A SEMANTIC ACCOUNT OF ISLAND-EXTRACTION

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This paper points out the fact that the resultant object shows strong deviancy when it is extracted out of a wh-island, which cannot be explained within Rizzi's (1990) ECP account. I argue that the acceptability of island extraction is subject to a semantic constraint and propose the pre-existence condition. Furthermore, our analysis provides a unified account of the unacceptability of island-extraction of some other postverbal constituents: eventive objects, true cognate objects, nominal idiom chunks, lexically selected manner adverbials, adjectival predicates, some types of measure phrases, and fake objects in unergative resultatives.

Keywords: pre-existence, island effects, wh-movement, participant

1. Introduction

In this paper we point out and try to provide a possible semantic account of the fact that extraction of resultant objects yields a strong wh-island effect. The proposed account will also give a unified explanation for severe island effects which can be observed when certain types of other postverbal constituents are extracted out of a wh-island. The paper is organized as follows: In section 2 we will see a typical complement-adjunct asymmetry in island extraction and review a syntactic account proposed in Rizzi (1990). In section 3 we point out that resultant objects, in contrast with patient objects, show a severe island

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effect, which cannot be accounted for within Rizzi’s analysis. We will provide a semantic account of the fact in section 4, where the pre-existence condition will be proposed. It will be shown in section 5 that our analysis can also account for the island effect when extracting from a wh-island other types of obligatory postverbal constituents. They are eventive objects, cognate objects, nominal idiom chunks, obligatory manner adverbials, adjectival predicates, and some types of measure phrases. In section 6, the condition will be refined through examining the island effect found with the ‘fake object’ in the unergative resultative construction, which has been pointed out in Rothstein (1992). The last section makes concluding remarks.

2. Island Effects and a Syntactic Account in Rizzi (1990)

It has been observed in the literature that there is a complement-adjunct asymmetry with respect to the (wh-)island effect: adjunct extraction gives a notably worse result than complement extraction, as shown in (1) and (2):

(1) a. ?Which problem1 do you wonder [how2 [PRO to solve t1 t2]]?
   b. *How1 do you wonder [which problem2 [PRO to solve t2 t1]]?

(2) a. ?What1 does John wonder [whether Mary bought t1]?
   b. *How1 does John wonder [whether Mary fixed the car t1]?

For example, which problem in (1a) is the complement of the verb solve in the embedded clause whereas how in (1b) is an adjunct, and the latter sentence is much worse than the former.

Considering some problematic data to the ECP analysis, Rizzi (1990) recaptures the asymmetry between arguments (i.e. complements) and non-arguments (i.e. quasi-arguments and adjuncts) in terms of the
'referentiality' of their $\theta$-roles (cf. Cinque (1990)). He introduces the notion of referentiality into $\theta$-roles, and makes a distinction between referential (argumental) and nonreferential (quasi-argumental) $\theta$-roles. The former are $\theta$-roles assigned to selected elements which refer to participants in the event described by a verb. Thus, arguments have referential $\theta$-roles and non-arguments have no $\theta$-roles or non-referential $\theta$-roles. He claims that referential $\theta$-roles essentially correspond to participant roles and include such roles as agent, theme, patient, experiencer, goal, etc., which are equivalent to 'true arguments' in Chomsky (1981). Nonreferential $\theta$-roles, on the other hand, are $\theta$-roles which are also assigned to selected elements but "do not refer to participants but rather qualify the event" compositionally or idiosyncratically (pp. 85f.). They include such roles as measure, manner, atmospheric roles or nominal parts of idioms, equivalent to Chomsky's 'quasi-arguments.'

Rizzi's analysis of island extraction is as follows: He appeals to two distinct requirements on the linkage between $wh$-operators and their variables (traces): (i) binding relation of referential indices for explaining the (marginal) extractability of elements which are assigned a referential $\theta$-role, and (ii) a government chain for explaining the unextractability of the other elements, which are assigned no $\theta$-role or only a nonreferential $\theta$-role. In general, only $wh$-constituents receiving a referential $\theta$-role can be unboundedly moved and marginally be extracted from $wh$-islands (though with the weak island effect, which is due to a subjacency violation). On the other hand, other $wh$-constituents, namely nonreferential ones, cannot cross $wh$-boundaries at all because of an ECP violation. They are restricted to clause bound movement, and long distance movement is licensed only when a government chain is formed through step-by-step movement operation. If

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2 Rizzi (1990) argues for a conjunctive version of the ECP. And since adjuncts are analyzed as properly head-governed by a verb as well, the complement-adjunct contrast in island-extraction, as in (1) and (2), cannot be reduced to the ECP as it is.

3 Lexically non-selected adjuncts are assigned no $\theta$-role whereas lexically selected constituents (even adverbials) are assigned a non-referential $\theta$-role. Thus, quasi-arguments and lexically selected adverbials are analyzed as having a non-referential $\theta$-role.
this kind of operation is blocked by an intervening *wh*-phrase (i.e. *wh*-island), the resulting sentence will be ruled out.

Since the extracted complements in (1) and (2) are assigned a referential θ-role (a patient role), the sentences are not completely ruled out. On the other hand, the adjuncts are not assigned one and the intervening *wh*-phrases block step-by-step movement. As a result, the sentences show a severe island effect. (See Rizzi (1990: 3.5, 3.6) for detailed discussion.)

3. A Problematic Asymmetry: Island-Extraction of Resultant Objects and Patient Objects

We will see in this section that there is a case in which even 'referential' complements may cause a strong deviation when extracted out of a *wh*-island. The relevant type of complement is the so-called resultant object (the object of an 'effect' verb; henceforth, RO), like the italicized NPs in (3):

(3) a. Mary painted *some pictures*.
   b. Bill wrote a *letter*.

We will see below that ROs are hardly extracted out of an island. In order to highlight the problematic behavior of ROs, let us take verbs which can take either an RO or a patient object (the object of an 'affect' verb; PO). As the following examples show, the verbs *dig* and *paint* may take either a PO, as in (4a) and (5a), or an RO, as in (4b) and (5b).

(4) a. John dug the ground. [PO]
   b. John dug the small holes in the ground. [RO]

(5) a. Mary painted the wall. [PO]
   b. Mary painted a beautiful picture on the ceiling. [RO]

Note here that both the POs and the ROs in (4) and (5) may undergo (long-distance) *wh*-movement:

(6) a. What₁ do you think [that John dug t₁]? [PO]
   b. What₁ do you think [that John dug t₁ in the ground]? [RO]

(7) a. What₁ do you think [that Mary painted t₁]? [PO]
   b. What₁ do you think [that Mary painted t₁ on the ceiling]? [RO]

However, when the objects undergo *wh*-movement over a *wh*-island, the resulting sentences show a contrast in acceptability. Consider the
following examples:

(8)  
   a. **What₁ do you wonder [whether John dug t₁]? [PO]  
   b. *What₁ do you wonder [whether John dug t₁ in the ground]? [RO]

(9)  
   a. **What₁ do you wonder [whether Mary painted t₁]? [PO]  
   b. *What₁ do you wonder [whether Mary painted t₁ on the ceiling]? [RO]

The contrasts above show that ROs (but not POs) show a strong *wh*-island effect: When extracted out of an island, only *wh*-phrases of the PO-type may, though marginally, cross a *wh*-boundary ((8a) and (9a)) while those of the RO-type may not at all, rendering the sentences severely deviant ((8b) and (9b)). Making the natural assumption that both of the two distinct classes of object (the PO- and the RO-class) are subcategorized and assigned, in Rizzi's terms, a 'referential' θ-role by the verbs, the contrast between them is surprising. Even if Rizzi's argument is correct, the ECP alone cannot provide a full account of the RO-PO asymmetry above. That is because it is clear that both ROs and POs are head-governed by a V head, satisfying the ECP as ordinary NP complements do. The ECP would then predict that both ROs and POs behave on a par with NP complements in (1) and (2) with respect to island-extraction. However, this prediction is incorrect: only POs can (marginally) undergo island-extraction, and Rizzi's ECP account tells nothing about this fact.⁴

4. An Analysis

In this section, we propose that in order to account for the asymmetry between ROs and POs, we must appeal to a semantic nature between them: the notion of pre-existence of the participant roles of

⁴ The contrasts in (i) and (ii) show that ROs, in contrast with POs, also show inner island effect as well (cf. note 1).

(i)  
   a. *What₁ didn't Mary paint t₁? [PO]  
   b. *What₁ didn't Mary paint t₁ on the ceiling? [RO]

(ii)  
   a. *What₁ didn't John dig t₁? [PO]  
   b. *What₁ didn't John dig t₁ in the ground? [RO]

Our analysis proposed in this paper can also explain the RO-PO asymmetry with respect to inner islands (as shown in (i) and (ii)), and other weak islands.
extracted constituents. Following Nakau (1989; cf. 1994), we define 'pre-existence' as follows:

(10) An entity is pre-existent, and the expression describing that entity forms a pre-established (or inherently anaphoric) domain if and only if it is perceived, with respect to the associated situation, to be present there in advance of the occurrence of that situation. (Nakau (1989))

Thus, the referent of a PO can be considered to be a typical example of pre-existent entities, because it is the target of the action carried out by the actor in subject position; if it were not present in the situation, the action itself could not be carried out and would lose its meaning.5 On the other hand, the referent of an RO is regarded as non-pre-existent, because it does not exist in advance of the denoted action but comes into existence as a consequence of it (see also Quirk et al. (1985: 749f.)).6 We should note here that it is only this semantic distinction that distinguishes ROs from POs, since they both have the same grammatical form (i.e. the form of NP), and are pure complements of the verbs and assigned a 'referential' $\theta$-role (in Rizzi's (1990) analysis). Thus, we claim that (non-)pre-existence of the participant roles of extracted constituents is the relevant factor for grammaticality of island-extraction, and here propose the following condition for (marginal, if possible) extractability out of a $wh$-island:

(11) The Pre-Existence Condition (to be revised)
A $wh$-constituent can only be extracted out of a $wh$-island, if it is the type of constituent which refers to an entity which is taken to be pre-existent, in the sense defined in (10), with respect to the described event.

As we have seen in section 2, POs can marginally be extracted from an island whereas ROs cannot. Given the pre-existence condition in (11), we can give a straightforward explanation to the RO-PO asymmetry in

5 We assume that it is typically the patient role which is assigned to the sort of constituents which refer to pre-existent entities with respect to the described events.

6 I provide Nakau's (1989; cf. 1994) definition of the RESULTANT (i.e. the RO in our terms) below:

(i) RESULTANT is a participant which comes into existence as a consequence of ACTOR's carrying out the action denoted by the verb.
wh-island-extraction.

Following the definition in (10), it is obvious that ROs do not refer to some entities which are presupposed to be pre-existent. The entity of an RO comes into existence as a consequence of the (creative) activity denoted by the RO-taking (effect) verb. Thus, the referents of the small holes and a beautiful picture in (4b) and (5b) are created entities and come into existence as a result of the denoted activities. Thus, they are non-pre-existent participants. (In this paper, we refer to the $\theta$-role that they are assigned as a non-pre-existent participant role.) Then, the condition in (11) rules out wh-extraction of ROs. The case of PO-extraction is different from this. The entity of a PO does pre-exist even before the relevant activity is carried out. The ground and the ceiling in (4a) and (5a) refer to entities which are present in advance of the activities. Thus, they are pre-existent participants. (We refer to the $\theta$-role they are assigned as a pre-existent participant role.) Then, the pre-existence condition allows island extraction of POs (cf. Nogawa (1995)).

The analysis proposed in this paper is limited to weak island effects, which yield complement-adjunct asymmetry (i.e. extraction from wh-islands and inner islands). As for strong islands (namely subject islands (i), complex NP islands (ii), adjunct island (iii)), they do not show the complement-adjunct asymmetry:

(i) Subject Island  
   a. *Which books did [talking about $t$] become difficult?  
   b. *How would [to behave $t$] be inappropriate?

(ii) Complex NP Island  
   a. *To whom have you found someone who would speak $t$?  
   b. *How have you found someone who would fix it $t$?

(iii) Adjunct Island  
   a. *To whom did you leave without speaking $t$?  
   b. *How was he fired after behaving $t$?

Since even typical complements (i.e. POs) cannot be extracted out of these islands, ROs also do show strong island effects, as can be naturally expected, if extracted out of these islands: these islands do not yield the asymmetry between ROs and POs. That is because those island effects are so strong that they diminish the role and influence of the notion of pre-existence and overwhelms the RO-PO asymmetry. This indicates that we need some other constraints for explaining strong island effects. I would like to thank an anonymous reviewer for bringing out this point to me.
5. Related Issues

In this section, we extend our semantic approach to wh-island-extraction to other (obligatory) postverbal constituents. What will be considered below are eventive objects (5.1), true cognate objects (5.2), nominal idiom chunks (5.3), obligatory manner adverbials (5.4), adjectival predicates (5.5), and some types of measure phrases (5.6). We will see that they are hardly extracted out of a wh-island either.

5.1. Island-Extraction of Eventive Objects

The same kind of strict ban on island-extraction can also be observed with eventive objects (EOs). EOs are (obligatory) verbal complements of light verbs, and include such NPs as an argument, a dash, etc. in (12).

(12) a. Bill's having an argument.
    b. Mary makes a dash.
    c. Michael took a long walk.
    d. José gave a big laugh.

((a, b) from Quirk et al. (1985))

While EOs may undergo long wh-movement (as in (13b) and (14b)), they cannot skip out of a wh-boundary ((13c) and (14c)).

(13) a. John took a (long) walk after he finished his homework.
    b. How long a walk did you think [that John took t1]?
    c. *How long a walk do you wonder [whether John took t1]?

(14) a. John gave a laugh during his speech?
    b. What kind of laugh do you think [that John gave t1 during his speech]?
    c. *What kind of laugh do you wonder [whether John gave t1 during his speech]?

This shows that even EOs as postverbal NPs also show a severe wh-island effect.

Here again, as is the case with ROs, it is clear that the entity of an EO cannot be considered to play a pre-existent participant role in the event described; it refers to merely an instance of the activity and that instance is absent before the activity is carried out (putting aside the question of whether or not the resulting instance can be regarded as a participant after all). Nakau (1989, 1994) also argues that eventive objects (and cognate objects to be discussed in section 5.2) do not refer to
pre-existent participants. He argues that they are of the RANGE type (one type of complement) and defines RANGE as follows: “RANGE is a participant which delimits the value range of the action denoted by the verb in such a way as to specify that action more narrowly. Hence, V+NP as VP forms a single action integrated as a whole” (Nakau (1989)). Thus, the role of an EO is not pre-existent either. Then, although it is true that the EOs in (12) are assigned a θ-role from the preceding light verbs, their referents cannot be considered to be present in advance of the activities, and hence the pre-existent condition in (11) rules out EO-extraction from a wh-island.

5.2. Island-Extraction of Cognate Objects

There is still another class of postverbal NP which shows a strong island effect when extracted from a wh-island. It is a type of cognate objects which is referred to as the true cognate object (CO) in Massam (1990).

In Nogawa (1995), I pointed out an asymmetry in island effects between the two types of the so-called cognate object: COs and transitivity objects (TOs) (cf. Massam (1990)). The former class includes NP complements of verbs such as laugh, live, sleep, smile, sneeze, and the latter sing, dream, dance.

(15) COs:
   a. John died a heroic death.
   b. Mary smiled a bright smile.

(16) TOs:
   a. John sang a beautiful song.
   b. Mary dreamed a strange dream.

Now COs (as well as TOs) are allowed to be unboundedly wh-moved as in (17), where, given Rizzi’s (1990) explanation, step-by-step movement of the wh-phrases comes to form a government chain:

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8 I refer to Nogawa (1995) for a detailed analysis of the data discussed in this subsection.
9 We assume here that cognate objects are lexically selected by cognate verbs (cf. Macfarland (1995)). This is because, if cognate objects were pure adjuncts, then they could appear freely in any construction (not as complements) so long as their semantic subcategorization matches the context, which is obviously not the case. If a cognate object is lexically selected by a cognate verb, it must be (θ-)governed and assigned a θ-role by the verb.
(17) a. What sort of death\(_1\) do you think \([t_1'\ (that)\ John\ died\ t_1]\)?
b. What sort of smile\(_1\) do you think \([t_1'\ (that)\ Hitler\ smiled\ t_1\ in\ front\ of\ Chamberlain]\)?
c. What sort of life\(_1\) do you think \([t_1'\ (that)\ Nixon\ lived\ t_1]\)?
d. What sort of sleep\(_1\) do you think \([t_1'\ (that)\ Nixon\ slept\ t_1\ the\ day\ before\ his\ resignation]\)?

(18) a. What sort of a song\(_1\) do you think \([t_1'\ (that)\ John\ sang\ t_1\ at\ the\ party]\)?
b. What sort of a dream\(_1\) do you think \([t_1'\ (that)\ John\ dreamed\ t_1\ yesterday]\)?
c. What sort of a dance\(_1\) do you think \([t_1'\ (that)\ John\ danced\ t_1\ at\ the\ party]\)?

On the other hand, if the embedded CP-Spec is already occupied by another wh-phrase (as in (19) and (20)), COs and TOs show a different acceptability of island extraction. As (19) shows, COs show severer island effect than TOs:10

(19) a. *What sort of death\(_1\) do you wonder [whether [John died \(t_1\)]]?
b. *What sort of smile\(_1\) do you wonder [whether [Hitler smiled \(t_1\) in front of Chamberlain]]?

10 The CO-TO asymmetry can also be observed with the inner island effect. COs show a strong deviance when extracted out of an inner island (as shown in (i)) whereas TOs are (though marginally) extractable (as shown in (ii)):

(i) a. *What sort of death\(_1\) didn’t John die \(t_1\)?
   (cf. What sort of death\(_1\) did John die \(t_1\)?)
b. *What sort of smile\(_1\) didn’t Hitler smile \(t_1\) in front of Chamberlain?
   (cf. What sort of smile\(_1\) did Hitler smiled \(t_1\) in front of Chamberlain?)
c. *What sort of life\(_1\) didn’t Nixon live \(t_1\)?
   (cf. What sort of life\(_1\) did Nixon live \(t_1\)?)
d. *What sort of sleep\(_1\) didn’t Nixon sleep \(t_1\) the day before his resignation?
   (cf. What sort of sleep\(_1\) did Nixon sleep \(t_1\) the day before his resignation?)

(ii) a. *What (sort of song)\(_1\) didn’t John sing \(t_1\) at the party?
   (cf. What (sort of song)\(_1\) did John sing \(t_1\) at the party?)
b. *What (sort of dance)\(_1\) didn’t John dance \(t_1\) at the party?
   (cf. What (sort of dance)\(_1\) did John dance \(t_1\) at the party?)
(20) a. ??What sort of song₁ do you wonder [whether [John sang t₁ at the party]]?
   b. ??What sort of dance₁ do you wonder [whether [John danced t₁ at the party]]?

Now, the strong island effect found with COs is explained with the definition of pre-existence in (10). COs does not refer to some entities which are presupposed to be pre-existent, but represent the processes of the activities denoted by the verbs. In other words, the ‘referents’ of COs, if any, refer to the realization of an instance of the activities, which are, of course, regarded as non-pre-existent (see the discussion in 5.1, Massam (1990), and Nakau (1994)). Then again, by the condition in (11), island-extraction of COs are completely ruled out. On the other hand, since TOs do behave, syntactically and semantically, in parallel with POs, we can naturally assume that they are not true cognate objects but complements of canonical transitive verbs, though they are phonologically and semantically ‘cognate’ with the verbs. In other words, TOs are ‘accidentally’ cognate with the verbs. Then, the referent of a TO is considered to be a pre-existent participant, and its long-distance extraction from a wh-island is, as is the case with POs, marginally possible with TOs (as shown in (20)). (See Nogawa (1995) for detailed discussion.)

11 TOs are analyzed in Nogawa (1995) as a patient complement of canonical transitive verbs. Our analysis of TOs is based on some syntactic and semantic distinctions between COs and TOs: The differences are found in:

(a) the selectional restriction:
   (i) CO:
      a. Mary smiled a beautiful smile.
      b. *He smiled a silly grin.
   (ii) TO:
      a. Mary danced a dance.
      b. Mary danced Swan Lake.

(b) adverbial interpretation:
   (iii) CO:
      a. He slept a sound sleep. = He slept soundly.
      b. He lived a happy life. = He lived happily.
5.3. Island-Extraction of Nominal Idiom Chunks

In this and the next subsection, we will briefly demonstrate that island-extraction of obligatory constituents which are discussed in Rizzi (1990) can also be covered within our analysis. The first to be discussed here is nominal idiom chunks. When they are extracted from a wh-island, the sentences show a severe island effect. Consider the following paradigm cited from Rizzi (1990):

(21) a. What headway\(_1\) do you think [\(t_1\) [you can make \(t_1\) on this project]]?
   b. What project\(_1\) do you think [\(t_1\) [you can make headway on \(t_1\)]]?
   c. *What headway\(_1\) do you wonder [how [PRO to make \(t_1\) on this project]]?
   d. ?What project\(_1\) do you wonder [how [PRO to make headway on \(t_1\)]]?

(Rizzi (1990: 79))

When the idiom chunk *headway* skips out of an island as in (21c), the sentence shows a strong deviance. This fact is also accounted for with condition (11). Although it is true that they take a nominal form as in (21), idiom chunks have no specific participant role at all. Then, it is completely nonsense to talk about their pre-existence, and the pre-existence condition correctly rules out the strong island effect with idiom chunks.

c. She smiled a bright smile. = She smiled brightly.
d. She laughed a hearty laugh. = She laughed heartily.

(iv) TO:
   a. He dreamed a strange dream. ≠ He dreamed strangely.
   b. He sang a beautiful song. ≠ He sang beautifully.

(c) passivization:
(v) CO:
   a. Mary laughed an unpleasant laugh.
   b. *An unpleasant laugh was laughed by Mary.

(vi) TO:
   a. Mary sang a beautiful song.
   b. A beautiful song was sung by Mary.

(d) the pseudo-cleft construction:
(vii) CO: *What Mary laughed was an unpleasant laugh.
(viii) TO: What Mary sang was a beautiful song.

See also Nogawa (1995) and Massam (1990).
Another type of problematic obligatory constituents which is discussed in Rizzi (1990) is lexically selected manner adverbials. Rizzi provides the following French paradigm:

(22) a. Jean se comporte *(bien) avec les amis.
   'Jean behaves (well) with friends.'

b. *Comment ne sais-tu pas [avec qui [PRO te comporter t t]]?
   'How don’t you know with whom to behave?'

cf. ?Avec qui ne sais-tu pas [comment [PRO te comporter t t]]?
   'With whom don’t you know how to behave?'

(Rizzi (1990: 77))

As (22a) shows, the verb obligatorily takes a manner adverbial. This fact indicates that the adverbial is not a mere adjunct. When it is extracted out of a wh-island, however, the result is as bad as when adjuncts are extracted.

The condition (11) can provide a clear account again. Since manner adverbials (whether they are obligatory or not) do not refer to any entities in the universe. Then, having no referent at all, they are not even subject to the pre-existence condition. As a result, sentence (22b) is also ruled out within our analysis. Furthermore, it should be noted here that the same line of explanation can be provided to the fact that wh-island-extraction of (pure) adjuncts renders the resulting sentences deviant (see (1) and (2)).

Our analysis also extends to island extraction of adjectival predicates. Consider the following examples, where the adjectival predicates are italicized:

(23) a. He became *angry.

b. Bill considers Pete *stupid.

Although the adjectival predicates are not optional constituents (i.e. not adjuncts), the sentences are ruled out when they are extracted out of a wh-island ((24b, d)):

(24) a. How angry do you think that he became t?

b. *How angry do you wonder [whether he became t]?

c. How stupid do you think (that) Bill considers Pete t?
d. *How stupid do you wonder [whether Bill considers Pete t]?

(Rizzi (1990: 130); cf. Roberts (1988))

The pre-existence condition in (11) can easily explain this fact. Adjecti-
tival predicates do not denote any ‘referents’ (thus, receiving no partici-
pant role) at all, as is the case with nominal idiom chunks and lexically
selected manner adverbials. Rather, they play a role of describing
some referents (i.e. participant-role-assigners). Then, it is totally
pointless to talk about (non-)pre-existence of their hypothetical refer-ents, and hence the condition in (11) bans island extraction of adjecti-
val predicates.

5.6. Island-Extraction of Measure Phrases

The last class to be discussed is of measure phrases. Levin (1993)
lists five classes of measure verbs. Among the five, we take the regis-
ter, the cost and the bill class of verbs, and examine how they behave
with respect to island extraction.12 Measure verbs take a measure
phrase (MP). Consider the following examples from each class, where
MPs are italicized and some representatives of each class are in pa-
rentheses:

(25) a. REGISTER: The book weighs 3 lbs. (measure, register, weigh, etc.)

b. COST: That Mercedes will cost you 50 thousand dollars. (cost, take, carry, etc.)

c. BILL: The company billed John $430. (bill, charge, tip, etc.)

Although the italicized MPs in (25) all denote some kind of amount or
measurement of some entity, they are divided into two types in terms
of their attributive nature. One type of MPs can be regarded as hav-
ing a purely attributive nature, which describes the amount of some en-
tity denoted by an NP within the sentence (either the subject NP or the
object NP). In this sense, they can be regarded as purely predicative
and we will refer to MPs of this type as ‘predicative MPs.’ We can see
that MPs of the first two classes in (25) are of this type. They are
subject-oriented predicative MPs and describe the quantity of subject

12 The other classes of measure verbs are the fit class and the price class. I refer
to Nogawa (1999c) for an analysis of those classes.
Thus, we obtain the following paraphrases, using the copula verb be:

(26) Register class verbs:
  a. The baby chimpanzee weighed 2.6 kg. = The baby chimpanzee is 2.6 kg.
  b. The radius of the earth measures about 6,400 km. = The radius of the earth is about 6,400 km.

(27) Cost class verbs:
  a. The repair of the air conditioner cost (me) $113. = The charge for the repair of the air conditioner is $113.
     = The length of time for the homework is more than three hours.
  b. The homework takes (me) more than three hours. = The length of time for the homework is more than three hours.

The other type of MPs has, within the sentence, no antecedent NP to be linked with, and thus they cannot be regarded as predicative. In contrast with the two classes above, MPs of the bill class belong to this latter type. Consider the following examples:

(28) Bill class verbs:
  a. The company billed/charged John $302. 
     = The company is $302.
     = John is $302.
     (= (The amount of) the bill/charge is $302.)
  b. The gentleman tipped the clerk only a penny.
     = The gentleman is only a penny.
     = The clerk is only a penny.
     (= (The amount of) the tip is only a penny.)

In (28a), for example, the amount of money $302 is not the ‘cost’ of the company denoted by the subject NP or of the recipient John in the object position. Thus, the MP is attributed neither to the subject nor to the object NP; it is attributed to an entity which is not syntactically realized.13 In fact, we can say that MPs of bill class verbs denote some substantial referents with a certain quantificational property. In other

13 Concerning bill class verbs, the implicit entity is lexically specified by the verb itself. Thus, $302 in (28a) is the amount of the ‘bill’ or the ‘charge’ and only a penny in (28b) is the amount of the ‘tip,’ which are both lexicalized into the verbs.
A SEMANTIC ACCOUNT OF ISLAND-EXTRACTION

words, the MP itself refers to a participant in the event. In (28a), the referent is arguably a theme object moving from the company to John. Then, although MPs of the bill class also refer to a particular amount (of money, in this case), we may say, at least, that they can be regarded as functioning as participants. Thus, they will be referred to in the following as ‘participant MPs.’

Let us now consider island-extraction of MPs. If there is any difference in pre-existence, among the MPs in (25), it is expected that we should obtain the same contrast with respect to the wh-island effect, between predicative and participant MPs: Those which have a predicative role should show the strong island effect whereas those which have a referential 0-role (i.e. participant MPs) should not.

This is indeed the case. Let us start with island-extraction of MPs of register class verbs, which Rizzi discusses in his analysis. Consider the sentence in (29):

(29) What did John weigh t? [ambiguous] (Rizzi (1990))

1. John weighed apples.
2. John weighed 200 lbs.

The wh-phrase in (29) allows two interpretations, namely the theme (patient) interpretation and the interpretation as an MP. Accordingly, the two replies in (29) are possible. However, Rizzi claims that the wh-phrase what in (30) cannot be interpreted as the weight of John.

(30) MPs of register class verbs:

?What did John wonder [how to weigh t t ]?
[unambiguous]

(Rizzi (1990: 78))

In other words, the wh-phrase what crossing the wh-island does not allow MP-interpretation. The only possible interpretation of the phrase is of the theme (or patient) object reading of the verb weigh (though the judgment is marginal as indicated above). This means that MPs of the register class cannot be extracted out of wh-islands. Given this, we expect that in a context where the patient interpretation is not allowed for the extracted wh-phrase, the sentence should be completely ruled out. Consider the following sentences:

(31) MPs of register class verbs:

a. *What did John wonder [whether the baby weighed t ]?
b. *What did John wonder [whether the diameter measured t ]?

As expected, the examples above are completely unacceptable. This is
a result of the 'forced'-thematic grid of the verbs in (31). The embedded subject in each sentence (i.e. the baby and the diameter) cannot be properly interpreted as an agent but serves only the theme interpretation. As a result, the wh-phrases originating from the postverbal positions are obligatorily understood as subject-oriented MPs. Hence, wh-extraction of the MPs are blocked and the sentences in (31) are ruled out.

The same is the case with MPs of cost class verbs. We have assumed that MPs of this class are purely attributive (predicative) in nature. Then, the MPs of this class are also expected to yield the strong island effect. Consider the following examples:

(32) MPs of cost class verbs:
    a. *{What1/How much1} did John wonder [whether that Mercedes cost t1]?
    b. *{What1/How long1} does John [wonder whether the homework takes t1]?

The examples above also show the same strong island effect. This proves that this class of verbs as well as the register class takes their MPs as predicative constituents and hence as non-pre-existent participants.

Now consider the last measure verb class in (25), the bill class. If the MP of this verb class functions as a participant (a theme), as we have assumed, we predict that they should be extractable even marginally from wh-islands. This prediction is also correctly borne out:

(33) MPs of bill class verbs:
    a. ??What1 did John wonder [whether the company billed t1 to him]?
    b. ??What1 did John wonder [whether the company charged t1 to him]?

Since the wh-MPs in (33) serve as pre-existent participants in the sentences, they can (though marginally) be moved out of a wh-island.14 MPs selected by the bill class of measure verbs are participant MPs and, given the pre-existence condition in (11), we can correctly rule in the sentences in (33).

14 We must admit that the wh-extraction in (33) is somehow a little worse than when extracting a patient object NP (cf. (1) and (2)).
6. Refining the Notion of Event: Island Effect in the Unergative Resultative Construction

Before concluding this paper, we will discuss island extraction in unergative resultative constructions and reconsider the condition proposed in section 4. We repeat the condition below:

(11) The Pre-Existence Condition

A wh-constituent can only be extracted out of a wh-island, if it is the type of constituent which refers to an entity which is taken to be pre-existent, in the sense defined in (10), with respect to the described event.

Specifically, we will refine the notion of event in this section. The data to be dealt with here is the contrast in island-extraction of postverbal NPs between the resultative construction based on a transitive verb (henceforth the transitive resultative) (e.g. (34)) and the one based on an unergative verb (the unergative (intransitive) resultative) (e.g. (35)):

(34) a. He wiped the table clean.
   b. He watered these tulips flat.

(35) a. The clock ticked the baby awake.
   b. She laughed the man off the stage.

The verbs in the resultative sentences in (34) are transitive, which have the ability to assign an accusative Case and a $\theta$-role to their objects; those in (35) are unergative verbs, and they do not have the ability to assign a $\theta$-role nor an accusative Case when they are used in isolation (i.e. without resultative phrases). Thus, the NPs the table and these tulips in the former are ‘subcategorized’ and $\theta$-marked by the verbs whereas the baby and the man in the latter are not. What is obvious is that all of these NPs occupy the same syntactic position and the entities referred to by them are arguably considered to be pre-existent in the world.

Concerning the wh-island effect, however, Rothstein (1992) provides an interesting data. She has shown that there is a clear contrast in acceptability of island extraction between the transitive resultative and the unergative resultative.\footnote{We can also find a clear contrast in applying some syntactic operations between the transitive resultative and the unergative resultative construction: middle formation, adjectival passive, nominalization, etc. (See Carrier and Randall (1992) and Rothstein (1992).)} Consider the following examples:
The examples above clearly show that, in the resultative construction, extraction out of a wh-island is (marginally) allowed with the object of a transitive verb while this is not the case with the fake object preceded by an unergative verb. Levin and Hovav Rappaport (1995) also observe the same (but weaker) contrast in extractability from the two kinds of resultative constructions.

Here again, transitive resultatives show a weaker island effect (e.g. (38)) than unergative resultatives (e.g. (39)). These two pieces of observation indicate that, though occupying the same position, the postverbal NPs in the transitive and in the unergative resultative construction differ from each other in certain respects, which yields the contrast in wh-island extractability.

Now, the question is whether or not our analysis so far can also account for this contrast. It will be shown below that in explaining the asymmetry found in (36)-(39), we must reconsider the notion of event in the pre-existence condition in (11). What we should note here is the fact that the event denoted by the resultative construction, whether it is of the transitive type or of the unergative type, consists of two distinct and successive sub-events (as shown in (40b)). The conceptual

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16 I pointed out, in Nogawa (1999a), some problems with Rothstein's (1992) and a Case-based analyses of the relevant data.
structure of the resultative construction denotes two distinct sub-events. In other words, two (sub-)events are woven into the construction in (40a).

\[
(40) \quad \text{a. } \text{NP V NP RP (RP=resultative phrase)} \\
\text{b. } \text{Event}_{\text{RC}}: \text{Sub-event}_1 \rightarrow \text{Sub-event}_2
\]

It has been pointed out in the literature that the resultative phrase in the resultative construction derives an accomplishment from an activity: the verb used in the construction (whether the 'original' use of it is transitive or unergative) is interpreted as an accomplishment verb (cf. Tenny (1987), Levin and Hovav Rappaport (1995)). This interpretation is compositionally derived. That is, the eventuality of the resultative construction has a complex internal structure, consisting of two (sub-)events. They are the event as an activity, which is specified by the verb, and the one as a result state caused by this activity, specified by the resultative phrase, which is predicated of the postverbal NP. Thus, the resultative construction describes a change of state even when the verb involved there does not denote a change of state.\(^{17}\) If we take the definition in question as the event as a whole (i.e. the event described by the resultative construction), we cannot make a clear distinction among postverbal NPs, because both object NPs in transitive resultatives and fake objects in unergative resultatives can be considered to be pre-existent in the events described by the constructions (and actually this is the case with the postverbal NPs in (34) and (35)). Since the second sub-event represents the result state, the NP is necessarily considered to be pre-existent. Then, the only difference between the postverbal NPs in these constructions should be attributed to the first sub-event, namely the event denoted by the verb involved. Thus, in determining the 'pre-existence' of postverbal NPs, we assume that it should be done within the event described by the verb: postverbal NPs can be regarded as referring to pre-existent entities only when they act as a pre-existent participant in the event denoted by the verb

\(^{17}\) Levin and Hovav Rappaport (1995: 50) provide the following example to illustrate this point.

\[(i) \quad \text{a. } \text{The blacksmith pounded the metal.} \\
\text{b. } \text{The blacksmith pounded the metal flat.}\]

The verb *pound* does not necessarily entail a change of state of its object (*the metal*) when it is used in isolation as in (ia). On the other hand, the verb comes to specify a state of the object when it appears in the resultative construction as in (ib).
(not by the sentence), and the requirement for island extractability varies according to the notion of pre-existence thus determined.

Now let us examine the asymmetry found in (36)–(39). As often pointed out in the literature, the postverbal NP in the transitive resultative is assigned \( \theta \)-roles from the verb and the resultative predicate while that in the intransitive resultative is only from the resultative phrase (cf. Carrier and Randall (1992)). Furthermore, the \( \theta \)-role of the postverbal NP in the former construction (like the NPs in (36) and (38)) are pre-existent-participants in both of the eventualities (i.e. the activity and the result state). For example, in (36a) the table must pre-exist as a target of the activity of wiping. It must also be regarded as pre-existent in the resulting state, because the state of being clean is predicated of, and describing an attribution of the existing table. On the other hand, the one in the latter construction (the fake NPs in (37) and (39)) can be understood as a participant only in the result state. In (36c), for example, the baby does not play any role in the first eventuality where the clock is only ticking, because it is not regarded as a (pre-existent) participant. To describe the situation in which something becomes awake, however, it must be regarded as a pre-existent entity. Then in (36c), the referent of the postverbal NP should be identified, at most, as a 'half'-pre-existent participant, not satisfying the requirement for the pre-existent participant role.

It should be noted here that it is not at all relevant whether or not the entity concerned physically pre-exists in the real world (and further, the speaker recognizes its presence) when an activity (the first event) is carried out by the subject, or comes to exist as a result of the activity. In other words, what is important is whether the first event is recognized, in the speaker’s mind, as requiring the entity in question as an (obligatory) pre-existent participant. And we are claiming that in the unergative resultative, the answer is negative. To sum up the discussion so far, we redefine, more specifically, the notion of event in the pre-existence condition.

(41) The notion of event in the pre-existence condition in (11) is restricted to the smallest domain, namely the event denoted by the lexical conceptual structure of a verb.

Then, by definition, the referent of the postverbal NP in the transitive resultative is regarded as pre-existent, and the one in the unergative resultative as non-pre-existent. This difference in pre-existence then yields the contrast in wh-island extractability between these two con-
Here, taking into consideration the refinement of the notion of event, we are led to revise the pre-existence condition in (11) as follows:

(42) The Pre-Existence Condition (revised version)

A wh-constituent can only be extracted out of a wh-island, if it is the type of constituent which refers to an entity which is taken to be pre-existent, in the sense defined in (10), with respect to the event described by the verb.

7. Concluding Remarks

We have shown in this paper that a semantic factor plays a crucial role in extracting from weak islands (e.g. wh-islands and inner islands): the semantic notion of pre-existence of the referent of an extracted constituent. The pre-existence condition in (42) accounts for the severe island effect with resultant objects, eventive objects, true cognate objects, nominal idiom chunks, manner adverbials, adjectival predicates, measure phrases of some types of measure verbs, and fake objects in unergative resultative constructions. It has been shown that it is the pre-existence of the participant role, if any, assigned to an extracted constituent that the acceptability of its island extraction depends on: constituents whose referents are considered pre-existent can be marginally extracted out of a wh-island whereas the other constituents (non-pre-existent participants and non-participants) cannot.¹⁸

¹⁸ The following paradigm, cited from Rizzi (1990: 89f.), shows that grammaticalization also plays a crucial role in island extraction. Our analysis cannot provide a clear account of the asymmetry in (ii).

(i ) a. Non so se potremo dire che Gianni è stato licenziato per questa ragione.
   ‘I don’t know if we could say that Gianni was fired for this reason.’
   b. Non so se potremo dare questa ragione per il licenziamento di Gianni?
   ‘I don’t know if we could give this reason for Gianni’s firing.’

(ii) a. *Per che ragione1 non sai se possiamo dire che Gianni è stato licenziato t₁?
   ‘For what reason don’t you know if we can say that Gianni was fired?’
   b. ?Che ragione1 non sai se possiamo dare t₁ per il licenziamento di Gianni?
   ‘What reason don’t you know if we can give for Gianni’s firing?’
Semantic (or cognitive) approach to island extraction is also attempted in Nakau (1981) and Dean (1992). However, they only discuss the semantic nature of the domains from which *wh*-phrases are extracted, and do not explore the semantic aspects of an extracted phrase itself. Thus, their analyses cannot deal with the fact discussed in this article.

The result of this paper indicates that there should be drawn a clear distinction between weak and strong island effects. Weak island effects might only be the effect of the semantic condition in (42) and true island effects might be limited to strong island effects. (Although we cannot examine the influence of the semantic condition on strong island effects, we assume, as a null hypothesis, that the semantic notion pre-existence works even on extraction from strong islands. That is, strong island effects overrule the role and influence of the pre-existence condition.) This strongly provides a semantic justification for dealing with weak and strong island effects in different ways, and motivates to analyze these two groups of island effects from different perspectives. In other words, all island effects should not be lumped together and that they should not be accounted for within a unified syntactic (or semantic) account.

Finally we should notice here that the theoretical framework of the analysis in Rizzi (1990), which we have basically assumed in this article, is a 'pre-Minimalist' one, namely the Government and Binding framework. Thus in the framework of the Minimalist Program (cf. Chomsky (1995)), some syntactic notions adopted in Rizzi's analysis (e.g. the notion of government) are abandoned or redefined, and the two devices which played a crucial role in his analysis and mine (i.e. binding of referential indices and formation of a government chain) may be formalized in a different manner. This may entail some interesting consequences to the Minimalist framework, or may bring about some problems to the analysis of the island effects discussed in this paper. I claim, however, that, being semantic in nature, the distinction between pre-existent participants on the one hand and non-pre-existent participants and non-participants on the other is real, and no matter what framework of a syntactic analysis we may stand on, the effect of the distinction remains the same, and there seems to be little possibility of a critical problem. The crucial point to be considered seriously is the fact that the acceptability of island extraction depends on the notion of pre-existence of the role assigned to extracted NPs. For this reason,
we have focused on the relevant discussion and do not try to work out 'reinterpreting' in the Minimalist framework.

Although we have to admit that we cannot fully discuss theoretical implications of the pre-existence condition in (42), we can say, at least, that the condition should be dealt in relation with the lexical conceptual structure (LCS). The reason for this is that the pre-existence condition refers to the conceptual structures of the verbs dominating extracted constituents. Hale and Keyser (1993, 1997) propose a syntactic approach to the relation between the LCS and the argument structure of a verb. They claim that resultant objects and patient objects differ in their LRS (lexical relational structure) positions. If this is the case, the asymmetry between POs and ROs (and other postverbal constituents discussed in this paper) might be attributed to their lexico-syntactic positions. Reluctantly, however, we have to leave these issues for further research.

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