Externalization out of Phase*

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Lee, Jeong-Shik. 2008. Externalization out of Phase. *The Linguistic Association of Korean Journal, 16(4),* 87-110. This paper observes a variety of externalization processes across languages, and attempts to offer a generalization: under a given subnumeration, Spell-Out of fewer materials is more economical than that of more materials in a phase. This generalization can embrace Alexiadou and Anagnostopoulou's (2001) SSG--by Spell-Out, VP can contain no more than one argument with an unchecked Case feature--as well as the traditional EPP (Chomsky 1981) by which VP-internal subject is externalized to Spec IP. This paper then proposes that behind this generalization lies the following: languages attempt to increase economy by reducing the number of Spell-Out materials in a phase. Different aspects of externalization processes across languages may be attributed to different attracting powers of relevant functional categories inviting externalization processes.

Key Words: externalization, EPP, SSG, phase, Spell-Out, null Spell-Out, Spell-Out economy

1. Introduction

This paper is concerned with a variety of externalization processes among languages, and basically confirms a generalization made in Lee (2008c): under a given subnumeration, Spell-Out of fewer materials is more economical than that of more materials in a phase. The EPP

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(Extended Projection Principle, Chomsky 1981) is one externalization process by which the VP-internal subject is raised out of Spec VP to Spec IP. Another one is the SSG (Subject-In-Situ-Generalization, Alexiadou and Anagnostopoulou 2001), which is intended to be independent of the EPP--by Spell-Out, VP can contain no more than one argument with an unchecked Case feature. Thus, these cross-linguistic generalizations state that by Spell-Out, a certain number of arguments of the verb vacate the original position within VP.

This paper investigates several other similar but a bit different cases of this kind of externalization process: (i) in German, whole VP-/vP-remnant including an argument moves to a higher position, (ii) in Niuean, whole VP-remnant moves to a higher position leaving behind its arguments, (iii) in Irish, CP complement of a verb moves to the verb's edge. (iv) in Korean, complement of a verb, object or CP, moves to the verb's edge. All these affairs are then considered to be an effort to increase economy by lessening the Spell-Out materials in a lower phase like VP before the derivation reaches the uppermost phase. This conjecture ultimately leads to a confirmation of an economy principle offered in Lee (2008c)--Minimize Spell-Out materials in the given subnumeration as much as possible in a phase; cross-linguistic differences resulting from specific properties of relevant functional categories inviting externalization processes in each language.

2. EPP and SSG

The EPP, originally proposed in Chomsky (1981), requires that every clause have a subject, as given in (1).

(1) EPP: Every clause must have a subject.

Thus, in languages like English the VP-internally generated subject moves to Spec IP out of VP, as roughly illustrated in (2).

(2) S_i [$_{VP}$ t_i V O] (cf. *e [$_{VP}$ S V O], *There [$_{VP}$ S V O])

It is noticed that by Spell-Out, VP can retain only the object, if any, in English.

Alexiadou and Anagnostopoulou (2001) (henceforth, A&A) provide another generalization about the externalization of the verbal arguments, as given in (3).

(3) By Spell-Out, VP can contain no more than one argument with an unchecked Case feature.

It is suggested that (3) is independent of the EPP. A&A rely on numerous empirical data to argue for (3). For the present purpose of illustration, only a limited number of representative phenomena are cited below (see A&A for details and relevant references therein).

Consider first English Quotative Inversion (QI), as roughly depicted in (4).

(4) *Quote, [V S O] (cf. Quote, S [V O]; Quote, V [S PP])

It is noted that Quote cannot be followed by a VP that contains both subject and object. The subject must externalize out of VP or the object must occur in the form of PP within VP. This fact is illustrated by the following QI examples from English.

(5) a. *"What is the exchange rate?" asked Mary John.
b. "What is the exchange rate?" asked Mary of John.
c. "What is the exchange rate?" Mary asked John.

It is observed that in English QI, the transitive subject cannot remain VP-internal when there is a VP-internal object ((5a) vs. (5c)). (It can remain VP-internal when there is no VP-internal object; e.g., *Quote, said Mary.*) If there is a VP-internal object, it must be a PP, as seen in (5b). This is dubbed the Subject-in-Situ Generalization (SSG), which is rephrased as (3).

French Stylistic Inversion (SI) is another case, as roughly shown below.

(6) *...quand V [S O] (cf. ...quand O [V S]; ...quand [V S PP]; quand 'when')

The following examples illustrate the point.

(7) a. Je me demande partira Marie.
I wonder when will-leave Marie
'I wonder when Marie will leave.'
b. *Je me demande quand acheteront les consommateurs
I wonder when when will-buy the consumers-Nom
les pommes.
the apples-Acc
c. ?Quand ecrira ton frere a sa petite amie?
when will-write your brother to his little friend
'When will your brother write to his girl friend?'

It is observed that the SSG is a property of French SI, too.

French/English/Icelandic transitive expletive constructions (TECs) also show that a VP cannot contain both subject and object, as roughly displayed in (8).

(8) *Expletive [V S O] (cf. Expletive [V S])

Relevant examples are drawn from the TECs of French and English.

(9) a. Il est arrive un homme.
Exp is arrived a man
'There has arrived a man.'
b. *Il a lu un eleve le livre.
Exp has read a student-Nom the book-Acc
'There has read a student the book.'
c. There arrived a man.
d. *There finished somebody the assignment.

It is noticed that although the subject can remain in a VP-internal position, as seen in (9a,c), the two arguments cannot both remain inside the VP, as seen in (9b,d), thus supporting the SSG.

Icelandic TECs apparently allow the subject to occur with the object in VP together. According to A&A, however, they are only apparent counterexamples to the SSG in that the subject is always VP-external (and the object can as well):

(10) a. að klaruðu margar mys ostinn.
there finished many mice the cheese
b. að klaruðu margar mys [$_{VP}$ alveg ostinn].
there finished many mice completely the cheese
c. að klaruðu margar mys ostinn [$_{VP}$ alveg].
there finished many mice the cheese completely
'Many mice completely finished the cheese.'
d. *að klaruðu [$_{VP}$ alveg margar mys ostinn].
there finished completely many mice the cheese

As seen in (10d), both the subject and the object cannot remain VP-internal together, unlike in (10b,c). This then conforms to the SSG.

Depending on the analysis, Korean Nom/Gen (*-ka/-uy*) conversion may be additional evidence for the SSG:

(11) a. [nay-ka/na-uy salangha-nun] ceca-tul
I-Nom/I-Gen love-Rel student-Pl
'the students I love'
b. [nay-ka/*na-uy chayk-ul pilyecwu-n] salam
I-Nom/I-Gen book-Acc lent-Rel person
'the person to whom I lent the book'

The same phenomenon is also discussed in Japanese in the name of *ga/no* conversion in the literature (Watanabe 1996, Miyagawa 1997). A&A argue for the SSG based on the above contrast in Japanese. Following Watanabe (1996), if the Gen marker is a reflex of covert

movement (e.g., to Agrs) and if the Nom marker shows up whenever overt subject movement takes place in Korean as well, then it follows from the SSG that the subject cannot remain in VP-internal position along with the object.

Discussion: What I have observed is that the VP must not retain all of its original materials at the point of Spell-Out. To satisfy this requirement, most frequently the subject raises out of VP to Spec IP, which is manifested by the EPP (and by the SSG as well). As another way, independently of the EPP, according to A&A's SSG, the object can move out of VP leaving the subject behind within VP; the object may remain within VP only in the form of PP. Other possibilities to satisfy the above requirement will be illustrated in the subsequent sections across languages. Here considering that the VP forms a phase (Chomsky 2000, 2001b), I may say that in the VP phase, its numeration materials cannot remain the same at the Spell-Out point. What does it follow from then? It appears that in PF, Spell-Out of fewer materials is preferred in a lower phase like VP. This could reflect some sort economy concerning Spell-Out, which is also an operation employed by the computational system. To roughly put,

(12) Spell out fewer materials in a lower phase under a given numeration.

More discussion will be advanced in detail in section 7 at the end of this paper.[2)]

3. German Verb-second (V-2)

Germanic Verb-second (henceforth, V-2) constructions, as instantiated in (13a,b), can be analyzed as involving externalization of VP and further vP materials as well.

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2) When the object remains in VP in the form of PP, however, the number of numeration materials in the vP phase is not in fact decreased. I will return to this matter in section 7.

(13) a. Die Maria hat den Fritz geküsst.
Nom Maria has Acc Fritz kissed
'Maria has kissed Fritz.'
b. Den Fritz hat die Maria geküsst.
Acc Fritz has Nom Maria kissed
'Fritz, Maria has kissed.'

A traditional analysis for this V-2 phenomenon involves V-2 movement of the finite verb to C by head movement and XP movement to Spec CP, as shown in (14).[3)]

(14) a. [$_{vP}$ Die Maria [$_{v'}$ [$_{VP}$ den Fritz geküsst] hat]]
Nom Maria Acc Fritz kissed has
b. [$_{CP}$ Die Maria [$_{C'}$ hat [$_{TP}$ **Die Maria** [$_{vP}$ **Die Maria** [$_{v'}$ [$_{VP}$ den Fritz geküsst] **hat**]]]]]

The head movement analysis, however, undesirably produces a violation of the Head Movement Constraint in examples like (15a), as can be seen from (15b), unlike the VP-/vP-remnant movement, as seen in (15c).[4)]

(15) a. Geküsst hat Den Fritz die Maria.
kissed has Acc Fritz Nom Maria
b. [$_{CP}$ C [$_{TP}$ [$_{vP}$ S [$_{VP}$ O V(geküsst)] v(hat)] T]]
==> [geküsst$_2$ [hat$_1$ [S [O t_2] t_1]]]
c. [$_{CP}$ [t_2 Geküsst ...t_1... hat] [$_{C'}$ [$_{TP}$ den Fritz$_2$ [$_{T'}$ die Maria1 [$_{T'}$]

Rejecting the head movement approach, Müller (2004), among others, advocates VP-/vP-remnant movement analysis in deriving V-2 constructions.

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3) Outlined copies found in this section are intended to replace the traditional traces under the copy theory of movement in Chomsky (1993).

4) Derivations in (15c) appear to involve a violation of the PBC (Proper Binding Condition). This problem may be avoided if this condition is relaxed a bit (see, e.g, Cecchetto 2000).

In this VP-/vP-remnant approach, (13a) is derived as in (16).

(16) a. [$_{vP}$ Die Maria [$_{v'}$ [$_{VP}$ den Fritz geküsst] hat]]
--> Merge (T, vP), Move (**VP**, SpecT)
b. [$_{TP}$ [$_{VP}$ den Fritz geküsst] [$_{T'}$ [$_{vP}$ Die Maria [$_{v'}$ **[$_{VP}$ den Fritz geküsst]** hat]]]]
--> Merge (C, TP), Move (**vP**, SpecC)
c. [$_{CP}$ [$_{vP}$ Die Maria [$_{v'}$ **[$_{VP}$]** hat]] [$_{C'}$ [$_{TP}$ [$_{VP}$ den Fritz geküsst] [$_{T'}$ **[$_{vP}$ Die Maria [$_{v'}$ [$_{VP}$] hat]]**]]]]
d. Die Maria hat den Fritz geküsst. (=13a)

And (13b) is derived as in (17).

(17) a. [$_{VP}$ den Fritz geküsst]
--> Merge (v, VP), Merge (v, Sub), Move (Obj, Specv)
b. [$_{vP}$ den Fritz [$_{v'}$ Die Maria [$_{v'}$ [$_{VP}$ **den Fritz** geküsst] v]]]
--> Merge (T, vP), Move (**VP**, SpecT), Move (Sub, SpecT)
c. [$_{TP}$ Die Maria [$_{T'}$ [$_{VP}$ **den Fritz** geküsst] [$_{T'}$ [$_{vP}$ den Fritz [$_{v'}$ **Die Maria** [$_{v'}$ **[$_{VP}$]** hat]]]]]]
--> Merge (C, TP), Move (**vP**, SpecC)
d. [$_{CP}$ [$_{vP}$ den Fritz [$_{v'}$ **Die Maria** [$_{v'}$ **[$_{VP}$]** hat]]] [$_{C'}$ [$_{TP}$ Die Maria [$_{T'}$ [$_{VP}$ **den Fritz** geküsst] [$_{T'}$ **[$_{vP}$]**]]]]]
e. Den Fritz hat die Maria geküsst. (=13b)

It is noticed that in (16, 17), by Spell-Out the VP/vP are entirely vacated by Move VP/vP.

That moved-VP category regularly occurs in the pre-V-2 position in German is shown in (18) as well.

(18) [Den Fritz geküsst] hat die Maria gestern.
'Kiss Fritz, Maria yesterday has.'

It is seen above that this VP-/vP-remnant movement analysis can avoid otherwise problematic head movement violation in deriving

examples like (15a).

Thus, in German V-2 constructions there is nothing left in VP/vP after VP-/vP remnant movement, which is more than what the SSG actually requires. Evidently, something more is going on here. For this aspect, a conjecture mentioned in section 2 will be more elaborated in section 7.

4. VSO order in Irish and Niuean

A&A (pp. 200-201) argue that VSO constructions in Celtic and Arabic are not inconsistent with the SSG by claiming that the subject is always VP-external. The following contrast from Irish supports this:

(19) a. Chuala Roise minic an t-amhran sin.
heard Roise often that-song
b. *Chuala minic Roise an t-amhran sin.
heard often Roise that-song

Considering that the subject precedes the adverb (here, *often*), as observed in (20), the subject *Roise* in (19a) should be analyzed as [V S_i Adv [$_{VP}$ t_i O]], thus satisfying the SSG.

(20) Chuala Roise go minic roimhe an t-amhran sin.
heard Roise often before-it that-song
'Roise had often heard that song before.'

In (19b), however, VP is too crowded, which is against the spirit of the SSG.

McCloskey (1996) analyzes Irish sentences like (21) as partially represented in (22), claiming that V moves only to I and C lowers to I.

(21) Deir se [$_{CP}$ gur chuir se sios e]
says he Comp+Past put he down it
'He says that he put it down.'

(22) [$_{CP}$ t_j [$_{IP}$ [$_{I'}$ [gδ_j -r xur$_i$] [$_{VP}$ Sub t_j sios Obj]]]

Under this analysis, verbal arguments remain within VP, as in (22), and thus it looks as if the SSG is not observed.[5] As A&A argue, however, if the subject moves out of VP in Irish as discussed around (19a,b), (21) may not counter to the SSG.

Another analysis concerning the derivation of VSO order is also found. This analysis will show that externalization process may take a different shape. Massam (2000) deals with some aspects of Niuean word orders, namely, VSO/VOS, in terms of remnant VP-predicate fronting instead of V-fronting. She argues that this VP fronts to Spec IP, thereby satisfying the EPP, and that this fronting is an externalization process. Consider the following data.

(23) a. Ne inu e Sione e kofe.
Past drank Erg Sione Abs coffee
'Sione drank the coffee.'
b. To fano a ia.
Fut go Abs he
'He will go.'

Adopting the clausal structure for Niuean as in (24), Massam provides the derivations in (25a,b) for (23a,b), respectively.[6]

(24) [$_{CP}$ CT [$_{NegP}$ Neg [$_{IP}$ Infl [$_{VP}$ Sub V Obj]]]]
(25) a. [$_{CP}$ Ne [$_{IP}$ [$_{VPj}$ inu t_i] [$_{I'}$ Infl [$_{vP}$ e Sione [$_{AbsP}$ e kofe$_i$ [t_j]]]]]].
Past drink Erg Sione Abs coffee
b. [$_{CP}$ To [$_{IP}$ [$_{VPj}$ fano t_i] [$_{I'}$ Infl [$_{AbsP}$ a ia$_i$ [t_j]]]]].
Fut go Abs he

What is moved to Spec IP here is the VP, and it contains the verb and

5) Thus, the EPP is not satisfied by the XP element in Spec IP but is assumed to be satisfied by X^0 in Infl.
6) In (24) CT is a complex of C and T.

the trace of the vacated argument.

What I notice here is that the derivation in (25a) shows that the two arguments still remain vP-internal. If the VP in the statement of A&A's SSG in (3) is in fact vP under a more elaborated VP-shell structure, this aspect does not seem to accord with the SSG. This is mainly because the vP is too crowded with both the subject and the object remaining in there. As the SSG says (i.e., By Spell-Out VP can contain no more than one argument with an unchecked Case feature), however, if in (25a) both arguments, especially the subject argument, can have their Case features checked within vP, the SSG may not be violated. Recall, however, that under A&A's analysis, VSO constructions like (19) from Irish involve the subject movement out of VP, or vP. Thus, under Massam's analysis, a question remains as to why only Niuean allows Case checking, particularly, of the subject within vP, which is not generally allowed in other languages, as shown in (2, 4, 6), repeated below.

(2) S_i [$_{VP}$ t_j V O] (cf. *e [$_{VP}$ S V O], *There [$_{VP}$ S V O])
(4) *Quote, [V S O] (cf. Quote, S [V O]; Quote, V [S PP])
(6) *...quand V [S O] (cf. ...quand O [V S]; ...quand [V S PP]; quand 'when')

For this, let it be so. Again, if the Irish example (21) is to be analyzed in terms of Massam's predicate fronting, the lower VP will move to Spec IP, leaving the two verbal arguments vP-internal. Thus, as in Niuean, this analysis is not consistent with the SSG, either.

Here I view VSO phenomena from a different perspective. That is, by Spell-Out at least one argument moves out of VP under A&A's analysis; VP itself moves to Spec IP under Masssam's, leaving behind arguments of the verb within vP. Either way, the vP phase contains fewer Spell-Out materials than the original ones. Thus, both analyses have their own ways to satisfy the economy principle roughly stated in (12) in section 2. Recall also that in Germanic V-2 constructions, VP/vP are entirely gone; in other words, they are null-spelled-out, which I will

call "null Spell-Out" in later discussion. Specific physical conditions of the outer surface level in each language will determine different manifestations of a deep principle like (12). I will return to this matter again in detail in section 7.

5. Clausal Object Shift in Irish

Noonan (1999) offers a reanalysis of Irish successive cyclicity phenomena in wh-movement constructions in terms of clausal object CP-movement to the matrix Spec v:

(26) Ceard a chreideann Sean a dheanfa?
what aL believes Sean aL would-say-2s
'What does Sean believe you would say?'

Differently from McCloskey-type analysis in which *aL* appears through morphological effects on the Comp by successive cyclic wh-movement (cf. declarative Comp *go/gur*), Noonan argues that the particle *aL* is a preverbal agreement morpheme that reflects clausal object shift of CP, but not a complementizer. According to her, (26) is thus derived as in (27).

(27) a. [$_{CP}$ pro dheanfa ceard] --> DP-preposing
b. [$_{TP}$ Sean chreideann [$_{CP}$ ceard **aL** dheanfa pro]]
--> CP-preposing
c. [[$_{CP}$ ceard **aL** dheanfa pro] [$_{TP}$ **aL** chreideann Sean t]]
--> wh-movement
d. [ceard [[$_{CP}$ ceard **aL** dheanfa pro] [$_{TP}$ **aL** chreideann Sean t]]]
--> remnant TP-movement
e. [ceard [$_{TP}$ **aL** chreideann Sean t] [$_{CP}$ ceard **aL** dheanfa pro]]]

(In (27d,e) the remnant TP-movement is assumed to occur by a prosodically motivated post-syntactic rule.) In particular, in (27c) the appearance of the agreement element *aL* before the verb *chreideann* comes as a result of complement CP-preposing containing the

wh-phrase *ceard* to a position in the higher position where this verbal agreement thereby takes place.[7] (See also Boeckx 2003 for this type of analysis for Selayarese agreement between verbs and intermediate complementizers induced by wh-movement.)

What I notice here is that as the whole CP complement, or the CP phase, raises to the Spec v in the matrix clause in Irish, the original CP phase in the lower position has nothing to spell out. Also, as the complement object raises from its original place, the matrix vP phase has much fewer materials to spell out. This conforms to the economy principle (12), setting aside the amount of evacuation.

6. Wh-movement in Korean

Contrary to common recognition, recently there has been a claim that Korean starts out as SVO and ends up dispalying SOV properties in general (e.g., Lee 2007a,b, 2008a,b,c; see also, e.g., Endo 1996, Fukutomi 2005 for Japanese). In support of this new claim, the following contrasts are representatively reproduced from Lee (2008a,b,c) (see also Fukutomi 2005 for the same contrast in similar Japanese examples):

(28) a. Chelswu-nun mwuess-ul cohaha-ni?
Chelswu-Top what-Acc like-Q
'What does Chelswu like?'

b. Chelswu-nun cohaha-ni mwuess-ul?
Chelswu-Top like-Q *what-Acc/something-Acc
'*What does Chelswu like?'
'Does Chelswu like something?' (in a positive setting)

(29) a. ne-nun [Yenghi-ka mwuess-ul cohaha-n-ta-ko]
you-Top Yenghi-Nom what-Acc like-Pres-Dec-Comp
sayngkakha-ni?
think-Q
'What do you think [that Yenghi likes].'

7) German also displays similar object CP movement to Spec v with *know*-type verbs (see, e.g., Müller 2004: 327).

b. *ne-nun sayngkakha-ni [Yenghi-ka mwuess-ul
you-Top think-Q Yenghi-Nom what-Acc
cohaha-n-ta-ko]?
like-Pres-Dec-Comp
'What do you think [that Yenghi likes].'

It is noted that a wh-phrase cannot appear in the postverbal position, as shown in (28b), in contrast with (28a). The seeming wh-phrase in the postverbal position can only be interpreted as a non-wh indefinite. Under the usual SOV hypothesis, (28b, 29b) would be derived from (28a, 29a) by rightward movement. But it remains mysterious why the rightward-moved wh-phrase loses its wh-interpretation in (28b) and why this movement produces a bad result in (29b).

Note that this kind of thing does not happen when the wh-phrase undergoes scrambling to the sentence initial position, as seen in (30a), or when the whole clause containing the wh-phrase moves to the sentence initial position, as seen in (30b):

(30) a. Mwuess-ul Chelswu-nun cohaha-ni?
what-Acc Chelswu-Top like-Q
'What does Chelswu like?'
b. [Yenghi-ka mwuess-ul cohaha-n-ta-ko] ne-nun
Yenghi-Nom what-Acc like-Pres-Dec-Comp you-Top
sayngkakha-ni?
think-Q
'What do you think [that Yenghi likes].'

This fact confirms that the SOV hypothesis cannot properly handle the contrasts observed in (28, 29) with the rightward movement analysis.

As a reviewer also points out, right-dislocated (RD) constructions like (28b) may be said to be derived by conjoined-clausal or bi-clausal approach under the SOV hypothesis (e.g., Chung 2008; Tanaka 2001 for Japanese). Thus, the following RD example in (31), for instance, is claimed to be obtained under the conjoined clausal or bi-clausal analysis

followed by necessary deletion, as illustrated in (32) below.

(31) Chelswu-ka cohaha-ni Yenghi?
Chelswu-Nom like-Q Yenghi
'Does Chelswu like Yenghi?'

Here the accusative Case marker *-lul* on *Yenghi* is intentionally deleted for reasons to become clear shortly. It is well-known that this accusative Case marker drop often takes place when the object is adjacent to the verb in informal or colloquial style (see also (33a)).

(32) a. Chelswu-ka Yenghi cohaha-ni? Chelswu-ka Yenghi cohaha-ni?
b. Chelswu-ka ~~Yenghi~~ cohaha-ni?
Yenghi ~~[Chelswu-ka Yenghi cohaha-ni]~~?
c. Chelswu-ka cohaha-ni Yenghi? (=31)

In (32b) the object *Yenghi* in the second clause has been fronted to make it possible to delete the clausal constituent except this object.

Unfortunately, however, I am not able to buy this analysis for the following reasons. First, it is usually the case that the overt accusative Case marker *-lul* on the object is required when the object is not adjacent to the verb due to an operation like Scrambling, as seen in the contrast between (33a) and (33b) below:

(33) a. Chelswu-ka Yenghi(-lul) cohaha-ni?
Chelswu-Nom Yenghi(-Acc) like-Q
'Does Chelswu like Yenghi?'
b. Yenghi-?*(lul) Chelswu-ka cohaha-ni?

This fact indicates that the process found in the second clause in (32b) cannot be right; that is, the object *Yenghi* cannot be fronted without accompanying its accusative Case marker.

Second, the backward deletion of the object in the first clause in (32b) is in reality not attested, as seen in the following contrast.

(34) a. Chelswu-ka pyenci-lul peli-ess-ta.
Chelswu-Nom letter-Acc throw-Past-Dec
Yengswu-to pyenci-lul peli-ess-ta.
Yengswu-also letter-Acc throw-Past-Dec
'Chelswu threw away the letter, and Yengswu did, too.'
b. Chelswu-ka pyenci-lul peli-ess-ta.
Yengswu-to ~~pyenci-lul~~ peli-ess-ta.
c. *Chelswu-ka ~~pyenci-lul~~ peli-ess-ta.
Yengswu-to pyenci-lul peli-ess-ta.

Thus, the derivation of (32c) obtained through this nonexisting operation applied in the first clause proved wrong.

Third, under the conjoined-clausal or bi-clausal approach the RD constituent *Yenghi* in (31) is supposed to be in a separate intonation phrase from the rest, namely, *Chelswu-ka cohaha-ni*. But this does not necessarily seem to be so. In other words, they can be in a single clause all together (see also Lee 2008b).

Notice also that the conjoined-clausal or bi-clausal approach requires a separate account for the ungrammaticality of (28b), repeated as (35).

(35) *Chelswu-nun cohaha-ni mwuess-ul?
Chelswu-Top like-Q what-Acc
'What does Chelswu like?' (intended)

Chung (2008) proposes a PF licensing condition to the effect that the question marker *-ni* 'Q' needs an overt wh-phrase in its probe domain in PF. In (35), since *mwuess* 'what' is in a separate clause in his analysis, this condition is violated.

But it would be better if his description of the phenomenon in question could be accounted for in terms of more general properties of PF. In this direction, I first note that wh-phrases, being regarded as focus elements, are followed by unique phonological deaccenting (e.g., Sim 2008). This contour crucially provides a phonological cue necessary for the wh-interpretation. This conjecture can well be integrated into

the SVO hypothesis for Korean word order advocated here. Below, I will show that under the SVO hypothesis in conjunction with a single clause analysis, the contrast in (28) can receive a reasonable account.[8)]

Now, if the object wh-phrase stays in its base postverbal position, as seen in (28b), a necessary phonological deaccenting contour cannot be formed for the proper wh-interpretation. So it must move to the preverbal position, as seen in (28a). (Otherwise, (28b) can only be interpreted as a non-wh-question, with *muess* being interpreted as 'something.') This movement could be triggered by a feature in v (e.g., EPP). The outer Spec of v would then be the best hosting position, in which the moved wh-object can have its focus interpretation licensed (see also Lee 2008a,b,c). It appears that some sort of agreement relationship between the wh-phrase *mwuess* 'what' raised to the outer Spec vP and the interrogative verb *cohaha-ni* 'like-Q' raised to v is established. Also, this raised wh-object will have its uninterpretable wh-feature checked against the interrogative (here, featural) C possibly in terms of an Agree relation between them. This C will then license wh-interpretation and determine the scope of the wh-phrase in question.

In the same way, the postverbal clausal object containing the wh-phrase in (29b) raises to outer Spec of the matrix v to produce (29a). Here I temporarily assume that the wh-feature can be copied onto the whole embedded clause in (29), so that the embedded clause may undergo movement to the outer Spec of the matrix v as a whole. This way it can establish an agreement relationship with the matrix interrogative verb.[9)]

The analysis developed in this section is quite reminiscent of Noonan's (1999) reanalysis of Irish successive cyclicity phenomena in

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8) For this hypothesis to hold, the verbal complex (e.g., *cohaha-ni*, *cohaha-n-ta*) is assumed to be introduced as it is (see Choi 1991 for this possibility; see also Cho and Sells 2005 for the lexicalist position). If a verb is inflected via head movement under the SOV hypothesis, the VSO order in particular, displayed by a sentence like *Cohahani ne Yenghi?* 'Do ya like Yenghi?,' is difficult to get. because there is no head in the front that can host the verbal complex in the head-final structure (see Lee 2007a,b for details).

9) For more relevant discussions and the derivations of the SOV order in the embedded clause in details, see Lee (2008c).

wh-movement constructions in terms of clausal object CP-movement to the matrix Spec v, introduced in the previous section (see also Boeckx 2003). In short, what I have noticed here is that the wh-object or the embedded CP clause containing it has to move to the vP peripheral position. This means that at the Spell-Out point no arguments remain in the phase vP. Again, this is basically in accord with the economy principle proposed in (12).

7. Discussion and Conclusion: Minimize Spell-Out Materials in a Lower Phase

Some cases of externalization process were observed across languages. One case in point is Chomsky's (1981) EPP, by which the subject moves from VP to Spec IP in languages like English:

(1) EPP: Every clause must have a subject.
(2) S_i [$_{VP}$ t_i V O] (cf. *e [$_{VP}$ S V O], *There [$_{VP}$ S V O])

Another case is seen in A&A's (2001) generalization, SSG:

(3) By Spell-Out, VP can contain no more than one argument with an unchecked Case feature.

At this point, it is interesting to note that no reason has so far been clearly provided as to why the EPP phenomenon exists at all. Especially, the postulation of the EPP feature that draws the subject to Spec IP has remained unjustified; in other words, whether the EPP feature is really a feature is not obvious (see also Chomsky 2001a for OCC). The same applies to the SSG; why either the subject or the object must vacate VP remained completely unclear:

(36) a. S_i [$_{VP}$ t_i V O], *There [$_{VP}$ S V O] (from (2))
b. Quote, S_i [$_{VP}$ t_i V O], *Quote, [$_{VP}$ V S O] (from (4))

On this problem the contrast between [$_{VP}$ V O] and *[$_{VP}$ S V O], as seen in (36), for instance, might shed some light. It seems that under a given numeration, fewer materials within vP, mostly concerning arguments, is to be preferred when Spell-Out occurs, as roughly stated in (12). Thus, either the subject or the object moves out of vP, and in most cases subject evacuation takes place first. This could be related to any variant of the Shortest Move or the Minimal Link Condition (Chomsky 1993, 1995). Considering that VP, more accurately vP, constitutes a phase (Chomsky 2000, 2001b), the contrast in question may be redescribed in terms of phase and its Spell-Out. In terms of economy, we can further elaborate (12) into a more fledged one:

(37) Under a given subnumeration, Spell-Out of fewer material is more economical than that of more material in a phase.

Now it can be said that externalization processes occur to satisfy this economy principle. After externalization takes place, fewer materials are spelled out in a lower phase like vP under a given subnumeration. In this connection, we may say, "Before Spell-Out, externalize material as much as possible in a phase." To simplify more (see also Lee 2008c),

(38) By Spell-Out, minimize numeration materials in a phase.

I call this Spell-Out Economy. Spell-Out also being an operation in the computation, I think that this economy eventually obtains as an effort to reduce computational burden.

The way this economy principle is satisfied is different across languages, as seen in the previous sections. In German and Niuean, derivations may involve externalization of VP and/or vP. In German, the whole VP/vP are evacuated, thereby resulting in Spell-Out of the vacated VP/vP, called null Spell-Out, in PF, which is intended to mean phonetically null after Spell-Out. In view of the economy principle in (37, 38), this kind of null Spell-Out would cost nothing, for there is no material left to be spelled out. In Niuean, the VP itself raises out of vP.

In Irish and Korean, the whole complement CP raises high, thereby resulting in null Spell-Out of the vacated CP, or the null Spell-Out of the vacated CP phase.

The current finding in (38)--Minimize Spell-Out materials in a phase--obviously implies that more movements secure more Spell-Out economy in a lower phase like vP. This may lead to a certain quandary associated with the least effort issue. Why should derivations of certain surface word orders involve more complicated movements? Is this possible in the name of economy? Despite this, I have so far shown that more movements, sometimes even complicated, are needed to evacuate certain materials out of a lower phase like VP for more economical Spell-Out, which is regarded as a real motive for any movements. Here I should like to point out that movements should be able to take place as many as possible in the computational system; otherwise, languages can't quite get their particular surface orders at all. Then the apparent issue at hand should not be a matter of economy. Now under the current understanding condensed in (38), more movements imply less computational burden on Spell-Out in a phase with a given subnumeration.[10]

Specific differences over the amount/mode of externalization in a particular phase among languages may be manifested by various requirements like the EPP, the SSG, or other similar species of this kind, which again can be associated with different attracting power of relevant functional categories like v and C, being phase heads, for any moving category. Thus, in a sense, the EPP, the SSG, and other similar species of this kind in an outer surface level are all offsprings of the Spell-Out Economy residing in a deeper level.

If the materials in a lower phase like vP are all evacuated theoretically, then the highest phase inevitably will be greatly crowded by accommodating the materials from the lower phases (e.g., German V-2 phenomenon partially serves as one such case; see also Lee 2008c in deriving embedded SOV order in Korean). This kind of Spell-Out all

10) Essentially the same interpretation of the economy expressed in (38) is also provided in Lee (2008c), which is perhaps unclear in part.

at once in the last phase should be allowed under the current system, and further, it is intended to be more economical than multiple non-null Spell-Outs in every phase. A reviewer questioned, though, "Doesn't this all-at-once-Spell-Out in the last phase greatly increase computational burden?" Well, Spell-Out in the lower phase, not being able to look ahead, wouldn't care what happens to the next phase up. So this type of Spell-Out in the last phase has a kind of last resort flavor. Another question ensued; "Why does externalization takes place mostly out the vP phase, but not from the CP phase?" Well, according to any variant of the low-level principle with a concept "minimal distance," the higher phase head v will host the closest element inside vP rather than any other element inside the lower CP phase. Thus, what we have observed instead is that in languages like Irish and Korean, the whole CP complement is raised to the outer Spec of v in the matrix clause.

Lastly, I will discuss one problematic situation with the current suggestion. As seen in (4, 6), repeated below,

(4) *Quote, [V S O] (cf. Quote, S [V O]; Quote, V [S PP])
(6) *...quand V [S O] (cf. ...quand O [V S]; ...quand [V S PP];
quand 'when')

the object can still remain within vP in the form of PP. This is not a problem for the SSG since the Case feature of the object can be checked within PP. Under the current system in which the notion phase is incorporated, however, fewer materials should remain in vP. But this is not the case with [(V) S PP], or [(V) S P O], in (4, 6). I think this fact suggests new measures to define a phase from a different angle. That is, PP is like another phase, and thus, it does not count when Spell-Out of vP proceeds from the economy point of view. But since all the materials in PP are allowed to be spelled out, I regard this PP phase, which is argumental, as a kind of subphase of the vP phase. Now if the argumental PP is also a phase, somewhat dependent, though, thus called a subphase of vP here, what makes it to behave as such? I might suggest that Case is a determining property: P, having a Case

feature, projects a phase PP, and so do vP and CP. This way the essence of the EPP/SGG can simply be deduced to "One Case per phase." I will leave this discussion to my ongoing study (Lee in progress).

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