An Alternative Approach on TH/EX

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Im, Chegyong. 2005. An Alternative Approach on TH/EX. *The Linguistic Association of Korea Journal, 13*(2), 23-41. Chomsky, in his paper (1999), argues that expletive passive constructions in English involve obligatory leftward displacement (Thematization, henceforth TH) or rightward displacement (Extraction henceforth EX). He also argues that TH/EX is phonological rather than syntactic in nature. In this paper, we suggest that the TH/EX-ed elements are displaced not by any post spell-out phonological operation but by pragmatic placement operation before spell-out (Im 2003, 2004a, b, 2005). We argue that the impossibility of extracting the whole or a part from TH/EX-ed element is due to the universal constraint that an operation with semantic/pragmatic effect does not iterate.

Key words: thematization, extraction, expletive passives, pragmatic property, placement, Multiple Sphere Hypothesis

1. Expletive passives

It is a well-known fact that such unaccusative constructions as the following are awkward or sometimes barred in English (Chomsky 1999: 15).

(1) a. *there came several angry men into the room
b. *there arrived a strange package in the mail
c. *there was placed a large book on the table
d. *how many packages did there arrive in the mail
e. *how many packages were there place on the table

The same construction is grammatical in Dutch which has an overt EXPL.

(2) hoeveel mensen zijn er aangekomen
(how many men did there arrive)

English fills the gap with the idiosyncratic expletive passive constructions such as (3) that are fully or partially acceptable[1].

(3) a. there were several packages placed on the table.
b. there were placed on the table several (large) packages.
c. *there were placed several large packages on the table

According to Chomsky, English bars surface structures of the form [V-DO], where the construction is unaccusative/passive, (3c). In those constructions, DO is extracted to the edge of the construction by an obligatory TH/EX. But the operation differs from normal displacement of subject or object in that it doesn't yield the usual surface or semantic effects (specificity, etc.) (Chomsky 1999: 16). Chomsky also claims that (3a) is ambiguous between a verbal/dynamic passive interpretation (similar to (3b)) and an adjectival/stative passive interpretation involving an 'existential construction "there be NP", where NP includes a reduced relative' (meaning 'There were several large packages which were placed on the table').

1.1. Thematization

Further instances of leftward TH are provided to prove the semantic neutrality of the operation.

(4) a. there are expected to be found many flaws in the proof.
b. #there are many flaws expected to be found in the proof.
c. there are likely to be baked many cakes.
d. #there are many cakes likely to be baked in that oven.

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1) This problem was first noted in Chomsky (1998: note 40). In the derivation of “I expected there to be a proof discovered." The structure is supposed to be “there to be [discovered a proof]" as in similar languages.

Structures like (4b) and (4d), he maintains, have existential import: the anomaly presupposes that the flaws or cakes independently exist (the flaws or cakes have already existed). Contrary, true expletive passives like (4a) and (4c) have no existential import, hence no oddity. Chomsky also observes that the passive participle constructions are islands for extraction: (5c) can be derived from (5a), but not (5d) from (5b); (Chomsky 1999: 20-21)

(5) a. there is likely to be a demolished building
b. there is a building likely to be demolished
c. how is there likely to be a demolished building
d. *how is there a building likely to be demolished

Chomsky does not propose any specific analysis of the asymmetry but simply states that the existentiality of (4b, d) and (5b) blocks the extraction from the constructions.

However, Chomsky's suggestion is criticized in Radford (2000a). First of all, Radford suggests the process of derivation for TH/EX. Assuming VP shell (Larson 1988), *several large packages* in (3) originates in Spec-VP and the verb *placed* would adjoin to the null light verb ϕ which heads vP. The structure at the end of vP cycle would be (6).

(6) [vP [v placed + ϕ] [VP several large packages [V placed] on the table]]

Merging *be* with vP would result in the following structure.

(7) [TP [be] [*v*P [v placed + ϕ] [VP several large packages [V placed] on the table]]

In the case of expletive passives like (6), the expletive *there* occupies the Spec-TP position to satisfy EPP,

(8) [TP there [T were [vP [v placed + ϕ] [VP several large packages [V placed] on the table]]

But as noted in Chomsky (1999), (8) is ungrammatical: English bars surface structures of the form [V-DO], where the construction is unaccusative/passive. In those constructions, DO is extracted to the edge of the construction by an obligatory TH/EX, (3a) and (3b), respectively.

He admits that this account doesn't neatly explains the derivation of the following:

(9) a. *there are expected to be caught many fish
b. there are expected to be many fish caught
c. there are many fish expected to be caught

(9a) is out under V-DO constraint. (9b) is the result of TH. But (9c) is unexplained. Chomsky (1999) asserts that (9c) does not result from (10) by leftward TH/EX if the iteration of TH/EX is barred.

(10) are expected [many fish to be caught t]

He suggests a true existential construction "*there be NP*" for (9c), where NP includes a reduced relative. The conclusion is supported by the meaning of each sentence in (9). (9a) and (9b) have no existential meaning, but (9c) does: it states that there are many fish such that they are expected to be caught.

Radford raises a lot of questions about the descriptive adequacy of the claims made by Chomsky. For one thing, iterative application of TH can be found in the following (Radford 2000a: 43):

(11) a. there are continually being new treatments developed for cancer
b. there are continually new treatments being developed for cancer

(12) a. he could see that there was being umbrage taken at his remarks
b. he could see that there was umbrage being taken at his remarks

(11b) and (12b) are the output of the movement of the object from Spec-vP to Spec-AspP. The grammaticality of these sentences might lead us to conclude that TH can be iterated. However, the conclusion is reserved when we find the following:

(13) a. there had been umbrage taken at his remarks
b. *there had umbrage been taken at his remarks

One might attempt to handle the difference by positing that *being* has EPP-property as the head of AspP, but *been* doesn't. But this sort of assertion is not only stipulative but also invalid for the grammaticality of the (b) examples in (14) and (15).

(14) a. there ended up being several demonstrators arrested
b. *there ended up several demonstrators being arrested
c. several demonstrators ended up being arrested
(15) a. there kept being complaints made about the noise
b. *there kept being complaints made about the noise
c. there kept being complaints made about the noise

Neither non-iterability of TH nor successive cyclic A-movement can explain the (un)grammaticality of the examples in (11)-(15).

The data in (11)-(15) lead Radford to suggest the generalization that in English expletive passives, the associate must occupy a surface position immediately below *be* (in the sense that *be* must be the closest verb c-commanding the associate). He further suggests data to support the generalization as in (16)-17) (Radford 2000a: 44).

(16) a. several demonstrators got arrested by the police
b. *there got several demonstrators arrested by the police
(17) a. they wanted replica guns issued to the campus cops
b. *they wanted there issued to the campus cops replica guns
(18) a. there seem to have been several passengers injured
b. *there seem to have several passengers been injured
c. *there seem several passengers to have been injured

The generalization might also resolve the puzzle: why the verb *be* is immune from the V-DO constraint as the contrast in (3a) and (3c) shows:

(19) a. There were several packages placed on the table.
b. *There were placed several large packages on the table

He concludes that non-iterative TH analysis is an ad hoc stipulation, suggesting the existential analysis of there + be + associate + participle structures.

But Radford's analysis on TH contains a theoretical problem. His generalization is just a description of the phenomena; it doesn't answer the question "why existential expletive passives or unaccusative expletive constructions have 'there + be/unaccusative V + (associate) NP + participle/ϕ'".

1.2. Extraction

Chomsky's analysis of clause-final objects in expletive passives like (3b) is called Extraction. As is explained through (6)-((8), DO is extracted to the right edge of the construction to avoid [V-DO] structure by an obligatory EX, which is also a phonological operation.

However, Radford (2000a) asserts that this analysis of EX contains a few problems. The first one is that if TH/EX is a PF phenomena driven by EPP-feature, it is not clear how an EPP-feature of a light verb *v* could drive rightward adjunction to *v*P, since an EPP feature typically triggers leftward movement. The second problem posed by Radford is that if EX is

a string vacuous PF movement as in (20), the movement itself result in a theory internal problem; what PF-interface problem is vacuous EX in the PF component designed to resolve? In other words, Chomsky has to posit that the clause-final direct object in (20) undergoes string-vacuous EX since movement, an imperfect operation, is tolerated only to the extent that it resolves interface problems.

(20) a. there are likely to be awarded several prizes
b. we expect there to be awarded several prizes

But as shown in (20), EX does not change the linear order of the overt constituents[2].

Radford (2000a) proposes an alternative analysis under which seemingly EX-ed objects are in situ constituents which undergo no movement operation. The direct object in (3b) is merged as the complement of *placed* and the locative argument on the table as specifier of *placed*. The structure he suggests for (3b) is as follows:

(21) [CP[C [TP there [T were] [vP [v placed$_i$ [VP on the table [V t_i] [several large packages]]]]

This analysis does not assume any rightward movement, nor any constraint for the iterative application of EX. But the problem is that it doesn't provide any valid reason why the locative argument occupies the [Spec VP] position[3].

Moreover, despite the fact that Radford's (2000a) analysis conforms

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2) Radford (2000a) also asserts that Chomsky's EX analysis violates Kayne's (1994) Linear Correspondence Axiom (LCA). Under LCA, in all structures in which XP is adjoined to some target constituents, 'the adjunct precede the target'. However EX compels the dislocated object to rightward adjoin to vP, in violation of LCA. (Radford 2000a: 41)

3) It is not certain whether Radford (2000a) assumes Locative Inversion Construction (LIC) or not. But the problem still remains since LIC is possible in unaccusative constructions and *placed* in (21) is not an unaccusative verb. See Collins (1997) and Ura (1996) for the discussions on LIC.

with theta-theory, as well as binding principles, it still cannot account for the extraction problem as in (22).

(22) a. how many people were there arrested
b. *how many people were there placed on the table pictures of

(22a) suggests that there is no constraint against the whole object undergoing wh-movement. Moving a subpart, however, yields ungrammaticality as in (22b). Radford (2000a) doesn't provide a clear reason for the asymmetry but just presents a similar phenomenon found in echo questions.

(23) a. he sent to you which copy of the book (echo question)
b. which copy of the book did he send to you
(24) a. he sent to you a copy of which book (echo question)
b. *which book did he send to you a copy of

The above asymmetries are already mentioned in Chomsky (1999). He poses the following question: Why does the English-specific rule TH/EX, which extracts DO either to left or right, bar wh-movement? A preliminary question is whether the position of extracted nominal (EN=DO) is immune to all syntactic operations, for example, wh-movement from within EN.

(25) a. what$_i$ are they selling [books about t_i] (in Boston these days)?
b. *what$_i$ are there [books about t_i]$_j$ being sold t_j (in Boston these days)?
(26) a. ?who$_i$ [did they deliver to your office [a picture of t_i]]
b. *who$_i$ [t_j was there delivered to your office [EN a picture of t_i]$_j$]

Chomsky (1999) argues that the contrast rules out one pattern of derivation for (25b): given the base form (27), apply wh-movement to

what within EN (as in (25a)) and then apply TH/EX to EN including the trace of *what*, yielding (25b):

(27) there are being sold [EN books about what] (in Boston these days)

If that were possible, the two cases of (25) should be on a par. Based on the observation, Chomsky concludes that the base position of EN is completely inaccessible to wh-movement, either as a whole or in part.

(28) Constraint on Extraction (Chomsky 1999: 17)
The base position of EN is completely inaccessible to wh-movement, either as a whole or in part.

But the constraint (28) is arguably a generalization satisfying some descriptive adequacy; it doesn't answer the question "why is the EN output of EX/TH inaccessible to wh-movement?"[4)]

2. Pragmatic properties

2.1. Movement from NPs

According to Fiengo & Higginbotham (1981), specificity condition blocks the extraction from the NPs that have 'some definite reference' as in (29).

(29) a. who$_i$ did you see a picture of t_i?
b. *who$_i$ did you see the picture of t_i?

4) On the observation that other operations like Agree for Case, binding etc., are allowed for EN, Chomsky (1999) concludes that i) TH/EX is an operation of the phonological component ii) traces are inaccessible to Move, but accessible to some other operations. This conclusion also bears internal problems, i.e., i) it resorts to a PF operation, which might be criticized as imposing the burden of semantically vacuous movement on a stylistic phonological movement ii) it assumes the existence of the empty category "trace", which has nothing to do with PF operations.

But their specificity condition does not provide an ample explanation for the full range of the extraction from NPs. The extraction from the non-specific NPs is also blocked in (30).

(30) *who$_i$ did you destroy a picture of t_i?

The asymmetry between (29) and (30) might lead us to believe that the difference is due to the choice of verbs. There are more cases, as in (31), that contradict the specificity condition of Fiengo & Higginbotham (1981).

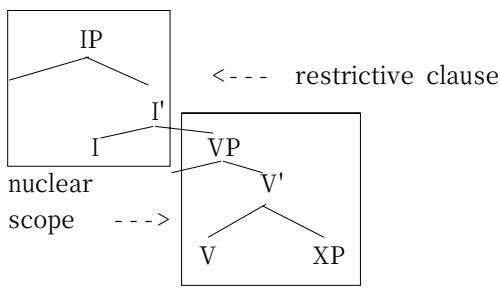
(31) a. *what$_i$ did Jake write a letter of t_i? (answer: apology)
b. *what$_i$ did Sherman commit a crime of t_i? (answer: passion)
c. *what$_i$ did Joseph make himself a coat of t_i? (answer: many colors)

The extraction from the NPs in (31) suggests that the extraction depends more on the semantic properties of the structure rather than on the syntactic properties of NPs or verbs.

Diesing (1992) proposes that the NPs that have presuppositional readings obligatorily undergo quantifier raising at LF, but the existential NPs cannot. The constraint suggested by Diesing is as follows;

(32) Extraction Constraint (Diesing 1992:128)
Extraction cannot take place out of an NP that must raise out of VP before tree-splitting

(33) Tree splitting



VPs are always mapped into nuclear scope of the tripartite quantificational structure. Therefore. presuppositional NPs must raise out of VP before the tree splitting takes place. The NP with a strong quantifier such as (34) has a presuppositional reading and it must raise out of VP via QR at LF. Consequently, the extraction from the NP is blocked by extraction constraint (32).

(34) a. *?who$_i$ did you see [the picture of t_i]?
b. *who$_i$ did you write [every book of t_i]?
c. *?who$_i$ did you paint [most pictures of t_i]?
d. *who$_i$ did you read [all books by t_i]?

By contrast, the NP with a weak quantifier cannot undergo QR and the extraction from the NP is allowed as in (35).

(35) a. who$_i$ did you see [a picture of t_i]?
b. who$_i$ did you write [some book of t_i]?
c. who$_i$ did you paint [many pictures of t_i]?
d. who$_i$ did you read [several books by t_i]?

However, (32) and (33) are based on LF representations, not the extraction operation itself. As long as LF is an outcome of Spell-Out, the notion of tree-splitting is similar to that of derivation by phase.

2.2 Focus property

Lee (2004) assumes that the focus-marked object remains in situ within VP to receive an appropriate interpretation (i.e., specificity, topic etc.). The same assumption can be found in Uriagereka (1999), where he put it, "Generally speaking, the focus that manifests itself on a (complement) 'right branch', may project higher up in the phrase marker, whereas that is not the case for the focus manifests itself on a (noncomplement) 'left branch'. A similar assumption can be found in Selkirk (1995), who argues that each lexical head in argument structure has an independent status as

a representational focus structure and is integrated into the category containing it, forming a hierarchy of successively wider domains up to the level of VP, the natural domain of presentational focus.

Following these assumptions, Cho & Lee (2004) argue that the NP which has non-presuppositional or existential reading can be focus-marked. Hence, it remains inside the VP without movement. The extraction from such NPs is allowed as already shown in (35).

However, the NP which has a presuppositional reading, as in (34a), cannot be focus-marked.

(34a) *who$_i$ did you see [the picture of t_i]?

According to them, the non-focus-marked NP [NP the picture of who] moves to the Spec of v to satisfy the EPP feature of v.

This property of focus explains the traditional asymmetry of the extraction from complement/noncomplement. As argued in Uriagereka (1999), a complement is different from any other dependent of a head in that the elements a complement dominates are within the same command unit (CU) of the head, whereas this is not true for the elements a non-complement dominates. As a result, extraction from a complement can occur within the same derivational cascade, whereas this is not possible for extractions from a non-complement.

Assuming that it is only within CUs that syntactic terms communicate with each other in a derivational cascade, Uriagereka proposes the following principle.

(36) Principle of Strict Cyclicity: All syntactic operations take place within the derivational cycles of CUs.

By this, cross-cascade relations of any sort-be they Attract, Move, or any others are strictly forbidden. The general idea is that if two phrase markers are built independently of each other, they are 'opaque' domains with respect to extraction from one into another. This is because Spell Out proceeds by CU.

In Uriagereka's terms, Spell Out applies once per CU, basically, every time a left blanch or an adjunct of a phrasal category is formed. Adjuncts and subject phrases are constructed by separate derivational procedures from subparts of lexical array before they are merged: they are spelled out at a different stage. After Spell Out, the phrase marker that has undergone Spell Out is like a giant lexical compound, whose syntactic terms are interpretable but are not accessible to movement.

The CU-based account can provide an answer to the question 'Why non-complements form syntactic islands.' In a derivation that involves a single derivational cascade, however, the domain of Spell Out may extend over CPs. If Spell Out proceeds by CU, the domain of derivational computation and Spell Out will diverge.

We argue that the CU-based account as well as Cho & Lee (2004)'s suggestion can also be captured in our model since their focus domain coincides with the Ω-sphere in our model.

3. PLACEMENT in Ω-sphere

3.1. Assumptions of Multiple Sphere Hypothesis

Multiple Sphere Hypothesis (MSH) assumes that the operation called "PLACEMENT" (PLACE) caused by (semantic)/discourse properties of specificity, TH/EX or Foc/Top is derived by the features in Ω-sphere. We have proposed in Im (2003, 2004a, 2004b, 2005), that when syntactic objects α and β come into numeration by Merge, they assume inherent discourse features (of information like specificity, topic, focus . . .) as well as inherent syntactic features (ϕ-features, for instance). The parametric variation of word order among languages is determined by the features in each sphere (θ-sphere, ϕ-sphere, and .Ω-sphere). As is well-known, Merge is a set operation that imposes no intrinsic ordering among its members. In order for a Merger set to be linearized into strings of words at PF, it should discharge all the features of three spheres.

(37) PLACE
Place SO when all the features are discharged

Contra Chomsky (1993, 1995, 1999) and many others, we don't assume one-fell swoop of lexical selection. Rather, we suggest "lexical selection all the time". So the operation would be 24hr-outlet operation whenever necessary. At the beginning of Numeration, SOs with its inherent phonological features as well as semantic features are merged with each other (theta-theoretic relation or s-selection abandoned in Chomsky (1999)). Simultaneously, the order of the elements is decided by PLACE (39). Then, the set of SOs with its full features escapes the spheres into sensorimotor and conceptual-intentional systems. In the process of this Spell-Out, each SO assumes its morphological forms as well as its phonological forms to satisfy LF and PF convergence.

3.2. Non-iterativeness of PLACEMENT

Since the operation PLACEMENT is the final operation in Ω-sphere before Spell-Out, we suggest that the operation cannot be applied twice to the same SO.

(38) Ban on the iterative application of PLACEMENT
The operation PLACEMENT cannot be applied to the same SO (or subpart of SO) more than once.

Now, let's tackle the problems one by one suggested in the previous chapter. The first one is the derivation of (9c)

(9) a. *there are expected to be caught many fish
b. there are expected to be many fish caught
c. there are many fish expected to be caught

According to Chomsky (1999), (9a) is out under V-DO constraint. (9b) is the result of TH. But (9c) is not explained.

But the problem can be resolved in our model. We argue, following MSH, *many fish* merges with *caught* in θ-sphere: in (9a), *many fish* moves to the associate position in ϕ-sphere[5]: (9b), (9c) are derived in Ω-sphere, where the NP*many fish* discharges its pragmatic feature "existential", meaning "there are many fish such that they are expected to be caught." Our suggestion can be supported by the interpretation of each sentence. In (9b), [to be many fish caught] can be interpreted as new information (focus). But in (9c), many fish is defocused, old information.

Now let's tackle the problem of (25) and (26) in our terms.

(25) a. what are they selling [books about t] (in Boston these days)?
b. *what are there [books about t] being sold t (in Boston these days)?
(26) a. ?who [did they deliver to your office [a picture of t]]
b. *who [t was there delivered to your office [EN a picture of t]]

In (25b), [books about t] occupies the associate position of are in Ω-sphere under (39). Like *many fish* in (9c), it occupies that position since it bears the existential meaning or (defocused) old information. Since the operation PLACEMENT is the final operation for ordering of constituents, (25b) is impossible under (38). In (26a), [NP a picture of NP] comes to the rightmost position in Ω-sphere under (37) and wh-movement from the NP is bad. In (26b), [NP a picture of NP] occupies the rightmost position under (37), but wh-movement from the NP is worse because the NP might have also come to the associate position of *was* as its final position. The constraint (38) forbids the wh-movement more strictly in case of (26b).

Now, we have to show that the constraint (38) does not preclude the

5) This idea is adopted from Radford (2000a), who asserts that in English expletive passives, the associate must occupy a surface position immediately below *be* (in the sense that *be* must be the closest verb c-commanding the associate).

derivation (11) and (12), which Radford (1999) asserts to be the instances of iterative application of TH.

(11) a. there are continually being new treatments developed for cancer
b. there are continually new treatments being developed for cancer
(12) a. he could see that there was being umbrage taken at his remarks
b. he could see that there was umbrage being taken at his remarks

Arguably, there is no difference in semantic and pragmatic meaning between (a) and (b) sentences in (11) and (12): they both have "existential meaning". So we argue that when the object is thematized, it either occupies [Spec PP] as in (a) sentences or [Spec AspP] in (b) sentences. If our suggestion is on the right track, there is no iteration of TH in (11) and (12). Accordingly, there is no need for positing (38).

Our assertion can be more clarified if we compare the sentences in (3) with those in (9).

(3) a. there were several packages placed on the table.
b. there were placed on the table several (large) packages.
c. *there were placed several large packages on the table
(9) a. *there are expected to be caught many fish
b. there are expected to be many fish caught
c. there are many fish expected to be caught

We argue that the structure of the sentences in (3) differs from that of the sentences in (9); the sentences in (9) consist of two CPs as the structure (10) shows, while the sentences in (3) consist of one CP. In (9c), when an argument raises from the embedded CP, it crosses a CP phase boundary[6]; a PLACEMENT operation in Ω-sphere induced by the

6) As posited in Chomsky (1999), propositions require a specification of force

pragmatic feature "existential" of *many fish*.

4. Conclusion

The mechanism for the movement/extraction from the Spelled-Out domain (phase) can be provided not only in syntactic terms but also in semantic, pragmatic terms. Focus property of the nominals also seems to operate on the movement/extraction from the domain. If our assumption that TH/EX is a pragmatic operation is on the right track, movement/extraction from a TH/EX-ed category is impossible since neither a category nor a subpart of a category can undergo the same pragmatic operation more than once.

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and CPs are headed by an abstract force-encoding C. Some might argue that raising/ECM structures contain defective complement clauses (TPs) lacking superordinate CP projection. However, such defective clauses seem to have their own force properties. As long as the force of a complement clause is determined by semantic properties of the matrix predicate, complement clauses must be CPs in order to encode force. (Radford 2000b: 2)

Furthermore, as CP is the Spell-Out domain, raising means "something escapes from its frozen domain". Compare the pair.

(1) a. he seems tired
b. he seems to be tired

Traditionally, the underlying structure of (1) is (2); what seems is "he is tired".

(2) it seems [that he is tired]

But in (1a), what seems is "he". The two sentences seem to have different meanings, technically, at least. Likewise, the meaning of ECM construction in the following might differ from its counterpart in our hypothesis.

(3) a. we believe him to be honest
b. we believe that he is honest

We cautiously suggest that in (3b), the whole embedded clause is the focus domain, while in (3a), *him* is defocused (existential meaning) and the remnant of the clause retains focus meaning.

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Received: 30 Mar, 2005
Revised: 12 Jun, 2005
Accepted: 20 Jun, 2005