Phase Theory: A Promising Approach to the Analysis of Semitic Construct State[*]

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الملخص

تتناول هذه الورقة تحليل العبارة الحدية "الاضافة" في اللغتين العربية والعبرية، كلغتين تنتميان للعائلة السامية، وبحكم اشتراكهما في هذا التركيب البديع. كما تقترح الورقة منهاجا مبنيا على نظرية الرحائل (تشومسكي، 2000-2008). تعتبر نظرية الرحائل اخر ما توصل اليه البرنامج الادنوي، كما تعتبر نظرية واعدة لتحليل الظواهر النحوية بإعمال 'اقل الاجرآت العقلية الحوسبية' وبما يلائم القدرة المحدودة للملكة اللغوية الانسانية. فالرحيلة تُعرَّف على انها وحدة نحوية حوسبية يتم ارسالها الى المستويين الصواتي والدلالي كوحدة نحوية مستقلة. يرى الباحث ان نظرية الرحائل هي النظرية الاكثر ملاءمة لتحليل تركيب الاضافة ويعزو ذلك الى عدة خصائص رحائلية يمتاز بها هذا التركيب ومنها: أ) تركيب الاضافة يكوِّن رحيلة (كب)، يكون فيها المضاف اليه حقلا لراس الرحيلة، بسبب حالة الاعراب "الجر" الدائمة، ب) كب تقتضيه حالة الجر للمضاف اليه، جـ) لدي كب مخصص (ص-كب) حيث يمكن اعتباره موقع لتفسير واعادة بناء تركيب الاضافة، د) في حالة الاضافة التكرارية، هناك عدة رحائل دورية متكررة، والتي تقتضي تهجئة كل رحيلة (او كب) على حدة، واخيرا هـ) يفترض الباحث ان ك مشبعة سيمائيا، وان الراس الحدي(د) يرث هذه السمات من ك. كما يفترض الباحث ان المضاف والمضاف اليه اسمان مستقلان، وقد بنى الباحث هذا الافتراض على امكانية دخول اداة التعريف على المضاف، وامكانية فصل المضاف عن المضاف اليه، مدعما افتراضه بامثلة من اللغتين، خلافا لما دأب عليه النحويون العرب وغير العرب في تحليل تركيب الاضافة. قبل عملية الارسال الى المستويين الصواتي والدلالي وقبل التهجئة، فان هذين الاسمين لابد لهما من عملية "تَخَيَطَة" يتحرك/ينتقل فيها المضاف اليه الى ص-كب. اما عملية تقييم/ تاويل السمات الغير مؤولة فإن الباحث يفترض انها تتم بواسطة عملية تطابق (تط). بالنسبة لتقييم الحالة الاعرابية للركنين، فإن الباحث يرى ان تقييم سمة الاعراب (الجر) لـ ك تتم ايضا بواسطة تط مع المضاف اليه، اما المضاف فتعتمد عملية تقييم حالته الاعرابية (وسماته) على راس الزمن (ز) عندما يكون فاعلا او الفعل (ف) اذا كان في حالة المفعولية، وكلا الحالتين تتم عن طريق العملية تط.

Abstract

Phase theory has been viewed as a promising approach to syntactic phenomena, minimizing the machinery apparatus needed to describe them, and meeting the 'limited' capacity of human language faculty. A phase is said to be a unit of syntactic computation that can be sent to the PF and LF interfaces as an independent syntactic chunk (Chomsky 2000, *et seq*). This article proposes a phase approach to analyzing Semitic Construct State (CS). Based on Case as a distinguishing property in Arabic and Hebrew, I argue that Semitic CS is a phase KP headed by K. My proposal ensues from several CS facts, which are phasal in nature, such as i) the GDC (=genitive DP complement) is a 'phase Spellout domain,' by virtue of being (and always) assigned Gen Case by its head, ii) KP is necessitated by the GDC's Gen Case, iii) a CS has an escape hatch which is an available site for reconstruction, iv) an embedded CS involves multiple Spellouts

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and successive cyclic movements, and v) K is assumed to be ɸ-*complete*, and that D inherits its *Agree* Feature from K (cf. Chomsky, 2008). It is hypothesized that a CS minimally consists of two DP layers, viz. the head-DP and the GDC-DP, which is based on the assumption that the head N can take the definite article. These two DPs must be linearized before being sent to the interfaces. Hence the head-DP exits the domain of K, and targets Spec-KP. K values its Gen Case via *Agree* with the GDC-DP, and the [uCase] feature of the head DP is valued via *Agree* established between it and an external head (possibly T/v).

Keywords: phase theory, KP-projection, Semitic Construct State, escape hatch, linearization, multiple Spellouts, successive cyclic movements

1. Introduction

Construct State (CS), as exemplified in (1a & b from Arabic), has been extensively investigated in the literature.[1]

(1) a. kitaab-u   l-mudarris-i
     book-NOM   the-teacher-GEN
     'The teacher's book.'

   b. kitaab-u   l-mudarris-i   l-kabiir-u
     book-NOM the-teacher-GEN the-big-NOM
     'The teacher's big book.'

There are four well-known approaches to the analysis of CSs, namely prosody, N-to-D movement, remnant movement and N-to-Spec movement.[2]

Although these approaches may have accounted for the properties of CSs like (1a & b), they have been criticized by a considerable number of linguists for several problematic issues (see e.g. Matushansky, 2006; Roberts, 2010, 2011:196; Chomsky, 2001:37f, 2007:26; Georgi & Müller, 2010:2-5; Abels, 2012; Bruening,

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The following abbreviations are used throughout this article: Acc= Accusative, C= Complementizer, Def= definiteness, Dem= demonstrative, DL= dual, F= feminine, Gen= Genitive, K=Case, M=masculine, Nom= Nominative, Part= Partitive, PL= plural, SG= Singular, T=tense. Those abbreviations and acronyms that are not mentioned here are indicated in the first use.

[1] In this article, I will focus mainly on analyzing nominal Construct States in Arabic and Hebrew. The variety of Arabic dealt with is Standard Arabic; whenever another dialect is involved, it will be indicated. As for Hebrew, it is Modern Hebrew; whenever another dialect is involved, it will be indicated.

[2] There are also some other approaches found in the literature, but very less employed like reprojection (see e.g. Suranyi, 2005; Georgi & Müller, 2010) and recursive PF linearization (see Kremers, 2009).

2009:33f; Mahajan, 2003; Shlonsky, 2004, 2012:281f; Ouhalla, 2009:322; Bardeas 2009, for criticism on head movement, and Roberts, 2010; Citko, 2009:936-939; Pereltsvaig, 2006; Shormani, 2014, for criticism on remnant movement, for example).

CSs like (2a), (2b) and (2c), what I call multi-embedded, complex and coordinated CSs, respectively, have perhaps been left open by such approaches.

(2) a. bayt-u   ħaars-i   bawaabat-i   l-kuliat-i   (Arabic)
    house-NOM guard-GEN gate-GEN   the-college-GEN
    'A house of a guard of the college's gate.'

   b. kis   xulcat   manahelet   mešek   beyt   ha-rav   ha- civ`oni
      pocket.NOM shirt.GEN manager.GEN affair.GEN house.GEN the-Robbi.GEN the-colorful.NOM
       al   ha-šulxan   (Hebrew, cf. Shlonsky, 2004:1504)
       on the-table.GEN
      'The pocket of the Rabbi's household manager's colorful shirt on the table.'

   c. kitaabu wa qalamu wa maṣtaratu t-taalibi   wa l-mudarrisi
      book.SG and pen.SG and ruler.SG   the-student.SG and the-teacher.SG
      wa l-mudiir.i   (Arabic)
      and the-principal.SG
      'The student, teacher and principal's book, pen and ruler.'

For example, N-to-D and N-to-Spec approaches cannot account for the movements of the embedded head-GDCs (=genitive DP complements) in CSs like (2a & b). The head Ns of these CSs are embedded DPs, and have what I call "double functionality," in that they simultaneously function as heads once and as GDCs once more. To put it differently, the head-GDCs cannot move independently as they are assigned Gen Case by their heads. This means that they (and their specifiers) are 'frozen' in their base-generated/in-situ positions (cf. Shlonsky, 2004). It could also be taken as empirical evidence that such head-GDCs constitute 'phase spellout domains' which are inaccessible to any outside operation (I return to this issue in section 5).[3]

Though prosody, making use of syntactic incorporation, perhaps accounts for CSs like (1a & b), it leaves open accounting for CSs like (2c). Siloni (1997:53, 2001), for example, holds that the syntactic incorporation proposed by Borer (1988, 1996)

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[3] Note, however, that previous approaches presumably assume the *Null Hypothesis* to deal with CSs like (2a & b), i.e. what applies to CSs in their minimal forms applies to such CSs, which is not unproblematic as we will see in this article..

is not compatible with such structures. She provides the Hebrew example in (3), where a constituent is only coordinated with the GDC (but none with the head).

(3) harisat [[ha-muze'on   le-'omanut] ve- [ha-rexovot ha-smuxim lo
    destruction the-museum to-art   and-the-streets the-close to+it
    'The destruction of the museum of art and the streets next to it.'

Siloni argues that in CSs like (3) the coordinated structure can no longer incorporate with the head N of the CS "nor can one member of the coordinate structure (or its head) be extracted" because this will lead to violation of 'Coordinate Structure Constraint' (see also Doron & Meir, 2013).[4]

Further, remnant movement perhaps accounts for modified CSs like (1b) from Arabic or (4) from Hebrew.

(4) kisey   ha-xulca   ha-xadasa   ha-civ'onim
    pockets.M.PL the-shirt.F the-new.F   the-colorful.M.PL
    'The colorful pockets of the new shirt.'

As for (4), Shlonsky (2004:1505ff) argues that CSs like (4) is derived by raising "the entire construct state NP, namely [NP[N pockets] [DP the shirt [AP the new]]]... above the AP 'colorful'" (see also Shlonsky (2012) for recent conceptions on such issues).

However, remnant movement fails to account for Arabic CSs like (5), where the AP *l-žayyd-u* (the good), itself modified by the adverb *fiʕlan* (surely), raises independently of the whole CS.[5]

(5) našr-u   l-xabar-i   l-žayyd-u   fiʕl-an
    broadcasting-NOM the-news-GEN   the-good-NOM surely-ACC
    'The news's surely good broadcasting.'

In (5), the adverb *fiʕl-an* (surely) is base-generated in the Spec of AP *l-žayyd-u* (the good) (because it modifies it), and if we apply remnant movement, the resulting structure is (6) which is ungrammatical (see also Fassi Fehri, 1999).

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[4] Along these lines, Shlonsky (2004:1503, fn.39, see also my fn.17 below) observes that Siloni's observation on CSs like (3) "casts some doubt on the validity of Borer's (1996) … claim that construct formation is a morphological (i.e. word-formation) operation."

[5] The standard assumption is that AP modifiers are merged as Specs of the heads they modify. It is also assumed that Arabic and Hebrew are N-A (i.e. Noun-Adjective, but not A-N) languages (see also Fassi Fehri, 1999; Cinque, 1996, *et seq*, among other related work).

(6) *našr-u   l-xabar-i   fiʕl-an   l-žayyd-u
    broadcasting-NOM   the-news-GEN   surely-ACC   the-good-NOM

What is more is that no approach has tackled CSs like (7), where not only can the head N take the definite article *al-*, but also the embedded head-GDCs can take it, which is very productive in the language.

(7) al-faqiir-aani   r-raθ-i   θ-θyaab-i   ṣ-ṣaɣiir-aani
    the-poor-NOM.DL   the-dirt-GEN   the-cloth-GEN   the-young-NOM.DL
    'The two young poor (men) with the dirty cloth.'

In this article, I argue that phase approach is more adequate than the previous approaches to analyzing these CSs, accounting for a wider range of facts of Semitic CSs. My hope is that my proposal improves on the existing approaches to the phenomenon. Thus, the article proceeds as follows. In section 2, I outline the salient properties of the CS as indicated by the previous work. I will also introduce some CS properties for the first time, perhaps those that have been left open by the previous approaches. In section 3, I tackle the possibility that D is a nonnull head in CSs. In section 4, I examine the motivating forces of Semitic CS to be a KP (=Case phrase). In section 5, I present my proposal, accounting for simple, multi-embedded and complex CSs. Section 6 concludes the paper.

2. Properties of Semitic Construct State
In this section, I outline the salient properties of CSs as assumed by the previous approaches. Note that properties (8i-iv) have been tackled by almost all previous approaches (see e.g. Mohammad, 1988; Ritter, 1988, 1991; Borer, 1996, 1999; Fassi Fehri, 1993, 1999; Ouhalla, 1991, 2009; Benmamoun, 2000, 2003; Siloni, 1997, 2001, 2002, 2003; Shlonsky, 2004; Pereltsvaig, 2006; Alexiadou et al., 2007; Sichel, 2002, 2003; Kremers, 2003, Danon, 2001, *et seq*; Bardeas, 2009). The properties (8v-viii) are perhaps introduced for the first time.
(8).
(i) A CS mainly consists of two members, *a* and *β*, the former is the head and the latter is its GDC.
(ii) *β* is always lexically realized.
(iii) α can bear a θ-role of Associate, Patient/Resultant, Possessee and *β* Theme, Agent, Possessor
(iv) *β* always bears a Gen Case while α can be assigned any of the three Cases: Nom, Acc or Gen depending on the assigning head.
(v) α and *β* are not (necessarily) adjacent.
(vi) α and *β* can take the definite article.
(vii) α can be $\alpha_1, \alpha_2 \ldots \alpha_n$, and in this case $\beta_n = \alpha_n$
(viii) a_1 can coordinate with $\alpha_2 \ldots \alpha_n$, and β_1 can coordinate with $\beta_2 \ldots \beta_n$.

The property (8i) is instantiated in (9a).

(9a) kitaab-u   *(l-mudarris-i)
     book-NOM   the-teacher-GEN
     'The teacher's book.'

In (9a), *kitaab-u* (book) is the head N representing *a*, and *l-mudarris-i* (the teacher) is its GDC, representing *β*. (9a) also instantiates the property (8ii), that is, the GDC must be *lexically realized*. In this regard, the GDC has two types: either nominal as in (9a) or a pronominal clitic as in (9b), where the clitic *–ha* functions as the GDC of the head N *kitaab-u*.

(9b) kitaab-u*(-haa)
     book-NOM-her
     'Her book.'

As for the property (8iii), that is, the fact that the head N (or α) can bear a θ-role of *Associate, Patient/ Resultant, Possessee,* and the GDC (or *β*) *Theme, Agent* or *Possessor,* is exemplified in (10a-c).

(10) a. baab-u   sayyaarat-in
        door-NOM car-GEN
        'A car's door.'

     b. taşwiir-u   ʕaliyy-in[6]
        drawing-NOM   Ali-GEN
        'Ali's drawing'

     c. kitaab-u   t-taalib-i
        book-NOM   the-student-GEN
        'The student's book.'

A well-known fact of CSs is that the theta relationship holding between *a* and *β* covers the spectrum of θ-roles typically assigned by the head N to its GDC. The θ-role assigned by the head to its GDC can be *Theme/Agent, Patient/Resultant, Possessor,* etc. (cf. Siloni, 2001:129f). In (10a-c), for example, the GDCs *sayyaarat-in, ʕaliyy-in* and *t-taalib-i* (car, Ali and the student, respectively) bear

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[6] This type is known as deverbal CSs in which the head is known as maşdar (gerund). It should be noted here that this example is ambiguous between an *Agent* and *Theme* reading for the GDC ʕaliyy-*in*. However, I point out only the agentive reading.

the θ-roles of *Theme, Agent* and *Possessor*, respectively. As for the head N, it can bear the θ-role of *Associate, Resultant* or *Possessee*. These can be identified in (10a-c). For example, in (10a), the head N *baab* bears the θ-role of *Associate*. In (10b), *taşwiir-u* bears the θ-role of *Resultant*, and *kitaab-u* the *Possessee*. Interestingly, there is a matching relation between the θ-role of the head N and that of its GDC. For example, the θ-role of *Theme* meets *Associate*, *Agent* meets *Patient/Resultant* and *Possessor* meets *Possessee*.

Another property that could be identified from the examples in (10) is (8iv), that is, the GDC *always* bears a Gen Case assigned to it by its head, whereby the GDC gets 'frozen.' However, the head N can be assigned one of three Cases, that is, either Nom, Acc or Gen, depending on the external head (the assigner, possibly T/*v*/P), respectively. This is illustrated in (11a-c).

(11) a. qatl-u   l-ʔinsaan-i   laa   yajuuzu
        killing-NOM   the-human-GEN   not   allowed
        'Killing the humans is not allowed.'

     b. raʔay-tu   kitaab-a   t-taalib-i
        saw-I   book-ACC   the-student-GEN
        'I saw the student's book.'

     c. marar-tu   bi-ʔustaað-i   n-naħw-i
        passed-I   by-teacher-GEN   the-syntax-GEN
        'I passed by the teacher of syntax.'

The head Ns in (11a-c), namely *qatl-u, kitaab-a* and *ʔustaað-i* are assigned Nom, Acc and Gen Case, respectively. Case assignment depends on the function each has in each sentence. For example, in (11a), *qatl-u* functions as the subject of the sentence, and hence assigned a Nom Case by T, and so on.

What is common to all the above discussed properties is that they have been investigated and thoroughly discussed by a considerable number of linguists as noted above. Since the properties in (8v-viii) are perhaps introduced for the first time, I will tackle them in some more detail. Regarding the property (8v), it was argued (see e.g. Benmamoun, 2000, 2003; Fassi Fehri, 1999; Borer, 1996, 1999; Siloni, 2001, 2003) that nothing can intervene between the head N and its GDC, hence both constitute a prosodic unit.[7] Contra these views, there seems to be good

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[7] In fact, this assumption was based on some sort of evidence arising from stress, the retention of the feminine consonantal suffix *-t* (which is said to delete in word-final contexts and Free Genitive (FG), (see also Ouhalla 2009), and the deletion of the dual and plural suffixes *-ni* and *–na*, respectively (see also Kremers, 2003).

evidence that adjacency does not always hold. The evidence includes data from nonstandard as well as Classic Arabic. As for nonstandard Arabic, evidence comes from CSs like (12) from Yemeni Arabic (YA).

(12) al-şahn   l-kabiir   l-zijaaj
     the-dish   the-big   the-glass
     'The big dish (made) of glass/The big glass dish.'

In (12), the AP *l-kabiir* intervenes between the head *al-şahn* and its GDC *l-zijaaj*. In fact, structures like (12) are very productive in the language. Similar facts have been drawn by Ouhalla (2009:329). Ouhalla reports on facts from Spanish Arabic as (13) shows.[8]

(13) al-kās   al-şaγiir   al-fiđđa
   [the-cup.M the-small.M   the-silver.F]

The AP *al-şaγiir* in (13) intervenes between the head N *al-kās* and its GDC *al-fiđđa*. In fact, examples like (13) lead Ouhalla (2009) to argue against Liaison-like effect, which, he argues, favors N-raising analysis in CSs and NP-raising in FGs.

As for Classical Arabic, consider (14), where constituents of different syntactic categories intervene between the head and the GDC (AlSywti, HHGG, II: 348ff; see also Ibn Jinni, I: Al-Aboudi, 1985).

(14) a. ka-naaħit-i   yawm-an   şaxrat-in
        as-graver-GEN   day-ACC   rock-GEN
        'As a graver graving a rock one day.'

    b. "flaa tahsabanna ʔallah-a   muxlifa waʕd-a-hu   rusul-i-hi"
        no   think   Allah-ACC failing promise-ACC-his messengers-GEN-his
        'Do not think that Allah will fail His promise given to His messengers.'

    c "…taarik-u l-i-şaaħib-i"   (Hadith)
        leaving   to-me-friend-my.
        'Leaving my friend to me.

    d. haaðaa   γulaam-u [wallahi]   zaid-in

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[8] Consider also (i) an Arabic dialect spoken in North Africa (from Corriente, 1977:124, cited in Ouhalla, 2009:314), which is almost similar to (13 & 14).
(i) sāyir **al**-rāhibāt **al**-kunbānt
   [all the-nuns   the-convent]
   'All the nuns of the convent.'

this   boy-NOM   [swear by Allah] Zaid-GEN
'I swear by Allah that this is Zaid's boy.'

The adverb ya*wm-an* in (14a) intervenes between the head *naaħit-i* and the GDC *saxrat-in*. The DP *waʕd-a-hu* intervenes between the head N *muxlifa* and the GDC *rusul-i-hi* in (14b). In (14c), the PP *l-i* intervening between the head *taarik-u* and the GDC *ṣaaħib-in* and the parenthesis [wallahi] intervening between the head *ɣulaam-u* and the GDC *zaid-in*. The examples in (14) from Classic Arabic show clearly that the head N of a CS can be separated from the GDC, which means that adjacency does not always hold.

As for Hebrew, it is possible that a numeral can intervene between a head and its GDC, as (15a) shows (see Shlonsky, 2004). In addition, Siloni (2001) also provides examples, where ambiguous (nominal and adjectival) forms like *ha-ca'ir* intervene between the head and its GDC as in (15b, adapted from Siloni, 2001:240).[9]

(15) a. beyt   šloša   melaxim
        house three   kings
        'A house of three kings.'

    b. yaldey   ha-ca'ir   ha-gibor
       children the-young the-hero
       'The hero's young children.'

As for property (8vi), there is much consensus among researchers that the GDC in a CS can take the definite article. However, whether the head N can take it is controversial. In what follows, I provide strong evidence from Arabic and Hebrew, where the head N takes such an article. There is also good evidence that not only can the head N take such an article, but also the embedded GDC(s) can take it. I first tackle Arabic data (and return to Hebrew data). The fact that the head N of a CS can take the definite article *al-* comes from CSs like (16).

(16) al-faqiir-aani   r-raθ-i   θ-θyaab-i   ṣ-ṣaɣiir-aani
     the-poor-NOM-DL the-dirt-GEN the-cloth-GEN the-young-NOM.DL
     'The two young poor (men) with the dirty cloth.'

Although the head N *faqiir-aani* takes the article *al-* in (16), the construct is still grammatical. As it turns out, then, the grammaticality of the CSs like (16) casts some doubts on the assumption that the head N of a CS cannot take the definite

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[9] Note that (15a) could be considered a multi-embedded CS, in which the numeral is an embedded head-GDC. But since the main focus of this paper is nominal CSs, I will not address such CSs.

article *al-* (. (16) also provides strong evidence that not only can the head N take the definite article *al-*, but also the GDC takes it. The embedded head-GDCs *r-raθ-i* and *θ-θyaab-i* take the definite article *al-* (assimilated into *r-* and *θ-,* respectively) (see also the examples in (13) from Spanish Arabic reported by Ouhalla (2009), and (12) from YA). Participles, be they active as in (17a) or passive as in (17b) can take *al-* when they function as heads to CSs (slightly modified from Ibn Jinni's *Alxaşaaiş*, I:219-220, see also Wright, 1898; Alanbaari, 1997; Alshara'i, 2014; Al-Aboudi, 1985; Ibn Malik (III:73f; AlSywti, II: 348ff).[10]

(17) a. al-munfiq-aa   l-maal-i   li-wažh-i   illaah-i
       the-giver-NOM.DL   the-money-GEN   for-face-GEN   Allah-GEN
       'The givers of the money for the sake of Allah.'

   b. yuħtaram-u   l-muʕlim-uu   n-naas-i   l-ʔaxalaaq-a
      is-respected   the-teacher-NOM.PL   the-people-GEN   the-morals-ACC
      'The teachers who teach people morals are respected.'

The examples in (16) and (17) provide strong empirical evidence that the head Ns and the embedded head-GDCs can take the definite article. Such facts constitute considerable problems for almost all the existing approaches. To the best of my understanding, no one of the existing approaches can account for these striking properties of CSs.[11]

As it turns out, then, examples in (15) cast some doubts on the assumption that the head N cannot be separated from its GDC. Moreover, examples in (16 & 17) indicate that the head N can take the definite article *al-* in Arabic CSs. However, it should be noted here that the CSs in (16) and (17) are examples of the so-called *Idaafa γair ħaqiiqia* (non-true construct state). However, the fact that these constructions are CSs cannot be denied. It is widely assumed in the literature that

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[10] A google search renders about 18,000 pages which contain examples like the ones presented in (16 & 17). Traditional Arabic grammarians have also argued for the possibility of *al-* to be attached to the head N in CSs. For example, Ibn Malik (III:73f) mentions five contexts, where *al-* can be attached to the head of a CS.

[11] The assumption that the head of a construct state can take the definite article is also supported by adjectival CSs (ACSs). ACSs are construct states whose head and GDC are adjectives. Consider (i)
(i) 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-wažh-i
        the-woman.NOM   the-beautiful.NOM   the-face.GEN
        'The woman with the beautiful face.'
In (i), the head of the ACS as well as the GDC take the definite article *al-* (see also Siloni, 2002, for Hebrew ACSs, and Kremers, 2009, for Arabic ACSs).

this type of CSs allows the head N to take the definite article *al-*. This feature contrasts this type of CSs with the so-called *Idaafa ħaqiiqia* (true construct state), where the head N cannot take the definite article. For expository purposes, however, I will ignore this difference.[12]

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[12] The assumption that the head N in (true) CSs cannot take the (in)definite article was based on (in)definiteness spread (=IS/DS). However, IS/DS has been a matter of controversy and hot debate. The debated issue has been whether there is IS/DS at all. This is not merely confined to Semitics, but also includes some other languages like Romanian (see e.g. Longobardi, 1994, 1996; 2001; Dobrovie-Sorin, 2001, 2002). Some scholars hold that IS/DS does not take place in CSs. Some others argue that it takes place in some CSs, but not in others. For example, Fassi Fehri (1999:126ff) argues for the absence of this property in some CSs. He argues that there are CSs, where DS does not take place, providing empirical evidence for that. He also maintains that there is no even relation between DS and genitive Case assignment (different from others like Ritter, 1991; Siloni, 1997*, et seq*; Borer, 1988, *et seq*). Consider the data in (i) from Arabic.

(i) a. haaðaa ʔab-i
    this   father-my
    'This is my father'

  b. ʕaliyy-un rajul-u l-mawqif-i
    Ali-NOM man-NOM the-situation-GEN
    'Ali is the man of the situation.'

  c. kull-u   n-naas-i
    all-NOM the-people-GEN
    'All the people.'

  d. ʔiħda   l-qasaaʔid-i   mafquudat-un
    one-NOM the-poems-GEN.F missing-NOM.F
    'One of the poems is missing.

  e. kitaabat-u   l-xabar-i   sariiʕ-an xaɫaʔ-un
    writing-NOM the-news-GEN fast-ACC mistake-NOM
    'Writing the news fast is a mistake.'

  f. *kitaabat-u l-xabar-i   l-mutasrriʕat-u xaɫaʔ-un
    writing-NOM the-news-GEN the-hasty-NOM   mistake-NOM
    '*Writing the news the hasty is a mistake.'

Fassi Fehri (1993, 1999) argues that in (ia-f), DS does not take place in Arabic CSs. In (ia), for instance, the CS *ʔab-i* (my father) is a CS whose GDC is the clitic possessive pronoun *–i* (my), and the head is *ʔab* (father). Another fact that can be drawn from (ia) is that in Arabic when the subject is a Dem (which is inherently definite) in verbless sentences, only indefinite DPs function as predicates. The same holds also true of nominal Arabic CSs as (ib) shows, where, the CS *rajul-u l-mawqif-i* is the predicate of the sentence. Another piece of evidence against IS/DS comes from quantified constructs, where the quantifier is the head and the GDC is any other definite DP. This is illustrated from Arabic in (ic). Here, *kull-u* (all) cannot be said to be definite, simply because when it functions as a quantifier, it never takes the definite article. In addition, Fassi Fehri (1999) maintains that DS is also absent in Arabic partitive constructions like (id). Fassi Fehri (1999) maintains that certain types of deverbal CSs show no DS as shown in (ie & f), where the head N *kitaabat-u* (writing) cannot be modified by an AP modifier. Thus, modifying it with AP *l-mutasrriʕat-u* (the hasty) renders the CS ungrammatical. However, when the head N *kitaabat-u* (writing) is modified by an adverb *sariiʕ-an* (fast) as in (ie), it is grammatical. All these facts cast some doubts on the IS/DS assumption. There are those (see e.g. Danon, 2001) who argue that there is no DS at least of *semantic definiteness* value from GDCs to their head Ns. There are also those (see e.g. Dobrovie-Sorin, 2001, 2002; Heller 2002) who consider DS only a feature of specificity/uniqueness specific to possessivization. Some other

Let us now turn to Hebrew and the possibility of the head N to take the definite article *ha-*. The idea that the head N of a CS can take the definite article *ha-* in Hebrew has been addressed in some studies. For example, Danon (2008:139f) argues that in Hebrew, specifically Colloquial Hebrew (CH), it is very common that *ha-* is attached to the head N in CSs as in (18).[13]

(18) ha-aremat dapim   ha-zot
     the-pile   papers   the-this
     'This pile of papers.'

In addition, Siloni (2001:153f) points out that the assumption that the head N of a CS cannot take the definite article has to be rethought and explored more. She holds also that the existing justifications for the impossibility of the head to take the definite article seem to be untenable. She, thus, makes it clear that as far as CH is concerned, "there is an ongoing process relocating the article before the head of the construct." Differently from Danon, however, she asserts that there are some contexts where attaching *ha-* to the head N is obligatory but "sensitive to the position of the construct in the sentence." She provides (19) as an example of the obligatory use of the article *ha-* (presumably assimilated along with the accusative/definite object marker *et* into *ta-*).

(19) kvar   avarti   [ta-bdikat rofe][14]
     already passed ACC+the+examination physician

Siloni also provides empirical evidence from Hebrew, where the head Ns of CSs are modified by definite determiners (i.e. Dems) as (20) shows.

(20) a. ota tmunat praxim še-hizkarta   hi xadaša
        that picture flowers   that-mentioned(you) is new

---

authors (see e.g. Alshara'i, 2014, Alanbaari, 1997, Sichel, 2002, 2003) argue that there is no IS/DS. Furthermore, traditional grammarians, for instance, Ibn Jinni (322-392, in his book *al-xasaaʔis* assumes that the inability of the head N to take *al-/–n* is due to a factor underlying the formation of the construct itself. This factor may be the association of the GDC with the head N. For modern Arab linguists, who support this assumption, see (e.g. Alshara'i, 2014, Alanbari, 1997; Wright, 1898, see also Almansour (2012) who claims that the head N in CSs is always indefinite).

[12] It is worth mentioning here that the term "DP-head" should not be confused with the technical term "head" which heads a maximal projection. Since the CS has two constituents, viz. the head and its GDC, I will continue to use the term "DP-head" to refer to the head of a CS, but without any theoretical implications.

[13] My attention has been drawn to this very example by Elizabeth Ritter, thanks to her.

[14] In the examples presented in (19 & 20), translation is not provided in the source these examples have been taken from.

   b. tmunat praxim zot hi xadaša
      picture flowers this is new

In (20a) and (20b), the head Ns are modified by the demonstrators *ota* and *zot* (that and this, respectively), though their GDCs are indefinite. She argues that such definite CSs function as "subjects of predicational sentences" (Siloni, 2001:158). In (20b), the Dem occurs prenominally, but in (20a) it occurs postnominally.

Property (8vii), that is, the fact that a CS can have multiple heads and GDCs, is thoroughly discussed in subsection 5.3. The property (8viii), namely the number of heads and GDCs can be notoriously coordinated as exemplified in (2c), reproduced here as (22) for convenience, I will leave for future research.

(22) kitaab-u wa qalam-u wa maṣtarat-u t-taalib-i   wa l-mudarris-i   wa l-mudiir-i
     book.SG and pen.SG and ruler.SG   the-student.SG and the-teacher.SG and the-principal-SG
    'The student's, teacher's and principal's book, pen and ruler.'

3. D as a nonnull Head

The assumption that the head N can take the definite article (in Arabic and Hebrew (cf. (14-20)) suggests that D is not null as was assumed in the previous approaches. Given this, it may well be argued that the definite article *al-/ha-* is an independent head occupying D. As for Arabic, there is good evidence from YA that the definite article *al-* can be separated from the head it is attached to as illustrated in (23b).

(23) a. r-ražul   ṣ-ṣaaliħ
        the-man   the-good
       'The good man.'

     b. al-ɣair   ṣaaliħ
        the-not   good
        'Intended: The one who is not good.'

In (23a), *al-* (assimilated into ṣ-) is attached to the A *ṣ-ṣaaliħ* (the good). In (23b), however, *al-* has been separated from the head A by the negative particle *ɣair* (not). That the negative particle *ɣair* can separate *al-* from the head N is controversial. The controversy concerns its status, that is, whether it is a noun having the status of a head N in a CS, or a particle. However, it is likely that *ɣair* is a negative particle, and not a noun. One piece of evidence supporting this is the fact that *ɣair* cannot be modified as illustrated by the ungrammaticality of (24, a nonconstruct DP).

 (24) *al-ɣair   ṣ-ṣaaliħ
        the-not the-good

The ungrammaticality of (24) indicates that the word *ɣair-u* is not a noun, but rather a negative particle. If it were a noun, it would have been able to be modified by the A *ṣ-ṣaaliħ*, compared to (23a) which is grammatical. In other words, if *ɣair* were a noun, it would have behaved like the noun *r-ražul* in (23a), which is modified by the same A.

Another strong piece of evidence that *al-* can be separated from the head N comes from a well-documented nominal structures in almost all Arabic vernaculars. Consider (25).

(25) al-laa-ʔinsaanya   (ṣifa   maðmuuma)
      the-not-humanity (quality disliked)
      'The inhumanity (is a disliked quality).'

In (25), the negative particle *laa-* (not) intervenes between *al-* and the head N *ʔinsaanya*. As it turns out, then, D can be argued to be an independent head in CSs.[15]

Let us now turn to Hebrew. Some scholars (e.g. Sichel, 2002; Shlonsky, 2004) argue that the definite article *ha-* is an independent head inserted/base-generated in D. For example, Shlonsky (2004) argues that *ha-* is the head of the DP and that nothing merges with it.[16] He also ascertains that the definite article in Semitic parallels the article in languages like English, and that the article/determiner and the head N "are not in the same syntactic head position at S-structure" (Shlonsky, 2004:1474ff & fns.10 & 18).[17] In addition, Sichel (2002) argues that in Hebrew CSs, *ha-* is an independent element, building her conclusion on two facts: i) an AP functioning attributively can intervene between *ha-* and the head N, as in (26a) and ii) a negative particle can intervene between *ha-* and the head N as in (26b) (Sichel, 2002:303).

(26) a. Ze kvar [ha-pakid ha-**legamrey** mebulbal ha-revi'i] Se-dibarti   ito   hayom
          this already the-clerk the-**completely** confused the-forth that-talked.I with-him today
          'This is already the forth completely confused clerk I've talked to today.'

---

[15] Note that structures like (23-25) occur also in Modern Standard Arabic, a language used in press, TV, etc. Such structures include *al-laa-tamaaθul-u* (the asymmetry) *al-maaʔa-u al-ɣair-u ṣaaliħ-in li-š-šurb-i* (the water not suitable for drinking), etc.

[16] Shlonsky (2004:1475) observes that "[t]he N→ D incorporation theory is thus not only vitiated by theory-internal considerations but invalidated by the absence of string adjacency between the two heads."

[17] For a comprehensive discussion and more data from Hebrew, see Glinert (1989) and Morth (1998:171f, cited in Shlonsky 2004:1474), for data from different Arabic dialects, where constituents of different syntactic categories intervene between D and N).

b. [ha-mis'ada   ha-**lo**   kSera   ha-yexida be-bnei brak] nizgera   ha-Savu'a
      the-restaurant the-**neg** kosher the-sole   in-bnei brak   closed   this-week
      'The only non-kosher restaurant in Bnei Brak closed this week.'

Thus, I assume, following Shlonsky and Sichel, that *al-* is an independent head. If this is true, I assume that they are free determiners in the CSs. And if this is on the right track, it follows that the CS consists minimally of two independent DP layers: one belonging to the head and the other to the GDC.

To recapitulate, since the definite article can be attached to the head N of a CS, on the one hand, and be separated from such a head by a constituent of some sort, on the other hand, it is expected that D is not null. This suggests otherwise that the head N is a full DP. Given this, I will assume that a Semitic CS consists minimally of two DPs: the head and its GDC. I also assume, following Richards (2010) and Walter (2005), that the DP-head and the DP-GDC have to be linearized before Spellout, "so that they are not linearized in the same Spell-Out domain" (Richards, 2010:71f).

4. Genitive Case: a motivating force for KP in CSs

One central assumption to KP is that it is an extended projection of the noun phrase, given "the general notion of Case as a licensing feature of the noun's extended projection" (Danon, 2011:312, see also Lamontagne & Travis, 1987; Loebel, 1994; Bittner & Hale, 1996; Lyons, 1999; Richards, 2010; Walter, 2005; Fassi Fehri, 2012; Alexiadou et al., 2007, and related work cited therein). For example, Lamontagne & Travis (1987) argue that KP is the extended projection of a noun phrase, crucially required in languages like Finnish and Russian, where the verb assigns more than one Case feature to the object position. In Finnish, for example, Lamontagne & Travis (1987) argue that these two Case features are [+accusative] and [+partitive].

In fact, the issue is more than that. In these languages, Case assignment is related also to some other features such as referentiality manifested in features like [±Definite], [±Human], etc. Consider (27, from Belletti, 1988:1, see also Loebel, 1994:39).

(27) a. Han pani kirja-t poyda-lle
          he put book-ACCPL table-ALL
          'He put the books on the table.'

      b. Han pani kirjo-j-a p6yda-lle
          he put book-PL-PART table-ALL

'He put (some) books on the table.'

The transitive verb *pani* in Finnish assigns two Case features, hence the DP-object can be marked either with Acc or Part Case. If Acc Case is assigned as in (27a), the object has a definite reading. If, however, Part Case is assigned, the object has an indefinite reading as in (27b). One direct stipulation is that the verb is specified in the lexicon with two separate cases (Belletti, 1988). However, Loebel (1994) argues that this stipulation is not needed if we just assume that a noun phrase is headed by two functional categories, namely K for *Case* and D for *Determiner*. It is also suggested that the Case feature is transmitted from the verb into KP, and therefore, to K (Loebel, 1994). This is due perhaps to the assumption that "one primary role of functional categories is to bear and/or transmit features and that all other attributes that they may have follow from this fact" (Lamontagne & Travis, 1987:72, see also Loebel, 1994:43). As for D, Loebel (1994) associates it with the feature [±Definite] which signals referentiality.[18] As for the structural position which KP occupies, these authors propose that KP dominates DP.[19]

Lyons (1999) argues for KP in the nominal projection. In fact, Lyons prefers K to be associated with Case, and D with (in)definiteness. Like the above cited authors, Lyons assumes KP to be the highest category in the noun phrase projection, that is, KP dominates DP (see Lyons 1999:395-399), in contrast to the view held by some others, as we will shortly see.

Bittner & Hale (1996) argue that KP projection applies only to unmarked Cases. They apply such KP-analysis only to non-nominative arguments, considering nominative a 'marked Case.' As far as Gen Case is concerned, Bittner & Hale (1996:61f) provides examples from Hindi, where I/T assigns the ergative Case, as in (28a,b), but D assigns Gen Case, as in (28c).

(28) a. raam-*ne* kuttoN-ko khariid-aa   hai
      R.-*ERG* dogs-ACC buy-PRF.SG.M be.PRS.3SG
      'Ram has bought the dogs.'

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[18] This is perhaps the reason behind Giusti's (1995) proposal that Case and referentiality features are realized on D.

[19] See also Travis & Lamontagne (1992) for an empty K in the projection of noun phrases. They perhaps based their proposal on null C by analogy with the clausal domain as in (i) (from Lamontagne & Travis, 1986:57, see also Loebel, 1994:42).
(i) a. John believes (that) Mary will win.
   b. John believes wholeheartedly *?(that) Mary will win.
They argue that in the absence of intervening materials, an overt C is optionally realized, but when there is an intervening material between the matrix verb and the subject of the embedded clause, this C must be realized.

b. raam-*ne* kele   khariid-e   haiN
   R.-*ERG* bananas(M)$_i$ buy-PRF.PL.Mi be.PRS.3PLi
   'Ram has bought the bananas.'

c. raam-*ke* baiTh-ne-par   maaN-ne   us-ko   khaanaa diy-aa
   [R.-*GEN*$_i$ sit.down-INF.SG]-LOC mother-ERG him-ACC food(M)*j* give-PRF.SG.M$_j$
   'When Ram sat down, mother gave him food.'

Like Lamontagne & Travis (1987) and Loebel (1994), Bittner & Hale (1996) conclude that DP projection (alone) cannot handle these facts cross-linguistically.

Another analysis concerning the proposal of KP in genitive noun phrases is Abney's (1987). Abney argues that in English possessive noun phrases like (29) KP is the functional category which may account for Gen Case assignment in such structures (from Abney 1987:103).

(29) *Caesar's* destruction of the city

Abney also proposes KP in noun phrases as in the case of Turkish possessive gerundive noun phrases (see Abney 1987:159). However, unlike other proposals noted above, Abney assumes that KP occurs in Spec-DP (see also Alexiadou et al., 2007:153).

Following Abney, Carstens (2000, 2001) argues also for KP in genitive noun phrases in Bantu and Afro-Asiatic languages like Swahili. Carstens argues that DP-analysis to concord in 'of' constructions imposes several problems for *Agree* relation. This is due perhaps to the fact that 'of' agrees with the head noun, rather than with its apparent complement (Carstens, 2001:154). Thus, he argues for KP, specifically for this particular structure, holding that in 'of' constructions "[s]ubject and theme arguments …are KPs" (Carstens, 2000:331). However, he assumes KP to be posited between DP and NP.[20]

Perhaps the most closely related proposals to our analysis are developed by Walter (2005) and Richards (2010). For example, Walter argues that Semitic CS is a KP, dominating DP. She hypothesizes that K is associated with a Gen Case feature. Based on Kayne's (1994) *linearization axiom*, and Richards's (2010) *Distinctness Constraint* (DC), Walter assumes that the CS-KP two DPs have to be linearized before Spellout. As we will see in the next section, since a pair like <DP, DP>

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[20] Note that in other constructions, Carstens also posits the presence of FP instead of KP. Another proposal of FP as a functional projection (dominating DP) is advanced by Giusti (1995).

cannot be linearized, Walter (as well as Richards (2010)), assumes the deletion of a function projection from one of these two constituents as a linearizing mechanism. For example, removing the DP layer from the head, making it an NP, would result in the pair <NP, DP> which is linearizable.

However, the fact that the head N of a CS can take the definite article in both Arabic and Hebrew, as we have seen in the previous sections, makes this possibility not an option (see examples in 16 & 17).[21]

Note that unlike in Finnish, Russian, Hindi, etc., where the KP is presumably necessitate by the fact that the verb assigns two Case features, Walter's postulation of the existence of K(P) in Semitic CSs perhaps gains support from the unchangeability of Gen Case feature. The fact that the Gen Case feature in CSs is unchangeable, regardless of the Case the head may have, is illustrated in (11), reproduced here as (30) for convenience.

(30) a. qatl-u   l-ʔinsaan-i   laa yajuuzu
         killing-NOM the-human-GEN not allowed
         'Killing the humans is not allowed.'

   b. raʔi-tu   kitaab-a   t-taalib-i
       saw-I   book-ACC the-student-GEN
       'I saw the student's book.'

   c. marar-tu   bi-ʔustaað-i   n-naħw-i
       passed-I   by-teacher-GEN the-syntax-GEN
       'I passed by the teacher of syntax.'

For example, the head has different Cases in (30a-c), namely Nom, Acc and Gen. The GDC, namely *l-ʔinsaan-i, n-naħw-i* and *t-taalib-*i, is (and always) assigned a Gen Case. In other words, the CS as a whole is assigned two Cases. The first Case is assigned to the head by an external lexical head: T, *v* or P, and the second is (and always) a Gen Case (see also Shlonsky, 2012:267). In traditional analysis of the phenomenon, it was argued that the second Case is assigned by the head to its GDC (see e.g. Fassi Fehri, 1993, 1999; Ritter, 1988, 1991; Siloni, 1997).[22]

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[21] Regardless of the mechanism Walter assumes for these two constituents to linearize, her proposal, in addition to that of Richards (2010), are among the inspiring sources of the proposal I am articulating here.

[22] In N-to-D approach, for example, it was assumed that the head N acquires the ability to assign Gen Case from D by virtue of raising to it.

As it turns out, then, it seems very much tempting to speculate the existence of K(P) in Semitic CSs, (solely for Gen Case feature). I assume, following Walter (2005:23f), that the head K (of KP) carries, or is specified for the feature [GEN].[23]

5. Semitic Construct State: A Phase Approach

Minimalism sees syntax as a computation "procedure that arranges and rearranges items taken from the lexicon according to their properties with a view to meeting the requirements of Full Interpretation" (Boeckx, 2003:2). Following Chomsky (1995, *et seq*, Boeckx, 2003), I will refer to the terms 'arranges' and 'rearanges' as *Merge* and *Move*, respectively, as two core operations. The former merges Lexical Items (LIs) and forms linguistic objects, and the latter moves them if necessary in the derivation, based on the intrinsic features of these LIs. Merge is basically related to immediate containment, sisterhood and c-command (see Chomsky, 2001:3; Boeckx, 2003:2), and *Move* is necessitated by a feature satisfaction. I will also assume, following (Chomsky, 2000, 2001; Boeckx, 2003), that the intrinsic features are encoded in LIs if they are in relations, and these relations are defined over the most core operation, i.e. *Merge*. Within that space, lies another core operation, i.e. *Agree,* which 'systematizes' the interaction between a probe (usually functional) and a goal (usually lexical).

Further, the limitations of the short-term memory of storing information lead to proposing Multiple Spell-Out and Merge-over-Move hypotheses (see Uriagereka, 1999, see also Chomsky, 2000, *et seq*; Matushansky, 2005; Abels, 2012; Bruening, 2013; Citko, 2014; Legate, 2003). These authors, thus, argue that syntactic computation (or otherwise derivation) proceeds in phases. According to Chomsky (2000, *et seq*), a phase is a unit of syntactic computation that can be sent to the interfaces, as an independent syntactic chunk. He argues that this mechanism allows for reducing the computational burden placed on the language faculty. Thus, taking the computational complexity to simply mean that the number of maximal projections in the search space must be limited, it seems that CSs (and DPs in general) are phases. This is due perhaps to the fact that CSs can have an unlimited number of iterated (or embedded) CSs as in (2-7). This suggests that at some point CSs must exhaust the available memory resources (see also Matushansky, 2005; Legate, 2003).

Recall from (section 3) that a Semitic CS in its minimal form has two DPs, that is, the head DP and its genitive DP complement. I assume, following Richards (2010), that these two DPs have to be linearized before undergoing transfer to PF and LF

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[23] Note that I am following Walter (2005) and Richards (2010) in assuming that KP is the extended projection of the whole CS and not, for example, every constituent of the CS has an extended projection KP of its own.

interfaces. However, being of the same type, that is, <DP, DP> gives rise to violation of DC on linguistic objects of the same type. The DC is formulated in (31, Richards 2010:5).

(31) DC
If a linearization statement <*a, a*> is generated, the derivation crashes.

(31) simply states that a linearization statement <*a, a*> is only interpretable if both constituents are distinct from each other. This, in fact, prevents the (two) CS constituents (i.e. the head DP and its GDC) to linearize, because they are adjacent and of the same type. In other words, linearization of such two DPs is not possible, because a DP precedes itself in <DP, DP> sequence, or more formally, "another in which one DP asymmetrically c-commands another within a Spell-Out domain" (Richards, 2010:127).[24]

One way out of this, as suggested by Richards (2010), is to assign the two DPs different indices, or allowing the linearization statement to refer to the contents of the two DPs (<DP(kitaab-u), DP(ŧ-taalib-i)> (in 32) below), or to their positions (<DP in specifier of XP, DP complement of X>). However, all these ways do not satisfy (31) due to the fact that they all end in the pair <DP, DP>, which is again uninterpretable. The reason, as Richards points out, is that these two DPs appear as self-contradictory to the linearization algorithm.

Another mechanism suggested by Richards is considering Case a distinguishing property that distinguishes the head DP from its GDC, consider (32).

(32) kitaab-u   ŧ-taalib-i
     book-NOM   the-student-GEN
     'The student's book.'

In (32), the head DP *kitaab-u* is distinguished from the GDC *t-taalib-i* by means of Case. While the former has Nom, the latter has (always) Gen Case. Given these facts, Richards (along with Walter) concludes that unlike Irish, where "Case may not function as a means of linearization" (Richards, 2010:73), Arabic "does distinguish nominative and accusative case, perhaps we can take this as evidence that in Classical Arabic [(and SA)] K is a phase head" (Walter, 2005:12, Richards, 2010:211).

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[24] Regarding these among other issues, Chomsky (2000, 2001) holds that when trees are generated by the syntax, they do not specify full information about linear order, and that the spell-out operation fully linearizes the nodes of the tree as one of the tasks performed by it.

As for Hebrew, it does not have Case markers to distinguish nominative from accusative Case. However, the fact that the accusative/objective marker (OM) *et* must precede definite accusative objects as in (33) indicates that Case can be used as a distinguishing property in this language, the same way it is in Arabic.

(33) raʔa-ti et ha-mora
    Saw-I OM the-teacher
    'I saw the teacher.'

Thus, following Richards (2010) and Walter (2005), I propose that *a CS is a phase KP headed by K, whose Spec (i.e. Spec-KP), is an escape hatch, and the two DPs are K's domain* (see (35) below). For linearization to take place and for DC to be satisfied, I propose (34) as an *Extract Mechanism* (EM) for a CS in its minimal form.[25]

(34) EM
Extract every DP-head to every assembled KP's escape hatch.

(34) states that when a KP phase is assembled, the DP-head has to exit the domain of K, and raise to K's escape hatch. This is further illustrated in (35).

(35)
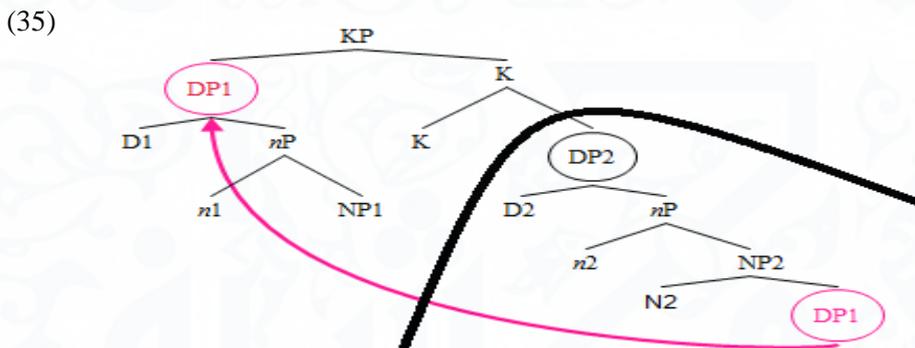
As is clear in (35), the DP1 (i.e. the head) exits K's domain to K's escape hatch (i.e. Spec-KP). Still however, if a CS is a phase KP headed by K, issues as to what features K has, how it projects, how K's [GEN] feature is valued in K-internal structure, how *n*P is postulated, among others, need to be shed light on. I tackle these in the subsection to follow.

5.1. K-Projection

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[25] See also (Gavruseva, 2000; Campbell, 1996; Kremers, 2003; Longobardi, 2001) who posit that DPs also have escape hatches.

Recall that KP is a projection meant solely for Gen Case in CS. It follows that K has the feature [GEN]. Further, since K is a phase head, there should be some other features as characteristic to phase heads in general (see also Chomsky, 2008). I hypothesize that K in CSs has the set of features presented in (36).

(36) {[$u\phi$; GEN; uD]}

As for ϕ-features, I assume, following Chomsky (2001, 2008), that K is ϕ-*complete*. It also follows that K is presumably the locus of ϕ-features, and that it presumably transmits those features to D, as "transmission of the *Agree* feature should be a property of phase-heads in general, not just of C" or v*" (Chomsky, 2008:148). Put differently, D should inherit *Agree* features from K (in the syntax) in the same way T inherits *Agree* features from C. The assumption that K has a [GEN] feature has been borne out. This [GEN] is unvalued (and uninterpretable) on K, but valued (and interpretable) on the GDC. Finally, the feature [uD] signals the c-selectional property of K, i.e. it selects a DP as its complement.

Given the parallelism between the clausal and nominal domains assumed by several proposals (see e.g. Bittner & Hale, 1996; Richards, 2010; Carstens, 2000, 2001; Walter 2005; Fassi Fehri, 2012; Alexiadou et al., 2007; Benmamoun, 2000, 2003), I assume that KP parallels CP, DP parallels TP and VP parallels NP. I also take *n*P as a thematic-oriented functional projection headed by the light *n* as an outer projection of the NP, where *n* "selects and θ-marks a possessor or agent argument" (Carstens 2001:154, see also Sichel, 2002, 2003).

The mechanism in which K projects is as follows. The *n1* merges with NP1, projecting into *n*P1. *n*P1 in turn merges with D1, projecting into DP1. D1, as assumed here, inherits ϕ-features from K. These features, in addition to [DEF], are unvalued. D then probes for a match, and this match is found in NP1, which has these features valued. Therefore, an *Agree* relation is established between both, the result of which is valuing, and deleting the unvalued features of D1. The value of the [DEF] depends on the [DEF] value of the head N. In other words, if the [DEF] feature of the head N is [+Def], it will be the same. If, however, it is [-Def], the value of D will be as such. Further, NP1 has a Case feature which is still unvalued, and needs to be valued and deleted. This makes it active and probe for a match, but it cannot be valued in this stage of the derivation, as there is no head carrying this value in this stage.[26] The DP1 merges with N2, projecting into NP2. Another Merge operation takes place, where NP2 merges with *n*2 projecting into *n*P2 which

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[26] As far as Agree is concerned, when it is established between two nodes, it is not necessary that every unvalued feature can be valued in this particular stage of the derivation, only if it can, if not, however, valuing this feature can be 'delayed' to a later stage in the derivation (Chomsky, 1995).

in turn merges with D2, projecting into DP2. The same *Agree* operations taking place between D1 and NP1 are also expected to take place between D2 and NP2 (cf. Almansour 2012).

Further, K has the feature [*u*D], it selects DP2, merging with it, and projecting into KP. K has the feature [GEN] unvalued, but this feature is valued on DP2.[27] It follows that an *Agree* relation is established between K and DP2, the result of which is valuing and deleting K's [GEN] feature. The whole process is summarized in (37).

(37)
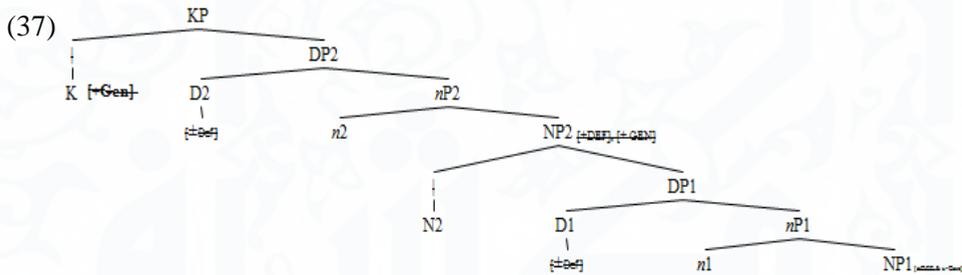
Given the Merge operation, merging DP2 and K, the phase KP is assembled (i.e. constructed). It follows that the phase head K will trigger Spellout of its complement, namely DP2. However, the phase KP contains two similar nodes, that is, DP1 and DP2, which cannot be linearized, because of violating the DC in (31) (i.e. the violation of DC bans the K's domain to be spelledout). However, applying (34), the lower DP, namely DP1 (the head of CS) will exit K's spellout domain, targeting Spec-KP (K's escape hatch). K then shields DP2 it dominates from linearizing 'with a higher instance of D' (see Richards, 2010:71f). Hence DP2 can be transferred to PF and LF interfaces for processing, thus spelledout. This is shown in (38).

(38)

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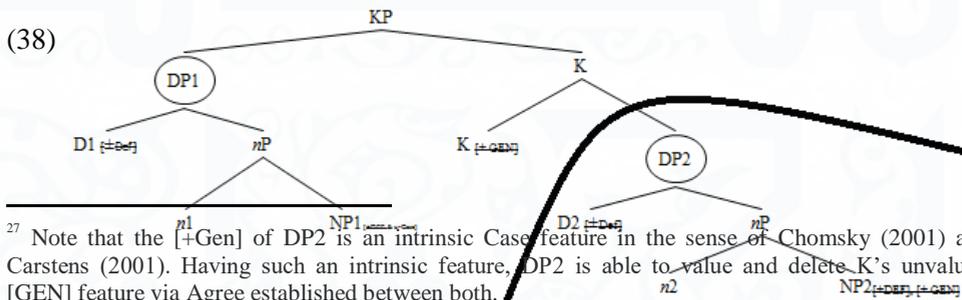
[27] Note that the [+Gen] of DP2 is an intrinsic Case feature in the sense of Chomsky (2001) and Carstens (2001). Having such an intrinsic feature, DP2 is able to value and delete K's unvalued [GEN] feature via Agree established between both.

Given the standard assumption that the head of a CS is marked with the default Nom Case (i.e. in case the CS is used in isolation, see e.g. Kremers, 2003; Fassi Fehri, 1999; Shlonsky, 2004; Pereltsvaig, 2006), the KP in (38) is transferred to PF and LF interfaces for processing, and hence spelledout. On the other hand, given our assumption so far that the head of a CS can take one of three Cases, depending on the assigning head, the DP1's Case feature will be valued as a 'by-product' of *Agree* established between DP1 and an external head (possibly T/v, see also Danon, 2011; Shlonsky, 2012)). In the following subsection, I tackle CSs functioning as subjects in Arabic and Hebrew.

5.2. Simple CSs

Given our assumption that the head of the CS has an unvalued Case feature, and that valuing this feature depends on the assigning head, it remains unvalued until it enters an *Agree* relation with such a head. I first apply the proposal to Arabic CSs, exemplifying T as the external assigning head. I consider Arabic data representing VSO order (and return to Hebrew data, representing SVO one below) as illustrated in (39a) whose derivation is illustrated in (39b).[28]

(39a) žaaʔ-a   mudarris-u   l-ħasuub-i   musriʕ-an
       came   teacher-NOM the-computer-GEN fast-ACC
       'A teacher of the computer came.'

(39b)
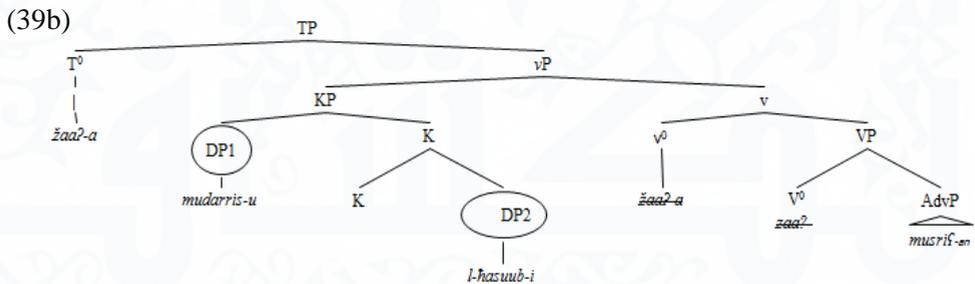
Thus, in (39b), after DP1 exits K's domain, targeting Spec-KP, and after the DP2 is spelledout, the KP is base-generated in Spec-vP.[29,30] The vP merges with T⁰

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[28] I will exemplify only CSs assigned Nom Case by T. For how *v* and P assign Acc and Gen Case to CSs, see examples in (30b & c).

[29] I use vP here as referring to v*P and indicate where it is a phase and where it is not.

projecting into TP. Being affixal, T^0 triggers V *žaaʔ-a* (came) to raise and adjoin to it, through v^0 (presumably for HMC (=Head Movement Constraint, see Travis 1984)), to acquire tense. Having unvalued ϕ-features, T^0 probes its 'closest' c-command domain for a local match which is found in DP1 *mudarris-u* (a teacher, i.e. the head of the CS). T^0 enters an *Agree* relation with DP1. Hence the unvalued features of T^0 and *mudarris-u*, are valued, and then deleted. In addition, T has no EPP, and so will not trigger the KP (the subject) to raise to its Spec.[31]

The *v*P here is not a phase, because the V *žaaʔ-a* (came) is intransitive. Since v^0 is not a phase head, it is not a probe. Consequently, the VP (i.e. its domain) will not be transferred at this point of derivation.

As for θ-assignment in (39), the θ-role *Theme* carried by the NP2 *l-ħasuub-i* (the computer) is (and always) valued by *n*2 in their local search space. The θ-role *Associate* carried by the NP1 *mudarris-u* is (but not always) valued by *n*1, because *v* here lacks this feature (it is not a phase head).[32] The whole sentence is now transferred to PF and LF for processing, and hence spelledout.

Let us now turn to Hebrew. Consider (40a) whose derivation is (40b).

(40a*)* tošav   ha- štaxim   bana beyt   gabol
       resident the-territories built   house big
       'A resident of the territories built a big house.'

(40b)

Being the subject of the sentence, the KP *tošav ha-štaxim* (a resident of the territories) in (40b) is base-generated in Spec-*v*P, where the θ-role of *Agent,* carried by its head N2 *tošav* (resident), is valued by its parallel one encoded in v^0. Note that this θ-role is not valued by *n*1, but rather by v^0 (i.e. a phase head). However, like Arabic the θ-role of *Associate* carried by the GDC *ha-štaxim* (the territories) is (and always) valued by *n*2. T^0 probes its 'closest' c-command for a match, which is found in DP1. An *Agree* relation is established between T^0 and DP1, the result of which is valuing the unvalued features of both. Finally, T^0 attracts KP to raise to its Spec to satisfy T's EPP (by virtue of being a SVO sentence).

5.3. Multi-embedded CSs

Multi-embedded CSs as presented in (41) are those recursive CSs whose internal structure is similar to multiple embedded CPs (see property (8vii). Given this, and if, as held so far, embedded head-GDCs are assigned Gen Case by their heads, it follows that such heads cannot be extracted independently (of their heads). Consequently, (34) may not be available in multi-embedded CSs like (41).

(41) bayt-u   ħaars-i   l-madrasat-i
     house-NOM   guard-GEN   the-school-GEN
     'A house of a guard of the school.'

In (41), the CS has three DPs, and is well-formed, though these DPs are adjacent. The embedded DP *ħaars-i* functions as a GDC of the head *bayt-u,* and a head of the GDC *l-madrasat-i.* If this is true, it follows that the head-GDC *ħaars-i* cannot raise independently of its head *bayt-u,* given the fact that the former is 'frozen' (by virtue of being assigned a Gen Case by the latter (see also Shlonsky, 2004:1488f). This suggests that no linearization would take place, and the DC in (31) is violated. To overcome this challenge, let us assume that in multi-embedded CSs, every embedded CS is a phase KP embedded within a large one, which in turn is embedded within a larger one, and so on. Hence I propose *Multiple Extract*

Mechanism (=MEM) in multi-embedded (and complex CSs), and formulate it in (42), for linearization to take place, and the DC in (31) to be satisfied.

(42) MEM
Extract every completed KP to every assembled KP's escape hatch.[33]

(42) simply states that in multi-embedded (and complex) CSs the lower completed KP (i.e. CS) has to be extracted out of the domain of a (higher) head K, when this (higher) KP is assembled. This is required for linearization to take place, and for the domain of this (higher) KP to transfer to the interfaces, taking into account the possibility of 'iterating extract.'[34] The notion 'iterating extract' explicitly implies that there are successive cyclic movements (=SCMs) involved to the edges of CSs. This property gives *CSs the status of phases*.

Consider now the derivation of (41) in (43).

(43)
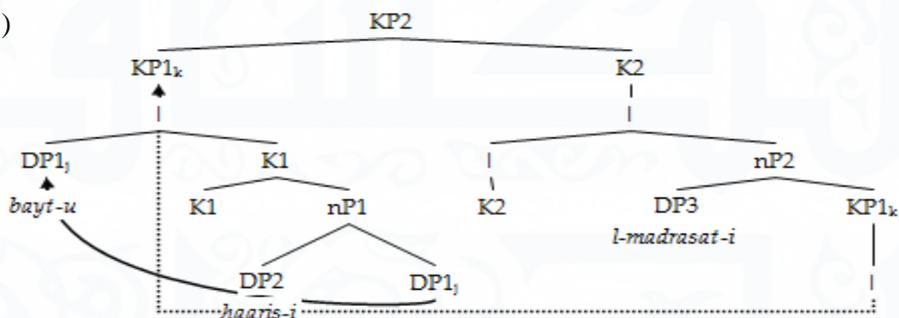
In (43), there are three DPs, but two phases. KP1 consists of the head DP1 *bayt-u* (a house) and its GDC, namely DP2 *ħaars-i* (guard). However, the DP *ħaars-i* (simultaneously) functions as a head once and as a GDC once more. In that it functions as a GDC to the head *bayt-u,* and as a head to the GDC *l-madrasat-i*. This implies that an embedded head has a "double functionality." Since DP1 *bayt-u* functions as the head to DP2, it undergoes an extraction operation to KP1's escape hatch, and hence satisfying (34). When KP1 is completed, it functions as if it is the head of DP3. The latter in turn functions as a GDC *per se*. KP1 is then extracted to Spec-KP2.

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[33] A phase *a* is assembled when its domain is sent to interfaces, and when it is completed, the whole of it is sent to interfaces for processing, and hence spelledout.

[34] Following Moro (2000), Richards (2010:88) applies DC to phases. He proposes moving a constituent to exit the Spellout domain to avoid violating the DC in linearizing two nodes of the same type.

It turns out, then, that the extraction of KP1 to Spec-KP2 in (43) entails that KP1 behaves like the head of DP3. It follows that *these head-GDCs are 'spellout domains' and so, it is possible to argue that they move, but as parts of the KPs including them, hence conforming to PIC*, and satisfying MEM in (42).

Considering 'the double functionality' of embedded heads in (41) in terms of Set Theory, there seems to be an intersection relation among such DPs. Let the DP-head be a and the DP-GDC β, then, a functions as the head to β. It follows that a sum (i.e. a construct) of a and β is a CS/KP. In a multi-embedded CS, then, a sum of $a1$ and $\beta1$ (i.e. KP1) will function as the head of $\beta2$, and $\beta1$ and $\beta2$ (i.e. KP2) will function as the head of $\beta3$, and so on. This relation could possibly be expressed by the intersection formula in (44).

(44) KP2∩KP1= $\beta1$

If (44) is true, then, $\beta2$ and $\beta3$ (i.e. KP3) will function as the head of $\beta4$, and $\beta3$ and $\beta4$ (i.e. KP4) will function as a head of $\beta5$ and so on. However, it should be noted that $a1$ (i.e. DP1) *functions only as a head*, and that $\beta5$ i.e. (DP5) *functions only as a GDC*.

To simplify the whole process, let us use two metaphorical relations: "father to" and "son to" in the way Arabic proper nouns operate in a name of a person. In Arabic, a name like (45) is taken to be very much similar to a multi-embedded CS.[35]

(45) Ali   Saleh   Naji   Qasem   Al-maswari

In (45), there is a name consisting of five proper nouns, *Ali, Saleh, Naji, Qasem and Al-maswari. Ali* functions as the son to *Saleh. Saleh*, however, functions as a father to *Ali* and a son to *Naji*. This means that *Saleh* has a double function, that is, as a son once, and a as a father once more. *Naji* has also a double function, that is, a father to *Saleh* and a son to *Qasem. Qasem* in turn has the function of a father to *Naji* and a son to *Al-maswari*. Note that *Ali* functions only as a son, and *Al-maswari* functions only as a father. Likewise, the names *Saleh, Naji* and *Qasem* each function as a son once and as a father once more. However, the relation between *Ali* and *Saleh* is that of a son, the relation between *Ali* and *Saleh*, on the one hand, and *Naji*, on the other, is that of a son. In that *Ali* and *Saleh* are considered sons of *Naji* (though *Ali* is related to *Naji* via *Saleh*), and so on. It is

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[35] Thus, given a name like **Avram Noam Chomsky,** which consists of three proper nouns, *it is understood in Arabic* in such a way that **Avram** is the real name of "Chomsky," *Noam* is the name of his father and *Chomsky* is the name of his grandfather, in a CS-like construction.

also true that *Ali* is directly related to *Saleh* in the relation "son to" but *Ali* is indirectly related to *Naji* in the same relation, and so on.

Let every 'two-noun' construct be a *Set* KP consisting of two members. It follows, for example, that in the relation "son to" *Saleh* intersects with the *Set* KP1, consisting of two members {Ali, Saleh}, and the *Set* KP2, consisting of two members {Saleh, Naji}. Let us give *Ali* the symbol "$a1$," *Saleh* "$\beta1$," *Naji* "$\beta2$," and so on. The intersection of the *Sets* KP2 $\{\beta1, \beta2\}$ and KP1$\{a1, \beta1\}$ is $\beta1$, and the intersection of the *Sets* KP4$\{\beta3, \beta4\}$ and KP3 $\{\beta2, \beta3\}$ is $\beta3$, and so on. Let every KP be a phase, then, we have four phases: KP1, KP2, KP3 and KP4. For example, the intersection of KP2 and KP1 is $\beta1$, and the intersection of KP3 and KP2 is $\beta2$, and so on. This explicitly implies that the intersecting βs are head-GDCs, and that every phase (i.e. CS-KP) intersects with a preceding (and a successive one) in one β, regardless of the number β bears. This indicates that (44) above is true, and if this is so, (46) could be generalized.

(46) $KP_n \cap KP_{n-1} = \beta_{n-1}$ (where n>1, and $\beta \neq 0$)

Since the intersecting member functions as an *a* once and as a β once more, let it be a_{n+1}. This means that $\beta1=a2$, $\beta2=a3$, $\beta3=a4$ and so on, where $\beta_n = a_{n+1}$ and the number of *a* = the number of β. Since $\beta_n = a_{n+1}$, let us give the same index to each member in the pair, thus, giving the index $_j$ to $(\beta1_j, a2_j)$ and the index $_k$ to each member in $(\beta2_k, a3_k)$, and so on. Given this, I conclude that a multi-embedded CS may have the generalized schema schematized in (47) below.

(47)
$$\left[\left[a1 \rightarrow \beta1_k\right]_{KP1} \left[a2_k \rightarrow \beta2_j\right]_{KP2} \left[a3_j \rightarrow \beta3_y\right]_{KP3} \left[a4_y \rightarrow \beta4\right]_{KP4}\dots \left[a_n \rightarrow \beta_n\right]_{KPn}\right]_{CS}$$
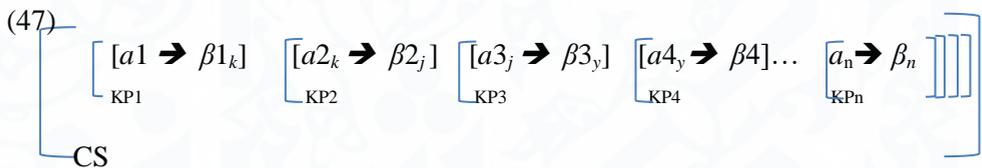
In (47), there are a_n, β_n and KP_n. Up to KP4, there are four *a*'s and four β's. *a* and β each have a double function, a head and a GDC. This is indicated by the indices **k, j** and **y**. Note that in KP1, $a1$ does not have an index, and in KP4, $\beta4$ does not also have an index, which means, as discussed above, that the former functions only as a head, and the latter only as a GDC.

5.5. MEM, SCMs and Multiple Spellouts
Let us now consider a little longer CS as in (48) below, whose derivation is presented in (44b).

(48a) bayt-u   ibn-i   ħaars-i   bawaabat-i l-madrasat-i
      house-NOM son-GEN guard-GEN gate-GEN   the-school-GEN
      'A house of a son of a guard of a gate of the school.'

(48b)
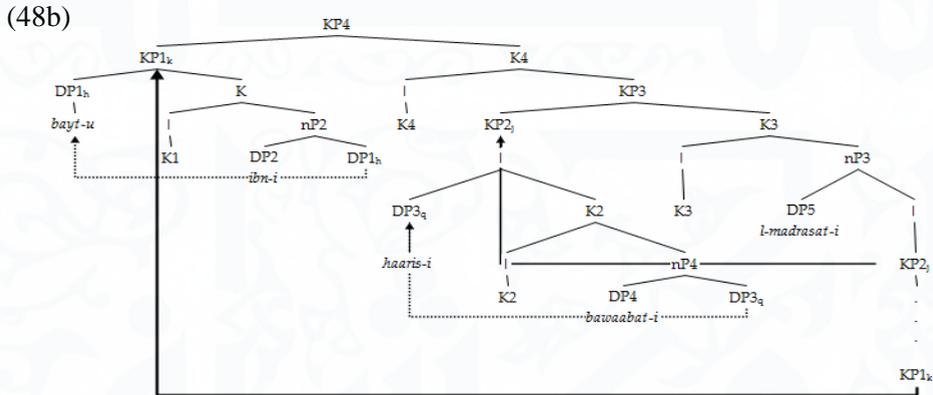
In (48a), the multi-embedded CS consists of four heads, namely *bayt-u*, *ibn-i ħaars-i* and *bawaabat-i* (house, son, guard and gate, respectively), four GDCs, namely *ibn-i ħaars-i bawaabat-i* and *l-maadrasat-i* (son, guard, gate and the school, respectively), and four phases, viz. KP1, KP2, KP3 and KP4. As is clear in (48b), there are several movements undergone by different constituents: DPs and KPs, but within the same CS. These movements seem also to be cyclic in nature. I tackle these, among other things, in what follows.

Given (34), a phase KP, when assembled, the head DP exits the domain of K, and targets Spec-KP, Generally, every head K constitutes a phase boundary, 'shielding' the DP K "dominates from linearization with a higher instance of D," (Richards, 2010:72), and hence satisfying the DC (see (31)). When that is done, the GDC gets frozen, and hence satisfying the PIC. Given the assumption that an embedded *β* functions as both a head and a GDC, when the whole phase is completed, an embedded KP undergoes an extraction operation to the escape hatch of a higher phase, thus satisfying MEM in (42). Given this, let us see how (48b) accounts for (48a).

In (48b), there are four phases, namely KP1, KP2, KP3 and KP4, each of which represents one Spellout. For simplicity of presentation, several details in (44b) are excluded. When KP1 is assembled, the head DP1 undergoes an extraction process to Spec-KP1. When KP1 is completed, the whole of it exits the domain of K2, and targets Spec-KP4 (i.e. KP4's escape hatch). The same thing can be said about KP2. In other words, when KP2 is assembled, its head, that is, DP3 undergoes an

extraction process to Spec-KP2. But when KP2 is completed, it exits the domain of K3, and targets Spec-KP3. After all the embedded CSs (i.e. KP1, KP2, KP3) are spelledout, the whole CS (i.e. KP4) is sent to the PF and LF interfaces for processing, where it is assigned its phonological and semantic form, and finally spelledout. Note that DP5 does not undergo extraction, simply because it is the domain of KP3, and KP3 itself does not also undergo extraction, simply because it is the domain of KP4, that is, the end of the cyclicity.

A very crucial conclusion that could be drawn from (48b) is that there are multiple Spellouts. That is to say, when a CP-phase is assembled, its DP-head undergoes an extraction operation to its Spec (i.e. escape hatch), and hence its domain gets spelledout. When this CP-phase is completed, it gets spelledout, thus, another Spellout. When it exits the domain of a higher phase, this domain gets spelledout, another Spellout once more. When this higher phase is completed, it gets spelledout, yet another Spellout, and so on. All in all, when a phase is completed, it gets transferred to the PF and LF interfaces for processing, and Spellout operations. In turn, every domain that is undergone an extraction from gets also spelledout. The same thing happens the more embedded CSs are involved, given the possibility of 'iterating' these embedded head-GDCs (or KPs). Interestingly, in (48b) there are already five Spellouts: three DP-domains, namely DP2, DP4 and DP5, and two KP-domains, namely KP2 and KP3. Note that DP3 is spelledout within KP2 (i.e. as part of it). Note also that there are two "waiting" Spellouts, namely that of KP1and KP4. KP1 is not yet spelledout, because there is a DP, namely DP1 in its Spec which is still accessible to outside operation (say, *Agree* with T/v), thus conforming to PIC (=Phase Impenetrability Condition, see Chomsky, 2000:108). KP4, which is the whole CS, is still not spelledout, too. KP4's Spellout, in fact, is conditioned by the spellout of KP1 (in its Spec), again, conforming to PIC.

There are also multiple SCMs. When a CS-KP is assembled, its DP-head undergoes a movement to its Spec. When this CS-KP is completed, it raises to the Spec of a higher CS-KP, and so on. The same successive cyclic movement operations apply the more higher KPs are involved. In short, CSs like (48) provides us with *strong empirical evidence for SCMs, on the one hand, and multiple Spellouts, on the other hand*, two of the most substantial properties of phases.

5.4. Complex CSs
I refer here to those CSs involving multi-embedded with modifiers as ***Complex CSs***. Complex CSs are exemplified by structures like (49a).

(49) hujuum-u   ʕadw-i   l-ʔinsaaniat-i   l-waħši-u   l-muħtamal-u   ʕala l-ʕiraaq-i
      attack-NOM enemy-GEN   the-mankind-GEN the-brutal-GEN the-probable-GEN on the-Iraq-GEN

'The probable brutal attack of the enemy of mankind on Iraq.'

In (45a), there is a multi-embedded CS consisting of two KPs *hujuum-u ʕadw-i* (an attack of enemy) and *ʕadw-i l-ʔinsaaniat-i* (enemy of the mankind). However, there are three modifiers, two APs, namely *l-waħši-u* and *l-muħtamal-u* (the-brutal and the probable, respectively) and a PP *ʕala l-ʕiraaq-i* (on Iraq). Consider how the proposed approach would account for these CS properties as presented in (50).

(50)
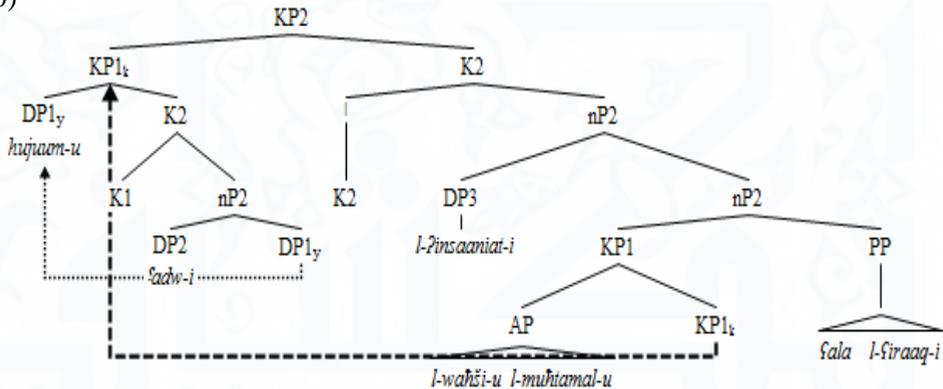
In (50), there are two phase-KPs. The head DP1 of KP1, *hujuum-u* (attack) is triggered by K1 to move to its edge, and hence extracted out of the domain of K1 to Spec-KP1. The DP2 *ʕadw-i* (enemy) remains in-situ as the GDC of the head *hujuum-u* (attack). When KP1 raises to Spec-KP2, KP2 is assembled, that is, the head K2 triggers KP1 to move to its edge. The DP3 *l-ʔinsaaniat-i* (the mankind) appears in Spec-*n*P2, where its θ-role is valued (and always) by *n*2, being the GDC of KP1 *hujuum-u ʕadw-i* (enemy's attack). As for the modifiers, the two APs, namely *l-waħši-u* and *l-muħtamal-u* (the-brutal and the probable, respectively), are base-generated in Spec-KP1, and remain in situ, given the assumption that Arabic and Hebrew are (A-N) languages (see e.g. Fassi Fehri, 1999, Pereltsvaig, 2006; Cinque 1996). As for the PP modifier, namely *ʕala l-ʕiraaq-i* (on Iraq), I assume, following Fassi Fehri (1999), that it is base-generated as the last-to-the-right constituent, given the fact that PP modifiers do not agree with the nouns they modify (see e.g. Fassi Fehri, 1993, 1999; Pereltsvaig, 2006; Cinque 1993, 1996, 2005; Siloni, 1991, 1997). KP2 by now as a whole is transferred to the phonological and semantic components for processing, and hence spelledout.

Having this in mind, it seems impossible for any existing approach to account for complex CSs. In fact, this also has been noted by some linguists. For example, Borer (1999) admits that N-to-D approach, for example, loses its strength if there are only two modifiers, where one modifying the head and the other the GDC. The

same is presumably true regarding N-to-Spec approach (see examples (2-7)). For an account of how remnant movement fails to handle multiple AP modifiers, specifically complex APs in relation to MIO (=Mirror Image Ordering) see, for example, Pereltsvaig (2006) and Shormani (2014).[36]

In the rest of this subsection, I tackle one of the problems of the previous approaches, as noted by Siloni (2001). Siloni points out that to the best of her "understanding, none of the accounts can handle the fact that an adjective modifying the head of the construct cannot, in fact, follow the entire genitive member" as (51) shows.

(51) *madaf ha-sfarim al ha-milxama ha-arox
        shelf the-books on the-war   the-long
Intended meaning: 'The long shelf of the books on the war.'

"nor intervene between the head of the genitive DP and its complement" (Siloni, 2001:242), as in (52).

(52) *madaf ha-sfarim ha-arox al ha-milxama
        shelf the-books the-long on the-war

In what follows, I will try to argue that the phase approach developed in this article can account for such ungrammaticality. Compare and contrast (53a) with (53b).

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[36] In a recent study, Shlonsky (2012:270f) addresses two issues left open in Shlonsky (2004), namely: i) movement must occur internally to DP, and ii) why an NP (but not N) movement is forced, whereby the NP raises above the agreeing modifiers in Semitic. He recasts such issues, implementing Agree and Move mechanisms. Differently from Shlonsky (2004), Shlonsky (2012) argues that the *whole construct state* must move above the agreeing modifiers, specifically in relation to MIO. In fact, the analysis he pursues accounts elegantly for CSs like (i, modified from Shlonsky, 2012:280).
(i) a. *haaða   ʔibn-u   r-ražul-i
        this.M.SG son-NOM the-man-GEN
        'This man's son'
    b. ʔibn-u   r-ražul-i   haaða
        son-NOM the-man-GEN this.M.SG
        'This man's son'
Shlonsky (2012) argues that the movement of the whole CS *ʔibn-u r-ražul-i* above the Dem *haaða* is the only option, which is true. However, I think it needs some further refinement to include CSs like (ii), where the head N and the GDC have an agreeing modifier each.
(ii) ʔitaar-u   s-sayyaarat-i   l-musriʕat-i   l-xalfi-u
        wheel-NOM.M.SG the-car-GEN.F.SG the-speedy-GEN.F.SG the-back-NOM.M.SG
        'The speedy car's back wheel.'
In (ii), the AP *l-xalfi-u* modifies the head *ʔitaar-u* and *l-musriʕat-i* the GDC *s-sayyaarat-i* (I return to this point below).

(53) a. *madaf   ha-sfarim   al   ha-milxama   ha-arox   (Hebrew)
    b.*raf-u   l-kutub-i   ʕala l-ħarb-i   t-tawiil-u   (Arabic)
       shelf-NOM the-books-GEN on   the-war-GEN   the-long-NOM

A close look at (53a), it is likely to find a complex CS like the one examined in
(49) above. The first thing that could be understood from Siloni's description is
that the PP *al ha-milxama* (on the war) in (53a) functions as a GDC. The multi-
embedded CS is *madaf ha-sfarim al ha-milxama,* where the PP *al ha-milxama*
functions as $\beta 2$, that is, a GDC of $\beta 1/a2$. This means that (48a) is a CS having two
KPs. But this seems to be not there. In other words, the PP *al ha-milxama* in
Hebrew cannot function as a GDC. This also seems to be true in Arabic, which
accounts for the ungrammaticality of (54).

(54) *al-kutub-u   ʕala l-ħarb-i
       the-books-MON on   the-war-GEN

(54) is ungrammatical though the PP is used as a GDC alone, that is, without any
other constituent either a modifier or complement. This implicitly suggests that no
PP can function as a GDC. Note that the ungrammaticality of (53) has nothing to
do with the definite article *al-* attached to the head. This is clear from the
ungrammaticality of (55).[37]

(55) *kutub-un   ʕala l-ħarb-i
       the-books-NOM on   the-war-GEN

However, consider (56), where the PP is removed.

(56) madaf   ha-sfarim   ha-arox
       shelf   the-books   the-long
       'The long shelf of the books.'

The question to be addressed here is: why is it that (56) is grammatical? It seems
that the grammaticality of (56) lies in removing the PP. Given that (56) has one
phase, the reason of the grammaticality of (56) could be that one phase is deducted,
just by removing the PP. Still, however, consider (57), where only the P *al* is
removed.[38]

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[37] It should be noted that (53 & 54) are ungrammatical only if they have a nominal reading, that is, if
they are DPs. If, however, they have sentential reading, that is, as verbless sentences, they are
grammatical.

[38] Note, however, that in French an adverbial PP like *in haste* as in (i) can intervene between an event
noun and its *de* ('of') phrase (see also Siloni, 1997).

(57) madaf   sifrim   ha-milxama   ha-arox
     shelf   books   the-war   the-long
     'The long shelf of the war's books.'

Removing the P *al* renders the (51) grammatical as in (57) which is similar (but not identical) to (51), and has two phases, viz. [*madaf sfarim*] and [*sifrim ha-milxama*].

Thus, a phase account for the ungrammaticality of (51) goes as follows. Since the embedded head, here *sfarim,* assigns Gen Case to its GDC, *namely ha-milxama*, it could be argued that the P *al* constitutes a barrier banning the former from assigning Gen Case to the latter. If this is true, it follows that the PP will not constitute a phase domain in its technical sense, simply because in such cases the embedded head *must* be a DP and not a PP. When removing the P, the PIC is satisfied. The difference between (56) and (57) (the AP modifier aside), is that while the former is only one phase, that is, [*madaf ha-sfarim*] (a shelf of books), the latter is two, namely [*madaf sfarim*] and [*sifrim ha-milxama*] (books of the war). Another difference is that *β*1 (i.e. *sifrim* (books)) occurs without the definite article *ha-* since in such CSs an embedded head must be indefinite (there are also CSs, where the embedded head can also be definite, (cf. (17) above). Having (34) and (42) in mind, (57) will have a derivation similar to (50) above as a complex CS.

Regarding Siloni's claim that no AP modifier can intervene between an AP modifier and the head N it modifies, it follows that her claim predicts (58a) to be ungrammatical and (58b) grammatical, which is not the case.

(58) a. Ɂitaar-u   s-sayyaarat-i   l-musriʕat-i   l-kabiir-u
        wheel-NOM.M.SG the-car-GEN.F.SG   the-speedy-GEN.F.SG   the-big-NOM.M.SG
        'The speedy car's big wheel.'

     b. *Ɂitaar-u   s-sayyaarat-i   l-kabiir-u   l-musriʕat-i
        wheel-NOM.M.SG the-car-GEN.F.SG   the-big-NOM.M.SG   the-speedy-GEN.F.SG

In (58a), the AP *l-musriʕat-i* modifies the GDC *s-sayyaarat-i* while the AP *l-kabiir-u* modifies the head *Ɂitaar-u*. According to Siloni (2001), since the AP *l-kabiir-u* modifies the head *Ɂitaar-u*, it has to occur immediately after the CS boundary, that is, after *s-sayyaarat-i,* which is not the case. When this happens, the

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(i) la fabrication   en häte de chaussures
    the manufacture *in haste* of shoes

construct is rendered ungrammatical as in (58b). The derivation of (58a) is illustrated in (59) below.

(59)
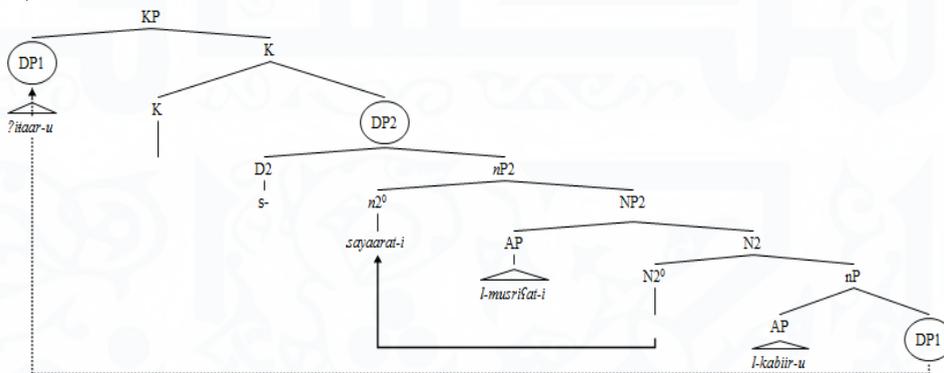
Before getting extracted, the AP *l-kabiir-u* in (59) originates/is base-generated in Spec-nP1. The $N2^0$, that is, *sayyaarat-i* raises to $n2^0$, for locality (and word order) requirement, where its θ-role is valued. This is how the approach proposed here accounts for modified CSs, and I am not sure how the constituent structure Siloni follows would account for the ungrammaticality of (58b).

6. Conclusion

In conclusion, the fact that an addition functional projection to 'license' Gen Case assignment in CSs has been argued for in the literature, though the nature and identity of this projection has been much controversial. For example, Ritter (1991) proposes NumP, Fassi Fehri (1993, 1999) and Kremers (2003) argue for PossP, Sichel (2002, 2003) propose AgrP, Cinque (2003) hypothesizes the existence of $Agr_{Gen}P$, and so on, regardless of the rationale such authors posit for their proposals. However, all these projections are not needed if we just hypothesize the existence of KP projection. KP projection not only accounts simply for Gen Case assignment in CSs, but also it (along with phase approach) accounts for several properties that have been left open by the existing approaches. For example, the approach pursued here accounts for the fact that the head as well as the GDCs can take the definite article. It also elegantly accounts for multi-embedded CS properties, multiple Spellouts, SCMs, and the recursiveness of *Merge* and *Move* operations involved in CSs.

If we take multiple Spellouts, SCMs, and the recursiveness of *Merge* and *Move* operations into account, Semitic CSs (see examples in (41-45)), seem to 'exhaust' the short-term memory of the language faculty. In (44 & 45), for example, there are multiple Spellouts, and several successive cyclic operations. However, tackling

these properties within phase theory seems to be simple but very elegant, simply because their derivation proceeds phase by phase. In fact, one of the core notions phase theory (and minimalism in general) is based on is "that the language faculty is an optimal solution to the constraints imposed on it by… the system of thought and the articulatory–perceptual system" (Citko, 2014:1). Given this, phase theory seems to provide substantial solutions to, and abandons, all the unnecessary complications the previous approaches are characterized with.

The application of phase theoretic notions, as the minimal apparatus needed to describe a particular syntactic phenomenon, reduces the complexity of the C_{HL} (=computational system of human language), because it leads to limiting the possible continuations of a derivation by selecting a more economical operation(s) (see e.g. Chomsky, 2005, 2008, Citko, 2014; Castillo et al., 1999). Thus, if my analysis is on the right track, phase theory is more tenable and much simpler in accounting for CSs properties (see (8i-viii)) than other approaches. It provides a simpler but more elegant analysis of how CSs, be they simple, multi-embedded or complex, are *merged* and *spelledout*, in addition to accounting for the problematic CSs (see (41-45), which are left open by precious approaches.

There are also several implications that could be elicited from the proposal developed in this article. One such implication concerns CSs, where every constituent has its own AP modifier. As far as N-to-D approach is concerned, Borer (1999:48) points out that if there is a slightly complicated CS, "in which both head and complement are modified, the explanatory power of N-to-D movement disappears" rendering structures like (60b) ungrammatical:

(60) a. [$_{DP1}$ [$_{NP1}$[$_{DP2}$ [$_{NP2}$ [$_{N'2}$ mitkademet kita [$_{N'1}$ xadaʃ [$_{N'1}$ more]]]]
                       advanced.F class.F new.M   teacher.M

   b.*[$_{DP1}$ more$_i$ [$_{NP1}$[$_{DP2}$ [$_{NP2}$ [$_{N'2}$ mitkademet kita [$_{N'_i}$ xadaʃ [$_{N'_i}$ t$_i$]]]]
          teacher-M   advanced.F class.F new.M
         'A new teacher of an advanced class.'

If Borer's (1999) analysis is on the right track, it is then expected that CSs like (56), where every constituent has its own AP modifier are really more complicated than expected (each A along with the DP it modifies are emphasized by underlining, italics and boldface).

(61) ʔitaar-u   *sayyaarat-i* **l-mudarris-i**   **l-yamani**   *l-musriʕat-i*   <u>l-xalfi-u</u>
    wheel-NOM.M.SG car-GEN.F.SG the-teacher-GEN.M.SG the-Yemeni.GEN.M.SG the-speedy-GEN.F.SG the-back-NOM.M.SG
     'The Yemeni teacher's speedy car's back wheel.'

A further implication concerns the extension of phase approach to nonstandard Semitic CSs, and to another state within Semitic nominal domain, namely free states or FGs. The latter structures consist minimally of two constituents, namely a DP-head and a PP-complement. Taking our stipulation that Case is a distinguishing property of States, be they construct or free, it could be argued that the head of the latter undergoes a linearization operation, whereby the head DP exists the domain of K to its Spec. However, if we take into consideration some proposals in the literature (see e.g. Bruening, 2013, Richards, 2010) that PPs are phases, the same (though not identical) mechanism applies, specifically if PPs have escape hatches (see Richards, 2010:71ff). In this case, it could be argued that the head DP undergoes an extraction operation to Spec-PP. The proposed approach could also be extended to analyzing nonconstruct structures like simple DPs in a phase theoretic analysis in Semitic as well as other languages, which, though, needs further research.

A third implication concerns the application of the proposed analysis to nonnominal constructs like adjectival constructs, where both the adjectival head and its adjectival GDC take the definite article. It could also be extended to other nonnominal constructs like numeral constructs, etc., though mounting these constructs to be phases needs further research.

A fourth implication is that even in very closely typologically related languages (like Arabic and Hebrew in our case), parameterization does exist. For example, while remnant movement approach accounts for modified CSs in Hebrew, it seems untenable in relation to Arabic similar ones (cf. (6)). Another implication has to do with the fact that though a morpheme may be absent morphologically or even phonologically, it may not be so syntactically and semantically. For example, though Hebrew does not have Case markers, Case remains a disguising property in Hebrew CSs.

A final implication is the evidence the article provides in support of the universality of phase theory. In particular, the assumption that only (but not all) functional heads are phase heads is supported in this article. That K (i.e. head of KP), which is functional, is a phase head has been developed straightforwardly in this article. This implication goes on a par with some proposals concerning CP and vP (functional projections) as phases in the clausal domain (see Citko, 2014).

It is clear, thus, that the possibility of extending the proposed analysis to other types of lexical (as well as grammatical) categories, and hence reducing the structure-specific complication seems to be promising, which is an ultimate minimalist assumption. However, needless to say that such assumptions need further research, and I leave this for future research.

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