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Grammatical Interfaces in English Object Extraposition*

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Kim, Jong-Bok. 2008. Grammatical Interfaces in English Object Extraposition. *Linguistic Research* 25(3), 117-131. English allows to extrapose a clausal element to the sentential position, leaving the expletive pronoun *it*. As such, English object extraposition appears to be a simple process, but a careful examination reveals much more complicated variations. In particular, we observe that there are cases where the expletive is obligatory, optional, and prohibited. The present analysis looks into the formal properties of English object extraposition and provides a way of capturing such variations relying on the grammatical interfaces among argument structure and realization, lexical information, functional constraints, and so forth. **(Kyung Hee University)**

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1. Basic Facts

English has various different usages for the pronoun *it*. For example, as in a sentence like (1a), the pronoun *it* is used as a weather expression. In (1b), that the pronoun *it* is used as a pronominal copy. And in (1c), it is used as introducing the so-called *it*-cleft construction (cf. Bolinger 1977, Collins 1994, Kim and Sag 2005):

(1) a. In recent years, it rained in some areas, but there are no seeds left to plant.
b. I think that one of the main points about this type of dance is that it is a form of dance.
c. It wasn't till I was perhaps twenty five that I read the book and enjoyed it.

In addition to these usages, the pronoun it can be used as an anticipatory *it* as exemplified in the following (Bolinger 1977):

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(2) a. It bothers me that John speaks loudly.
b. We want to make it clear that everything you told us is true.

The pronoun *it* here in both cases tells us to anticipate something that appears later in the same sentence. This pronoun also has no clear meaning as can be attested by the wh-question test (cf. Postal and Pullum 1988):

(3) a. *What bothers you that John speaks loudly?
b. *What do you want to make clear that every you told us is true?

The traditional grammarians assumed that these two sentences in (2) are derived from the source sentences like (4) (Chomsky 1981):

(4) a. [That John speaks loudly] bothers me.
b. We want to make [that everything you told us is true] clear.

For example, if we extrapose the subject that-clause *That John speaks loudly* to the sentence final position, while filling out the remaining position by the dummy *it*, we get (2a). In (4b), we extrapose the object that-clause [*that everything you told us is true*] with the introduction of the dummy or anticipatory *it* in the left-out position, the output we have is (2b). We call such processes 'subject extraposition' and 'object extraposition', respectively (cf. Quirk et al. 1985, Stroik 1996).

In addition to these that-clauses, we can also extrapose clausal elements like an infinitival or interrogative clause (Collins 1994, Culicover and Rochemont 1990):

(5) a. [To book early] is a good idea. → It is a good idea [to book early].
b. [Why she did it] is unclear. → It is unclear why she did it.

In (5a), we extrapose the infinitival VP *to book early* and in (5b), we extrapose the interrogative clause *why she did it*. In both cases, we of course need the dummy *it*. In object extraposition, we can also extrapose infinitival VPs like *to verify all quotations* or infinitival clauses like *for him to breathe*.

(6) a. I always make [to verify all quotations] a rule → I always make it a rule [to verify all quotations].
b. I consider [to know the conditions of payment] essential. → I consider it essential [to know the conditions of payment].

There is one clear difference between subject and object extraposition from the data we have observed so far. The difference is that subject extraposition is optional, but object extraposition is not. That is, object extraposition is obligatory. This means object extraposition is not just a matter of style, but a phenomenon controlled by certain grammatical rules. This paper will look into these grammatical rules governing English object extraposition. We will do this not with 'artificial' examples traditionally made by grammarians, but with 'authentic' corpus data, collections of real-world data like novels, speeches, literature, newspapers, etc.[1)]

2. Questions on the Variations

At first glance object extraposition looks rather simple. However, a careful examination of the data tells us that it is more complex than we think.

First consider one obvious grammatical constraint. The first constraint we have in object extraposition is that this dummy *it* is obligatory as we have seen. In (7a) and (7b), the pronoun *it* is also obligatory (Iwakura 1994):

(7) a. He found *(it) frustrating that his policies made little impact on poverty.
b. I put *(it) to you that he must be regarded as more qualified.

Let us see consider slightly different examples:

(8) a. I like *(it) that she has good manners.
b. Rumor had *(it) that Spain may support the bill as well.
c. We may depend upon *(it) that their paper will expose crooked politicians.

1) Most of the data here are from the ICE-GB (International Corpus of English, Great Britian) corpus with about one million words.

These examples are slightly different from examples like (7) in that nothing intervenes between the dummy *it* and the *that* clause. However, these examples can be taken to be also object extraposition in the sense that the pronoun *it* is obligatory and functions as an anticipatory or dummy *it* pronoun (cf. Herriman 2001, Huddleston and Pullum 2002).

Let's see one more interesting example in which the pronoun *it* is obligatory.

(9) a. I would appreciate your action / your forwarding this to everyone.
b. I would appreciate *(it) if you could forward this email to everyone.

The verb *appreciate* combines with an NP or a gerundive nominal. When it occurs with the *if* clause here, the pronoun *it* is obligatory.

However, this doesn't mean that the dummy *it* is always obligatory in object extraposition. Look at the following examples:

(10) a. They never mentioned (it) to the candidate that the job was poorly paid.
b. Nobody expected (it) that he would be there.

As you can see here, we can either have the dummy *it* or simply drop the dummy *it* out. The presence of the dummy *it* is optional.

In addition to these obligatory and optional cases, we have another pattern. Consider the following examples:

(11) a. *Fred thought it that John ate the meat.
b. *Fred hoped it that he would win the race.
(12) a. Fred thought that John ate the meat.
b. Fred hoped that he would win the race.

In such examples, we cannot have the dummy or anticipatory *it* at all. That is, no object extraposition is possible with such examples.

Observing these variations in object extraposition, we then can have the following two main questions:

- What kind of grammatical rules do we need in object extraposition? How can we apply these rules?
- How can we explain these variations? That is, why do we have three different cases in which the dummy *it* is obligatory, optional, or not possible at all?

This paper tries to answer these two questions.

3. Lexically-controlled Properties

Before we try to answer these two questions, let's see three different types of verbs in terms of what they can combine with. First, we have verbs selecting only an NP. For example, verbs like *pinch* or *devour* select only an NP. It cannot select a clausal CP (cf. Menzel 1975, Stroik 1996).

(13) a. She pinched [his arm] as hard as she could.
b.*She pinched [that he feels pain].
(14) a. A dog will devour at least [one can of food] per day.
b.*A dog devoured [that he felt full].

In contrast, verbs like *hope* or *wonder* select only a CP. This kind of verb cannot combine with an NP complement.

(15) a. We hope [that such a vaccine could be available in ten years].
b.*We hope [the availability of such a vaccine in ten years].
(16) a. I wonder [if it was an animal caught in a trap].
b.*I wonder [the problem].

Unlike these two types, verbs like *prove* and *regret* can select either an NP or a CP as we can see in (17) and (18):

(17) a. Cohen proved [the independence of the continuum hypothesis].
b. Cohen proved [that the continuum hypothesis was independent].

(18) a. We regret [any confusion which may have been caused].
b. For the first time in his life, he regretted [that he had no faith].

These observations mean that English has at least three different types of verbs. From a grammatical perspective, we can represent this in terms of argument structure, telling us what each verb will combine with. That is, these three different types of verbs will have the argument structure in (19) (Kim 2005, Kim and Sag 2005, Kim and Sells 2008):

(19) a. pinch-type: ARG-ST <NP, NP>
b. hope-type: ARG ST <NP, CP>
c. prove-type: ARG-ST <NP, [*nominal*]>

We can interpret (19c) as if a verb selects a *nominal* argument which can be realized either as an NP or a CP.

4. Relationships with Object Extraposition

Then, what does this three types of verb have to do with English object extraposition? As some readers can conjecture, the verb that selects either an NP or a CP object / argument can undergo object extraposition. Consider the following:

(20) a. *He pinched it that he felt a pain.
b. *He hoped it that we would receive an Academy Award.

The examples show us that *pinch* or *hope* does not allow object extraposition. However, with the verb *prove* and *regret* we can have object extraposition:

(21) a. Science has not proved it that it was mere coincidence.
b. Afterwards, we regretted it that we did not do it.

Based on these observations, we can have the following generalization for English object extraposition (Kim 2005, Kim and Sells 2008).

(22) English Extraposition Rule (First Approximation):
Verbs selecting a nominal can undergo *it*-object extraposition.

The generalization means that if a verb selects a *nominal* element which can be either an NP or a CP, it allows *it*-object extraposition. Let's check the validity of this generalization. Consider verbs like *think*, *wonder* and *hint*. These verbs require a PP complement and cannot combine with an NP object, as can be observed from the following data.

(23) a. *I wonder that question.
b. *He hinted the possibility of a treat of some sort.
(24) a. I wonder about the question.
b. He hinted at the possibility of a treat of some sort.

The data tell us that these verbs do not select an NP (or *nominal*). This then implies that they are not be able to undergo object extraposition. This is in fact what we have. As you can see in the following, we must drop out the dummy *it* here.

(25) a. I wondered (*it) how he did on the test.
b. He wouldn't dare hint (*it) that I am not the right man for the job.

Then, let's see verbs like *mention* and *demand*. We can easily` verify that these verbs select either an NP or a CP.

(26) a. They didn't even mention { his latest promotion. / that he was promoted recently. }
b. They demanded { justice. / that he should leave. }

Since these verbs select a *nominal* element, they can have object extraposition. This is in fact true:

(27) a. They never mentioned it to the candidate that the job was poorly paid.
b. They demanded it of our employees that they wear a tie.

5. Explaining the Variations

It appears that we are then ready to tackle the three variations. If this simple generalization in (22) is true, the next question is then how we can explain the variations. How can we explain obligatory, optional and impossible cases we have seen before.

5.1 Obligatory Cases

Consider the obligatory cases first. In (28), we must do extraposition.

(28) a. *French consider [to have a central bank in the EC] impossible.
b. *He made [always to check with the scorekeeper] a rule.

Verbs like blame also belong to the obligatory case:

(29) a. I blame the case on you.
b.*I blame [that we can't go].
c.*I blame [that we can't go] on you.
d. I blame it on you [that we can't go].
e.*I blame on you [that we can't go].

If we look at just (29a) and (29b), it appears that *blame* type cannot undergo extraposition, but as we can see in (29c), it is possible. How can we account for the grammatical and ungrammatical examples here? Before we do this, let's consider one independent constraint in English.

(30) a. I believe strongly [that the world is round].
b.*I believe [that the world is round] strongly.
(31) a. John explained the question to Mary.
b.*John explained [why he signed the document] to Mary.
c. John explained to Mary [why he signed the document].

What's wrong with (b) examples here? Intuitively, this has to do with processing effects. For example, if we have something after a clausal element, like to *Mary*, we will have difficulties in understanding where to link the PP [*to Mary*]. Following Kuno (1987), we assume English has the following constraint:

(32) Ban on the Non-sentence Final Clause (BNFC):
No element can follow after a clausal element (CP or S).

Now, let's look at the examples with *blame*. The data in (29) tell us that it has the following argument structure.

(33) [<blame>
ARG-ST <NP, [*nominal*], PP[*on*]>]

This lexical information means *blame* selects three arguments: the subject NP, nominal object (NP or CP), and PP complement. When the *nominal* is realized as an NP, we will have (34a). (34b) is out since it does not have the obligatory PP. (34c) is ungrammatical because of the BNFC. One way to save (33c) is to apply the extraposition rule that moves the that-clause to the sentence final position, with the introduction *it* in its place:

(34) a. I blame the case on you. <NP, NP>
b.*I blame [that we can't go]. *<NP, CP>
c.*I blame [that we can't go] on you. *<NP, CP, PP>
d. I blame it on you [that we can't go]. Extraposed.
e.*I blame on you [that we can't go].

The example (34e) can be predicted unacceptable from the general ordering reflecting that the order of arguments needs to be kept in syntax too.

5.2 Optional Cases

Let's see optional cases. Consider slight different examples. As we have already noted, there are examples where the presence of *it* is optional.

(35) a. Nobody expected the case (of you).
b. Nobody expected that you could be so cruel.
c.*Nobody expected [that you could be so cruel] of you.
d. Nobody expected it of you [that you could be so cruel].
e. Nobody expected __ of you [that you could be so cruel].

How can we explain the data here? (35a) and (35b) tell us that it can undergo extraposition. The data tell us that verbs like *expect* have the following argument-structure.

(36) $\begin{bmatrix} \text{<expect>} \\ \text{ARG-ST } \text{<NP, [}\textit{nominal}\text{], (PP[}\textit{of}\text{]>} \end{bmatrix}$

This means that the verb selects an NP subject, a *nominal* object (which can be realized either as an NP or a CP), and an optional PP[*of*]. When the nominal object is realized as an NP, we will have (37a).

(37) a. Nobody expected the case (of you). [canonical pattern]
b. Nobody expected that you could be so cruel. [NP, CP]
c.*Nobody expected [that you could be so cruel] of you. [violating the BNFC)
d. Nobody expected it of you [that you could be so cruel]. (extraposition)
e. Nobody expected ___ of you [that you could be so cruel].

When the *nominal* is realized as a CP, we have (37b). (37c) is fine, but it violates the functional constraint BNFC. That is, if the object is realized as a CP as shown in the following, we would generate an unacceptable sentence due to the presence of the post-CP element.

(38) $\begin{bmatrix} \text{<expect>} \\ \text{ARG-ST } \text{<NP, CP, PP[}\textit{of}\text{]>} \end{bmatrix}$

However, if we extrapose the object CP, leaving the expletive NP in its place, we will have no such BNFC violation and generate (37d). How about (38e)? Why the dummy *it* is optional? This is different from obligatory cases with verbs like *blame* where the dummy *it* cannot be dropped out. The answer can be found from the difference between predicative vs. non predicative preposition. Consider the following contrast:

(39) a. The blame is on me. [predicative on]
b.*The expectation is of me. [nonpredicative of]

As we can see here, *on me* can be used as a predicative preposition, describing the property of *blam*e whereas *of me* is not. To reflect this, we then need to revise the

Extraposition Rule as following:

(40) English Extraposition Rule (Second Approximation):
Verbs selecting a *nominal* can undergo *it*-object extraposition. The placement of *it* is optional if the post-expletive phrase is non-predicative.

Then, let's see examples with *mention* and *demand*. These verbs allow the optional *it*:

(41) a. They never mentioned (it) to the candidate that the job was poorly paid.
b. They demand (it) of our employees that they wear a tie.

It is not difficult to verify *to the candidate* and *of our employees* is nonpredicative:

(42) a. *The mention is to him.
b. *The demand is of our employees.

The second generalization in (40) then allows the expletive it to be optional.

5.3 Impossible Cases

In addition to the obligatory and optional cases, we also have cases where no extraposition is possible at all.

(43) a. John thought to himself that Mary was coming.
b. John said to his friends that we had betrayed him.
(44) a. *John thought it to himself that Mary was coming.
b. *John said it to his friends that we had betrayed him.

Why do we have this pattern? The answer can be found from the lexical properties of these verbs. That is, such a verb does not select a *nominal* as its complement. It just selects a clausal CP element, as noted from the following argument structure:

(45) [ARG-ST <NP, (PP), CP>]

As represented in the ARG-ST, the verbs select a subject NP, an optional PP, and a clausal complement. This kind of argument-selecting property will allow sentences like the following:

(46) a. John thought that Mary was coming.
b. John said that we had betrayed him.

This in turn means that such verbs cannot be the input to the object extraposition since it does not select a *nominal* as its argument.

5.4 Remaining Issues

There is one remaining set of data we haven't discussed so far. Consider the following examples we have seen earlier:[2)]

(47) a. We would appreciate *(it) (very much) if we were left alone from now on.
b. I like *(it) that she has good manners.
c. Rumor had *(it) that Spain may support the bill as well.
d. We may depend upon *(it) that their paper will expose crooked politicians.

In such examples, the dummy *it* is obligatory. Note that these verbs select an NP object, but not a clausal complement:

(48) a. *She appreciated that he helped her a lot.
b. *Rumor had that it influenced the decision.
c. *The family depended on that they receive charity.
(49) a. She never appreciated the depth and bitterness of the Irish conflict.
b. Rumor had a great impact on the decision.
c. The family depends on charity.

How can we explain these? Since these verbs are surely selecting only an NP, they cannot be the input to the English Object Extraposition Rule. As we have seen earlier, verbs selecting only an NP canonically disallow *it*-extraposition. For example, pure activity denoting transitive verbs do not allow such:

2) As an anonymous reviewer points out, we need to further develop this section.

(50) a. *John kicked it that the ball flew away.
b. *John ate it that he felt satisfied.
c. *John cut it that the bread has two parts.

The difference between verbs including *like* and those like *kick* is that the former semantically allow a propositional object. That is, one can 'like' a proposition, but cannot kick or ate a proposition.

A generalization to such examples seems to be offered by Bolinger (1977). He claims that the *it* in such examples refers to some fat already broached. For example, consider the following examples from Bolinger (1977):

(51) a. Not for a moment did I believe it that the election hurt them.
b. I can understand it that the election hurt them.
c. He had to go and blab it that I was seen out with a blonde last night.

All these sentences are about a topic that has already been introduced. Taking *it* as a referent also led him to assume that this construction is also favored with factive verbs (data are from Bolinger (1977)):

(52) a. He can't swallow *(it) that you dislike him.
b. He hid *(it) that she was involved.
c. He cannot understand *(it) that you dislike him.
(53) a. I just love *(it) that you are moving in with us.
b. We welcome *(it) that we are to have the benefit of your criticism.

In all these examples both true factive verbs like *swallow* or emotional factive verbs like *love*, the pronoun it is obligatory. As Bolinger noted, a factive verb implies the factuality of its complement in the mind of the speaker. This means that a semantically factive verb selecting an NP object can be realized into a different one selecting a third singular pronoun *it* and a CP coindexed with this pronoun:[3)]

(54) $\begin{bmatrix} \text{<love>} \\ \text{ARG-ST <NP, NP>} \end{bmatrix} \rightarrow \begin{bmatrix} \text{<love>} \\ \text{ARG-ST <NP, NP}i\text{ [NFORM } it\text{], CP}i\text{>} \end{bmatrix}$

3) As a reviewer points out, we could generalize this constraint adopting the notion of type.

This means that there is another use of the pronoun *it*, different from the extraposition *it*.

6. Conclusion

English object extraposition appears to be a much more complicated that we expect. For example, we have seen that there exist at least three variations in object extraposition. A related fact was that there are three different types of verbs in terms of what they combine with. We have seen that verbs select either an NP or a CP can undergo object extraposition.

To account for the three variations, we need to have an interactive grammatical system, e.g., interfaces between a grammatical rule like the Extraposition Lexical Rule and a processing effect like the BNFC. In addition to the use of *it* in extraposition, we have also observed that there is a referential *it* introduced with factive verbs to evoke a topic that has already been introduced.

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