# Vacuous It-Extraposition: A Lexicalist, Construction-based Approach*

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English licenses the extraposition of a clausal expression to the sentence final position while introducing the expression *it* in the object position. The object extraposition also includes the so-called vacuous extraposition in which the expletive object and the allegedly extraposed CP are adjacent. This paper investigates actual uses of the vacuous object extraposition, using contemporary corpora. Based on the empirical data obtained from the comprehensive corpus search, we suggest that the illocutionary rule of 'assertion' plays a key role in licensing the construction, in addition to the factive lexical semantics of the matrix verb in question. Together with the assumption that English employs not only verbal but also nominal extraposition, we also offer a construction-based analysis that can account for the licensing conditions as well as grammatical properties of the construction.

**Keywords:** extraposition, expletive, corpus, HPSG, Construction Grammar

## 1. Issues

English licenses a systematic pattern where a finite or infinitival clause is extraposed to the sentence final position, as observed from the naturally occurring data (see Quirk et al. 1985, Biber et al. 1999, Huddleston and Pullum 2002):

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(1) a. Sometimes I find it difficult [to read my own writing].
    b. In the circumstances I do not think it unreasonable of me [to ask for the return of my subscription].

This pattern involves the introduction of expletive (or 'dummy') *it* which, though morphologically identical to the third person singular pronoun, is not referential, and hence is unable to be assigned any semantic role.[1]) Note that the object extraposition in such examples is obligatory (see Huddleston and Pullum 2002, Baltin 2005, Kim 2005, Kim and Sag 2008, among others):

(2) *I find [to read my own writing] difficult.

This supports the idea that the object extraposition is triggered by the constraint that the heavy constituent needs to be at the end of sentence.

Slightly different from examples like these, there are also cases like (3) where the expletive and the allegedly extraposed CP clause are adjacent (Bergh 1997):

(3) a. Type I: I regret it that John will resign.
    b. Type II: I take it that John will resign.
    c. Type III: I rely upon it that John will resign.

In all these examples, the CP clause is 'vacuously' extraposed in the sense that its position is the same as the original one. In addition, note that these three types behave differently. Observe the following data:

(4) a. I regret that John will resign.
    b. *I take that John will resign.
    c. *I rely upon that John will resign.

Type I allows the expletive to be optional as seen from (4a). Type II

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1) Quantifiers, denoting a set or a second order relation, are taken to be referential.

behaves like an idiom, and the predicate cannot take a sentential complement as shown in (4b). Type III involves a prepositional verb, and the putative source is also ungrammatical as seen from (4c).

This paper tries to investigate usages of the vacuous *it*-object extraposition in English, using online-available corpora. Based on our corpus investigation, we try to identify grammatical properties of the phenomenon in question. We then sketch a construction-based analysis that can account for these properties.

## 2. Corpus Data

In order to see the actual uses of the vacuous object extraposition and offer an insightful analysis, we have performed an extensive corpus search, using the largest online available corpora:

**Table 1.** Corpora used in the research

| Corpus | Corpus size | Texts | Period |
|--------|-------------|---------|-----------|
| COCA | 450 million | 190,000+ | 1990-2012 |
| COHA | 400 million | 100,000+ | 1810-2009 |
| BYU-BNC | 100 million | 4049 | 1970s-1993 |
| TIME | 100 million | 275,000+ | 1926-2006 |
| Total | 1,050 million | 569,049+ | |

All these corpora, available online, provide wealth data on the construction in question and add to the data that have been presented in previous studies.[2] We thus expect more reliable data analyses for the

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2) COCA (Corpus of Contemporary American English) is the largest structured 'balanced' corpus of English that continues to be updated and which is based on a variety of genres (e.g., spoken, fiction, magazines, newspapers, and academic), and it contains 450 million words of text from 1990-2012 (see Davies 2009, 2012a). COHA (Corpus of Historical American English) is the largest structured corpus of historical English that is based on a variety of genres, maintaining the same genre balance from year to year. It is more than 100 times as large as any other structured and balanced corpus of historical English, and it contains 207 million words of fiction (novels, short stories, plays, and movie scripts), 97 million words from

construction with naturally occurring data.

The search method we have adopted is simple, as represented in the following:

(5) a. [vv⋆]    it that  [a⋆] / [p⋆] / [np⋆]
    b. [vv⋆]   [i⋆] it  that    [a⋆] / [p⋆] / [np⋆]

The search string in (5a) yields tokens in which a lexical verb (vv*) is followed by *it* and *that*, and then either by a determiner (a*) or pronoun (p*) or proper noun (np*). (5b) just adds a preposition (i*) right after the verb. The following is the raw frequency of the vacuous object extraposition:

**Table 2.** Raw frequency of the vacuous object extraposition construction

| Corpus | [vv*] it that [a*]/[p*]/[np*] | [vv*] [i*] it that [a*]/[p*]/[np*] |
|--------|-------------------------------|-------------------------------------|
| COCA | 571 | 638 |
| COHA | 859 | 1606 |
| BYU-BNC | 175 | 147 |
| TIME | 68 | 364 |

Of the data we obtained from the search, data like the following are manually removed:

(6) a. It was [only after Dorothy reported it] that the story did move.
       (COCA 1999 SPOK)
    b. There were so many great musicians [who played it and recorded it]
       that the artistic standard is still very high. (COCA 1998 MAG)
    c. Then he pressed the call button near my bed and informed [the nurse
       who answered it] that I was ready for discharge. (COCA 2010 FIC)

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popular magazines, 40 million words from newspapers, and 61 million words from non-fiction books. Crucially, it maintains the same balance in genres (and in most cases sub-genres) decade by decade. The British National Corpus (accessed via the BYUBNC interface) contains 100 million words from the 1980s and early 1990s, and likewise contains texts of spoken, fiction, magazines, newspapers, and academic. The TIME Magazine corpus is based on more than 275,000 articles in TIME Magazine from the 1920s to the 2000s (see Davies 2012a, 2012b).

In all these examples, the expression *it* is not linked to the following *that* clause but to the preceding clause including the expression, as indicated by the brackets.

As we have seen in the previous section, the vacuous object extraposition examples can be identified as three different groups. It is simple to identify Type III with a prepositional verb. As for the distinction of Type I and II, we rely on the subcategorization pattern of the matrix verb. That is, Type I verbs can select a CP complement, and Type II verbs select only an NP complement:

(7) a. Type I: We heard (it) that Charlie was the one who got in trouble. (COHA 1949 FIC)
  b. Type II: You really hate *(it) that I helped, don't you? (COHA 1987 FIC)
  c. Type III: ··· you can wager and depend on *(it) that no man will ever remark in his presence. (COCA 1990 FIC)

With this classification, some representative examples we have extracted from each corpora are given in the following:

(8) Type I
  a. We're **hearing it that** the United States should make this sudden shocking violent strike. (COCA 1990 SPOK)
  b. ··· she did not try to **explain it that** the wind or the stars or the pencils told her to do it. (COHA 1997 FIC)
  c. But we nowhere **find it that** the Heavens declare the will of God; which is pronounced a law and a testimony, that men should do according to it. (COHA 1852 NF)
  d. I would have **thought it that** the message would have got over to me. (BNC JSG)

(9) Type II
  a. I **love it that** the congregation is made up of different races and cultures. (COCA 2005 NEWS)
  b. I **enjoyed it that** the late news came on at 10 p.m. (COCA 1999 NEWS)

    c. I just couldn't **face it that** I wasn't in the newsroom. (COCA 1993 NEWS)

    d. I can not **help it that** the Tall One always gives me the feeling of a lamb before a wolf. (COHA 1921 FIC)

    e. We **accept it that** the Athenian achievement is without parallel, ··· (COHA 1972 FIC)

    f. My father couldn't **stand it that** I wasn't the girl he wanted. (COHA 1993 MAG)

(10) Type III

    a. I was round all day to **see to it that** he shouldn't strike. (COHA 1871 FIC)

    b. But I do **look at it that** I was lucky to have him. (COCA 2002 SPOK)

    c. They **go into it that** you're stupid. (COCA 2002 SPOK)

    d. ··· you can **count on it that** Greg Dolman won't waste any time in telling them the whole thing's settled. (COCA 1990 FIC)

    e. I **heard about it that** the zoo's director ended up back at the zoo. (COCA 2008 SPOK)

    f. I think they'll essentially **come to it that** Margaret York is irrelevant material. (COCA 1995 NEWS)

As seen from these illustrative examples, we can observe that a variety of verbs can occur in the vacuous object extraposition. Verbs like *hear, explain, find, think,* and so forth typically select a CP complement while those like *take, love, mind, enjoy,* and the like are true transitive verbs. Prepositional verbs like *see to, look at, go into, count on, hear about, come to* are also often used in the vacuous object extraposition. Of these, *see to* is the most frequently used one in the vacuous object extraposition.


# 3 Findings and Discussion

When considering Type I examples in which the expression *it* is optional, the immediate question that follows is why the expression *it* is

introduced. As maintained by Kiparsky and Kiparsky (1970), it appears that the vacuous object extraposition induces a factive interpretation of the main clause predicate, which may be absent in the typical one. For example, unlike (11a), (11b) induces a factive interpretation of the complement clause:

(11) a. They reported that there had been an explosion.
　　 b. They reported it that there had been an explosion.

Factive predicates presuppose the truth of their complements, and can be tested from the negation or paraphrased with *the fact*:

(12) a. They didn't report that there had been an explosion.
　　 b. They reported the fact that there had been an explosion.

The negation in (12a) does not change the presupposition expressed by the complement clause. Meanwhile, nonfactive propositional predicates subcategorize for a sentential complement representing a proposition. As for verbs like *think*, the negation changes the presupposition of the complement clause:

(13) a. They didn't think that there had been an explosion.
　　 b. They thought that there had been an explosion.

In addition, the paraphrase with the expression *the fact* is not possible either:

(14) *They thought the fact that there had been an explosion.

Given these, the following list represents factive and propositional predicates (Kiparsky and Kiparsky 1970):

(15) Factive verbs:
　　 a. true-factives: regret, resent, amuse, suffice, admit, comment, emphasize, forget, inform, know, mention, recognize, ⋯

b. semi-factives: realize, discover, learn, note, notice, observe, perceive, recall, remember, reveal, see, ⋯

(16) Propositional verbs:
allege, assert, assume, believe, claim, conclude, conjecture, consider, decide, declare, envisage, estimate, fancy, feel, figure, imagine, intimate, judge, propose, report, reckon, say, state, suggest, suppose, suspect, tell, think, understand, ⋯

Note that factives are divided into true and semi-factives. Semi-factives would lose factivity, depending on environments, as noted by Karttunen (1971). For example, consider the following examples.

(17) a. If I regret later that I have not told the truth, I will confess it to everyone.
b. If I realize/discover that I have not told the truth, I will confess it to everyone.

Different from (17a), the conditional sentence (17b) asserts the manner in which the speaker comes to know the truth of the CP clause.

With the distinction between factive and non-factive (propositonal) predicates, Kiparsky and Kiparsky (1970), Menzel (1975), and others have assumed that only factive predicates license the vacuous object extraposition, rendering the following contrast:

(18) a. I regret it that John left.
b. John mentioned it that Bill just left.
c. John commented on it that nobody seem to care.

(19) a. *I claimed it that John left.
b. *I supposed it that John left.
c. *Bill said it that John left.

Our corpus search basically supports the assumption that propositional predicates typically do not occur in the vacuous object extraposition.[3]

However, note that there are a nontrivial number of counter-examples with the propositional predicates:[4]

(20) a. The group claims it that the song was used with an infringement of his copyrights and leads people. (COCA 2008 SPOK)

b. When I say it that he is going through with the democratization and the elections, people should believe it. (TIME 1978)

c. The mainstream media finally reports it that they will have to come to us for the details! (GlobWe US)

Cognitive verbs (e.g., *believe, suppose, assume*) are non-factive verbs and select a CP clause, and they do not combine with the expression *the fact*:

(21) a. John believes/assumes/understands/supposes/thinks that Mary has something to do with it.

b. *John believes/assumes/understands/supposes/thinks the fact that Mary has something to do with it.

Given the factive constraint, these verbs cannot license the vacuous object extraposition. However, our search yields examples like the following:

(22) a. I couldn't believe it that I was in this situation. (COCA 2011 SPOK)

b. I think it that God is on your side. (COCA 2012 SPOK)

c. I could understand it that she was irritated. (COCA 1990 ACAD)

Bolinger (1977) points out that since a factive verb implies the factuality of its complement in the speaker's mind, verbs like *know* do not

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3) As a reviewer points out, a question remains why examples like (19) are unacceptable whereas those like (20) are acceptable. In Section 4, we suggest that the grammaticality of examples like (19) can be improved or repaired with an appropriate discourse force.

4) The corpus GlobWe (Corpus of Global Web-Based English) consists of 1.9 billion words from 1.8 million web pages in 20 different English-speaking countries. This is also part of the BYU online corpora created by Mark Davies.

occur in the vacuous object extraposition:

(23) He knows (*it) that I can best him. (Bolinger 1977: (31))

Once again, our corpus examples do not countenance this suggestion:

(24) a. That man knows it that he couldn't get that woman to dance.
        (COCA 1998 SPOK)
     b. I asked the tough questions about Mrs. Obama because there was a
        perception and everybody knows it that she was not hap-
        py-go-lucky. (COCA 2012 SPOK)
     c. A voice cried out, and, at that, at least, he knew it that they were
        not mad at him. (BNC W fic prose)

Communication or reporting verbs like *say, declare, maintain, report, de-
ny, remark* also select a CP but resist the combination with *the fact*:

(25) a. He admitted that he was impressed with what Mary had.
     b. *He admitted the fact that he was impressed with what Mary had.

The corpus search also brings us examples of the vacuous object ex-
traposition with such a predicate:

(26) a. Just admit it that you actually hate America. (GlobWe US)
     b. Admit it that you are a moron and go on with life. (GlobWe US)
     c. We don't deny it that we are not the force we used to be. (GlobWe GB)

Request verbs like *suggest, demand, insist, request, ask, urge, hint*, etc, re-
porting directive functions, select a CP complement clause and also re-
sist the 'fact' insertion:

(27) a. She suggested that he leave.
     b. *She suggested the fact that he leave.

Corpus search again gives us counterexamples like the following:

(28) a. Cisco's guide suggests it that DOA is failure. (GlobWe IE)
  b. Insurers demand it that non central accounting is the way to go. (GlobWe AU)

Despite the fact that verbs like *suggest* or *demand* are propositional and nonfactive verbs, these verbs can occur in the vacuous object extraposition. What these corpus data tell us is that it is not just the verb's lexical semantics (e.g., factivity) that determines the possibility of the vacuous object extraposition. The modality or context may also play a role in licensing the construction.

   Type II verbs originally select an NP complement, and the vacuous object extraposition in a sense introduces a CP complement:

(29) a. He can't swallow it.
  b. *He can't swallow that you dislike him.
  c. He can't swallow it that you dislike him.

(30) a. She hid it.
  b. *She hid that she was involved.
  c. She hid it that she was involved.

Type II verbs include *take, have, swallow, hide, let, spill, get, like, love*, and so forth. These verbs are strict-transitive in the sense that they subcategorize for an NP. Note that it is rather unnatural for most of these verbs to combine with *the fact*, but they can occur with the object extraposition, as seen from the following illustrative examples.

(31) a. Reports had it that they can live on land for up to three days. (COCA 2002 MAG)
  b. You'll like it that we're offering you this exciting deal. (COCA 1995 FIC)
  c. He didn't get it that she was going to be leaving soon. (COCA 2009 SPOK)

The vacuous object extraposition thus allows the verbs to combine

with a sentential complement. The extraposition in such a case enables the verbs to combine with a CP complement.

As for Type III prepositional verbs, we identify the following from the corpus:

(32) account for, agree to/on/with, apply for, comply with, depend on, laugh at, knock at, listen to, look at/for/after, see to, wait for, talk about/to, ⋯

These prepositional verbs cannot combine with a CP complement, simply because of the preposition's subcategorization restriction.

(33) a. You can depend upon their arrival.
     b. *You can depend on that they will arrive soon.

The preposition thus combines with an NP complement, but not a CP complement. The vacuous object extraposition saves this restriction, as seen from the following illustrative examples:

(34) a. Our army will see to it that they get it. (Time 1974)
     b. People say of it that it is more stately and more serious. (COCA 1998 ACAD)
     c. Our American friends can rely on it that we are going this way in close cooperation and partnership with them. (Time 1990)
     d. I count upon it that you will be able to dispel such doubts as I am fostering. (COCA 1921 FIC)
     e. ⋯ insisting on it that Aennchen died in 1659. (COHA 1867 FIC)

Of these examples, the expression *see to it* covers more than half of the instances in the corpus data. This expression also cannot be replaced by *the fact*, implying that the factive constraint is not applicable for Type III either.

As we have seen so far, even though factivity may play a key role in the vacuous object extraposition, it is not a whole story. There are much more complex uses of the vacuous object extraposition than the

previous literature has assumed. We suggest that the vacuous object extraposition is not triggered simply by the lexical semantics (e.g., factive) of the matrix predicate, but evoked by functional motivations such as the speaker's 'assertion' of the proposition in question. In particular, we adopt Searle's (1969) illocutionary rule. Searle (1969) suggests that speaking a language is performing acts according to rules and introduces the following 'assertion' rule to be operative in illocutions:

(35) Searle's (1969) rule of 'assertion'
   For the given proposition *p*, the speaker has evidence (reasons, etc) for the truth of *p*, and it is not obvious to both S (peaker) and H (earer) that H knows *p*. S believes *p* and counts as an undertaking that *p* represents an actual state of affairs.

Together with this rule of assertion, we suggest that the vacuous object extraposition is also controlled by this assertion rule. This assumption, different from the 'factive' constraint, then can account for the vacuous extraposition with nonfactive verbs, whose data we repeat here.

(36) a. I can't believe it that he has gone.
   b. I think it that God is on your side.
   c. I knew it that they were not mad at him.

As we have seen, matrix verbs like *believe*, *think* and *kno*w are not factive, but they can introduce the vacuous object extraposition, simply because the CP clause here represents an assertion by the speaker. That is, the speaker has internal or external evidence (or belief) that the proposition denoted by the CP clause is true.

In what follows, we will see how this 'assertion' constraint interacts with other lexical and constructional constraints in licensing the vacuous object extraposition.

# 4. A Constructional Account

## 4.1. Lexical Classes

Before we offer our analysis for the vacuous object extraposition, let's see three different types of verbs in terms of what they can combine with (see Kim 2005, Kim and Sag 2008).

First, there are verbs selecting only an NP as their complement. For examples, verbs like *pinch* and *devour* can combine with an NP complement, but not with a CP:

(37) a. She pinched [his arm] as hard as she could.
    b. *She pinched [that he feels pain].

(38) 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* subcategorize only a CP complement. This kind of verb cannot combine with an NP complement, as illustrated by the following data:

(39) 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].

(40) a. I wonder [if it was an animal caught in a trap].
    b. *I wonder [the problem].

Unlike these two types, verbs like *prove* or *regret* can select either an NP or a CP, as can be observed from the following examples:

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

(42) 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. As a way of reflecting such lexical patterns, we will assume, following much work in HPSG, that parts of speech come in families and can profitably be analyzed in terms of feature structure types. The part-of-speech types we will assume form the hierarchy illustrated in (43):

(43)

```
                    part-of-speech
                   /     |     |    \
               core    adj   prep    ...
              /    \
        nominal      verbal
        /    \      /    \
     noun    comp        verb
```
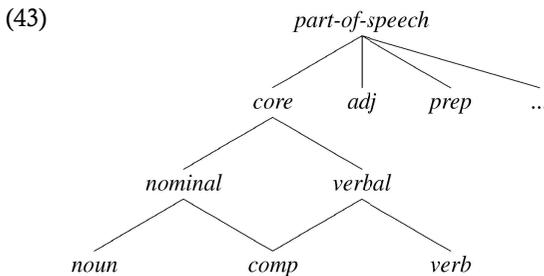
The type *nominal* is a supertype of both *noun* and *comp* whereas *verbal* is a supertype of both *comp* and *verb*.[5] In accordance with the basic properties of systems of typed feature structures, an element specified as [HEAD *nominal*] can be realized either as [HEAD *noun*] or [HEAD *comp*]. These will correspond to the phrasal types NP and CP, respectively.

Given this hierarchy, we then can represent the argument structure of the three different types of verbs in the following way:

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

We can interpret (44c) as if a verb selects a *nominal* argument, the nominal can be realized either as an NP or a CP.

In what follows, we will see how this generalization over the category can help us account for extraposition in English.

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5) CPs and VPs both have verbal properties, for example, in the sense that they both are sensitive to verbal form (VFORM) values, denote events, and so forth.

### 4.2. Subject Extraposition Construction

Before we discuss object extraposition constructions, let us consider subject extraposition constructions that also share many constructional constraints with object extrapositions.

English exhibits a systematic alternation between pairs of non-extraposed and extraposed sentences concerning with the subject (see, among others, Quirk et al. 1985, Huddleston and Pullum 2002, Kaltenböck 2004, 2005):

(45) a. [That Chris knew the answer] occurred to Pat.
     b. It [occurred [to Pat] [that Chris knew the answer]].

The relation between the putative source in (45a) and the extraposed version in (45b) is productive. As English acquires new expressions (e.g., *freak out, weird out, suck, or bite*), it licenses both extraposed and non-extraposed sentence types, as we can observe from the following data:

(46) a. It would freak me out that they are so desperate to get you started. (GloBwE)
     b. That they are so desperate to get you started would freak me out.

(47) a. It really sucks that the universe is not programmable. (GloBwE)
     b. That the universe is not programmable really sucks.

To capture the systematic relationship in subject extraposition, following Van Eynde (1996), Kim (2005, 2008), Kim and Sag (2008), Kim and Sells (2011), Sag (2012), and others, we take English extraposition to be a nonlocal dependency and introduce the nonlocal feature EXTRA together with the following lexical construction:[6]

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6) Note that lexical constructions, as used here, are quite similar to phrasal constructions ('Phrasal Schemata' in the sense of Pollard and Sag (1994).

(48) (Verbal) Extraposition Lexical Construction

$$
\begin{bmatrix}
\text{MTR} & \begin{bmatrix} \textit{verbal-extra-cxt} \\ \text{ARG-ST} \quad \boxed{A} \oplus \langle \text{NP}[\textit{it}] \rangle \oplus \boxed{B} \\ \text{EXTRA} \quad \langle \boxed{1} \rangle \end{bmatrix} \\
\quad \big| \\
\text{HD-DTR} & \begin{bmatrix} \textit{word} \\ \text{ARG-ST} \quad \boxed{A} \oplus \langle \boxed{1}[\textit{verbal}] \rangle \oplus \boxed{B} \end{bmatrix}
\end{bmatrix}
$$
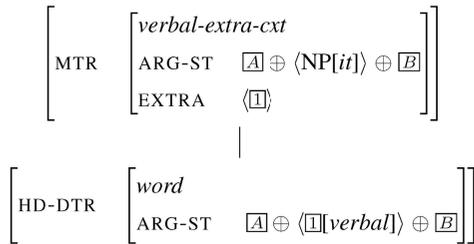
This lexical construction in essence allows us to generate word-level constructions (*verbal-extra-cxt* on the mother) whose feature specifications systematically related to those of other words (*word* on the head-daughter) that select a '*verbal*' complement.[7] That is, these new words select a *verbal* complement (CP, S, or VP) not via the ARG-ST feature, but rather via EXTRA, a separate selection feature that will also be used in the analysis of other kinds of extraposition phenomena including the object extraposition. An expletive NP (NP[*it*]) holds the place of the extraposed complement in the new word's ARG-ST list.[8] For example, the verb *bother* can be projected into an extraposition lexical construction:

(49)

$$
\begin{bmatrix}
\text{MTR} & \begin{bmatrix} \textit{verbal-extra-cxt} \\ \text{FORM} \quad \langle \text{bother} \rangle \\ \text{ARG-ST} \quad \langle \text{NP}[\textit{it}], \boxed{2}\text{NP} \rangle \\ \text{EXTRA} \quad \langle \boxed{1} \rangle \end{bmatrix} \\
\quad \big| \\
\text{HD-DTR} & \begin{bmatrix} \textit{word} \\ \text{FORM} \quad \langle \text{bother} \rangle \\ \text{ARG-ST} \quad \langle \boxed{1}\text{CP}, \boxed{2}\text{NP} \rangle \end{bmatrix}
\end{bmatrix}
$$
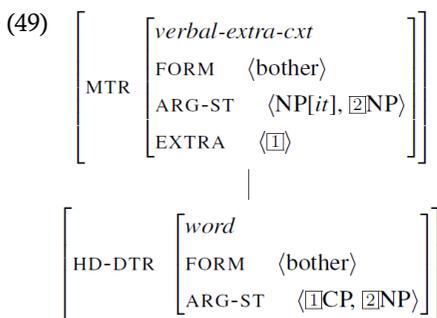
This lexical construction may project a structure like the following:

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7) The symbol $\oplus$ indicates an 'append' operation for lists.

8) As a reviewer questioned, there is no anaphoric relation between the expletive and the extraposed clause. The analysis implies that the expletive is introduced as a dummy argument to license the extraposition.
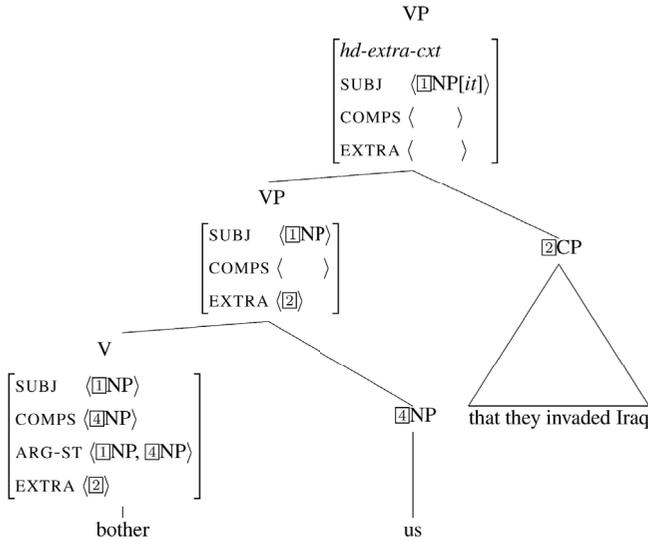
(50)
$$
\begin{array}{c}
\text{VP} \\
\begin{bmatrix}
\textit{hd-extra-cxt} \\
\text{SUBJ} \quad \langle \boxed{1}\text{NP}[\textit{it}]\rangle \\
\text{COMPS} \langle \quad \rangle \\
\text{EXTRA} \langle \quad \rangle
\end{bmatrix}
\end{array}
$$

VP
$$
\begin{bmatrix}
\text{SUBJ} \quad \langle \boxed{1}\text{NP}\rangle \\
\text{COMPS} \langle \quad \rangle \\
\text{EXTRA} \langle \boxed{2}\rangle
\end{bmatrix}
$$

$\boxed{2}$CP

V
$$
\begin{bmatrix}
\text{SUBJ} \quad \langle \boxed{1}\text{NP}\rangle \\
\text{COMPS} \langle \boxed{4}\text{NP}\rangle \\
\text{ARG-ST} \langle \boxed{1}\text{NP}, \boxed{4}\text{NP}\rangle \\
\text{EXTRA} \langle \boxed{2}\rangle
\end{bmatrix}
$$

bother

$\boxed{4}$NP

that they invaded Iraq

us

The verb *bother* is now a *verbal-extra-cxt* expression, with a nonempty EXTRA value. The verb first combines with the object NP *us*, and then the extraposed CP. Note that the feature EXTRA, started from the verb *bother*, is passed up to a higher structure and discharged by the following Head-Extraposition Construction:[9]

(51) Head-Extraposition Construction:

$$
\begin{bmatrix}
\textit{hd-extra-cxt} \\
\text{EXTRA} \langle \quad \rangle
\end{bmatrix}
$$

H
$$
\begin{bmatrix}
\textit{phrase} \\
\text{EXTRA} \langle \boxed{1}\rangle
\end{bmatrix}
$$

$\boxed{1}$XP
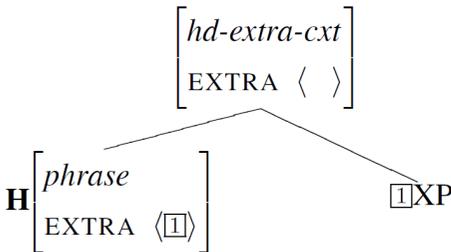
This phrasal construction reflects the fact that English independently

---

9) The percolation of the feature EXTRA is either guaranteed by the Generalized Head Feature Principle of Ginzburg and Sag (2000) or else, making slightly different theoretical assumptions, by the Valence Principle of Sag et al. (2003), Kim and Sells (2008), and Sag (2012), among others.

allows phrases constructed by a head combining with an extraposed element. In what follows, we will see the same constructional constraint holds in the object extraposition.

### 4.3. Analyzing the Vacuous Object Extraposition

The object extraposition is a subtype of the extraposition construction, but the main difference is that the object extraposition is obligatory, at least, for Type II and III. In addition, we can observe that the matrix verbs licensing the vacuous object extraposition all select an NP as its argument. This is even true for Type I verbs like *regret*. For this, we assume that English allows not only extraposition of a verbal (clausal) expression but also extraposition of a nominal expression:

(52) Nominal Extraposition Lexical Construction

$$
\begin{bmatrix}
\text{MTR} & \begin{bmatrix}
\textit{nominal-extra-cxt} \\
\text{SYN} \begin{bmatrix}
\text{ARG-ST} & \langle \boxed{1}\text{NP, NP}[\textit{it}] \rangle \\
\text{EXTRA} & \langle \boxed{2}\text{CP[IND s]} \rangle
\end{bmatrix} \\
\text{CXT } \textit{assert(s)}
\end{bmatrix}
\end{bmatrix}
$$

$$
\begin{bmatrix}
\text{HD-DTR} & \begin{bmatrix} \text{ARG-ST} \langle \boxed{1}\text{NP, } \boxed{2}[\textit{nominal}] \rangle \end{bmatrix}
\end{bmatrix}
$$

The construction specifies that a lexeme selecting two arguments, a subject NP and a *nominal* complement, can be projected into a nominal extraposition (*nominal-extra-cxt*). Note that this also accompanies the contextual constraint such that the speaker 'asserts' the proposition denoted by the extraposed CP.

Let us consider Type I where the verb originally selects either an NP or a CP. Since these can be an input to the Nominal Extraposition Lexical Construction, we would generate the following lexical construction:

(53)

$$
\left[
\begin{array}{ll}
\text{MTR} &
\left[
\begin{array}{ll}
\textit{nominal-extra-cxt} & \\
\text{FORM} & \langle \text{regret} \rangle \\
\text{ARG-ST} & \langle \boxed{1}\text{NP, NP}[\textit{it}] \rangle \\
\text{EXTRA} & \langle \boxed{2}\text{CP} \rangle \\
\text{CXT} & \textit{assert(s)}
\end{array}
\right]
\\
\\
\\
\text{HD-DTR} &
\left[
\begin{array}{ll}
\textit{word} & \\
\text{ARG-ST} & \langle \boxed{1}\text{NP, } \boxed{2}\text{CP}[\textit{nominal}] \rangle
\end{array}
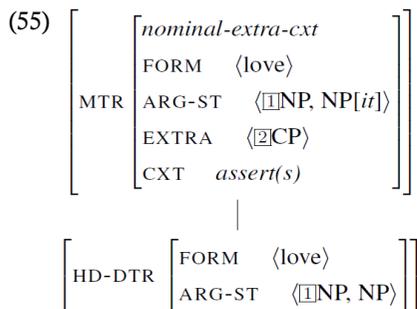\right]
\end{array}
\right]
$$

From this lexical construction, we license examples like the following:

(54)
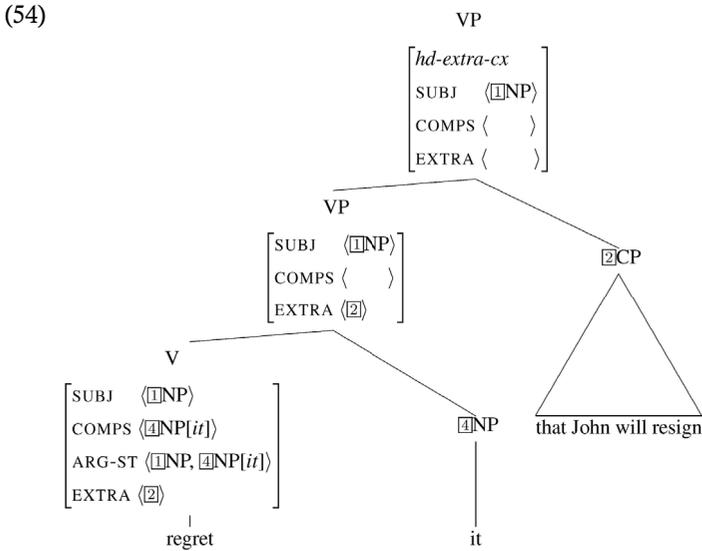


This structure, not different from the one in (50), is projected from the lexical construction *regret*. This verb, introducing the nonempty EXTRA value, first forms a head-complement structure with the expletive object *it* and then forms a head extraposition construction with the CP.[10]

---

10) See Stroik (1996) for a transformational analysis with movement operations and Rothstein (1995) for the right-dislocation treatment. The space limit does not allow us to discuss the details of these analyses.

Type II and III are similar in the sense that the basic lexeme can be an input to the nominal extraposition construction, yielding a structure like the following:

(55)

$$
\begin{bmatrix}
\text{MTR} \begin{bmatrix}
\textit{nominal-extra-cxt} \\
\text{FORM} \quad \langle\text{love}\rangle \\
\text{ARG-ST} \quad \langle \boxed{1}\text{NP, NP}[\textit{it}]\rangle \\
\text{EXTRA} \quad \langle \boxed{2}\text{CP}\rangle \\
\text{CXT} \quad \textit{assert(s)}
\end{bmatrix} \\
| \\
\text{HD-DTR} \begin{bmatrix}
\text{FORM} \quad \langle\text{love}\rangle \\
\text{ARG-ST} \quad \langle \boxed{1}\text{NP, NP}\rangle
\end{bmatrix}
\end{bmatrix}
$$

This tells us that the verb *love* originally selects a subject NP and a complement NP. This word is projected into a nominal extraposition lexical construction introducing a dummy argument together with the asserted expression as the EXTRA value. From this, we can generate a structure like the following:

(56)
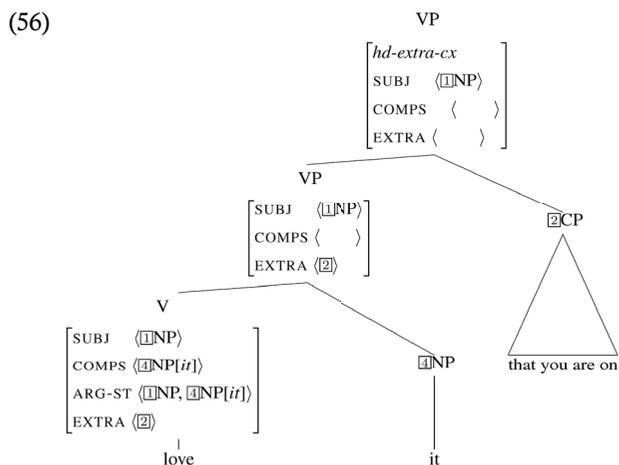


Note that the vacuous extraposition construction is triggered from the lexical construction which introduces the feature EXTRA. This value is percolated up to the VP level and then discharged by the CP clause.

The construction is also licensed by the contextual constraint of 'assertion' such that the speaker asserts the proposition of the CP clause.


## 5. Conclusion

In this paper, we have first identified three types of the vacuous object construction. To investigate the authentic uses of these three types, we have performed an extensive corpus search.

The corpus data have indicated that in licensing the vacuous object extraposition, the factive constraint cannot be the whole story. We have observed that various examples of the vacuous object extraposition can occur with nonfactive predicates. Based on these, we have shown that the previous 'factivity' constraint is not enough, and suggested that the vacuous extraposition is triggered by functional motivations such that the speaker 'asserts' the CP proposition. This illocutionary rule accompanies the assumption that English allows the extraposition of not only a verbal (for subject extraposition) but also a nominal expression (for object extraposition).

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