* 'step' into the negative particle *pas* 'not' in French (Simpson and Wu, 2002). It also involves the change of a head to a higher head such as the change of lexical verbs into auxiliary verbs. With the application of LMP on the English verb *willan* 'want' in old English, Van Gelderen (2008b) assumes that the auxiliary verb *will* is generated in a late step in T as shown in (5a) rather than being generated early in a low position and then moved to T as shown in (5b).



LMP is reformulated into a feature loss principle known as Feature Economy. This principle is based on the concept of reanalysis. In the late Minimalism, syntactic change is seen as a result of the language learner's reanalysis of features. It is reported that "it is economical for an item to be reanalyzed with uninterpretable features" (Van Gelderen, 2011, p.7). The principle of feature economy best describes the development of certain functional items including the change of the English preposition *after* to a complementizer. Consider the presence of the uninterpretable [ACC] feature in (6a), compared with the loss of this feature in (6b) (Van Gelderen, 2008b, p.297-298).



2.2 Grammaticalization of auxiliaries cross-linguistically

The grammaticalization of lexical items into auxiliary verbs is common across languages. The development of the motion verb *go* into the future tense marker *be going to* in English is one of the most examined examples of grammaticalization. Heine et al. (1991) explain the grammaticalization of the auxiliary verb *be going to* in English as an example that clearly shows the role of the so-called metaphor in explaining the nature of grammaticalized categories. While the lexical verb *go* carries a literal meaning of movement, they claim that the auxiliary verb *be going to* carries a metaphorical, also known as transferred or abstract, meaning of a future prediction. Similarly, Evans and Green (2006) distinguish between the progressive auxiliary verb *be*, which is followed by the lexical verb *go*, and the future auxiliary verb *be going to*. They also highlight the influence that the syllabic reduction has on the future auxiliary verb *be going to*, but not on the verb *go*, resulting in the development of the reduced form *gonna* out of the complex future auxiliary verb *be going to*. Kuteva (2004) states that the development of the auxiliary verb *be going to* takes place in a chain-like structure known as an auxiliatation chain. The stages of developing the auxiliary verb *be going to* are explained by Smith (2017). He claims that the development of the auxiliary verb *be going to* has undergone three main stages. As a first stage, English has the progressive auxiliary verb *be* followed by the purposeful motion verb *go* as in 'I am going to see the bishop'. Due to a syntactic process of reanalysis, this construction develops into the future auxiliary verb *be going to* followed by a verb of activity indicating the speaker's intention as in 'I am going to stay here'. Due to a semantic process known as metaphor, the future auxiliary verb *be going to* is followed by any verb including stative verbs indicating a prediction of the future as in 'it is going to rain'.

The grammaticalization of auxiliary verbs in English is a topic that has recently interested most of the generative linguists. Hopper and Traugott (2003) investigate the development of *do* constructions in interrogative sentences. They state that the grammaticalization of the auxiliary verb *do* includes reanalysis of the lexical verb's category status resulting in two categories. One category is for the lexical verb *do* and the other category is for the auxiliary verb *do*. Roberts and Roussou (2003) examine the properties of the auxiliary verbs in English, compared with those of lexical verbs. They argue that the reanalysis of modals includes one of two steps. If the modal has no argument structure as the case of epistemic modals, it is argued that it is directly merged in T. On the other hand, dynamic models are base-generated in little *v* to determine the argument structure before they move to T. Krug (2011) examines the grammaticalization of the lexical verbs *be*, *have*, and *do* into auxiliary verbs. He also describes the development of the past tense

markers *must*, *might*, *would*, *could*, *should*, and *ought to* in Old English into more abstract grammatical markers in Modern English. He also examines the development of tense markers such as *wanted to*, *had to*, and *was able to* which morphologically behave like modals. In a corpus-based study, Machová (2015) investigates the degree of grammaticalization in some structures including *gonna* and *gotta* examining the level of independence of those items from their auxiliaries *be* and *have*. She argues that *gonna* and *gotta* have the same level of grammaticalization. They occur with reduced auxiliaries; their occurrences with full or omitted auxiliaries are rare.

In the same vein, the grammaticalization of auxiliary verbs is examined in other languages. Rajendran (2000) examines the grammaticalization of verbs in Tamil. He finds out that the verbs in Tamil are grammaticalized into auxiliaries, verbalizers, adjectivalizers, adverbializers, prepositions, and complementizers. Significantly, he distinguishes between the lexical verbs and the grammaticalized auxiliaries giving examples of verbs that are grammaticalized into modal auxiliaries, aspectual auxiliaries, passive auxiliaries, causative auxiliaries, attitudinal auxiliaries, and non-attitudinal auxiliaries. In a comparative study, Nicolle (2007) discusses the development of the lexical verbs *go* and *come* into tense markers in a construction known as *go get* construction in English and Digo. He argues that the movement verbs *go* and *come* in the *go get* construction as in 'let's go watch the match' syntactically function in T, exactly similar to auxiliary verbs. Lee (2015) examines the grammaticalization of aspectual auxiliary verbs in complex sentences in Korean, compared with the grammaticalization of the auxiliary verbs *have* and *be going to* in English. He investigates two types of aspectual auxiliaries in Korean as the following: auxiliary verbs that indicate aspect (i.e., perfective and imperfective aspect) and other aspectual auxiliary verbs, known as Aktionsarten, which indicate state or accomplishment.

In an attempt to find out universal patterns of grammaticalization, cross-linguistic studies are also conducted to examine the development of auxiliary verbs. Based on a database, Bybee et al. (1991) thoroughly examine the development of future tense markers in seventy five languages of the world. They contend that future auxiliary verbs develop cross-linguistically from verbs of desire, obligation, and movement going through unidirectional paths of grammaticalization. Kuteva (2004) examines the grammaticalization of the bodily posture verbs *stand*, *sit*, and *lie* into progressive markers when they are connected with a lexical verb of action by the conjunctions *og/och/i* 'and' in the following European languages: Norwegian, Danish, Swedish, and Bulgarian. She also investigates the auxiliatation of those posture verbs in non-European languages including Mandan, Kabyle, Imonda, and Kxoe. Throughout her analysis, she argues that languages

which have the previously mentioned posture verbs as auxiliary verbs extensively use them as lexical objects, compared with languages that do not have them as auxiliary verbs such as English. Lamiroy and De Mulder (2011) analyze the degree of grammaticalization of auxiliary verbs in the following Romance languages: French, Italian, and Spanish. They conclude that French is generally more grammaticalized than Spanish, which itself is more grammaticalized than Italian. They state that the grammaticalization of auxiliary verbs in French, compared with that of Italian and Spanish, involves the development of a limited class of auxiliary verbs with less variations and a high degree of paradigmaticization. The development of future tense markers out of the motion verb *go* in English, French, and Portuguese is examined by Correia Saavedra (2019). He mainly explains the grammaticalization of auxiliary verbs in those languages based on the six parameters of grammaticalization (Lehmann, 2015), the five principles of grammaticalization (Paul et al., 1991), and the cline-based view (Hopper and Traugott, 2003). Significantly, the cline-based view involves a cline of grammaticalization which starts with a lexical item developed into a functional item, clitic, and inflectional affix, respectively.

In addition to spoken languages, the grammaticalization of auxiliary verbs in sign languages are taken into account to examine to what extent the universal paths of grammaticalization found in spoken languages can account for sign languages. Steinbach and Pfau (2007) study the development of auxiliary verbs in a set of sign languages including the Argentine sign language, Catalan sign language, Greek sign language, Indopakistani sign language, Japanese sign language, the sign language of Netherlands, Taiwanese sign language, and Greek sign language. They state that the grammaticalization of auxiliary verbs in sign languages is different from that of auxiliary verbs in spoken languages in two aspects. While auxiliary verbs in spoken languages mainly develop from lexical verbs, auxiliary verbs in sign languages develop from pronouns, verbs, and nouns. While auxiliary verbs in spoken languages function as tense, aspect, and modality markers, auxiliary verbs in sign languages function as markers of subject and object agreement.

2.3 Previous analyses of the grammaticalization of auxiliaries in Arabic

The grammaticalization of auxiliary verbs in Modern Standard Arabic (MSA) and in different varieties of Arabic is investigated in several studies. Vanhove et al. (2009) investigate the development of modal auxiliaries with epistemic and intersubjective values in Maltese and Arabic vernaculars spoken in the Mediterranean area (i.e., Moroccan, Jordanian, Egyptian, Syrian, and Palestinian Arabic). Based on the so-called enunciative theory, examples of

grammaticalized modal auxiliaries developed from verbs of capacity, possibility, cognition, volition, necessity, etc., are discussed in those languages. AlShboul et al. (2010) examine the syntactic development of prefixes as future tense markers in MSA (e.g., *sawfa* > *sa-* 'will') and Jordanian Arabic (e.g., *badd-i* > *ba-*, *rah* /*rayih* > *ha-*, and *hatta* > *ta-* 'will'). The processes of desemanticization and phonological reduction are also discussed in relation to those grammaticalized forms. Watson (2011) examines the grammaticalization of verbal preformatives in Modern Arabic dialects claiming that most of the verbal preformatives in the Arabic dialects result from different degrees of grammaticalization. She describes the development of future markers from six elements including verbs of movement (e.g., *rah* 'went' > *rah* and *ha* 'will') and desire (e.g., *jabyi* 'wish' > *b-* 'will'). She also explains the development of progressive markers from verbs of being (e.g., *ykun* > *ku-* in Anatolian Arabic), *sitting* (e.g., *gaʿad* and *ga-* in Iraqi, Sudanese, and Tunisian Arabic), and *doing* (e.g., *ʕammil* > *ʕam-* in Syrian and Egyptian Arabic). Jarad (2013) studies the paths of the development of the *b*-future prefix from the volitional verbal noun *bi-wudd* in Syrian Arabic. He claims that the grammaticalization of this prefix takes place in three steps. The first step involves desemanticization, in which the verbal noun *bi-wudd* loses the lexical meaning of volition and gains a functional meaning of futurity. The second step includes a fusion of the preposition and the verbal noun into the verb *badd*. The third step involves a phonological reduction of the syllable resulting in the development of the *b*-future prefix. In order to support his argument, he provides examples of the use of the *b*-future prefix in Egyptian and Gulf Arabic. Jarad (2014) investigates the changes which take place in the grammaticalization of the motion lexical verb *rah* 'went' into the prospective future markers *rah* and *rajh* in Syrian Arabic. He claims that the grammaticalization of those future markers goes through stages documented as cross-linguistic development. In the first stage, the lexical verb *rah* 'went' loses the lexical meaning of movement and attains the meaning of intention going through syntactic reanalysis; the grammaticalized item is reanalyzed in AspP. In the second stage, the semantic change is extended to the meaning of future predictions. In the third stage, a phonological reduction takes place resulting in the future prefix *ha-*. He also gives examples of the use of those future markers in Arabic dialects including Lebanese, Jordanian, Egyptian, and Baghdadi Arabic. Hassan (2016) studies the development of a group of peripheral modal particles found in the Spoken South Iraqi Arabic (e.g., *hissa*, *mu-*, and *yer*). He claims that the Spoken South Iraqi Arabic does not have real modal particles. Instead, it has modal particles which are not autosemantic and they are still under grammaticalization leading to overlaps with homophones in other lexical

categories (e.g., demonstrative pronouns, negative markers, and interrogatives). For instance, he claims that the modal particle *hissa* as in '*hissa ma arid aruh*' overlaps with the demonstrative pronoun *hissa* as in '*hissa rah*' and the modal particle *mu-* as in '*mu- ani rihit il-barha*' overlaps with the negative marker *mu-* as in '*la mu- haða*'. He argues that the distinction between those overlapping items can be made based on their functional and distributional characteristics.

The grammaticalization of auxiliary verbs in Gulf Arabic is also taken into account by some researchers. For example, Jarad (2017) examines the grammaticalization of four items in Emirati Arabic including the *b*-future prefix. In his study, he claims that the *b*-future prefix, which denotes volition and future tense, is derived from the volitional verbs *jabyal/jabi/jaba* 'want' in Gulf Arabic. In order to support his claim, examples that show the universal path of the grammaticalization of volitional verbs into future tense markers in Levantine varieties are provided (e.g., *bi-wudd-i* > *b*-future prefix), Libyan Arabic (e.g., *jaba* > *b*-future prefix), and Yemeni Arabic (e.g., *jafa* > *fa*). Eifan (2017) investigates the paths of the grammaticalization of a group of lexical items in urban Hijazi Arabic. She describes the changes that take place in the grammaticalization of lexical verbs into auxiliary verbs (e.g., *gam*, *gaṣad*, *zalas*, and *fiḍil*). While she claims that *gam* is developed an inceptive marker in Hijazi Arabic, she believes *gaṣad*, *zalas*, and *fiḍil* are grammaticalized into progressive markers. In a cross-dialectal study, Camilleri and Sadler (2017) analyze the grammaticalization of the postural active participles *gaṣid* and *zalis* into progressive markers in contemporary Arabic vernaculars including Emirati, Kuwaiti, Hijazi, and Hassawi Arabic. They investigate a further stage of grammaticalization, in which they argue that the progressive markers *gaṣid* and *zalis* develop into imperfective markers in Kuwaiti and Hassawi Arabic, but not in Emirati Arabic, as in '*gaṣid jaṣbah ubuh*'. They also argue that they are developed into copulas in Kuwaiti Arabic as in '*kahu il-akil gaṣid*'.

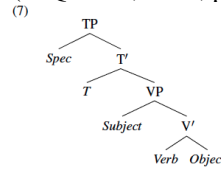
2.4 TP in Arabic

This section consists of two subsections. The first subsection introduces the canonical structure of TP in Arabic. The second subsection discusses the head movement of the verb from V-to-T in Arabic.

2.4.1 The canonical structure of TP in Arabic

The distribution of syntactic objects in a sentence projected by TP varies from one language to another. In Arabic, the structure of TP is determined by the subject position resulting in SVO or VSO word order. In addition to the syntactic movement of the subject from [Spec: VP] to a higher subject position [Spec: TP] in SVO order in Arabic, the verb in Arabic moves in both word orders (i.e., SVO and

VSO orders) from V to T to check the tense and agreement features. Before any of those syntactic movements takes place, the schematic in (7) is proposed as the canonical structure of TP in Arabic (AlQahtani, 2016, p.23).

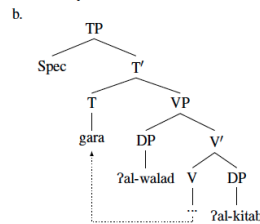


As illustrated in (7), T and the specifier of TP are not originally occupied by any syntactic object; as an external argument, the subject occupies the specifier position of VP. As an internal argument, the object occupies the complement position of VP. Importantly, the verb is base-generated in V position.

2.4.2V-to-T movement in Arabic

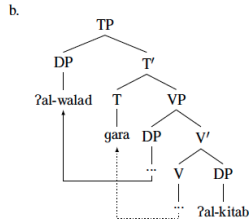
In Arabic, it is argued that the verb raises from V-to-T (Emonds, 1980; Fassi Fehri, 1993; Benmamoun, 2000; Roberts, 2001; Benmamoun, 2003; AlQahtani, 2016). As a result of the strong features of T in Arabic, the verb in Arabic moves from its original position V to T in head movement for tense and agreement features checking. Before Head-movement (V-to-T) takes place, it is noticed in the canonical structure shown in (7) that T is not occupied and it is ready to host the moved element, the verb. Consider the movement of the verb in (8).

- (8) a. gara ?al-walad ?al-kitab
 read-MS-3SG the-boy-MS-3SG the-book-MS
 'The boy read the book.'(VSO order: NA)



In (8), the subject *?al-walad* 'the boy' stays in its original position [Spec: VP] and the verb *gara* 'read' moves to T deriving VSO order and checking the tense and agreement features on T. Significantly, the head movement of the verb from V-to-T in Arabic does not only take place in VSO order; it also takes place in SVO order as shown by (9).

- (9) a. ?al-walad gara ?al-kitab
 the-boy-MS-3SG read-MS-3SG the-book-MS
 'The boy read the book.' (SVO order: NA)



Similar to the verb in (8), the verb *gara* 'read' in (9) moves from V-to-T for tense and agreement features checking. However, a further syntactic movement takes place in (9). The subject *?al-walad* 'the boy' moves in a phrasal movement from its original thematic subject position [Spec: VP] to a grammatical subject position [Spec: TP] deriving SVO order.

Based on the schematics in (8) and (9), we conclude that T, in Arabic, is occupied by the verb via Head-movement (V-to-T) in both word orders (i.e., VSO and SVO orders).

3 The puzzle

This paper addresses a central puzzle embodied in the syntactic position of the examined grammaticalized items and how they are generated in this position. Precisely, we focus on the discussion of grammaticalized 'functional' forms vs. ungrammaticalized 'lexical' forms in NA. Consider the syntactic position of the item *gaʕad* 'sat' in (10).

- (10) a. ?al-walad gaʕad ʕla ?al-kirsi
 The-boy-MS-3SG sit-MS-3SG on the-chair-MS
 'The boy sat on the chair.' (Lexical item: NA)
- b. ?al-walad gaʕad jagra ?al-kitab
 The-boy-MS-3SG PROG-MS-3SG read-MS-3SG the-book-MS
 'The boy was reading the book.' (Functional item: NA)

As shown in (10), the lexical and functional *gaʕad* occupy two different syntactic positions. It is noticed that the lexical *gaʕad* 'sat' is followed by the PP *?la ?al-kirsi* 'on the chair' indicating the subject's postural position. On the other hand, the functional *gaʕad* is followed by the lexical verb *jagra* 'read'. Similar to *gaʕad*, the item *gam* 'to stand up, get up, wake up' occupies two different syntactic positions shown in (11).

- (11) a. ?al-walad gam mubakir
 The-boy-MS-3SG wake.up-MS-3SG early
 'The boy woke up early.' (Lexical item: NA)
- b. ?al-walad gam jagra ?al-kitab
 The-boy-MS-3SG PAST-MS-3SG read-MS-3SG the-book-MS
 'The boy started to read the book.' (Functional item: NA)

In (11), the lexical *gam* 'woke up' is followed by the AdvP *mubakir* 'early' and the functional *gam* is followed by the lexical verb *jagra* 'read'.

Similarly, the item *rah* 'went' occupies two different syntactic positions shown in (12).

- (12) a. ?al-walad rah le ?al-madrisah
 The-boy-MS-3SG go-MS-3SG to the-school-FM
 'The boy went to school.' (Lexical item: NA)
- b. ?al-awlad rah jagrun ?al-kitab
 The-boys-MS-3PL FUT read-MS-3PL the-book-MS
 'The boys are going to read the book.' (Functional item: NA)

In (12), the lexical *rah* 'went' is followed by the PP *le ?al-madrisah* 'to school' and the functional *rah* is followed by the lexical verb *jagrun* 'read'.

This puzzle raises the question of 'which syntactic position do the grammaticalized items *gaʕad/zalas*, *gam*, and *rah* occupy, in NA?'. If we assume that those functional items occupy the head T position of TP, the question is 'how would we differentiate between those lexical and functional items?'

In this paper, we examine those two questions in light of syntax proper and DM. We hypothesize that the words *gaʕad/zalas*, *gam*, and *rah* can occupy the position of lexical heads in particular syntactic structures whereas they occupy the position of functional heads in other syntactic structures in NA. If this is the case, they are, we believe, derived by different mechanism.

4 The account

This section is divided into three subsections. Each subsection discusses one of the examined grammaticalized items, namely *gaʕad/zalas*, *gam*, and *rah*. Based on the item type, lexical or functional, it analyzes the syntactic position that each type occupies. We argue that lexical items 'ungrammaticalized' items (i.e., verbs) are base-generated in V then they are moved from V-to-T using head movement. In the case of functional items 'grammaticalized' items (i.e., auxiliary verbs), we argue that they, auxiliaries, are base-generated in T. Consequently, we also argue that V-to-T movement of the main verbs may not take place (i.e., blocked) since T is already occupied.

4.1 *gaʕad* and *zalas*

This subsection analyzes the syntactic position of the lexical and functional *gaʕad* and *zalas* in NA showing how those items are different in light of DM theory.

4.1.1 Syntactic position of lexical *gaʕad* and *zalas*

In order to analyze the syntactic position of the lexical *gaʕad* and *zalas* 'sat', it is important to first highlight that those two lexical items are used as synonyms in NA. Consider the examples in (13).

- (13) a. ?al-walad gaʕad ʕla ?al-kirsi
 The-boy-MS-3SG sit-MS-3SG on the-chair-MS
 'The boy sat on the chair.' (Lexical item: NA)
- b. ?al-walad zalas ʕla ?al-kirsi
 The-boy-MS-3SG sit-MS-3SG on the-chair-MS
 'The boy sat on the chair.' (Lexical item: NA)

In (13), the lexical *gaʕad* and *zalas* are used interchangeably. They are bodily posture verbs carrying the lexical meaning of 'sitting/remaining'.

They are intransitive verbs in the past tense followed by the PP *ʔla ʔal-kirsi* ‘on the chair’ as a complement. They are base-generated in V then they move to T via head movement to satisfy the requirement for V-to-T movement in Arabic. Similar to lexical verbs in Arabic, the verbs *gaʕad* and *zalas* are inflected for person, number, and sometimes gender agreement with the subject in NA. This is clearly shown in (14).

- (14) a. *ʔal-bint gaʕada-t ʔla ʔal-kirsi*
 The-girl-*FM-3SG* sit-*FM-3SG* on the-chair-*MS*
 ‘The girl sat on the chair.’ (Lexical item: NA)
- b. *ʔal-awlad gaʕad-u ʔla ʔal-karasi*
 The-boys-*MS-3PL* sit-*MS-3PL* on the-chairs-*MS*
 ‘The boys sat on the chairs.’ (Lexical item: NA)
- c. *ʔal-banat zalas-u ʔla ʔal-karasi*
 The-girls-*FM-3PL* sit-*MS-3PL* on the-chairs-*MS*
 ‘The girls sat on the chairs.’ (Lexical item: NA)

In (14a), the verb *gaʕada-t* is inflected with the third person feminine singular morpheme *-t* showing person, gender, and number agreement with the subject *ʔal-bint* ‘the girl’. In (14b), the verb *gaʕad-u* is inflected with the third person masculine plural morpheme *-u* showing person, gender, and number agreement with the subject *ʔal-awlad* ‘the boys’. In (14c), the verb *zalas-u* is also inflected with the morpheme *-u* showing person and number, but not gender, agreement with the third person feminine plural subject *ʔal-banat* ‘the girls’.

4.1.2 Syntactic position of functional *gaʕad* and *zalas*

It is reported that the bodily posture verb *sit* is grammaticalized into a progressive marker (Kuteva, 2004) in European languages (e.g., Norwegian, Danish, Swedish, and Bulgarian) and non-European languages (e.g., Mandan, Kabyle, Imonda, and Kxoe). Similarly, the bodily posture verb *gaʕad* ‘sit’ is grammaticalized into a progressive marker in Arabic varieties including Iraqi, Sudanese, and Tunisian Arabic (Watson, 2011) and urban Hijazi Arabic (Eifan, 2017).

Similar to what has been found in those languages/varieties, the lexical posture verbs *gaʕad* and *zalas* ‘sit’ are developed ‘-categorized’- into grammatical markers carrying the past progressive tense in NA. Consider the examples in (15).

- (15) a. *ʔal-walad gaʕad jagra ʔal-kitab*
 The-boy-*MS-3SG* PROG-*MS-3SG* read-*MS-3SG* the-book-*MS*
 ‘The boy was reading the book.’ (Functional item: NA)
- b. *ʔal-walad zalas jamfi*
 The-boy-*MS-3SG* PROG-*MS-3SG* walk-*MS-3SG*
 ‘The boy was walking.’ (Functional item: NA)

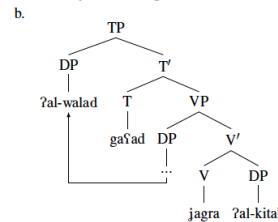
Unlike the lexical *gaʕad* and *zalas* shown in (13) and (14), the functional *gaʕad* and *zalas* in (15) function as auxiliary verbs followed by lexical verbs in the imperfect form. While the verb *jagra* ‘read’ expresses accomplishment, the verb *jamfi* ‘walk’ expresses activity. It is noticed that the functional *gaʕad* and *zalas* in (15) lose the lexical meaning of ‘sitting’, which they carry as lexical items. Similar to the auxiliary verb *be* in English, *gaʕad* and *zalas* in (15) carry tense and aspect indicating that the actions of ‘reading’ in (15a) and ‘walking’ in (15b) were ongoing in the past.

As strong evidence that supports the assumption that the functional items’ development of grammatical meanings and loss of their lexical meanings, it is clearly noticed that the functional *zalas* in (15b) is combined with the lexical verb *JamSi* ‘walk’ which carries a lexical meaning of an incompatible physical posture with the lexical *zalas* ‘sat’. Another evidence is their loss of the requirement for an animate subject, as also observed in other languages (Kuteva, 2004). Consider the example in (16).

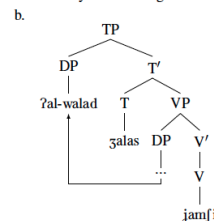
- (16) *al-ʕisfur gaʕad jakil*
 The-bird-*3SG* PROG-*3SG* eat-*3SG*
 ‘The bird was eating.’ (Functional item: NA)

In (15) and (16), the functional *gaʕad* and *Zalas* block V-to-T movement, which takes place in the syntactic derivation of sentences in Arabic as shown by (8) and (9). As T triggers the head movement of the verb from V-to-T in Arabic, the auxiliary verbs *gaʕad* and *Zalas* occupy T in NA carrying the tense with the main verbs remaining in situ (i.e., in the head position of VP) as shown in (17) and (18).

- (17) a. *ʔal-walad gaʕad jagra ʔal-kitab*
 The-boy-*MS-3SG* PROG-*MS-3SG* read-*MS-3SG* the-book-*MS*
 ‘The boy was reading the book.’ (Functional item: NA)



- (18) a. *ʔal-walad zalas jamfi*
 The-boy-*MS-3SG* PROG-*MS-3SG* walk-*MS-3SG*
 ‘The boy was walking.’ (Functional item: NA)



Interestingly, when the grammaticalized items *gaʕad* and *zalas* are present in structures, they are responsible for carrying the tense; consequently, the main verbs of these structures become tenseless as shown by (17) and (18). Strikingly, if the main verbs are inflected for tense in the presence of what we consider auxiliary verbs, the structure would become ill-formed as shown in (19).

- (19) **ʔal-walad gaʕad gara ʔal-kitab*
 The-boy-*MS-3SG* PROG-*MS-3SG* read-*MS-3SG-PAST* the-book-*MS*
 Intended: ‘The boy was reading the book.’ (Functional item: NA)

The structure in (19) is not acceptable in NA because the main verb *gara* ‘read’ is inflected for

tense (i.e., past tense) resulting in an ill-formed structure.

Similar to the lexical *gaṣad* and *zalas* shown in (13) and (14), the functional *gaṣad* and *zalas* are inflected for person, number, and sometimes gender agreement with the subject in NA. Consider the examples in (20).

- (20) a. *ʔal-bint* *gaṣada-t* *tagra* *ʔal-kitab*
The-girl-*FM-3SG* PROG-*FM-3SG* read-*FM-3SG* the-book-*MS*
'The girl was reading the book.' (Functional item: NA)
- b. *ʔal-awlad* *gaṣad-u* *jagrūn* *ʔal-kitab*
The-boys-*MS-3PL* PROG-*MS-3PL* read-*MS-3PL* the-book-*MS*
'The boys were reading the book.' (Functional item: NA)
- c. *ʔal-banat* *gaṣad-u* *jagrūn* *ʔal-kitab*
The-girls-*FM-3PL* PROG-*MS-3PL* read-*MS-3PL* the-book-*MS*
'The girls were reading the book.' (Functional item: NA)

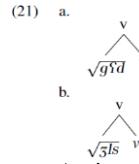
In (20a), the functional *gaṣada-t* is inflected with the third person feminine singular morpheme *-t* showing person, gender, and number agreement with the subject *ʔal-bint* 'the girl'. In (20b), the functional *gaṣad-u* is inflected with the third person masculine plural morpheme *-u* showing person, gender, and number agreement with the subject *ʔal-awlad* 'the boys'. In (20c), the functional *gaṣad-u* is also inflected with the morpheme *-u* showing person and number, but not gender, agreement with the third person feminine plural subject *ʔal-banat* 'the girls'.

4.1.1 Lexical and functional *gaṣad* and *zalas* inDM

As the term indicates, the theory of DM (Halle and Marantz, 1993; Embick and Noyer, 2007; Embick and Marantz, 2008; Embick, 2015) proposes a model of grammar consisting of a single syntactic generative system responsible for both "word structure and phrase structure" (Embick and Noyer, 2007, p.2). This generative system derives syntactic structures which are spelled out in the phonological form (PF) and logical form (LF), as two interface levels of syntax.

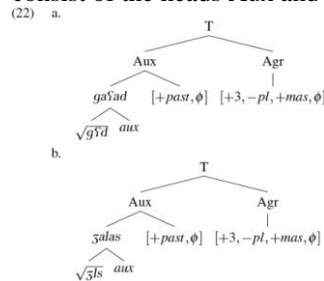
In DM, morphemes are considered the essential elements of syntactic operations consisting of two distinct types: Roots and functional morphemes. While Roots are the elements of the open class, functional morphemes are functional categories consisting of bundles of features. Significantly, both types are represented differently in DM.

Acting as main verbs, the Roots of the lexical *gaṣad* and *zalas* 'sat' are inherently not categorized and must be categorized by combining them with a category-defining functional head. With the application of the categorization assumption (Embick and Marantz, 2008), the Roots of the lexical *gaṣad* $\sqrt{g\dot{s}d}$ and *zalas* \sqrt{zls} are categorized by adjoining to the category-defining functional head *v* deriving the lexical verbs *gaṣad* and *zalas*, in which the complex verb head consists of the Root and the category-defining head *v* as shown by the representations in (21).



Acting as auxiliary verbs, the Roots of *gaṣad* and *zalas* are first categorized by adjoining to a categorizing functional head (*aux* in our case). Once categorized, a complex head is generated in order for the newly generated auxiliary item to host bundles of grammatical features known as synsem (i.e., syntactic-semantic) features including tense, number, person, and gender features. In DM, Embick (2015) distinguishes between tense morphemes in English and Spanish (i.e., past progressive tense in English and past imperfective tense in Spanish) assuming that "languages use very similar features that are "packed" differently" (p.39). While he claims that the same features are represented in a form of a single verb consisting of complex heads in the past imperfective tense in Spanish, he assumes that they are realized as an auxiliary and a participle in the case of the auxiliary verb *be* in English. If the functional *gaṣad* and *zalas* act as the auxiliary verb *be* in English, this means that they are represented similarly.

Based on those claims, we assume that the representations of the auxiliary *gaṣad* and *zalas* consist of the heads Aux and T as shown in (22).



In (22), it can be noticed that the auxiliary *gaṣad* and *zalas* acquired the auxiliary using the functional categorizer *aux*; once categorized, they combine with the [+past] null morpheme and acquire the ϕ -features of the subject establishing agreement with their subjects

4.2 gam

This subsection analyzes the syntactic position of the lexical and functional *gam* and their different representations in DM.

4.2.1 Syntactic position of lexical *gam*

The lexical *gam* is a bodily posture verb derived from the verb *gam* 'to stand up, get up, wake up' in MSA. It is an intransitive verb in the past tense. It is base-generated in V then it moves to T via V-to-T head movement. Consider the examples in (23).

- (23) a. *ʔal-walad gam mubakir*
 The-boy-*MS-3SG* wake.up-*MS-3SG* early
 'The boy woke up early.'
 (Lexical item: NA)

- b. *ʔal-walad gam min ʔal-kirsi*
 The-boy-*MS-3SG* get.up-*MS-3SG* from-the-chair-*MS*
 'The boy got up from the chair.'
 (Lexical item: NA)

In (23), the lexical verb *gam* carries a lexical meaning of 'waking up/getting up' followed by the AdvP *mubakir* 'early' in (23a) and the PP *min ʔal-kirsi* 'from the chair' in (23b). Similar to lexical verbs in Arabic, the verb *gam* is inflected for person, number, and sometimes gender agreement with the subject in NA as shown in (24).

- (24) a. *ʔal-bint gama-t mubakir*
 The-girl-*FM-3SG* wake.up-*FM-3SG* early
 'The girl woke up early.'
 (Lexical item: NA)

- b. *ʔal-awlad gama-u mubakir*
 The-boys-*MS-3PL* wake.up-*MS-3PL* early
 'The boys woke up early.'
 (Lexical item: NA)

- c. *ʔal-banat gama-u mubakir*
 The-girls-*FM-3PL* wake.up-*MS-3PL* early
 'The girls woke up early.'
 (Lexical item: NA)

In (24a), the verb *gama-t* is inflected with the third person feminine singular morpheme *-t* showing person, gender, and number agreement with the subject *ʔal-bint* 'the girl'. In (24b), the verb *gama-u* is inflected with the third person masculine plural morpheme *-u* showing person, gender, and number agreement with the subject *ʔal-awlad* 'the boys'. In (24c), the verb *gama-u* is also inflected with the morpheme *-u* showing person and number, but not gender, agreement with the third person feminine plural subject *ʔal-banat* 'the girls'.

4.2.2 Syntactic position of functional *gam*

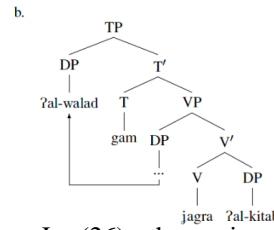
The lexical posture verb *gam* 'to stand up, get up, wake up' is grammaticalized into a past tense marker in NA. Consider the example in (25).

- (25) *ʔal-walad gam jagra ʔal-kitab*
 The-boy-*MS-3SG* PAST-*MS-3SG* read-*MS-3SG* the-book-*MS*
 'The boy has read/ has been reading the book.'
 (Functional item: NA)

Unlike the lexical *gam* shown in (23) and (24), the functional *gam* in (25) functions as an auxiliary verb followed by a lexical verb in the imperfect form *jagra* 'read'. In addition to carrying the past tense, it also carries the inceptive aspect of initiation 'to start to do something' indicating that the action of 'reading' initiated in the past (Eifan, 2017). As a result of performing a grammatical meaning, the functional *gam* loses the lexical meaning of 'standing up/getting up/waking up' which it carries as a lexical item.

Similar to the functional *gaʔad* and *zalas*, the functional *gam* blocks V-to-T movement. It occupies T carrying the tense with the main verb remaining in situ (i.e., in the head position of (VP) as illustrated in (26).

- (26) a. *ʔal-walad gam jagra ʔal-kitab*
 The-boy-*MS-3SG* PAST-*MS-3SG* read-*MS-3SG* the-book-*MS*
 'The boy started to read the book.'
 (Functional item: NA)



In (26), the main verb *jagra* 'read' remains tenseless as a result of the presence of the auxiliary verb *gam* which carries the tense.

Similar to the lexical *gam* shown in (23) and (24), the functional *gam* is inflected for person, number, and may be inflected for gender agreement with the subject in NA. Consider the examples in (27).

- (27) a. *ʔal-bint gama-t tagra ʔal-kitab*
 The-girl-*FM-3SG* PAST-*FM-3SG* read-*FM-3SG* the-book-*MS*
 'The girl started to read the book.'
 (Functional item: NA)

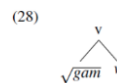
- b. *ʔal-awlad gama-u jagrun ʔal-kitab*
 The-boys-*MS-3PL* PAST-*MS-3PL* read-*MS-3PL* the-book-*MS*
 'The boys started to read the book.'
 (Functional item: NA)

- c. *ʔal-banat gama-u jagrun ʔal-kitab*
 The-girls-*FM-3PL* PAST-*MS-3PL* read-*MS-3PL* the-book-*MS*
 'The girls started to read the book.'
 (Functional item: NA)

In (27a), the functional *gama-t* is inflected with the third person feminine singular morpheme *-t* showing ϕ features (e.i., person, gender, and number) agreement with the subject *ʔal-bint* 'the girl'. (27b) shows that the functional *gama-u* is inflected with the third person masculine plural morpheme *-u* showing person, gender, and number agreement with the subject *ʔal-awlad* 'the boys'. In (27c), the functional *gama-u* is also inflected with the morpheme *-u* showing person and number, but not gender, agreement with the third person feminine plural subject *ʔal-banat* 'the girls'.

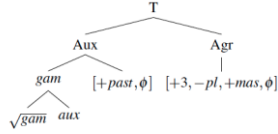
4.2.3 Lexical and functional *gam* in DM

The Root of the lexical *gam* \sqrt{gam} is categorized by adjoining to the category-defining functional head *v* deriving the lexical verb *gam*, in which the complex verb head consists of the Root \sqrt{gam} and the category-defining head *v* as shown by the representation in (28).



As an auxiliary verb, the functional *gam* carries system features of tense, number, person, and gender. The representation of the functional *gam* consists of the heads Aux and T as shown in (29).

(29)



In (29), the Root \sqrt{gam} is categorized into auxiliary verb and then it combines with the [+past] null morpheme and acquires the ϕ -features of the subject establishing agreement with the subject and deriving the auxiliary verb *gam*.

4.3 rah

This subsection analyzes the syntactic position of the lexical and functional *rah* and their different representations in DM.

4.3.1 Syntactic position of lexical *rah*

Similar to the verb *went* in English, the lexical *rah* 'went' is a motion verb carrying the lexical meaning of 'leaving'. It is an intransitive verb in the past tense. It is base-generated in V then moves via head movement to T. Consider the examples in (30).

- (30) a. ?al-walad *rah* *le* ?al-madrisah
The-boy-*MS-3SG* go-*MS-3SG* to the-school-*FM*
'The boy went to school.'
(Lexical item: NA)
- b. ?al-walad *rah* *mubakir*
The-boy-*MS-3SG* go-*MS-3SG* early
'The boy went early.'
(Lexical item: NA)

In (30), the lexical verb *rah* is followed by the PP *le ?al-madrisah* 'to school' in (30a) and the AdvP *mubakir* 'early' in (30b). Similar to lexical verbs in Arabic, the verb *rah* is inflected for person, number, and sometimes gender agreement with the subject as illustrated in (31).

- (31) a. ?al-bint *raha-t* *le* ?al-madrisah
The-girl-*FM-3SG* go-*FM-3SG* to the-school-*FM*
'The girl went to school.'
(Lexical item: NA)
- b. ?al-awlad *rah-u* *le* ?al-madrisah
The-boys-*MS-3PL* go-*MS-3PL* to the-school-*FM*
'The boys went to school.'
(Lexical item: NA)
- c. ?al-banat *rah-u* *le* ?al-madrisah
The-girls-*FM-3PL* go-*MS-3PL* to the-school-*FM*
'The girls went to school.'
(Lexical item: NA)

In (31a), the verb *raha-t* is inflected with the third person feminine singular morpheme *-t* showing person, gender, and number agreement with the subject *?al-bint* 'the girl'. In (31b), the verb *rah-u* is inflected with the third person masculine plural morpheme *-u* showing person, gender, and number agreement with the subject *?al-awlad* 'the boys'. In (31c), the verb *rah-u* is also inflected with the morpheme *-u* showing person and number, but not gender, agreement with the third person feminine plural subject *?al-banat* 'the girls'.

4.3.2 Syntactic position of functional *rah*

It is reported that future tense markers are cross-linguistically developed from verbs of movement including the verb *go* (Bybee et al., 1991; Watson, 2011; Correia Saavedra, 2019). Similar to Arabic varieties (e.g., Baghdadi, Jordanian, Syrian, Lebanese, and Egyptian Arabic), the lexical *rah* 'went' is grammaticalized into a future tense marker in NA. Consider the examples in (32).

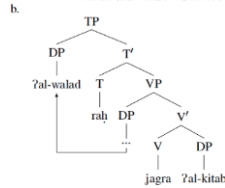
- (32) a. ?al-awlad *rah* *jagrun* ?al-kitab
The-boys-*MS-3PL* FUT read-*MS-3PL* the-book-*FM*
'The boys are going to read the book.'
(Functional item: NA)
- b. ?al-bint *rah* *tagra* ?al-kitab
The-girl-*FM-3SG* FUT read-*FM-3SG* the-book-*FM*
'The girl is going to read the book.'
(Functional item: NA)

Unlike the lexical *rah* shown in (30) and (31), the functional *rah* in (32) functions as an auxiliary verb followed by a lexical verb in the imperfect form. As a result of developing a grammatical meaning, the functional *rah* in (32) loses the lexical meaning of 'leaving'. Similar to the future auxiliary verb *be going to* in English, it carries the prediction that an action (e.g., reading) will take place in the future.

Supporting the proposal that *rah* is an auxiliary verb, it is noticed that the functional *rah* loses agreement with the subject. In contrast to the lexical *rah* shown in (30) and (31), the functional *rah* in (32) is not inflected for person, number, and gender agreement with the subject. The item *rah* functions as an auxiliary verb in NA if it is followed by a lexical verb and the subject is not singular masculine, as shown with the plural masculine subject *?al-awlad* 'the boys' in (32a) and the singular feminine subject *?al-bint* 'the girl' in (32b). According to Jarad (2014), the functional *rah* is a real auxiliary verb acting like modal auxiliaries in English.

Similar to the functional *gasad*, *galas*, and *gam*, the functional *rah* blocks head V-to-T movement. It occupies T carrying the tense with the main verb remaining in situ. Consider the schematic in (33).

- (33) a. ?al-awlad *rah* *jagrun* ?al-kitab
The-boys-*MS-3PL* FUT read-*MS-3PL* the-book-*MS*
'The boys are going to read the book.'
(Functional item: NA)



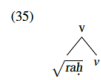
In (33), the main verb *jagrun* 'read' remains tenseless due to the presence of the auxiliary verb *rah* which carries the tense. If the main verbs are inflected for tense in the presence of the auxiliary *rah*, the structures would become ill-formed as in (34).

- (34) a. *ʔal-awlad rah garau ʔal-kitab
The-boys-MS-3PL FUT read-MS-3PL-PAST the-book-MS
Intended: 'The boys are going to read the book.' (Functional item: NA)
- b. *ʔal-awlad rah bi-jagrun ʔal-kitab
The-boys-MS-3PL FUT read-MS-3PL-FUT the-book-MS
Intended: 'The boys are going to read the book.' (Functional item: NA)

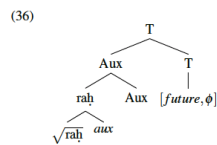
The sentences in (34) are not acceptable in NA because the main verb is inflected for tense. While the verb *garau* 'read' carries the past tense in (34a), the verb *bi-jagrun* 'read' carries the future tense in (34b). Those ill-formed structures show that the auxiliary verb *rah* does not appear if the tense is carried by the main verb.

4.3.3 Lexical and functional *rah* in DM

The Root of the lexical *rah* \sqrt{rah} is categorized by adjoining it to the category-defining functional head *v* deriving the lexical verb *rah*, in which the complex verb head consists of the Root \sqrt{rah} and the category-defining head *v* as shown in (35).



Noticeably, the functional *rah* exemplified in (32) and (33) carries only tense feature. Similar to modal auxiliaries in English, the auxiliary verb *rah* does not carry agreement features. The representation of the functional *rah* consists of the heads Aux and T, in which *rah* combines with the [future] null morpheme deriving the auxiliary verb *rah*.



The merge of the auxiliary verb with the tense feature is accomplished after the Root has been categorized as an auxiliary verb as shown above in (36).

5 Conclusion

This paper has investigated the grammaticalization of auxiliary verbs found in NA. Based on syntactic analyses, it has examined the syntactic position that *gaʕad*, *zalas*, *gam*, and *rah* occupy as lexical and functional items. Based on DM analyses, it has shown the different representations of those items. Throughout the paper, we have shown that the lexical *gaʕad*, *zalas*, *gam*, and *rah* function as lexical verbs. We have argued that those lexical items are grammaticalized into auxiliary verbs in NA. While the functional *gaʕad* and *zalas* carry the past progressive tense, the functional *gam* carries the past tense and inceptive aspect; the functional *rah* denotes the future tense.

Evidently, we have argued that those auxiliary verbs occupy T carrying the tense and blocking V-to-T movement. In light of DM, we have explained how the Roots of those lexical items are categorized by adjoining to category-defining functional heads. We have also discussed how those functional items are derived as functional morphemes carrying bundles of grammatical features.

References

- AlQahtani, S. J. (2016). The structure and distribution of determiner phrases in Arabic: Standard Arabic and Saudi dialects. PhD thesis, University of Ottawa.
- AlShboul, S., Al Shaboul, Y., and Asassfeh, S. M. (2010). Grammaticalization Patterns: Evidence from Future Markers in Jordanian Arabic. *Journal of the Australasian Universities Language and Literature Association*, 2010(114):99–110.
- Benmamoun, E. (2000). The Feature of Structure of Functional Categories. A Comparative Study of Arabic Dialects. Oxford University, New York.
- Benmamoun, E. (2003). Agreement parallelism between sentences and noun phrases: A historical sketch. *Lingua*, 113(8):747–764.
- Bobik, M. (2019). The Grammaticalization of Verbs. Verbs as Sources of Grammatical Change. GRIN Verlag.
- Bybee, J., Pagliuca, W., and Perkins, R. D. (1991). Back to the future. Approaches to Grammaticalization 2: Focus on types of grammatical markers, Elizabeth C. Traugott and Bernd Heine (eds.), pages 17–58.
- Camilleri, M. and Sadler, L. (2017). Posture verbs and aspect: A view from vernacular Arabic. *Proceedings of the LFG'17 Conference*, pages 167–187.
- Chomsky, N. (1995). The minimalist program (current studies in linguistics 28). Cambridge et al.
- Correia Saavedra, D. (2019). Measurements of grammaticalization: Developing a quantitative index for the study of grammatical change. PhD thesis, University of Antwerp.
- Eifan, E. (2017). Grammaticalization in Urban Hijazi Arabic. Master's thesis, University of Manchester.
- Embick, D. (2015). The morpheme: A theoretical introduction, volume 31. Walter de Gruyter GmbH & Co KG.
- Embick, D. and Marantz, A. (2008). Architecture and blocking. *Linguistic Inquiry*, 39(1):1–53.
- Embick, D. and Noyer, R. (2007). Distributed morphology and the syntax/morphology interface. *The Oxford Handbook of Linguistic Interfaces*, 289–324.
- Emonds, J. (1980). Word order in generative grammar. *Journal of linguistic research*, 1(1):33–54.
- Evans, V. and Green, M. (2006). *Cognitive linguistics*. Edinburgh University Press.

- Fassi Fehri, A. (1993). Issues in the Structure of Arabic Clauses and Words. In *Studies in Natural Language and Linguistic Theory*, volume (29). Kluwer Academic Publishers, Dordrecht ; Boston.
- Halle, M. and Marantz, A. (1993). Distributed morphology and the pieces of inflection. The view from building 20: Essays in Linguistics in Honor of Sylvain Bromberger, ed. Kenneth Hale and Samuel Jay Keyser., pages 111–176.
- Haspelmath, M. (2002). Functionalist linguistics: Usage-based explanations of language structure. Handout from talk given at Düsseldorf Summer School, 15.
- Hassan, Q. (2016). The grammaticalization of the modal particles in South Iraqi Arabic. *Romano-Arabica*, 16:45–55.
- Heine, B., Bernd, H., Kuteva, T., et al. (2002). *World lexicon of grammaticalization*. Cambridge University Press.
- Heine, B., Claudi, U., and Hünnemeyer, F. (1991). *Grammaticalization: A conceptual framework*. University of Chicago Press.
- Heine, B. and Reh, M. (1984). *Grammaticalization and reanalysis in African languages*. Buske Helmet Verlag GmbH.
- Hopper, P. J. and Traugott, E. C. (2003). *Grammaticalization*. Cambridge University Press.
- Jarad, N. I. (2013). The evolution of the b-future marker in Syrian Arabic. *Lingua Posnaniensis*, 55(1):69–85.
- Jarad, N. I. (2014). The grammaticalization of the motion verb "Raḥ" as a prospective aspect marker in Syrian Arabic. *Al-Arabiyya*, pages 101–118.
- Jarad, N. I. (2017). Grammaticalization in Emirati Arabic. *Arabica*, 64(5-6):742–760.
- Krug, M. (2011). Auxiliaries and grammaticalization. Narrog, H. & H. Bernd (éds.): *The Oxford Handbook of Grammaticalization*. Oxford University Press, Oxford, pages 547–558.
- Kuteva, T. (2004). *Auxiliation: An enquiry into the nature of grammaticalization*. Oxford University Press on Demand.
- Lamiroy, B. and De Mulder, W. (2011). Degrees of grammaticalization across languages. *Handbook of Grammaticalization*, pages 302–318.
- Lee, H.-Y. (2015). The Grammaticalization of aspectual auxiliary Verbs in Korean. *International Journal of Languages, Literature and Linguistics*, 1(2):122–126.
- Lehmann, C. (1985). *Grammaticalization: Synchronic variation and diachronic change*, volume 20. na.
- Lehmann, C. (1991). Grammaticalization and related changes in contemporary German. *Approaches to Grammaticalization*, 2:493–535.
- Lehmann, C. (2015). *Thoughts on grammaticalization*, volume 1. Language Science Press.
- Machová, D. (2015). The degree of grammaticalization of gotta, gonna, wanna and better: A corpus study. *Topics in Linguistics*, 15(1).
- Meillet, A. (1912). *L'évolution des formes grammaticales*. Bologna : Nicola Zanichellie.
- Nicolle, S. (2007). The grammaticalization of tense markers: A pragmatic reanalysis. In *Tense, Mood and Aspect*, pages 47–65. Brill Rodopi.
- Paul, H., Closs, T. E., and Bernd, H. (1991). On some principles of grammaticalization. *Approaches to Grammaticalization*, 1:17–35.
- Rajendran, S. (2000). *Grammaticalization of Verbs in Tamil*. Amrita Vishwa Vidyapeetham Coimbat-ore.
- Roberts, I. (2001). Head Movement. *The handbook of contemporary syntactic theory*, page 113.
- Roberts, I. and Roussou, A. (2003). *Syntactic change: A minimalist approach to grammaticalization*, volume 100. Cambridge University Press.
- Simpson, A. and Wu, Z. (2002). Agreement, shells, and focus. *Language*, pages 287–313.
- Smith, A. D. (2017). Grammaticalization theory. *Encyclopedia of Evolutionary Psychological Science*, pages 1–Steinbach, M. and Pfau, R. (2007). Grammaticalization of auxiliaries in sign languages. *Trends in Linguistics Studies and Monographs*, 188:303.
- Van Gelderen, E. (2008a). Negative cycles. *Linguistic Typology*, 12(2):195–243.
- Van Gelderen, E. (2008b). Where did late merge go? grammaticalization as feature economy. *Studia Linguistica*, 62(3):287–300.
- Van Gelderen, E. (2011). Grammaticalization and generative grammar: A difficult liaison. *The Oxford Handbook of Grammaticalization*.
- Vanhove, M., Miller, C., and Caubet, D. (2009). The grammaticalisation of modal auxiliaries in Maltese and Arabic vernaculars of the Mediterranean area. *Empirical Approaches to Language Typology*, 44:325–362.
- Watson, J. (2011). *Arabic dialects. The Semitic Languages: An International Handbook*.
- Wu, X.-Z. Z. (2004). *Grammaticalization and language change in Chinese*. Routledge Curzon.