Can a (Phase) Head Undergo Interpretation along with Its Domain?

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Abstract

In this paper, I propose that a phase head, mainly *v**, belongs to its domain for spell-out purposes contra Chomsky (2000, 2001 and subsequent work). However, whether the phase head undergoes interpretation along with its complement or not is something that depends on the spell-out instruction that this phase head itself may instantiate.

Keywords: Syntax-phonology interface, New spell-out mechanism, Spell-out domain, Phase head, major phonological phrasing (p-phrasing/ MaP).

1. Introduction

The question of whether a phase head can undergo interpretation along with its domain is a very challenging one as far as the syntax-phonology interface is concerned. Generally speaking, it is assumed within Chomsky's DbP that both the head and edge of a strong *v**P/CP phase are not spelled-out with the complement as it is implied by the PIC itself in its two versions. This assumption has been taken too far to the extent that it is used to differentiate between CP and *v**P (also DP), on the one hand, and phases of the type xP (aP, nP, vP) proposed by Marantz (2001), on the other, and according to which the interpretation of xP phases includes the phase head, while that of CP and *v**P does not (see Newell, 2008). The standard view thus is that a clausal phasal head (mainly *v**) is assumed not to be interpreted with its complement so that it can still be accessible for selection and head movement.

However, and phonologically speaking, assuming that the verb universally moves to *v** plus the standard assumption that *v** as a strong phase head must not undergo interpretation along with its complement posits a problem for deriving the phonological

phrasing where the verb is phrased together with its complement/s, which is a prominent one. In fact, there exist many (interface) studies and empirical data which allude to the issue that a (phase) head - mainly *v** - but usually not a specifier can undergo interpretation with its complement resulting in a p-phrasing where the verb (V-*v**) and its complement/s are grouped together. In the following, I present some of such studies as well as the main possible accounts of the phonological grouping of the verb and its complement/s together. As it will be shown below, some of the studies account for the phrasing of the verb and object together, not by assuming that it is the V+*v** that undergoes spell-out, but rather by assuming that it is only the V that undergoes spell-out while *v** remains behind which is really problematic assuming the universality of V-to-*v** movement.

2. Possible Accounts for the Wrapping of the Verb along with Its Complement/s

2.1 Head Movement Does Not Occur in Narrow Syntax

Chomsky (2000) suggests that head movement is a phonological operation taking place at PF. Consequently, if we go on to assume that V-to-*v** movement is a phonological process and hence takes place after spell-out, then and at spell-out, VP including the verb will be spelled-out in the complement of *v**. Such analysis is entertained in studies as Dobashi (2004) who, following Chomsky (1995b) as he indicates, assumes that V-to-*v** movement does not occur in narrow syntax[1].

2.2 Lack of V-to-*v** Movement in Some Languages: Samuels (2009)

Another possible explanation is that the verb does not move to *v** (or higher) in some languages, contra the assumption that the verb universally moves to *v**. Samuels (2009) assumes this to account for obsruent voicing in Korean where she indicates that "it is crucial here that the verb doesn't move to *v** or higher" (Samuels, 2009, p. 331).

a. The application of obstruent voicing between a direct object and a verb in Korean. According to her, "In order for the object and verb to be spelled out together in

[1] However, Dobashi does not employ this assumption to account for the verb and object being spelled-out together, he rather assumes that both the verb and the object are in the complement of *v** (i.e., the same spell-out domain) and that the verb escapes the mapping for linearization purposes, specifically, the verb is used to linearize two instances of spell-out by being a shared element.

the matrix clause, it is important that the verb does not move too high: if it is in *v* or higher, the verb and object would be in separate clause-level domains (unless the object also raises)" (Samuels, 2009, p. 329).

b. The non-application of obstruent voicing between a subject and a verb in Korean. This is because assuming the lack of verb raising, the subject will be spelled-out in the complement of C and the verb in the complement of *v**.

One point to add here is that in one of her studies[2], Samuels makes it explicit that variations in the p-phrasing of the verb can be the result of its position at spell-out. She assumes three positions for the verb during spell-out namely either in V, *v* or T.

2.3 Movement of the Object to a Higher Position (Spec, *v**P): A Form of Delayed Spell-out

- Dobashi (2004) on Chichewa

Despite the fact that Dobashi (2004) indicates that the default p-phrasing can be taken to be (S)ϕ (V)ϕ (O)ϕ where the verb and its complement are phrased separately, he also shows that the phrasing (VO)ϕ in some languages as Chichewa can be derivationally obtained from this default phrasing. The reason for obtaining this phrasing is that *v* in Chichewa has an OCC feature and thus the object moves to its Spec to check this occurrence feature resulting in the evacuation of the spell-out domain of *v** and thus spell-out applies only to the sister of C yielding a p-phrasing where both the verb and object are phrased together. Thus, the phrasing of the verb and its object (VO)ϕ can be accounted for in languages as Chichewa by the movement of the object to the Spec of *v* (plus the movement of *v**to T).

- Seidl (2001)

Seidl (2001) also has a similar prediction as she indicates that "arguments which are in situ are phrased separately from the verb and arguments which are not in situ at spell-out are phrased with the verb" (Seidl, 2001, p. 86). [3]

[2] " From syntax to phonology: phi and phases"

[3] See Chapter 5 of Seidl (2001) on Bantu languages for exact details.

2.4 Uriagereka's (1999) MSO Model

One of the main predictions within Uriagereka's (1999) MSO model is that heads and their complements are mapped together onto a single prosodic unit, but not heads and their complex specifiers.

- A Dependent Study: Sato (2009) on Taiwanese

In Sato (2009), the prediction within Uriagereka (1999) that a head is to be mapped together with its complement onto a single prosodic constituent is borne out. Using data from Taiwanese, Sato shows that the head-complement configuration (V-NP$_{object}$) licenses tone sandhi but not the head-specifier one.

Example (1) V-NP$_{object}$

be● [lng●pun● chhe]

buy two-CL book

'buy two books' (Sato, 2009, p. 242 after Simpson & Wu, 2002)

2.5 A Featural Account: Ott (2011)

According to Ott (2011), a phase head, specifically C, can undergo spell-out along with its complement if it does not retain any interpretable feature after inheritance takes place[4] and he uses this assumption to account for the asymmetries between embedded interrogatives and free relatives (FRs). More specifically, Ott assumes the existence of two types of C, one is C_Q which does not get spelled-out along with its complement due to the presence of some interpretable feature Q[5], and this type of C exists in embedded interrogatives resulting in the fact that embedded interrogatives *retain CP-hood across derivational cycles*, and the other is C_{FR} which undergoes spell-out along with its complement by virtue of having no interpretable feature and this type of C exists in free relatives and accounts for properties of FRs more generally.

[4] Following Richards (2007), Ott (2011) assumes that feature inheritance dislocates only uninterpretable features from a phase head but not interpretable ones which, if present, will remain on the phase head.

[5] Thus, C remains visible for selection by the matrix predicate.

2.6 Simpson and Wu's (2002) Modified Model of CSO

The study of Simpson and Wu (2002) maintains the thesis that a phase head can undergo transfer with its complement as Simpson and Wu clearly put it that " the input to CSO is the inner 'core' of a phase [6] consisting of its head H and its complement YP, but critically not the phase's outer phase-peripheral specifier XP" (Simpson & Wu, 2002, p.11). Specifically, they show that in Taiwanese spell-out applies to a head C [kong] and its complement IP and this is indicated by the very fact that the elements in the [C+IP] sequence undergo tone sandhi/TS modification and the application of the rule is indicated below by a dot symbol following the syllables undergoing TS.

Syntactic creation of the inner core of a phase headed by C0 kong

↓

[kong [IP/TP A-sin m lai]]

↓

Spell-out of the inner core + application of tone sandhi rules:

↓

[kong• [IP/TP A•-sin m• lai]]

↓

Syntactic raising of the output of mid-derivational Spell-out → IP/TP raising to outer phase-peripheral Spec of the phase CP:

↓

[CP [IP/TP A•-sin m• lai]$_i$ kong• t$_i$]

↓

Final syntactic form is pronounced (as immediately above)

(Simpson & Wu, 2002, p. 11)

Despite the fact that they assume, based on data from Taiwanese[7], that only CP can be a phase, the main contribution of this study to the issue at hand is that they empirically demonstrate that both a phase head C and its complement IP constitute a single spell-out domain to the exclusion of the specifier as it is illustrated above. One interesting point which falls as a natural result of their assumption that only CP is a phase is that the verb

[6] The phase intended here Is CP and not *v**P.
[7] As well as data from English.

along with its overt object (i.e., VO) can be spelled-out together in the complement of C when its inner core is submitted to spell-out as it indicated by the two examples to be discussed below which contrast the status of a topicalized versus a non-topicalized overt object in Taiwanese.

More to the point, Simpson and Wu do also employ the idea that only the inner core of a CP phase (C+ its complement) can undergo spell-out together, but importantly not the specifier, to account for the fact that the raised IP in *kong* sentences (as it is illustrated above), but not a topicalized object, can trigger TS in the head preceding it in the underlying form in Taiwanese. Their account assumes that IP raising in *kong* sentences does target Spec CP and hence when spell-out applies to CP (i.e., to C+IP) and before the Spec CP is created, the still in situ IP will trigger TS in the head C prior to its raising to its Spec. On the other hand, object topicalization does not target the Spec of CP, and consequently when the inner core of the CP phase is sent to spell-out, the topicalized object is not in situ and thus cannot trigger TS on the preceding verb (head) as it has raised though to a lower position within the inner core of the CP phase. The contrast between a topicalized overt object preceding the verb and triggering no TS in the verb, and a non-topicalized overt object following the verb and hence resulting in TS in the verb is shown below.

Example (2)

a. The case of a non-topicalized object	b. The case of a topicalized object
[goan**.** lau**.**pe] be**.** hiao**.** kong**.** tai**.**oan**.**oe	[tai**.**oan**.**oe]$_i$ [goan**.** lau**.**pe] be**.** hiao**.** kong t$_i$
I old-father not know speak Taiwanese	Taiwanese I old-father not know speak.
‘My father can’t speak Taiwanese’	‘Taiwanese, my father can’t speak’

(Simpson & Wu, 2002, p. 13)

2.7 A Different Interpretation of What Constitutes a Spell-out Domain: Fox and Pesetsky (2005)

Within Fox and Pesetsky (2005), a phase head (*v** and C) can undergo interpretation with its complement due to the assumption that a phase and a spell-out (SO) domain are the same.

- Fox and Pesetsky's (2005) definition

  a. Phase: *v**P and CP

  b. SO domain: *v**P and CP

➢ A Dependent Study: Ishihara (2007) on Major Phonological Phrasing in Japanese

Adopting the definition of phase and SO domain within Fox and Pesetsky (2005), Ishihara (2007) accounts for major phonological phrasing in Japanese. However, he employs a single addition to their definition. Accordingly, adjuncts and A'-moved elements should be considered as SO- external as indicated below.

a. Phase: *v**P and CP

b. SO domain: *v**P and CP (excluding adjuncts and A'-moved material) (Ishihara, 2007, p. 146)

Employing the above-mentioned system of cyclic spell-out, Ishihara maps CP and *v**P (excluding adjuncts and A'moved elements) onto MaPs. Defining the MaPs boundaries, Ishihara (2007) successfully accounts for the correlation between semantic scope and prosodic phrasing, specifically, quantifiers and their scopes are claimed to be sensitive to MaP boundaries. The following are the two sentences, originally taken from Miyagawa (2003), Ishihara (2007) accounts for their scope by referring to their major prosodic phrasing created by direct and cyclic mapping of SO domains onto prosody (see Ishihara, 2007 for more details).

Example (3):

Sentence (a): ***zen'in****-ga*$_i$ *t*$_i$ *sono tesuto-o uke-****nakat****-ta.* *(SOV)*

All-NOM that test-ACC take-NEG-PST

'All did not take that test.'

Its Phrasing: only one phrasing pattern (unambiguous: all>> not)

[$_{TP}$ **zen'in**-ga$_i$ [$_{vP}$ t$_i$ sono tesuto-o uke-**nakat**-ta]]

(**zen'in**-gai) $_{MaP}$ (sono tesuto-o uke-**nakat**-ta)$_{MaP}$

Sentence (b): sono tesuto-o$_i$ ***zen'in****-ga* *t*$_i$ *uke-****nakat****-ta.* *(OSV)*

that test-ACC all-NOM take-NEG-PST

'That test, all didn't take.'

Its Phrasing: Two phrasing patterns (ambiguous):

a. (not >> all)

[TP sono tesuto-oi [vP **zen'in**-ga ti uke-**nakat**-ta]]

(sono tesuto-o) MaP (**zen'in**-ga uke-**nakat**-ta) MaP

b. (all >> not)

[CP sono tesuto-o i [TP **zen'in**-gaj [vP tj ti uke-**nakat**-ta]]]

(sono tesuto-o) MaP (**zen'in**-ga) MaP (uke-**nakat**-ta)MaP

(Ishihara, 2007, pp. 139 & 149)

2.8 Spell-out of Maximal Projections (Eliminating the Escape Hatch): Svenonius (2001b)

A related account to that of Fox and Pesetsky (2005) is the one in Svenonius (2001b), as both tend to eliminate the escape hatch so that when an expression is sent to spell-out, "Not even its specifier or head are available" (Svenonius, 2001b, p. 8). However, and while Fox and Pesetsky's account still maintains the standard assumption that *v**P and CP are phases intended for spell-out, Svenonius (2001b) allows the spell-out of maximal projections which are not strong phases.

Svenonius (2001b) is basically a phase-based account for the word order contrasts in impersonal passive constructions namely VO (participle-object) vs. OV (object-participle) orders. The innovation of this study lies in the fact that spell-out is triggered not by the construction of a strong phase but by the elimination of uninterpretable (unvalued) features on a phrase (not phase) itself and the rule he defines is *Evaluate X when it is complete* which is finally replaced by *Evaluate X as soon as possible*. This has the effect that spell-out happens both as soon as possible and as frequently as possible resulting in reduction of the amount of material in working memory, as he himself indicates.

However, the importance of his spell-out-based study to our subject lies in its consequences, that is, its giving evidence for some of the aspects of the proposal I handle in this paper. Particularly, the following assumptions are of importance:

I. The spell-out version developed in Svenonius (2001b) allows a maximal projection/phrase (not strong phase) to undergo interpretation along with its head if all unvalued features have been eliminated, specifically, a verb can undergo interpretation with the DP in the participle-object order in languages as Norwegian, where VP (VO) goes to spell-out early since it is bereft of unvalued features[8]. This in a way supports the observed phonological facts where the verb in many languages tends to be phrased together with its object indicating that they are spelled-out together. Moreover, the notion of *phrase* (or maximal projection) used by Svenonius is also phonologically important in that it is generally assumed to be a unit defined by the syntax-phonology interface, specifically speaking, a (lexical) syntactic phrase corresponds to a (Major) phonological phrase within the prevailing end-based interface theory (Selkirk, 1995, 2000; Truckenbrodt, 1995, 1999, 2007).

II. Within Svenonius (2001b), the timing of when total elimination of unvalued features occurs is very crucial for accounting for the word order contrasts in impersonal passive constructions namely, VO vs. OV. Accordingly, Svenonius allows the following constituents to be spelled-out depending on the timing of the elimination of unvalued features:

- Norwegian: VP (very early, at the VP level)
- Swedish & English: *v*P (little bit late, at the *v*P level)
- Icelandic: CP (late, at the CP level)

The assumption of the early vs. delayed spell-out allows for the construction of small and large domains which can be phonologically important in that it allows for the construction of small and large phonological domains. This may have implications for the syntax-phonology interface in that may be (many of) the observed mismatches between syntactic and phonological constituents may turn out to be apparent ones, if we just have the right tool to handle them. In this

[8] Assuming the uninterpretable-feature criterion whereby an X cannot be spelled-out until all its uninterpretable (unvalued) features have been checked plus allowing the spell-out of phrases which are not strong phases, in addition to the assumption that V does not move to *v,* VP (VO) can accordingly go to spell-out early before the merger of *v* which accounts for the VO order in Norwegian.

dissertation, the notion of the timing of spell-out is employed within my new account though in ways that still adhere in many respects to Chomsky's phase theory (2000, 2001). Specifically speaking, I assume two optimal timing principles, namely PIC1 and PIC2, and that languages/cases can vary as to which one is in effect.

Before concluding, I want to indicate that the notion of spelling-out phrases (maximal projections) gets even reinforced in Svenonius (2001a) and formulated as below.

- *A (verb) phrase goes to Spell-out if:*

(i) it no longer contains any unvalued features and

(ii) its head has reached its final landing site (p. 8).

2.9 A Phonological Account: Kratzer and Selkirk (2007)

Kratzer and Selkirk (2007) is a spell-out-based interface theory. To account for the fact that the verb and object are phrased together in English and German, they use the interface Highest-Phrase condition, as well as the assumption that the stray verb, which is assumed to be segmentally spelled-out, can be prosodically adjoined to a neighboring MaP, specifically to the MaP that follows it resulting in the phrasing (V(NP_{obj})) ϕ, and this accordingly happens after all "syntactic derivation and its multiple spell-out was complete'' (Kratzer & Selkirk, 2007, p. 131). Thus, the adjunction and hence the p-phrasing of the verb is to be decided by phonology.

2.10 A Perspective That Has the Phase as Its Hallmark: Gonzalez-Vilbazo and López (2012)

The account developed here still falls under the umbrella of phases where a phase head is assumed to determine some interface features as prosody. However, this account is not derivationally justified. They just account for the difference in the p-phrasing of the verb and object in German and Spanish by arguing that the two languages have two different little *v*s with different specifications as to the p-phrasing of their complement (lexical) VP. More specifically, little *v* in German entails a p-phrasing as that predicted by the constraint Align-XP, R within the end-based, and little *v* in Spanish results in a p-phrasing as that predicted by the Align-XP, L constraint within the end-based.

a. German: (V XP)ϕ

b. Spanish :(V)ϕ (XP)ϕ

2.11 Two Other Related (Interface) Studies

The fact that a (phasal) head can (at least phonologically) undergo interpretation with its complement/s is also indicated by some other studies as Pak (2008) and Scheer (2007). The related predictions are summarized below.

- Pak (2008): In her dissertation, Pak (2008) indicates that, taking into consideration some phase-based proposals, the possibility of having a phase head grouped together with its complement can also be an option. Therefore and to account for the fact that some preverbal elements (negator, relativizer and other clause-initial items) in Huave are grouped together with the following verb, Pak indicates in her footnotes the possibility that these elements are located in C and that the phase head C in Huave can undergo spell-out with its complement. Moreover, in her analysis of Luganda, she indicates that the verb can be phrased with either one or both of the objects[9] for the sake of the application of different rules but the implementations she uses to justify such p-phrasings are different. To account for the fact that the verb can be phrased with following complements, she assumes that only CP is a phase in Luganda and that the verb and following arguments are spelled-out in the complement of C, and to account for the fact that the verb can be phrased with only its first complement as a domain for the application of a certain other rule, she assumes that such a domain is created by a concatenation statement formed between head and complement within the spell-out domain.
- "A symmetric spell-out: heads remain uninterpreted (syntax)" while this is "Not really in phonology" (Scheer, 2007, p.11).

[9] Accordingly, she shows that the verb and the first complement can be grouped together for the application of the rule of Low-Tone Deletion (LTD), while the verb can be phrased together with the following complements to form the domain for the application of the rule of H-Tone Anticipation (HTA).

3. My addition

The new thesis I propose here is that a phase head mainly *v** can undergo spell-out along with its complement in some languages contra Chomsky (2001), especially if we assume the universality of V-to-*v** movement. This thesis is empirically borne out by the cross-linguistic data and p-phrasing facts discussed in the previous section. I argue for this below by defining three conceptual motivations strengthening the notion that a phase head mainly *v** can be transferred along with its complement in some languages.

3.1 Conceptual Motivations

i. First, if the main motivation for not interpreting a phase head with its complement, as it is assumed in DbP, is the fact that the phase head has to remain accessible for selection and head movement, then, the first intuition one can get is that once the phase head needs not be available for selection and head movement, it can undergo spell-out. The spell-out by PIC2 can guarantee the phrasing of the phase head (V-*v**) with its complement via two assumptions: First, the delay of spell-out via PIC2 allows selection and head movement to take place and, second, since the domain of the lower phase has not been spelled out yet, then the head (after selection and head movement has taken place) can also undergo spell-out along with its domain.

   This assumption seems to fare well with Chomsky's *simplest assumption* that "the phonological component spells out elements that undergo no further displacement -the heads of chains- with no need for further specification" (Chomsky, 2001, p. 13). The spell-out via PIC2 ensures this end, delaying spell-out of the phase head *v** until it is no longer needed to be accessed, allowing not only head movement to *v** but even the selection of *v** by T. More to the point, if the main motivation for the introduction of PIC2, in the first place, is the existence of empirical data from Icelandic allowing T to agree with the complement of V, then it is logical to go on and assume that (the delay via) PIC2, allowing selection between *v** and T to take place, should also be enabled to account for the phonologically well-attested phenomenon of phase head *v** (i.e.,

V-*v**) getting transferred with its complement, mainly if we adhere to the assumption that the cycle is one in syntax and phonology.

ii. Second, the main motivation within Chomsky (2001) for not interpreting a phase head, mainly *v** along with its complement, is, and as it is indicated earlier, that the phase head should be accessible for selection and head movement. However, this motivation turns out to be a useless one by the Chomskyan framework itself. For one reason, head movement is finally defined as a phonological operation within Chomsky (2000), and for another reason, s-selection ends up as *dispensable* within the framework of Chomsky (2004). Thus, the motivation for the assumption that a phase head cannot undergo transfer along with its domain gets once again weakened.

iii. Thirdly, the p-phrasing of the verb and object together via transferring them together in the lower phase turns out to be the optimal choice given Chomsky's new assumption of feature inheritance (henceforth, FI) which conforms to the notion of the simultaneity of value and transfer as Richards (2007)[10] indicates. However, I go on and argue that to ensure the assumed value-transfer simultaneity, it is not only the verb that should undergo spell-out with other element/s in the lower phase *v** but the complex V-*v**. That is to say, if the assumption of simultaneity is on the right track, then the phase head *v** should undergo spell-out along with its complement which, I assume, is the only way consistent with the assumption of the simultaneous valuation and transfer assumed within a phase theory as that of Richards (2007) specifically if we assume the verb movement to *v**. The main consequence of such assumption is the reduction of the edge accessibility to the edge itself. I argue for this below and I choose to begin by introducing the following two premises from Richards (2007).

- ***Premise 1[Full interpretation]:*** *Value and Transfer of uF must happen together*
- ***Premise 2[Edge accessibility]:*** *The edge and non-edge (complement) of a phase are transferred separately as implied by the PIC itself (p. 122).*

[10]" On phases, Phase heads, and Functional Categories".

Richards (2007) notices that premise 1 and 2 mentioned above are actually "at odd with each other" because while premise 2 (i.e., the PIC) "forces edge material (specifiers + head) to be transferred at the next phase level", premise 1 "forces uF on the phase head (which is part of the edge)[11] to be transferred together with the rest of the completed phase" (p. 122). Specifically, the value-transfer-simultaneity assumption entails that uFs have to be spelled-out as soon as they are valued via Agree, because after valuation by Agree, they will have the same status as other *lexically valued features* and hence spell-out will not be able to distinguish them. His solution to this contradiction is to assume Chomsky's FI system[12] whereby the uF must descend from edge to non-edge (i.e., from C to T and from *v** to V) and since *the valued uF cannot survive into the next phase level* only PIC1 is consistent with the rationale of feature inheritance. Notwithstanding the fact that PIC2 is empirically well-grounded, PIC2 thus ends up *incompatible* with Chomsky's FI system as Richards (2007) indicates.

As far as the phase head *v** is concerned, I assume that the two premises mentioned above are at contradiction whether we assume DbP or OP and this is due to the fact that *v** is the locus of uF in both versions and that FI is of no importance if the verb finally ends up in *v**, the edge[13]. To elaborate, Agree features (uF) on *v** cannot be transferred at the phase *v**, because PIC1 ensures that *v** stays behind when its complement VP is spelled-out and this violates the requirement that *v**s uF be transferred at the point when it is valued (by the object in VP)[14]. Hence, I propose that the only way to tackle the problem of simultaneity

[11] Here, Richards assumes that *v** and C are locus of uFs, following Chomsky's OP and subsequent work.

[12] According to Richards (2007), the rationale for feature inheritance is that it is enforced by the way deletion happens, specifically, the non-phase heads exist only to act as *feature-receptacles* so that the valued uF do not end up hanging in the edge.

[13] This can in a way account for the fact that for the most part it is *v** which can be spelled-out with its complement but hardly C. This is due to the fact that *v** is spelled-out with its complement because valued uF are spelled-out on it both within DbP (as the locus of uF) or within the feature inheritance framework (due to V-to-*v** movement) to ensure simultaneity. Conversely, the valued uF are not spelled-out on C and this is because it is not the locus of uF within DbP (but T), and not even within the feature inheritance as its uF are downloaded to T.

[14] Same problem is mentioned within Gallego (2010) and first discussed in Epstein et al.(2008). Accordingly, the assumption within Chomsky's feature inheritance that phi-features must leave the edge (the phase head) to the complement for deletion, does not make the right prediction if the verb (the

via (a slightly modified) PIC1 is to allow the phase head *v** or to be more precise the complex V+*v** to be spelled out in the lower phase rather than the verb only and thus to reduce the edge accessibility to the edge itself. This can be ensured and should be allowed as it is indicated in II above if one dispenses with s-selection.

Summarizing, the discussion above is neither for nor against FI as all my analysis will still build on Chomsky's DbP. The idea I want to defend here is that if simultaneity of valuation and transfer to which FI conforms is really a requirement, then, and specifically for the case of *v**[15], it can only hold by allowing the phase head to undergo spell-out with its complement via PIC1.

One point to add here is that I will not pursue this kind of analysis in my work as I assume the coexistence of PIC1 and PIC2 as two optimal options available by the grammar and I thus do not adhere to the notion of the value-transfer simultaneity. Specifically, assuming Chomsky (2001), I believe that the spell-out of the verb (i.e., V+*v**) with other elements in the lower phase can be attained via both PIC1 and PIC2. PIC1, on the one hand, ensures the transfer of a phase head *v** along with its domain iff one assumes the irrelevance of s-selection (Chomsky, 2004) and only for languages in which the verb does not move beyond *v** (and thus conforms to the value-transfer-simultaneity assumption[16] which I do not follow here). PIC2, on the other hand, can ensure the spell-out of a phase head *v** along with its domain for languages with V-to-*v** movement, even if one still adheres to Chomsky (2001) where s-selection is of relevance, as the delay via PIC2 ensures both head movement and selection between T and *v** as I indicate above.

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locus of phi-features after feature inheritance) ends up in v* (i.e., the edge) after V-to v* movement contra feature inheritance as the valued phi-features on the verb appear outside VP, that is, "the uF-bearer(s) appear outside the deletion domain" (Gallego , 2010, p. 69).

[15] Due to V-to-*v** movement.

[16] However, and before to conclude, one can mention a case where PIC1 does not obey the value-transfer-simultaneity. This is the case whereby the object in the *v** domain undergoes early spell-out in the *v** phase via PIC1 while the V-*v** remains behind and this case hence still follows the Chomskyan classic assumption that both the phase head and edge belong to the next phase domain and hence predicting the p-phrasing whereby the verb (V+*v**) and object are phrased separately due to their being transferred in different domains.

However, I will not follow this analysis in relation to PIC2 and this is because I do assume the elimination of s-selection within Chomsky (2004). Since PIC2 induces a delay anyway, I assume that PIC2 can be used only to account for languages in which the phase head *v** undergoes late spell-out along with its domain in languages with syntactic movement to T (and hence spell-out via PIC2 does not seem to be governed by the requirement of the value-transfer simultaneity). PIC1, however, and as defined above, can account for languages in which *v** undergoes early spell-out along with its domain in languages where the verb does not move beyond *v** (conforming to the valuation- transfer simultaneity).

3.2 The New Proposal

- A Brief Introduction

The theoretical framework assumed here is mainly Chomsky (2000, 2001). Moreover, I will also employ the assumption of the elimination of s-selection assumed within Chomsky (2004) in my analysis. The new account developed in this whole part builds on the following assumptions:

a) A new thesis: The phase head *v** (also C) belongs to its spell-out domain contra Chomsky's DbP and subsequent work.
b) A new spell-out mechanism: Two interleaving factors[17]
    i) The role of head movement as a syntactic phenomenon (contra Chomsky, 2000).
    ii) Phase heads as the loci of parameteric variations
c) Both PIC1 and PIC2 can be optimal.

The new thesis a) above has already been introduced earlier in this paper. Before going on to briefly discuss the new spell-out mechanism b) above, I will deal with the two factors i) and ii) defined above, and upon which the new mechanism is to be finally based.

[17] This new spell-out mechanism is discussed in greater detail in Yahya (2014b).

3.2.1 Head Movement and Its Role

The assumption here is that if a phase head is to undergo spell-out along with its domain in related languages[18], it must be ensured that this phase head needs no longer be available for head movement, and in Svenonius' terms it must have reached *its landing site*. I assume here that the fact that a (phase) head needs no longer be available for syntactic head movement is ensured via PIC1 for languages with V-to-*v**, while it is ensured via PIC2 for languages where the verb moves to T (or beyond).

In the following I present the two versions of the Phase Impenetrability Condition or PIC within Chomsky (2001).

I. Phase Impenetrability Condition: First version(PIC1)

The domain of H is not accessible to operations outside HP; only H and its edge are accessible to such operations (Chomsky, 2001, p. 13).

II. Phase Impenetrability Condition: Second version(PIC2)

The domain of H is not accessible to operations at ZP; only H and its edge are accessible to such operations (Chomsky, 2001, p. 14).

[Given structure [ZP Z … [HP α [H YP]]], with H and Z the heads of phases].

As it is indicated earlier while discussing the conceptual motivations for interpreting a phase head along with its complement, only PIC2 can spell-out the fact that *v** can be finally interpreted with other elements in its domain in languages with V-to-*v** movement if one still assume the necessity of selection between *v** and T. PIC2 delays spell-out incorporating more structure, specifically T, allowing not only head movement up to *v**, which is also ensured by PIC1, but also selection between T and *v**, if it ever counts. However, and as I indicate earlier, s-selection gets eliminated within Chomsky (2004) and this has some welcome results which are defined below.

1. The first welcome result is that it allows PIC1, rather than PIC2, to spell-out the fact that the verb (V-*v**) in languages with V-*v** movement as English can be spelled-out

[18] Languages in which the matrix of a phase head say *v** includes the instruction that the phase head undergoes spell-out with other elements in its domain. This view builds on the assumption that phase heads are the loci of parametric variations and this view will be very briefly discussed in this paper though it is defended and developed in Yahya (2013, 2014b).

with other elements in its domain resulting in a phonological domain of the type (VO)ϕ, mainly if one assumes that the phase head belongs to the spell-out domain of the phase it heads.

2. The second result is that dispensing with s-selection allows us to account for the p-phrasing (VO)ϕ in languages with *v**-to-T movement. This is because PIC2 is the only delaying candidate available and this candidate can only ensure s-selection between *v** (V-*v**) and T but not between T (V-*v**-T) and C. Thus, and to be able to account for languages with *v**-to-T movement and a (VO)ϕ phrasing pattern via PIC2, dispensing with s-selection is a good option to pursue. Generally speaking, to account for languages with *v**-to-T movement and a p-phrasing of the type (VO)ϕ, different solutions raise themselves of which dispensing with s-selection (Chomsky, 2004) is the cheapest. These solutions are :
    I. Only CP is a phase: Hence, (VO) gets mapped in the complement of C, but not the subject, either because it is in Spec, CP or because it escapes the mapping for some reason say linearization (Dobashi, 2004).
    II. However, if we still assume the phasehood of *v**, then we have the following two options:
        a. To continue with Chomsky's (2001) assumption that *v** and T are the locus of uF, but dispense with s-selection (Chomsky, 2004).
        b. Selection can be pertained by looking at the label of the (slided) phase in conformance with a view as that of Boeckx and Grohmann (2004)[19].

Dispensing with s-selection, I will show now that while PIC1 spells-out the case where a phase head *v** in languages with V-to-*v** movement as English undergoes transfer along with its domain resulting in a form of early spell-out, PIC2 spells-out the case where a phase head *v** in languages with *v**-to-T movement [20] as Chichewa (Dobashi, 2004) undergoes transfer along with its domain leading to a form of late spell-out.

[19] They assume that the "Head accessibility could be achieved by just looking at the phase-label, not below it, since the label is a copy of the head. That would work for selection. If furthermore head-movement is not part of CHL, then there is no need to look below the label, i.e. Spec should be inaccessible" (Boeckx & Grohmann, 2004, p. 6).

[20] *v**-to-T movement results in a phase sliding (Gallego, 2010).

i. PIC1 spells-out the case where a phase head, in languages with V-to-*v** movement, undergoes transfer along with its domain resulting in a form of early spell-out.

ii. PIC2 spells-out the case where a phase head, in languages with *v**-to-T movement, undergoes transfer along with its domain leading to a form of late spell-out.

A. PIC1 & Languages with V-to-*v** Movement

In this sub-section, I will consider the case of languages with V-to- *v** movement and a p-phrasing whereby the verb is grouped together with other element/s in its domain. An illustrative case can be English. English is defined within the framework of Selkirk (2000) as a language with the p-phrasing whereby the verb is grouped with its two complements onto a single MaP. Selkirk accounts for this phrasing as being a consequence of interface constraints[21] which define phonological domains in relation to syntactic constituents and these two constraints are Align-XP,R and Wrap-XP, entailing that the verb be mapped with either one or two of the phrasal complements in its domain respectively. Despite the fact that these two constraints are out of use by some linguists as constraints developed within the X-bar theory, the effects ensured by them should still be predicted within the new theory of MSO but this time in a derivational way, specifically as a function of the spell-out process itself. I assume that the spell-out process in English is regulated by PIC1 as the verb moves only up to *v**[22]. Thus, spell-out applies and the V-*v** will be included in the lower domain resulting in a p-phrasing where the verb or V-*v** and object/s are defined onto a single domain. As regards edge accessibility, I assume that the edge (specifier and adjoined materials) will remain accessible (though I do not assume this accessibility to fall from the head accessibility). The following are the constraints used within Selkirk (2000) to account for major phonological phrasing in English:

[21] Interface conditions are now reduced to spell-out (mapping) instructions by a phase head as it will be discussed soon.

[22] However, the p-phrasing (VO)ϕ in English can still be attained if one argues that English lacks of V-to-*v** movement as some linguists have proposed and in which case PIC1 will still be the one in effect in the mapping process.

1- Interface constraints (Selkirk, 1995, 2000; Truckenbrodt, 1995, 1999)

I- Wrap-XP (the verb and its two complements are phrased together)

II- Align-XP, R (the verb and first complement are phrased together)

2- Phonological constraint (Selkirk, 2000)

Binary (MaP): A major phrase consists of just two minor/accentual phrases.

Tableau (1): The tableau is for the sentence *She loaned her rollerblades to Robin*

[She [lóaned] [her róllerblades]$_{NP}$ [to Róbin]$_{PP}$]	Wrap-XP	AlignXP,R	BinMap
☞ (She lóaned her róllerblades to Róbin)$_{MaP}$		*	*
☞ (She lóaned her róllerblades)$_{MaP}$ (to Róbin)$_{MaP}$	*		*
(She lóaned)$_{MaP}$ (her róllerblades)$_{MaP}$ (to Róbin)$_{MaP}$	*		**!*
(She lóaned)$_{MaP}$ (her róllerblades to Róbin)$_{MaP}$	*	*!	*

(Selkirk, 2000, p. 245)

B. PIC2 & Languages with *v**-to-T Movement

Let us now turn to the case of languages with *v**-to-T movement and a p-phrasing whereby the verb is grouped together with its domain. PIC2 or to be more accurate the delay via PIC2 should, and as the only available delaying candidate within Chomsky's DbP framework, ensure and account for the fact that the verb can be grouped together with the object by being transferred together in the same domain within the lower (slided) phase in related languages with *v**-to-T movement. A possible example can be Chichewa which is defined within the framework of Dobashi (2004) as a language with *v**-to-T movement and a p-phrasing whereby the verb and object are mapped together onto a single MaP as it is shown below.

✓ *Interface constraints used to account for major phonological phrasing in Chichewa (see Truckenbrodt, 1995 for more details)*

I- Wrap-XP

II- Align-XP, R

The ranking system is Wrap-XP >> Align-XP, R and the following tableau accounts for thep- phrasing pattern observed in mono-transitive sentences.

Tableau (2)

[V NP]VP	Wrap-XP	Align XP,R
a. (V)ϕ (NP)ϕ	*	
b. ☞ (V NP)ϕ		

I do propose here a re-analysis of Dobashi's (2004) account of the spell-out process in Chichewa and the consequent major phonological phrasing. I do assume the following:

PIC2 and v-to-T languages:*

- ✓ Head movement: The delay via PIC2 allows *v**-to-T movement to take place → Following Gallego (2010), *v**-to-T movement results in phase sliding (or may be, phase extension as some linguists assume).
- ✓ Spell-out: I do assume that the verb (V-*v**-T) can be spelled-out in the lower phase by the merger of C within the domain of the slided *v**P via PIC2→ This conforms to Chomsky's simplest assumption that phonology spells-out elements that undergo no further movement.

The assumptions above can help us to reach a re-analysis of Dobashi's (2004) account for deriving the phrasing (VO)ϕ in Chichewa for the following sentence.

Example (4)

Mwaána anaménya nyuúmba
child SM-hit house
( ) ϕ ( ) ϕ
'The child hit the house' (Chichewa, para.1)

Assuming the phrase structure: [CP C [IP child hit-*v*-Infl [*v*P house <*v*> [VP <hit> <house>]]]], Dobashi's analysis stands on the assumption that the verb and object gets spelled-out together in the complement of C due to the evacuation of the lower phase domain (as a consequence of the object movement to Spec, *v**P to check the OCC feature of *v** as well as the *v**-to-T movement). Moreover, and to account for the fact that the subject does not get spelled-out with the verb and object in the complement of C,

Dobashi proposes that the subject escapes the mapping due to a linearization issue, and is finally spelled-out when transfer applies to the root. Worth mentioning is that spell-out in his analysis is assumed to happen via PIC1.

✓ *Dobashi: Spell-out via PIC1*

[CP **C** [IP child hit-*v*-Infl [*v*P house <*v*> [VP <hit> <house>]]]]

1- Spell-out the sister of C via PIC1 with the Subj escaping the mapping = (VO)ϕ
2- Spell-out applies to the root (C Subj)ϕ

My re-analysis, however, does not postulate any such a linearization issue. The idea here is that the *v**-to-T movement results in a delay in spell-out via a phase sliding and thus by the merger of C, the *v**-T (by my new thesis that a (slided) phase head can be spelled-out with its domain) can now undergo spell-out within the lower (slided) phase via PIC2, the subject, on the other hand, is spelled-out when spell-out finally applies to the root. Hence, the main assumptions are:

i. My assumption that a (slided) phase head can be spelled-out with other elements in its domain.

ii. My assumption of the role of head movement in delaying spell-out: A phase head can be spelled-out with other elements in its domain iff it has reached its final landing site and this fact is ensured for *v**-to-T languages via PIC2. Head movement in *v**-to-T languages results in a phase sliding (Gallego, 2010).

✓ *Re-analysis: Spell-out via PIC2*

[CP **C** [IP child hit-*v*-Infl [*v*P house <*v*> [VP <hit> <house>]]]]

1- *Spell-out the lower slided phase (along with its head) = (VO)ϕ*

2- Spell-out the domain of C= *(Subj)ϕ or (C Subj)ϕ*

As it is shown above, the assumptions above help us to reach a derivational account for major phonological phrasing in Chichewa. The effects of the interface constraints: Wrap-XP and Align-XP,R within the end-based do now attain a derivational flavor as being consequences of the spell-out mechanism itself.

To wrap up, I assume that a phase head *v** in the configurations V- *v** and V- *v**-T can undergo spell-out with its domain via PIC1 and PIC2 respectively. More specifically, the delay via PIC2 allows *v**-T movement to take place. This view finally conforms to Chomsky's (2001) *simplest assumption* that phonology can spell-out elements (and thus heads) which undergo no further movement. Add to this, the assumption of phase sliding, that is, "V-movement is a device to redefine syntactic boundaries" (Gallego, 2010, p. 142)[23], which raises the possibility that "(some instances of) head movement have an effect on the way syntactic domains are transferred" (Gallego, 2010, p. 51)[24] .

- V-to-*v**
- V-*v**-to-T→ phase sliding (Gallego, 2010)→incorporating more structure

3.2.2 Phase Heads as the Loci of Parametric Variation

However, and for the view to be more comprehensive, one more factor should be added to account for the fact that there exist languages with same syntax say the verb moves only up to *v**, but still they vary in that the verb (V-*v**) may or may not undergo interpretation with its complement/s.

This factor builds on the role of phase heads as the loci of parametric variations. More specifically, a phase head, mainly *v**, can come from the lexicon with specific instructions as to the p-phrasing of its domain[25]. I assume that the assumption of phase heads being the loci of parametric variations as well as that of the role of head movement (discussed earlier) are all we need to account for the fact that a phase head *v** can, in some languages, be included in its spell-out domain resulting in a p-phrasing type (VO)ϕ. These two assumptions will be discussed in the following sub-section in some detail and will be shown to be interleaving ones.

[23] Gallego here assumes and indicates that the process of phase sliding is an update on Chomsky's (1986a) assumption that " V-movement is a device to redefine syntactic boundaries" (Gallego, 2010, p. 142)

[24] Gallego here refers to the effect of the phase sliding resulting from *v**-to-T movement.

[25] The domain of a phase head *v** includes this phase head, as it has been indicated before.

3.2. 3 Two Interleaving Factors: A New Spell-out Mechanism[26]

As indicated before, the new thesis I assume in this work is that a phase head, mainly *v**, belong to its spell-out domain. However, I also assume that although the phase head *v** belongs to its spell-out domain, it may or may not be spelled-out with its domain. Specifically, I assume that a phase head *v** can undergo interpretation along with its complement/s

1- in languages lexically parameterized to do so[27]
2- when it is syntactically possible: when the head needs no longer be available for head movement (i.e., it reaches its landing site)[28]

The two points mentioned above are not at odd with Chomsky's DbP, specifically speaking his PICs. The idea here is that the mapping via PIC should be assumed to be sensitive to the above-mentioned two points to allow more variability in the mapping of domains. Doing so, the PICs will entertain a derivational status rather than their representational one. Moreover, the assumptions above conform to Chomsky's (2000, 2001) views: while the second assumption conforms to Chomsky's (2001) *simplest assumption* that phonology can spell-out elements undergoing no further movement, the first assumption is still in line with Chomsky's (2001) view that *parametric variation is restricted to the lexicon* and both assumptions may also find a motivation in a more generalized form of Chomsky's "generalization of the idea that operations can apply only if they have an effect on outcome"[29] (Chomsky, 2000, p. 109). That is, if a language is lexically parameterized to group a (phase) head with its domain as it is manifested by *the effect on outcome* (e.g., English exhibits the phrasing (VO)ϕ), and this outcome is syntactically ensured as a (strong) phase head *v** has reached *its landing site* (e.g., V-to-*v**), then the inevitable assumption is that the head can undergo spell-out with its domain via PIC.

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[26] This new spell-out mechanism is discussed in greater detail in Yahya (2014b).
[27] I assume here that languages are parameterized as to *the kind of spell-out* applying to their spell-out domains, itself a function of a strong phase head as the locus of parametric variation. The exact view is detailed in Yahya (2014b, 2013).
[28] This factor is a timing factor and I term it *the timing of spell-out relevant.*
[29] Here, the notion of effect on the outcome is employed as an evidence (and hence consequence) rather than a cause.

Hence, the view I develop here to account for the p-phrasing of a phase head *v** (V-*v** or V-*v**-T) with its domain rests upon two interleaving assumptions: the first is that a phase head *v** can, in some languages, include an instruction to group the verb[30] with other elements in its domain and the second assumption is that a (phase) head *v** (V-*v** or V-*v**-T) can undergo spell-out with its domain once it has reached its landing site. I assume that these two assumptions are all we need to account for the fact that the (phase) head *v** can, in some languages, be interpreted with its complement. To understand how these assumptions can work together, I will briefly account for the p-phrasing pattern (VO)ϕ in *v**-to-T languages. Accordingly, if the phase head *v** comes from the lexicon with the instruction that the verb and object in a particular language must be phrased together, and the verb is to syntactically move to T, then the only way to accomplish this instruction is to delay spell-out enough to allow head movement to take place so that the complex head (V-*v**-T) can finally be spelled-out in the lower slided phase *v**P in ways predicted by PIC2.

One point to add is that the two factors defined above should be a part of any successful and integrated theory of the interface to allow different outputs to be accounted for. The broader readings of these two factors can be *what are the units that can be transferred to the interface?* and *when can the transfer operation happen?* respectively. These two factors find echo within phase-based theories as that of Richards (2007a) and Richards (2009)[31].

3.2. 4 Towards a Conclusion

Assuming all the analyses and discussions above, the fact that the cycle is single in syntax and phonology (i.e., syntactic domains define phonological ones)[32], the fact that the verb universally moves to *v*, the fact that the internal structure of a derived head is syntactically indivisible, the fact that the verb can be phrased together with the object in

[30] V can end up in *v** or T.

[31] See Yahya (2014b) for elaboration.

[32] Chomsky (2001) indicates that the phonological cycle is not an independent cycle but it "proceeds essentially in parallel" (Chomsky, 2001, p. 5).

many languages (a phrasing predicted by two[33] out of the three constraints the end-based uses to account for MaP-domains formation cross-linguistiaclly) as well as some integrity condition as Richards' (2004) phase integrity condition stated below, we are lead to the fact that a phase head, mainly *v**, can undergo interpretation with its complement in some languages. This proposal is extended to C if it exhibits a liability of phrasing with its complement.

- Phase Integrity Condition:

  For two adjacent categories to be parsed inside the same ϕ (and any lower prosodic category), they must be spelt out in the same phase (Richards, 2004, p. 36).

Thus, and to conclude, the assumption pursued in this study is that although a phase head belongs to its domain for spell-out purposes, it may/may not (at least phonologically) undergo interpretation with the domain it defines. To give it name, I call it the head parameter and I formulate it as follows:

- The head parameter

  Languages are parameterized (at least phonologically) as to whether the head of a (strong) phase can undergo interpretation with its complement or not.

As to the issue whether the exact basis of this parameter is a phonological or a syntactic one, we have come across different possibilities:

a. A general basis: It is regulated by functional categories specifically the phasal heads which come from the lexicon with specific (interface) properties (Gonzalez-Vilbazo & López, 2012). That is, phase heads can include specifications regarding p-phrasing. This assumption is more optimal as it places variability in the lexicon. This is the assumption I follow, and I believe that combining this assumption with my hypothesis that a (phase) head can undergo transfer with its domain the moment it is no longer needed for head movement, which can be somehow late,

[33] Both Wrap-XP and Align-XP,R predict that the verb be phrased with its complement in mono-transitive sentences.

will suffice to account for the p-phrasing whereby a verb (V-*v** or V-*v**-T) and its complement/s are grouped together.

b. A syntactic basis: It is dependent on syntactic movement. One instance is the object movement in some Bantu languages as Chichewa (Dobashi, 2004). However, the object movement in Dobashi's (2004) analysis is finally triggered by an OCC feature of *v**. I claim here that *v** in Chichewa includes the instruction that the verb and object should be phrased together and this instruction is both rescued and implemented by an OCC feature, which results in the object movement, and subsequently the verb (in T) and the object in Spec,*v** can be spelled-out together in the domain of C, and hence phrased together[34] .Thus, account **b** may end up included in account **a**.

c. A phonological basis: It is decided in phonology via the assumption that "different language-particular rankings of prosodic markedness constraints could give rise to different alternations to the prosodic structure produced by the universal prosodic spell-out principles" (Kratzer & Selkirk, 2007, p. 126).

Despite the fact that I cannot completely exclude the possibility that whether the phase head will be interpreted with its complement or not may vary from language to language due to some language-specific phonological constraints or parameters, this does not stop me from saying that the view where the *head parameter* is defined in relation to instructions in lexicon seems both more optimal and minimal(ist). This is because assuming it to be a consequence of phonology places a *vital role* on phonology in deciding p-phrasing, and hence weakening the role of the phase-based cyclicity in shaping phonological phrases. As I have indicated earlier in this paper, the p-phrasing pattern (VO)ϕ in German with pitch accent on the object can be successfully predicted by both Kratzer and Selkirk (2007) as well as by Gonzalez-Vilbazo and López (2012). Thus, it seems that opting for the option where the head parameter is defined in relation to

[34] Another account is that the XP movement is but a last resort strategy to accomplish the spell-out instruction of the phase head regarding how to map its domain onto a ϕ. This is the account I assume and it will be argued for in some detail in Yahya (2014b).

phasal syntactic elements (direct reference)[35] is the perhaps the best strategy. However, opting for the option where the head parameter is defined in relation to phase heads, we are now left with two more complications:

1- The first is that the instructions included by the phase heads are intended only for the PF branch and hence interpretation by phonology. This still implies that it is syntax which decides (Major) phonological phrasing by including some special interface instructions, defined lexically, to be read and interpreted by the sensorimotor SM system. If this assumption is ever right, then it can partly[36] account for why the output of narrow syntax and semantics mirror each other but not that of syntax and phonology, a view indicated in some studies as Chomsky (2004). The reason thus and as we have seen may reside in the fact that the mapping to SM system is more complex than that to the C-I system.

2- The second is that the instructions included by the phase heads are necessary not only for structure interpretation by phonology but also for syntactic structure building and interpretation by C-I as well. This is the minimal(ist) hypothesis which simplifies the mapping building on the assumption that syntactic and phonological effects of spell-out are similar due to the unification of the phonological and syntactic cycles.

The second view is the view I follow in this dissertation. One point to indicate here is that perhaps if we pertain a good command over both the syntax and interface facts of languages, the two complications mentioned above can finally get clarified.

In a nutshell, it has been argued here that a phase head, particularly *v**, belongs to its spell-out domain and can in some languages be spelled-out, and hence get phrased, together with its complement. Despite the fact that this assumption seems at the first

[35] One point worth mentioning here which is of some relevance is that it has been indicated that the fact that phonological domains are defined in relation to syntactic elements can find its support in a phenomenon as recursion. Recursion is generally assumed to be a feature of syntax and not phonology. However, the fact that the (major) phonological phrase, a constituent of the prosodic hierarchy, turns out to be a recursive one indicates its syntactic basis.

[36] It can only account partly for mismatches between phonological domains and syntactic structures because I assume that phonological considerations can also play a role in shaping phrasal domains in some languages.

glance to be a weakening of the phase theory[37], it turns out that it is not and this is because it is still the phase head *v** which determines the variation in the p-phrasing of its domain (i.e., the verb (V-*v** or V-*v**-T) and its complement/s).

3.3 A New Assumption to Live with

The new assumption in this paper and which will have a welcome result as far as the derivation of different phonological possibilities is concerned is that the spell-out domain of a (strong) phase head consists of both the (strong) phase head and its complement (contra Chomsky, 2000, 2001 and subsequent work). However, I also claim that whether the phase head undergoes spell-out along with its complement or not is parametrically dependent on the lexical feature the phase head may include.

This assumption is not a postulation or technology proposed to account for facts that would otherwise go unjustified, but it is one that emerges from the discussion in the previous sections. It has been shown in this paper that a phase head, mainly *v**, can be spelled-out with its complement in some languages. Moreover, this assumption has one more welcome consequence. Accordingly, if one assumes that the fate (spell-out and hence phonological phrasing) of the phase head (V-*v** or V-*v**-T) and its complement is decided within the *v**P phase, then the assumption that subjects[38] have different situation (in spell-out and phonological phrasing) from other elements falls naturally, as subjects tend in majority of cases to be phrased separately[39].

Thus, the assumption here is that a phase head belongs to its spell-out domain[40]. To understand how this assumption will technically work, I will illustrate below its effects in relation to both PIC1 and PIC2 (Chomsky, 2001) and show that this assumption will be in no contradiction with PIC1 (Chomsky, 2001) in languages where the phase head and other element/s in its domain spell-out separately, though it apparently seems to be so.

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[37] This is because Chomsky's phase theory assumes that a phase head does not belong to it domain for spell-out purposes while this study assumes that a phase head does belong to its spell-out domain.

[38] Here, I assume that subjects are spelled-out by the main derivation workspace of the clause (Contra Uriagereka, 1999).

[39] Within the end-based, subjects (but not subject pronouns) are always predicted to be phrased separately in SVO languages.

[40] However, this fact may get obscured by the spell-out instruction the phase head itself can bear namely if this instruction dictates that the verb (V-*v** or V-*v**-T) be phrased separately from other element/s in its domain.

However, this assumption will appeal to a slight reconsideration of the spell-out domain defined by PIC1 & PIC2 (Chomsky, 2001) in the case where a phase head *v** (V-*v** or V-*v**-T) undergoes spell-out along with other element/s in its domain.

i. PIC1: Considering PIC1, PIC1, as it will be assumed in this whole dissertation, is in effect in languages where *v** includes spell-out instructions of the following two types:

   a. To spell-out the verb and object onto two separate domains[41]

   Thus, and though the verb (V- *v** or V- *v**-T) and object are assumed to belong to the the spell-out domain of *v**, only the object will be spelled-out in the *v**P phase while the verb (V- *v** or V- *v**-T) will remain accessible and will be spelled-out in the domain of C. Being so, the new assumption of the phase head belonging to its spell-out domain is in no contradiction with Chomsky's (2001) PIC1 since the phase head *v** (in the configurations V- *v** & V- *v**-T) and object are spelled-out separately.

   Actually, the case of languages with the p-phrasing type (S)ϕ (V)ϕ (O)ϕ does not only conform to Chomsky's (2001) PIC1, but it also indirectly strengthens the assumption that a phase head *v** (in the configurations V-*v** & V- *v**-T) belongs to its spell-out domain though it may not get spelled-out when spell-out applies to its domain. One actual illustration is French which is defined as a language with the p-phrasing (S)ϕ (V)ϕ (O)ϕ. It is also defined as a *v**-to-T language and that the subject is in Spec, TP (Narita & Samuels, 2009). Thus, one can assume that the object is defined within the *v**P phase a separate domain. As for the verb (or V-*v**-T), it will not undergo spell-out at this stage, and hence conforming to Chomsky's (2001) assumption that a phase head should remain accessible when its complement gets spelled-out. However, what is not clear here is that why should the subject[42], landing in Spec TP, get spelled-out

[41] Here, spell-out happens early disregarding head movement to *v** or T and this is due to the assumption that only the object/s must be spelled-out at this stage via the instruction of the phase head *v**. An example of this case of early spell-out can be French. French is a language with *v**-to-T movement and a phrasing of the type (V)ϕ (O)ϕ.

[42] Here, I assume, in line with many existing studies, that the subject belongs to the main derivation workspace of the clause.

separately from the verb (V-*v**-T) though all belong to the domain of C. Such a case finds a solution within the new proposal and the solution goes as follows. Within the *v**P phase, *v** as a phase head has the instruction to define its domain viz the verb (V-*v**-T) and its complement as two separate domains[43]. The object will be early defined via PIC1 as a separate domain (O)ϕ within the *v**P phase. The other half of the instruction of *v** namely to define the verb as a separate domain will be carried over to the next strong phase level C. C in French seems to have no preferences (instructions) regarding the phonological phrasing of its domain and hence *v**'s instruction is carried over (spreading) to the C level resulting in only the verb being defined upon spell-out as a separate domain (V)ϕ, while the subject will be defined as a separate domain when spell-out applies finally to the root.

Thus, and as it has been suggested by the French case above, the phase head *v** belongs to the domain of the phase it heads and this is suggested by the assumption that the fate of the verb (V-*v**-T) is determined within the *v**P phase though it does not get spelled-out until the next level, conforming, in this case, to Chomsky's assumption that a phase head (*v**) should remain accessible, more specifically to Chomsky's PIC1.

b. To early spell-out the verb and object onto a single domain in languages where the verb does not move beyond *v**

PIC1 is also assumed in this study to account for languages where a phase head (mainly *v**) does undergo spell-out with its complement in languages with V-to-*v** movement. However, for Chomsky's (2001) PIC1 to be the right candidate to handle this case, it should be used here with a slight modification in the definition of the spell-out domain so that the new definition includes the phase head itself in addition to its complement.

[43] The spell-out feature geometry of *v** as well as the notion of feature spreading is discussed in Yahya (2014b)

Turning to the exact details of this early spell-out form, I assume that the verb (V-*v**) and its complement can undergo spell-out within the *v**P phase via PIC1 which ensures the verb movement to *v**. More specifically, assuming a wrapping instruction of *v** manifested by the surface phonological phrasing (VO)ϕ plus the assumption of the universality of V-to-*v** movement, spell-out on the *v** phase via PIC1 should include the phase head *v** with the result that only the edge (Spec, *v**P) will be accessible. A good example to illustrate this case is English which has been previously discussed in this paper.

ii. PIC2: Late spell-out

PIC2 is assumed in this study to account for languages with *v**-to-T movement (resulting in what Gallego (2010) calls phase-sliding) and a p-phrasing whereby the verb (V-*v**-T) undergoes spell-out with other elements in its domain due to the instruction of *v** to wrap its whole domain (head+ all other elements in its domain) onto a single domain. Thus, once again, and in line with PIC1, Chomsky's (2001) PIC2 will be used here with a modification in the spell-out-domain definition namely a spell-out domain consists of both the phase head *v** and its complement.

The delay via PIC2 is necessary to ensure that head movement has taken place or in Svenonius' (2001) terms that the head *has reached its final landing site*. Hence, once again, we can conclude that assuming a wrapping instruction manifested by the surface phonological phrasing (VO)ϕ plus the assumption of the role of syntactic head movement of *v**-to-T in triggering a process of phase sliding, the spell-out domain of a phase *v** defined by PIC2 should include the phase head *v** (V-*v**-T) with the result that only the edge (Spec, TP) will be accessible. A good example of this case can be Chichewa which has been discussed earlier in this paper.

To conclude, incorporating the following notions into the PICs:

1- The domain of a strong phase head = head + other elements in its complement
2- The different possibilities in what can get spelled-out in the world languages: partial/full spell-out of the domain of a phase head

3- The role of head movement (mainly *v**-to-T movement) in delaying spell-out, the two PICs can perhaps be something near to the following:

PIC1 (Two Phonological versions)

i. Some part/s of the domain of H is /are not accessible to operations outside HP; while H and its edge are accessible to such operations.
[Given structure [ZP Z … [HP α [H YP]]], with H and Z the heads of strong phases].

ii. The whole domain of H (i.e., H+ all other elements in its complement) is not accessible to operations outside HP; only its edge is accessible to such operations.
[Given structure [ZP Z … [HP α [H YP]]], with H and Z the heads of strong phases].

PIC2 (One Phonlogical version)

The whole domain of H (i.e., H+ all other elements in its complement) is not accessible to operations at ZP; only its edge is accessible to such operations.
[Given structure [ZP Z … [HP α [H YP]]], with H and Z the heads of strong phases].

4. Summary

The main thesis proposed and argued for in this paper is that a phase head mainly *v** belongs to its spell-out domain (contra Chomsky's DbP and subsequent work) and can undergo spell-out along with its complement in some languages. Moreover, this paper introduces the basic notions of a new spell-out mechanism, which is developed in detail in Yahya (2014b).

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