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A Prosodic Account of Arabic Construct State: Evidence from Active Participles

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ABSTRACT

There are well-known approaches to the analysis of Construct State (CS) such as N-to-D movement, remnant movement and N-to-Spec movement. Although these approaches have accounted for the properties of CSs, they have been criticized by a considerable number of linguists for several problematic issues. This paper attempts to find out a prosodic account of the construct state in Arabic. It brings about new evidence for a prosodic account from Active Participles which assign accusative case when they appear with the absolute indefinite markers *-un*, *-an*, *-in*. In such a case, they take a subject and an object, assign a case to them, and refer to the present or future (i.e., complex event nominal). However, in a construct state, Active Participles are inflected with a non-absolute indefinite marker *-u*, *-a*, *-i*, and assign genitive case to N2. The paper briefly reviews some of the Active Participle accounts, revisits the evidence of the prosodic nature of the construct state, goes through the previous prosodic accounts, and investigates the Active participle to support the prosodic account of the construct state. The paper argues that in such cases Active Participle nominals denote the person rather than the event and thus lack argument structure. It also contends that construct Active Participles have prosodic case checking which accounts for their genitive, rather than accusative, case. Thus, the paper contributes to Arabic studies by refining and challenging previous syntactic-based analyses of CSs.

Keywords: Active Participles; Arabic Construct State; Case Assignment; (In)definite Markers; Prosodic Account

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Paper highlights.

(1) The paper presents a prosodic account of the Arabic construct state, using Active Participles to explain genitive case assignment through prosodic case checking.

(2) The paper discusses how Active Participles with specific indefinite markers in the construct state assign genitive case to the second noun, in contrast to accusative case outside the construct state.

(3) The paper refutes traditional approaches to CS and provides new evidence supporting a prosodic explanation, highlighting their limitations.

1. Introduction

The construct state (henceforth CS) consists of two elements. The first is called a construct head (N1), also known as the possessor, the annexee, or *muDa:f* in Arabic. The head lacks definiteness marking and cannot be marked with *tanween*. The second element, inner NP (N2), is the possessee, the annexor, or in Arabic *muDa:f ʔilajh*. It immediately follows the construct head and it *always* carries a GEN case. The whole construct 'inherits' the (in)definiteness of the inner NP [1–8].

There are three well-known approaches to the analysis of CSs: N-to-D movement, remnant movement and N-to-Spec movement. Note that in syntax, N-to-D movement refers to the idea that a noun (N) moves up to the determiner (D) position within a noun phrase (DP = Determiner Phrase). Normally, a determiner like "the" or "a" heads the DP and the noun follows inside it ("the book"). However, in some languages- including Arabic in construct state- the noun itself moves into the determiner position because there is no overt determiner (like "the"). So, the noun moves to D and takes over that slot, giving the structure a very tight relation between the two nouns (like "book man" meaning "the man's book"). Although these approaches may have accounted for the properties of CSs, they have been criticized by a considerable number of linguists for several problematic issues [4,6,9–15]. A fourth approach is the prosodic account of CS pursued by several researchers [16]. So, based mainly on data from Arabic, this paper attempts to find out if prosody can account for CS.

This paper proceeds as follows: section 2 reviews some of the literature on CS and discusses the morphological and semantic properties of CSs. Section 3 brings evidence for the prosodic account of CS. The derivation of nominal CS is presented in section 4. Section 5 concludes.

2. Literature Review

2.1. Properties of Semitic Construct State

In this section, I outline the salient properties of CSs as assumed by the previous approaches. These properties have been tackled by [3,4,6,11,16–24].

(i) A CS mainly consists of two members, *α* and *β*, the former is the head and the latter is its complement.

(ii) *β* is always lexically realized.

(iii) The head N (or *α*) can bear a θ-role of *Associate, Patient/Resultant, Possessee,* and the complement (or *β*) *Theme, Agent* or *Possessor,* as exemplified in (1a–c) respectively.

(1) a. baab-u sayyaarat-in
door-NOM car-GEN
'A car's door'
b. taṣwiir-u ʕaliyy-in
drawing-NOM Ali-GEN
'Ali's drawing'
c. kitaab-u ṯ-ṯaalib-i
book-NOM the-student-GEN
'The student's book'

In (1a), the head N *baab* bears the θ-role of *Associate*. In (1b), *taṣweer-u* bears the θ-role of *resultant*, and in (1c) *kitaab-u* is the *Possessee*. Interestingly, there is a matching relation between the θ-role of the head N and that of its complement. For example, the θ-role of *Theme* meets *Associate*, *Agent* meets *Patient/Resultant* and *Possessor* meets *Possessee.* Thus, the θ-role assigned by the head to its complement can be *Theme/Agent, Patient/Resultant, Possessor,* etc. [21]. Moreover, CS can express a wide range of possessive and partitive relationships. These include both material and inalienable possession, location, part-whole relationships, measure or quantity, and comparison [5,25]. Whether N2 is an agent, theme, or a possessor, it carries a genitive case. In other words, it enters syntax with an inherent genitive case.

(iv) *β* always bears a Gen Case while *α* can be assigned NOM, ACC or GEN depending on the assigning head (assigner, possibly T/*v*/P).

Shormani mentions that *α* and *β* are not (necessarily) adjacent [8]. However, we will show that this is not true as the components of the CS form one prosodic unit. In addition, Shormani claims that α and *β* can take the definite article as in the following example [8]:

(2) al-munfiq-u l-maal-i l i-waž̌h-I illaah-i
the-giver-NOM.PL the-money-GEN for-face-GEN Allah-GEN
'The givers of the money for the sake of Allah'.

In fact, if an active participle (in this case, *al-munfiqu* 'the givers') takes a definite article, it assigns an ACC case to its complement. Thus, *l-maal* 'the money' should surface as 'l-maal-**a**' with an accusative suffix.

Several researchers point out that nothing can intervene between the head N and its complement, hence both constitute a prosodic unit [3,16–20].

Studies list the following additional properties of CS [1,18,26]:

(v) *inseparability* of the head noun and genitive DP (e.g., adjectives cannot intervene between them).

(3) a. daxal-tu da:r-a- (F) **r**-rajul-i (M) **l**-waasiʕat:-**a** (F)
enter:PRF-1S house-ACC **the**-man-GEN **the**-wide-ACC
'I entered **the**/ *a man's wide house'
b. * daxal-tu dar-a l-waasiʕat-a r-rajul-**i**
enter:PRF-1S house-ACC **the**-wide-ACC **the**-man-GEN

If the adjective followed the head immediately, it would break off the prosodic string of CS. This supports the prosodic account of case assignment in CS [21].

(vi) *(In)definiteness spreading:* the definiteness value of the head noun depends on that of the genitive. In other words, the definiteness value of the members of CS must match. Since an adjective modifying the head of the construct shows definiteness agreement, it indicates that the head carries the definiteness feature. Compare (3) above to (4):

(4) daxl-tu dar-a rajul-in (INDEF) waasiʕat-an (INDEF)
enter:PRF-1Shouse-ACC man-GEN wide-ACC
'I entered **a** /*the man's wide house'

(vii) The head noun cannot bear main stress [21].

(viii) The head of the construct cannot bear the definite article (the article constraint).

Shormani claims that the head of a construct state can take the definite article in the so-called *Idaafa ɣair ħaqiiqia* (non-true construct state) [8]. An example of that is adjectival CSs as in:

(5) a. r-ražul-u l-kaamil-u l-ʔawsaaf-i
the-man-NOM the-perfect-NOM the-features-GEN
'The perfect-featured man'.
b. al-maraʔat-u l-žamiilat-u l-važh-i
the-woman.NOM the-beautiful.NOM the-face.GEN
'The woman with the beautiful face'.

It seems that Shormani did not consult Arabic grammar books that ban adding the definite article to the head noun of CS [8]. So, the above examples are ungrammatical unless we delete the definite article from *'l-kaamilu and l-žamiilat-u'*.

2.2. Definiteness of CS

There are two types of determiners in Arabic: indefinite and definite. The indefinite article is either the absolute indefinite suffix *tanween* '*un, in, an'* or the non-absolute '*u, i, a'*. The definite determiner is *ʔal.* Aziz states that the definite *al-* has four main uses: *anaphoric familiarity*, *shared knowledge familiarity*, *situational familiarity,* and *unique kind or species* [27]. However, a noun can also be rendered definite if it is added to a definite noun (Arabic *Ida:fa*, i.e., CS). Aziz pinpoints that definite CS phrases are used as kind-denoting nominal expressions [27]. However, unlike kind-referring *al*-Ns, kind-referring CS phrases denote sub-kinds or sub-species, rather than whole kinds or species. The complement noun modifies the head noun, resulting in the head noun being more specific [27]:

(6) ʔal-kitab 'The book' vs. kitab ʔaṭ-ṭalib 'The student's book'

In SA, determinerless NPs cannot be subjects of predicational sentences (7a) unlike definite nouns (7b). As expected, if definiteness spreads from N2 to N1, constructs whose genitive member is definite can appear as subjects of predicational sentences (8b), in contrast with the constructs in (8a), whose genitive member is indefinite (based on Siloni's tests of Hebrew) [21].

(7) a. *Su:ra-t-un dʒadi:da-t-un
Picture-F-NOM new-F-NOM
'*A picture is new'
b. **S**-Su:ra-t-u dʒadi:da-t-un
the-Picture-F-NOM new-F-NOM
'The picture is new'
(8) a. *Su:ra-t-u ward-in dʒadi:da-t-un
Picture-F-NOM flowers-GEN new-F-NOM
'*A flowers' picture is new'
b. Su:ra-t-u **l**-ward-i dʒadi:da-t-un

Picture-F-NOM the-flowers-GEN new-F-NOM
'The flowers' picture is new'

By the same token, definite CS can appear in a topicalized position while indefinite CS cannot:

(9) muba:jl l-usta:z/ *usta:z, lagei-t-uh ʕ-al-kawnter
mobile the teacher, *a teacher find:PST-I-it on-the-counter
'The/*a teacher's mobile, I found on the counter'

Moreover, definite noun phrases, in turn, are ruled out in existential contexts introduced by the existential particle *fi:* ('there is') (10a). Again, the behavior of CS in this environment is dependent on the definiteness value of the genitive member; only a construct whose genitive member is indefinite can appear in existential contexts (10b):

(10) a. *fi: mufti:ħ l-ʁurfeh ʕ-al-kawnter
There is key the-room on-the-counter
'There is the room's key on the counter'
b. fi: mufti:ħ ʁurfeh ʕ-al-kawnter
There is key room on the counter
'There is a room's key on the counter'

2.3. Genitive Case: A Motivating Force for GEN in CSs

NOM is assigned for the subjects and agents mainly, and ACC is assigned to objects and object-like elements:

(11) a. al-bint-u dʒami:la-t-un (Subject-predicate)
the girl-**NOM** beautiful-**F-NOM**
'The girl is beautiful'.
b. za:ra-t Fa:Timat-**u** l-madrasa-t-**a** (sub: agent and obj: theme)
visit-F Fatima-**NOM** the-school-**ACC**
'Fatima visited the school'.
c. istafad-tu mina d-dars-i istifa:dat-**an** ʕaḍi:mat-an
benefit:PST-I from the-lesson-GEN benefir:GER-**ACC** great-ACC
'I benefitted from the lesson greatly'. (object-like element)

By contrast, Danon argues that GEN case is an extended projection of the noun phrase [24], given "the general notion of Case as a licensing feature of the noun's extended projection" [28–32]. Bittner and Hale argue that GEN case projection applies only to unmarked cases [33]. They apply such GEN case-analysis only to non-nominative arguments, considering nominative as the marked case.' As far as Gen Case is concerned, Bittner and Hale provide examples from Hindi, where I/T assigns the ergative Case, but D assigns Gen Case [33].

In Arabic, GEN case is assigned in the following cases: After prepositions, after *rubba* (perhaps), after swear '*waw*', in CS (as exemplified in (12a–d).

(12) a. Muna ʕala l-talla-t-i
Muna on the-hill-F-GEN
'Muna is on the hill'
b. rubba ramya-t-in min ʁajri ra:m-in
perhaps a throw--F-GEN from except a thrower
'Perhaps one can get a score (a throw) without being a scorer (thrower)'.
c. wa-llah-i la-aqu:la-nna l-ħaqi:qa-t-a
swear-Allah-HGEN FOC-say-FOC the-truth-F-ACC
'I swear to tell the truth'
d. ħasanu l-wadʒ-i
good looking the-face-GEN
'(has) a beautiful/ good looking face'

The examples in (11–12) above show that NOM and ACC cases are assigned either by *T* or *v*, while GEN is assigned elsewhere.

3. Evidence for the Prosodic Account of CS

Recall that this piece of research tries to answer the question: Can prosody account for CS in Arabic? To answer this question, we will bring some evidence for such an account by addressing the non-nominal heads and phonological changes of CS.

3.1. CS and Non-Nominal Heads

It is worth mentioning here that CS is not limited to nominal heads: gerunds, quantifiers, adjectives, and *participles* can all appear as heads of CS. As in nominal heads, these heads assign GEN to N2, undergo the same phonological alternations nominal heads of constructs do, have to be adjacent to N2, and show all other CS properties. Regardless of the thematic relations between N1 and N2 in these cases, N2 always receives a genitive case (N1 is in **bold** and N2 *italicized*).

(13) a. **ka:tibu** *r-risalat-i* (N2 is a theme of N1)
writer:AP the-letter-GEN
'The letter's writer'

b. **ʕaqdu** *r-raʔi:s-i* li-l-i dʒtimaʕ-i (N2 is an agent of N1)
Conducting the-director to-the-meeting-GEN
'The director's holding of the meeting'

c. sajja:ratu l-dʒadd -i (N2 is a possessor of N1)
car the-grandfather-GEN
'The grandfather's car'

d. ħasanu l-wadʒ-i (N2 is a theme pre-modified by N1)
good looking the-face-GEN
'(has) a beautiful/ good looking face'

Since these heads assign GEN to N2 regardless of the thematic relations between N1 and N2, this indicates that case assignment takes place at the prosodic level, i.e., N! and N2 are in CS.

3.2. Phonological Changes of CS

There is ample evidence that CS forms one prosodic word. First, to render any word definite, Arabic either uses a definite article, *al-*, or adds an indefinite noun to a definite one, i.e., CS. The definiteness of N2 spreads to N1, hence rendering the construct as one semantic entity where N2 provides definiteness specification for N1 [21,34,35]. Both members of the construct are in the scope of the definite articl and are thus interpreted as definite because they are part of the same prosodic phrase. For example, the indefinite *kita:b* 'a book' can become definite by adding the definite article *al* (i.e., *al-kitaab* 'the book') or by adding it to a definite noun as in *kita:b-u l-muʕallim-i* 'the teacher's book'. In both cases, we refer to one entity, the book. This means that N1 needs to be semantically incorporated into N2 in order to become specified. During this process, N1 obtains its [+def] feature from N2 through incorporation as we will see later.

A study proposes that case domains are defined either in syntax or by the prosodic structure of the PF component [36]. Siloni argues that CS is formed at PF [21]. He pinpoints that in CS, N1 becomes unstressed and N2 receives a main stress and the whole CS receives one main stress. Due to lacking main stress, N1 prosodically becomes like a function word since it is part of the prosodic word determined by an adjacent lexical word.

Heads of constructs, then, constitute function words at the prosodic structure [21]. First, the head, N1, undergoes some phonological changes such as liaison: in some Arabic dialects, the feminine nominal ending '*-t'* morpheme is pronounced only in CS (14a). In addition, in Standard Arabic (SA), the dual and plural suffixes are deleted when the noun is in the construct head position (14b–c):

(14) a. Ta:wle 'table'
Ta:wle**t** l-usta:z ' 'the teacher's table'

b. wa:lid *a:***n** 'parents, DUAL'
wa:lid*a* l-ʕari:s 'parents of the bridegroom'

c. ʕa:bid *u:***n** 'worshippers'
ʕa:bid*u* Allah 'Allah's worshippers'

Moreover, in these cases, the last vowel undergoes reduction (underlined and italicized in the examples above). Furthermore, the nouns hosting possessive clitic pronouns as in *kitāb-u-ha* 'her book' are in construct as well. Here, the head noun and the possessee form an inseparable constituent.

Such phonological deletion and reduction may indicate N-to-D raising because when 'a noun substitutes for the functional head D, it is in some sense functional and can therefore have a phonologically weak form. According to this proposal, N-to-D raising is required for phonological reduction' [21].

Furthermore, Al-Samirra'e mentions that some traditional Arab linguists analyzed CS as involving a silent preposition between the two nouns [25]. For instance:

(15) a. xa:tam-u ðahab-in
'a ring-NOM gold-GEN 'A gold ring'
can be rendered as:
b. xa:tam-un **min** ðahab-in
'a ring- NOM from gold- GEN'. 'A ring made of gold'

In this way, Semitic CS equates to NPs in many other languages that has N^0 post-modified by a PP introduced by words like *of, de, di, das* (e.g., The end *of* the month).

The head of CS shares many properties with prepositions in prepositional phrases. First, like prepositions, heads of CS do not receive main stress and thus they become part of a prosodic word with the next content word. Second, prepositions and heads of CS assign GEN to their complements (see 23a above). Third, the case that CS and PP assign to their complements is a default case in the sense that all non-nominative and non-accusative NPs in Arabic receive genitive case (see examples in 12 above).

In addition, unlike an NP post-modified by an AdjP or a PP, CS allows resyllabification in all Arabic varieties and allows liaison of the feminine maker /-t/ in many Arabic dialects:

(16) a. kita:b-u l-muʕallim (CS in SA)
ki ta: **bul** mu ʕal lim (resyllabification)
'The teacher's book'
b. kita:b-un mufi:d-un (NP post-modified by an AdjP)
ki ta: **bun** **mu** fi: dun
'A useful book'
c. lawħa-(t) vs lawħ-**it** Muna (liaison in CS in JA)
drawing-F drawing-F Muna 'Muna's drawing'
d. lawħa-(t) fannijja ⟶ lawħa fannijja (NP (N + AdjP: No liaison)
drawing-F artistic 'artistic drawing'

Moreover, the phonological word boundary between N1 and N2 is obliterated. In fact, in an empirical study on Egyptian Arabic prosody, Abdelghani found that none of her (40) subjects paused between the two nouns of CS when asked to narrate a story they have heard [37]. Specifically, the time interval between the two nouns was zero (on a scale of 5). This results in the non-application of the word-final deletion of the feminine suffix /-t/ in Arabic dialects as in *lawħ-**it** Muna* 'Muna's drawing' (17c) in comparison with its deletion when the noun is post-modified by an adjective (17d).

Furthermore, no lexical material can appear between the construct-head and its DP complement [21,26,38]. Such a constraint does not hold in non-construct noun-adjective sequences:

(17) a. banṭalon el-walad (CS)
Pants the-boy 'The boy's pants'
b. *banṭalon jaʕni el-walad
Pants means the-boy 'I mean, the boy's pants'
c. bantalon qasi:r (Noun post-modified by an Adjective)
pants short 'Short pants'
d. banṭalon jaʕni qasi:r
Pants means short 'I mean, short pants'

Finally, the head of the construct cannot be prefixed with *al-* because it is a function word at the prosodic structure; that is the head does not license an article prefix as it does not form a prosodic word [21]. In other words, if the construct head is destressed, then it is plausibly a weak element that cannot act as a host to certain kinds of clitics/affixes. This lends more evidence in favor of the prosodic account. The article constraint is derived from its prefixal nature, which, in turn, is incompatible with the prosodic function word status of heads of constructs. By contrast, non-prefixal determiners can directly pre-modify the head of the construct (18).

(18) Wala Su:rit wardeh
No picture flower 'no picture of any flower'.

Taking these remarks into account, Siloni pinpoints that the CS is phonologically coherent [21], and thus he argues that the Semitic Construct defines a prosodic domain of Case checking. This is supported by the Arabic data since SA marks N2 with GEN regardless of the relationships between the members of CS which cover the semantic roles of *Agent, Patient,* or *Possessor* (see examples (1) and (13) above). This supports Siloni's argument of the prosodic domain of case

checking [21]. Otherwise, N2 would be marked NOM, ACC, or GEN according to the thematic role in relation to N1.

3.3. Active Participle and the Prosodic Account of CS

3.3.1. Active Participles

Ryding states that 'Arabic participles (APs) [34], called *ism l-fa:ʕil*, are descriptive terms derived from verbs and intended to describe or refer to entities involved in an activity, process, or state'. AP refers to the doer and it is often equivalent to the English *-er/-or* morpheme or any of its allomorphs. Morphologically, APs are derived according to the verb ten forms/patterns. They may be masculine or feminine. For tri-consonantal verbs, Form I, *ism l-fa:ʕil* has the pattern as the agent *fa:ʕil* 'C_1a:C_2iC_3'. AP refers to nouns and adjectives, which are subsumed under the term *ism* 'noun; name', hence dubbing it *ism l-f:aʕil.*

For forms II–X, AP is derived by changing the present tense prefix *ju-* to AP prefix *mu-*. For case, definiteness, gender, number, APs inflect as nouns or adjectives (ibid 83–84):

(19) a. ju-daħridʒ-u ⟶ **mu**daħridʒ-un
IMPF:3SM-roll down — roller down:AP-INDEF:NOM
'to roll down' — 'a roller down-MS'
b. mudaħridʒ-**at-an** — roller down:AP-**F-INDEF:ACC**
c. mudaħridʒ-**i:n** — roller down:AP-**MPL:ACC**
d. mudaħridʒ-**a:t-in** — roller down:AP-**F:PL-GEN**

Al-Ansari pinpoints that AP is derived from a root verb [39]. If the equivalent root verb is intransitive, AP only takes a subject (20a); if transitive, it takes a subject before it and an object after it (20b).

(20) a. ʔa-musa:fir-a:ni — ʔar-radʒul-**a:ni** — Al- -jawm ?
Q-travel:**AP**-DUAL:NOM — the-man-DUAL:**NOM** — the-day
'Are the two men travelling today?'
b. ʕalijj-**un** — ka:tib-un — d-dars-**a** — ʁadan
Ali-**NOM** — write-AP:NOM — the-lesson-**ACC** — tomorrow
'Ali is writing/will write the lesson tomorrow'

Hamid and Jabre provide morphological evidence for deriving the verbal AP from the root [40]: If the root of the imperfective verb consists of tri-consonants, *ism l-fa:ʕil* will also have three consonants (e.g., ja-**lʕa**b *'(he) plays'*, **la:ʕi**b *'player'*). If the imperfective form has a long vowel in the middle, *ism l-fa:ʕil* will have a vowel-like (glottal stop) in the middle (ja-S**i:**d *'(he) hunts'*, S**a:ʔ**id *'hunter'*). Moreover, in verb patterns other than Form I, *ism l-fa:ʕil* has exactly the imperfective pattern except for the third person prefix '*ja-/ju-'* which is replaced by the AP prefix '*mu-'*.

Lecomte refers to AP as "the hinge between the verb and the noun" because of their noun form combined with verbal qualities [34,41]. In terms of their function, 'the AP can syntactically function as a noun, verb or attributive adjective' [42]. "This is determined only by the syntactic context" [43]. For instance, AP is purely nominal when it occupies a subject or an object position prefixed with the definite article *al-* and not followed by any complement.

(21) Ar-ra:kidh-u — sabaqa — l-ma:ʃi
The-runner:AP-NOM — passed — the-walker:AP
'The runner passed the walker'

The description of APs varies substantially because of their wide-ranging functional nature. Depuydt refers to them as 'adjectival verb forms,' whereas Beeston states that 'the participle is a noun (substantive or adjective) which, like the verbal noun, matches the verb' [43,44].

As a predicate adjective, AP may serve as a verb substitute. However, it is temporally and aspectually ambiguous according to context. Thus, it may refer to a state of current activity, or of having accomplished a certain activity [34].

(22) Sami:r-un — qa:dim-un — mina — l-quds
Sameer-NOM — coming:AP-NOM — from — Jerusalem
'Sameer is coming/has come from Jerusalem'

Thus, as a predicate of a verbless sentence, APs may indicate a verb-like action. It is believed that *ism l-fa:ʕil* functions as a verb because of the morphological similarity with the present tense and the denotation of continuity and recurrence [45–47]. Active Participles (henceforth APs), dubbed as '*ism l-fa:ʕil'* in Arabic, sometimes function as verbs, hence verbal Active Participles which represent complex events. However, they also behave like nouns,

hence nominal Active Participles which stand for simple events. On one hand, verbal APs appear with *tanween* (also known as *nunification*), *-un, -an*, *-in* (underlined in (23), and assign ACC to the (complement) object. In such a case, AP denotes present or future, but not past:

(23) Zaid-un *za:ʔir-un* Amr-**an** ʁadan / *ʔamsi
Zaid-NOM visitor:AP-NOM Amr-**ACC** tomorrow/ *yesterday
'Zaid is going to visit Amr tomorrow/ *yesterday'

By contrast, nominal APs appear in CS. In such a case, they are inflected with non-absolute indefinite suffixes *-u,-a,-i* (24). Like any other noun in CS, the active participle N1, the head of the construct, assigns GEN case to N2 and may denote present, past, or future:

(24) Ha:ða ḍaarib-u Zaid-**in** l-jawma/ amsi/ ʁadan
This hitter:AP-NOM Zain-**GEN** today/yesterday/tomorrow
'This is (the one who) has hit/ hit/ will hit Zaid's today/yesterday/tomorrow'.

In such cases, APs seem to behave like English V+ing forms, which either function as progressive participles (and thus assign ACC), or as gerundive nouns (and thus assign GEN to its complement).

Al-Samirra'e mentions a prosodic remark regarding the CS [25]. The non-absolute CS (of active and passive participles) is prosodically *lighter* than its AP verbal counterpart as N1 in the former ends with an open light syllable, while N1 in the verbal AP ends with a heavy closed syllable:

(25) a. Zaid-un ḍa:rib-**u** ʕamr-an
Zai.dun ḍa:.ri.bu ʕam.ran
CVC. CVC CV:.CV.**CV** CVC.CVC
Zaid-NOM hitter:AP Amr-ACC
'Zaid is the hitter of Amr'.
b. Zaid-un ḍa:rib-un ʕamr-an
Zai.dun ḍa:.ri.bun ʕam.ran
CVC. CVC CV:.CV.**CVC** CVC.CVC
'Zaid is hitting/ going to hit Amr'.

Another piece of evidence for the prosodic nature of the CS comes from the masculine or feminine feature of N1 when it is omissible as it is part of N2:

(26) fa-ðall-at ʔaʕna:q-u-hum la-ha xa:ḍiʕ-i:n
so-remain:PST-**FEM** neck:pl:**FEM**-NOM-their:**MAS** to-it submissive-PL:**MAS**
'Their necks remained submissive to it (a miracle)'
(The Holy Quran, Surat Al-ShuʕaraːʾThe poets': 4)

The verb *ḍall* 'remained' is inflected with a feminine suffix 'at' in order to agree with the agent *ʔaʕna:q* 'necks' which is a plural feminine noun. However, *ʔaʕna:q* is N1 of the CS *ʔaʕna:qu-hum* 'their necks'. The predicate *xa:ḍiʕ-i:n* 'submissive' should be feminine because it describes the plural feminine noun *ʔaʕna:q* 'necks'. Nevertheless, it is spelled out as a masculine plural, hence agreeing with the masculine suffix *–hum* 'their' (N2 of the CS). As *ʔaʕna:quhum* 'their necks' is CS and N1 (*ʔaʕna:qu*) 'necks' is an (omissible) part of N2 (*-hum*) 'their/they' which is masculine, the predicate agreed with the whole (i.e., N2)–*hum* 'they' in order to indicate that *they* and *their necks* were submissive to the miracle. In other words, the CS is treated as one prosodic word.

3.3.2. AP Evidence for the Prosodic Account of CS

Perhaps the most concrete evidence for checking case in the prosodic domain is the fact that the CS Active Participle sometimes refers to *events*. However, it assigns GEN to its internal argument rather than the ACC case assigned by verbal AP:

(27) a. Kull-u nafs-in ðaːʔiqa-t-**un** l-mawt-a
Every soul taste:AP-F-NOM the-death-**ACC**
'Every soul will taste death/will die' (Verbal AP)
b. Kull-u nafs-in ðaːʔiqa-t-**u** l-mawt-i

Every soul taste:AP-F-NOM the-death-**GEN**
(CS nominal AP)

'Every soul will taste death/will die' (The Holy Quran: Al-Ankaboot 'the Spider', 57).

It is evident here that the CS *ða:ʔiqa-t-u l-mawt-i* 'taster of death' does not refer to an entity, rather it refers to a future event. Thus, we expect AP here to assign an ACC case as in (27). However, the GEN of the internal argument suggests that the case has been assigned within the CS before it entered the derivation.

Finally, recall that adjacency is an essential property of CS. If any material intervenes between the case checker and checkee, it breaks up the prosodic (phonological) unit. This indicates that the case domain of CS is dictated at PF, not in syntax. A verb in Arabic, by contrast, assigns an accusative case to its complement regardless of adjacency (the verb and its complement are in boldface):

(28) naħnu **na-quṣṣu** ʕalaj-ka **ʔaħsan-a** l-qaṣaṣ-i
we 1PL-narrate on-you the best-ACC the-stories-GEN
'We tell you the best stories' (Holy Quran, Youssef:3)

4. The Derivation of Nominal AP

This section reviews the most plausible accounts for CS and provides an analysis that benefits from the works by Fassi-Fehri and Ouhalla accounts and builds on the research by Marantz and Borer [19,48–50]. We argue that the nominal AP forms a prosodic phrase which lacks a verbal head and thus it directly moves to a nominalizer head and then to [spec/Agr$_{GEN}$] which assigns GEN case to N2 regardless of its thematic relationship to N1 (AP).

First, it is worth mentioning here that nominal APs take adjectival modification (29a), and number affixes (29b), and do not assign ACC case.

(29) a. ha:ða sa:ʔiq-u s-sajja:ra-t-**i** **l-ba:riʕ-u**
this driver:AP-NOM the-car-F-**GEN** the-skillful:ADJ-NOM
'This is the skillful car driver'
b. ha:ʔula:ʔi sa:ʔiq-**u:** s-sajja:r-a:-t-**i** **l-ba:riʕ-u:n**
these driver:AP-**PL**:NOM the-car-PL-F-**GEN** the-skillful-ADJ:PL:NOM
'These are the skillful car drivers'

Therefore, the root is realized as nominal. Since it lacks vP, no case ACC assignment takes place forcing the default genitive case assignment.

Researchers argue that the CS consists of a (DP) with a 'null' head dominating a lexical projection headed by the construct head [1,19,48,51,52]. The construct head raises to and incorporates with the head of the DP. The inner NP is inserted as the specifier of the lexical projection to which GEN is assigned. The inner NP and the construct head agree in definiteness under a specifier-head relation:

c. [$_{DP}$ [D kitāb-u$_i$] [$_{NP}$ [$_{DP}$ l-walad-i] t$_i$]]

Studies propose that the construct head and the inner-NP undergo a 'morphological merger' [18,21,50]. The strict adjacency between the head and the genitive noun is triggered by the attraction of Gen DP to [spec/Agr GEN].

d. [$_{DP}$ [$_{NP}$ kitāb-u] [spec/Agr GEN [$_{NP}$ l-walad-i]]]

Another piece of evidence for the nominal nature of CS comes from '(in)definiteness agreement/spreading' mentioned earlier. When we add a definite N2 to N1, the whole CS phrase becomes definite whereas when we add an indefinite N2 to an indefinite N1, the phrase is rendered indefinite:

(30) a. ha:ða kita:b-u *ṭa:lib-in*
this book-NOM student-GEN
'This is *a/ some* student's book'
b. ha:ða kita:b-u **ṭ**-ṭa:lib-i
this book-NOM **the**-student-GEN
'This is **the** student's book'

Generally speaking, adding a definite N2 defines N1, whereas adding an indefinite N2 limits the reference of N1, i.e., it becomes more specific (e.g., a book that belongs to a student not a professor) [25]. Since definiteness is a nominal property, then *ism l-faːʕil* that occurs in a CS becomes inactive and thus unable to assign ACC to its internal argument (N2) (cf 13a,b).

Ritter brings up another analysis for genitive case marking by arguing that Hebrew CS NPs result from head movement of N to D [53]; N adjoins to a phonetically null genitive Case assigner (D$_{GEN}$) which is the head of DP. Evidence for such analysis comes from the fact that manner adjectives of N1 come after N2, not right after N1[1] [54]. The

[1] Recent proposals such as Aoun et al. assume that post-nominal modifiers are left-adjoined [54]. However, they appear following the head noun because they have undergone head-movement to a position higher than that of the modifier: [DP [D ʾal- kitāb-u$_i$] [NP [NP [AP l-kabīr-u] t$_i$]]].

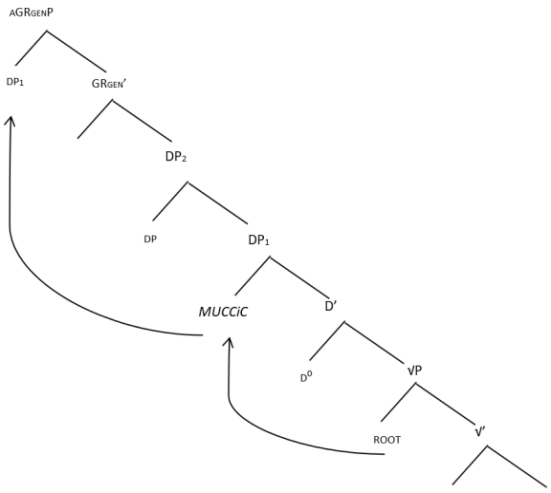
same test applies to Arabic CS in general and CS AP in particular:

(31) a. za:ʔir-u Laila l-muʔaddab-i
visit:AP-NOM Laila the-polite-GEN
'Laila's polite visitor'.
b. [$_{DP}$ D GEN + za:ʔir-u$_i$ [$_{NP}$ Laila [N' t$_i$ [$_{AdjP}$ l-muʔaddab-i]]]]
c. * za:ʔiɾu l-muʔaddab-i Laila

The adjective *l-muʔaddab-i* 'polite' is an NP adjunct. Let's assume that it remains in its d-structure position throughout the derivation. N1 in CS moves and adjoins to D_{GEN}. This movement enables it to assign a structural case to N2. If N1 does not move to [Spec, DP_{GEN}], the d-structure position of N2 is not accessible to case assignment by D_{GEN}.

Shlonsky analyzes CS derivation a little bit differently [4]. He maintains that the entire CS NP is moved to the [spec/Det]. The φ features of the head noun end up closer to the external probe T/v than those of the complement N (or Det) as they lie on the extreme left edge of DP. Therefore, movement of the entire CS nominal brings the head noun of CS to a position where it can be directly probed for [φ] by the clausal probes T/v. In CS nominals, the NP moves as a unit to the left of Det, and the φ features of the noun are simply carried along via phrasal movement. Hence, Det never has φ features and cannot be phonetically realized.

On the other hand, some researchers argue that nominalization is the spell-out of a category-neutral "root" projection in a DP context [49,50]. Applying Marantz's proposal, the nominal CS AP starts as a root [49]. We contend that since CS has a simple event reading, the root is inserted directly under N which does not dominate a VP. Since AP refers to a person, not an event, the root raises to a nominalizer AP suffix (AP form such as MUCCiC) which absorbs the agent theta role and hence cannot assign ACC case to the internal argument in the same way that passive verbs cannot assign case to their complements [55]. In other words, the nominalizing AP affix absorbs the agent theta role and the non-absolute affix *-u/-i/-a* absorbs ACC case just as in passive verb formation. Accordingly, the internal argument of APs takes GEN rather than ACC due to the presence of Agr_{GEN} which assigns GEN to its complement, the inner NP. This is supported by the fact that N2 gets GEN regardless of its thematic role to N1 (see part 3 of section 2 above). Thus, the absence of a verbalizing head in CS accounts for the nominal characteristics of CS AP.



Being in a CS, AP's nominal features strengthen, and verbal ones weaken. This is further supported by the fact that CS AP lacks aspectual modification and cannot be modified by bare adverbials.

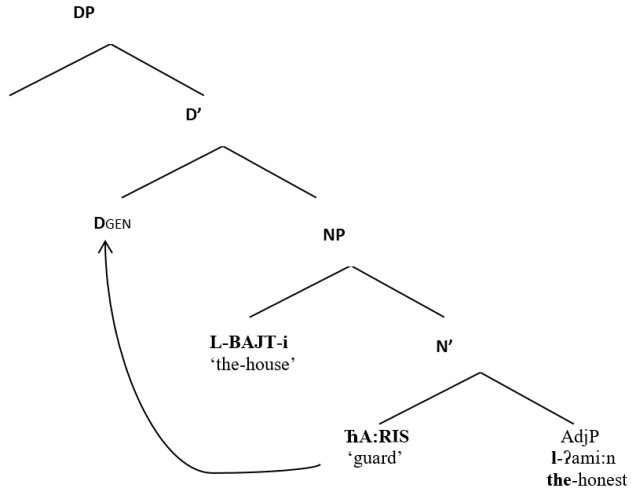
(32) *Omar-u za:riʕ-***u** l-ʔaʃdʒa:r-i fi ʕa:majn
Omar-NOM plant:an-NOM the-trees-GEN in year-DUAL:GEN
'Omar is the plant-grower in two years'

The argument structure does not exist here because the nominalization was formed in the prosodic structure. For the internal argument to get a case, the alternative is to move N1 (the AP) to [spec/Agr_{GEN}] whose head assigns GEN to N2. Case assignment of the complement of CS takes place at the prosodic level where D_{GEN} assigns the GEN case regardless of the thematic role of N2. The head raises to [spec/Agr_{GEN}] of the construct leaving any adjunct modifiers in situ. Lacking the [D] feature, the head probes and finds the complement DP equipped with the [D] feature. The [D] feature of the complement, whether definite (33a) or indefinite (33b), is copied onto the head, hence rendering it definite or indefinite:

(33) a. raʔaj-tu ħa:ris-a **l-**bajt-i **l-**ʔami:n-a
See:PST-1S guard:AP-ACC **the**-house-GEN **the**-honest-ACC
'I saw *the honest guard'*
b. raʔaj-tu ħa:ris-a bajt-in ʔami:n-an
See:PST-1S guard:AP-ACC house-GEN honest-ACC
'I saw *an honest guard* of the house'

Thus, the GEN on the complement is checked and the [D] feature is copied onto the head at the prosodic level.

Recall that whereas the genitive NP is inactive due to the case being assigned in the prosodic structure, the head of the construct is still active due to lacking CASE. So, the derivation proceeds. Since *v* lacks phi-features it probes and finds the head of the construct within its domain. The head gets its ACC case checked by v which, in turn, gets the matching person, number, and gender features. When CS is an object, it lies within the vP domain, and the case is checked in this phase by V. Therefore, the CS head *ħa:ris-a* 'gurad' (in 33) appears in the ACC case. When CS is in a subject position, it moves phrasally and lies within the TP domain, and the case is checked by T. Therefore, the head appears in the NOM case.



5. Conclusion

This paper presented a prosodic account for CS in Arabic. In addition to the phonological changes that take place in CS, the paper brought more evidence for the prosodic account from APs which, when occurring in CS, denote the person rather than the event. The study showed that in Construct State APs, case assignment takes place in the prosodic domain, hence APs assign GEN to their internal argument. There is no argument structure since the nominalization was formed prior to the projection of the syntactic structure. This is supported by the fact that the CS complement (i.e., N2) always receives a genitive case regardless of its thematic role about N1. AP assigns GEN case and the AP head becomes part of a prosodic phrase, the CS, which denotes an entity rather than an event. It also contends that construct. Active Participles, thus, have prosodic case checking which accounts for their genitive, rather than accusative, case. Accordingly, the paper advances Arabic studies by revisiting and questioning earlier syntax-based approaches to the analysis of CSs.

Author Contributions

Conceptualization, A.Y.; methodology, A.Y.; software, A.Y.; validation, A.Y., I.H., and N.A.; formal analysis, A.Y.; investigation, I.H. and N.A.; resources, A.Y.; data curation, A.Y.; writing—original draft preparation, A.Y. and I.H.; writing—review and editing, H.L.; visualization, A.Y.; supervision, A.Y.; project administration, A.Y. All authors have read and agreed to the published version of the manuscript.

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Conflicts of Interest

The authors declare no conflict of interest.

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