Lives of *That* and *That*-Clauses: A Lexicalist Approach

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Chai, Myong-Hi. 2006. Lives of *That* and *That*-Clauses: A Lexicalist Approach. *The Linguistic Association of Korea Journal,* *14*(4), 151-168. The English word *that* plays various grammatical roles. Among them, this study examines four kinds of *that*s and *that*-clauses, i.e. complement, appositive, relative, and cleft *that*-clauses. Despite the similarity of their form consisting of *that* and a finite clause, the four *that*-clauses show different behaviors with regard to "*that*-trace" effect, functions of *that*, recursion and omission of the *that*-clause, and the preceding element. In this study, we propose that those syntactic differences are attributed to the lexical properties of each *that*, and attempt to provide a lexicalist analysis for the differences based on the framework of HPSG, pursuing strong lexicalism. By doing so, we contribute to a theoretical support for the lexicalist approach to syntactic phenomena.

Key Words: complement *that*-clause, appositive *that*-clause, relative *that*-clause, cleft *that*-clause, a lexicalist approach, complement, adjunct, HPSG

1. Introduction

The English word *that* plays various grammatical roles such as an adverb, a determiner, a demonstrative, a complementizer, an appositive, a relativizer, etc. as in (1).

(1) a. The course isn't <u>that</u> easy. (adverb)
   b. <u>that</u> exciting trip (determiner)
   c. To go to Japan -- <u>that</u> was her number one ambition. (demonstrative)

    d. We know <u>that</u> the idea was yours.   (complementizer)

    e. Doubts that the government would fund the project quickly

       surfaced.   (appositive)

    f. The TV program <u>that</u> we saw last night had a powerful impact

       on us.   (relativizer)

                (Pam Peters, 2004, pp. 534-535)

Among the above examples, (1d, e, and f) share in common that they contain a *that*-clause which consists of *that* and a following finite clause. Examples (2a and b) are ungrammatical because an infinitive clause follows the word *that*. Note that as a subordinate clause, the *that*-clause cannot stand alone, as shown in (2c).[1)]

    (2) a. *We know [that the idea <u>be</u> yours].   (bare infinitive)

      b. *Doubts [that the government <u>to fund</u> the project] quickly

        surfaced.   (to-infinitive)

      c. *[That we saw the TV program last night].

Beside the above three kinds of *that*-clauses, such commonalities are also shared by another *that*-clause used for the *it*-cleft construction, as in (3). In the below examples, *that* was also followed by a finite clause, forming a *that*-clause together. The *that*-clauses in these examples, like those of (1d-f), are also subordinate clauses, and they cannot be independent, either.

    (3) a. It was Velma [<u>that</u> you reported to the commissioner].

      b. It was Velma [<u>that</u> you took to the meeting].

                (Baker, 1995, pp. 445-446)

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1) The examples like (i), in which subjunctive verb forms are used in *that*-clauses, are out of the scope in this study. We will leave it for next study.

   (i) a. It's important [that somebody <u>talk</u> to the police].

     b. I recommended [that she <u>reduce</u> her expenditure].

     c. It is his wish [that the money <u>be</u> given to charity].

                (Swan, 2005, p. 512)

In this study, we deal with these four constructions containing a *that*-clause, i.e. the complement clause, the appositive clause, the relative clause, and the cleft clause. We explore syntactically different behaviors of those seemingly similar *that*-clauses and look for what factors the differences attribute to. In section 2, we examine the syntactic behaviors of *that* and *that*-clauses and compare the properties of each construction. In section 3, we show that those constructional differences in syntax can be explained by the lexical properties of each *that*. By doing so, this study aims at providing a theoretical support for the lexical analysis of syntactic phenomena in the framework of Head-Driven Phrase Structure Grammar (hereafter HPSG).

2. Properties of *that* and *that*-clauses

2.1. "*That*-trace" effect

It is generally known that a complementizer *that* does not allow a trace to immediately follow it, as in (4a). While the so-called "*that*-trace" effect is also observed in the appositive *that*-clause, as in (4b), it is not in the relative clause nor in the cleft clause, as in (4c and d), respectively.[2]

(4) a. *Max is the one she thinks <u>that</u> _ is the ring holder.

(complementizer)

   b. *John told me the fact <u>that</u> _ wrote the novel.   (appositive)
   c. I bought the book <u>that</u> _ has just appeared.   (relative)
   d. It was Harry <u>that</u> _ loved Sally most.   (cleft)

The contrast in the "*that*-trace" effect is attributed to the difference in allowing a missing element within the *that*-clause. That is, whether or not the clause following *that* can be slashed makes a difference. The

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2) It is true that the frequency of the cleft examples like (4d), in which subject is missing from the *that*-clause, is lower than that of the examples in which object is missing. However, such examples are still possible, though.

complementizer *that* and the appositive *that* do not allow any empty category within the following clause, as in (5). However, the relative *that* and the cleft *that* require one, as in (6).

(5) a. *I thought <u>that</u> John voted for _.   (complementizer)
    a'. I thought <u>that</u> John voted for me.
    b. *I can't believe the claim <u>that</u> John is _.   (appositive)
    b'. I can't believe the claim <u>that</u> John is a spy.

(6) a. The TV program that we saw _ last night had a powerful
       impact on us.   (relative)
    a'. *The TV program that we saw the drama last night had a
       powerful impact on us.
    b. It was Sally that Harry loved _ most.   (cleft)
    b'. *It was Sally that Harry loved her most.

Such examples show that in the so-called "*that*-trace" effect, the complementizer *that* and the appositive *that* have a common property while the relative *that* and the cleft *that* also have a commonality, respectively.

2.2. Functions of *that*

The four constructions differ in the grammatical functions of the word *that* itself. The relative *that*, like other relative words such as *who, whom,* and *which,* can act as subject or object within the relative clause, as in (7).

(7) a. He's got a new girlfriend <u>who</u> works in a garage.   (subject)
    b. This is Mr. Rogers, <u>whom</u> you met last year.   (object)
    c. Here's an article <u>which</u> might interest you.   (subject)
    d. There is a programme tonight <u>which</u> you might like.   (object)
    e. Have you got something <u>that</u> will get ink out of a carpet?
                                  (subject)
    f. I've found the car keys <u>that</u> you were looking for.   (object)

(Swan, 2005, pp. 477-479)

The above examples support that the relative word *that* has a
pronominal property replacing a noun. Since *that*, like other relative words,
functions as subject or object, which is a pronominal role, the relative
that-clause has only one subject or object including *that* within it, making
the example containing another subject or object ungrammatical. For
example, in (8) the examples would be ungrammatical if *it* or *them* would
appear in each example because the *that*-clause already has subject or
object, i.e. *that*.

(8) a. This is the key <u>that (*it)</u> opens the garage.   (subject)
    b. I've found the car key <u>that</u> you were looking for <u>(*them)</u>.
                                                                  (object)
                              (Swan, 2005, pp. 477-478)

However, the word *that* used in complement clauses and appositive
clauses seems to play no roles like subject or object but a connector. This
property can be predicted from the fact that the complement *that*-clause
and the appositive *that*-clause do not allow a missing element in it, and
therefore there is no roles like subject or object for the word *that* to
replace.

Meanwhile, the cleft *that*-clause behaves a little differently. Though
the cleft clause does allow a missing element like the relative clause, it is
hard to say that the word *that* functions as subject or object within the
cleft *that*-clause.[3] As shown in (9), the missing element within the cleft
that-clause may be various adverbial phrases as well as subject or object,
as shown in (3).

(9) a. It was <u>here</u> that Linda put the molasses _.   (locative phrase)

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3) For the precise analysis of the cleft construction, see Chai & Lee (2001)
and Chai (2003). Therein, the cleft *that*-clause is analyzed as a complement CP
(Complementizer Phrase) of the head verb *be*. The CP consists of the head C
(Complementizer), i.e. *that*, and a complement S. The head complementizer *that*
functions only as a connector, not as subject or object.

b. It was <u>to Boston</u> that they decided to take the patient _.

(motion phrase)

c. It was <u>then</u> that the answer occurred to her _.   (time)

d. It was <u>with a great deal of regret</u> that I vetoed your

legislation _.   (manner)

e. It was <u>by starting a fire</u> that the army avoided defeat _.

(means)

f. It was <u>three whole days</u> that the battle lasted _.   (duration)

(Baker, 1995, p. 447)

The above examples in this subsection indicate that among the four, only the relative *that*, which can function as subject or object, has a pronominal status, while the other three do not.

2.3. Recursion

It is generally known that complements do not recursively occur, while adjuncts do. Thus, this recursion test will give us a hint about the grammatical status of each *that*-clause. As observed in (10), the relative *that*-clause, which modifies a noun phrase, can be iterated, while the other three clauses cannot.[4]

(10) a. The book [that I like] [which everyone else in the class
          hates] was written in 1843.   (relative) (Sag, 1997, p. 465)

    b. *I thought [that John voted for Clinton] [that Mary voted for
        Bush].   (complement)

    c. *Everyone knows the fact [that John wrote a letter to her]
        [that she responded immediately to him].   (appositive)

    d. *It is this book [that I like] [that everyone else in the class

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4) Some speakers accept (10d) as "not bad". However, for them, the first *that*-clause seems to have the relative interpretation, and only the second one has the cleft interpretation. That seems to be why the example becomes ameliorated for them. Therefore, we conclude the cleft *that*-clause cannot be iterated.

hates]   (cleft)

The observations on the above data let us assume that only the relative *that*-clause is an adjunct while the other three kinds of *that*-clauses are likely to be a complement rather than an adjunct.

2.4. Omission of *that*-clauses

The grammatical status of the *that*-clauses discussed in the preceding subsection implies the possibility of their omission. Adjuncts generally can be freely omitted because they are additional elements, while complements are hard to delete because they are generally required to complete the meaning of the head.

As predicted, the relative *that*-clause, a modifier, can be freely deleted as shown in (11), while the complement *that*-clause is hard to delete, as in (12). While the examples without *that*-clauses are perfect in (11), those are rather incomplete or ungrammatical in (12).

(11) a. The TV program (that we saw last night) had a powerful
          impact on us.
      b. I bought the book (that has just appeared).   (relative)

(12) a. We all know *(that the idea was yours).
      b. *(That she should forget me so quickly) was rather a shock.
                                                          (complement)

In case of the cleft clause, *that*-clauses are hardly omitted. If they are omitted, the string left behind loses the property as the pivot of the cleft construction. For example, in (13a) *Velma* gets a focus, which is a peculiar characteristic of the cleft construction. However, if the *that*-clause is omitted, *Velma* does not get focused. Then, the expression without the *that*-clause, *It was Velma*, is not a cleft construction any more. The impossibility of omission of the cleft *that*-clause can be evidence for its complementhood rather than its adjuncthood.

(13) a. It was Velma *(that you took to the meeting).
　　 b. It was just yesterday *(that Harry met Sally for the first time
　　　　 and fell in love with her).　　　　　　　　　　　　 (cleft)

　Like the complement clause or the cleft clause, the appositive *that*-clause is also hardly omitted, as in (14).[5]

(14) a. The fact ??(*)(that it was illegal) didn't worry him.
　　 b. The theory is borne out by the fact ??(*)(that children in
　　　　 co-educational schools often mature earlier than those who
　　　　 are segregated).　　　　　　　　　　　　　　　 (appositive)

　Though the appositive examples with the *that*-clause omitted are not as bad as the complement examples or the cleft ones, it is sure that the examples with it are much better, unlike the relative *that*-clause, a modifier.[6] In fact, without the previous context identifying the noun phrase, *the fact*, the examples without a *that*-clause would be ungrammatical. Such observations give us evidence that the *that*-clause following the NP, *the fact*, is a complement which identifies its head, i.e. *the fact*, rather than a modifier.

2.5. Categories of the preceding element

　The four *that*-clauses differ one another in the categories of the preceding element and the way they combine with it. Complement *that*-clauses can follow an element of various categories such as a verb, an adjective, and a noun or they can precede a verb.

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　5) The original examples are from Huddleston & Pullum (2002, pp. 965–966). They were traditional oppositive examples with the *that*-clause. In (14), we put parentheses around the *that*-clause to show the difference.
　6) In (14a), though the preceding noun, *the fact*, is not animate, the word *that* cannot be replaced by *which*. This also can be evidence that the appositive *that* is different from the relative *that*.

(15) a. I <u>regretted</u> [that I was not going to be at the meeting]. (verb)
    b. The minister is <u>anxious</u> [that nothing should get into the
       papers].   (adjective)
    c. I admire your <u>belief</u> [that you are always right].   (noun)
    d. [That she should forget me so quickly] <u>was</u> rather a shock.
                                                (verb)
                (Swan, 2005, p. 576)   (complement)

Note, however, that the complement *that*-clause cannot combine with every verb, adjective, or noun.

(16) a. *I <u>want</u> [that you'll have a wonderful time].   (verb)
    a'. I want you to have a wonderful time.
    b. *It is <u>worth</u> [that you visit the art museum].   (adjective)
    b'. It is worth your visiting the art museum.
    c. *I understood the <u>importance</u> [that we should be there].
    c'. I understood the importance of our being there.   (noun)
                              (Swan, 2005, p. 577)

The above examples show that the complement *that*-clause is selected for by the head of a certain kinds of verbs, adjectives, or nouns.

    Relative *that*-clauses and appositive *that*-clauses resemble in that they follow only a noun phrase. However, they differ in the way they combine with it.

(17) a. They are delighted with <u>the book</u> [that has just appeared].
    b. *They are delighted <u>with</u> [that has just appeared].
    c. *They are delighted [that has just appeared].   (relative)

(18) a. Everyone knows <u>the fact</u> [that John wrote a letter to her].
    b. I don't believe <u>the claim</u> [that John is a spy].   (appositive)

The relative clause modifies the preceding noun phrase, while the appositive clause identifies the preceding noun phrase. The relative clause

is an adjunct while the appositive clause is an optional complement to complete the meaning of the preceding noun.[7]

Meanwhile, the cleft *that*-clause follows an element of various categories, but they are different from the complement *that*-clause. It follows an NP, PP, ADVP, CP, etc. not a VP nor an AP. In addition, it does not combine with the preceding element alone, but with the head verb *be* and the preceding element altogether, forming a VP.[8]

(19) a. It was <u>Harry</u> [that Sally loved most].   (NP)

b. It was <u>with care</u> [that I carried the jar to the grandfather's room].   (PP)

c. It was <u>three whole days</u> [that the battle lasted].   (ADVP)

d. It was <u>that you truly loved me</u> that I really wanted to hear.

(CP)

e. *It was <u>proud</u> [that I was of Mary].   (AP)

f. *It was <u>loved</u> [that I Mary most].   (VP)

(cleft)

2.6. Conclusion

So far, we have examined that the four kinds of *that*-clauses show different properties in "*that*-trace" effect, functions of *that*, recursion and omission of *that*-clauses, and the categories of the preceding element. Among them, the complement *that*-clause and the relative *that*-clause differ most from each other. The appositive *that*-clause generally shows similar behaviors with the complement *that*-clause except two aspects, i.e.

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7) Due to this optionality, the appositive *that*-clause can be regarded as "supplement", which might be different from "complement". However, the discussion on this matter is out of the scope of this paper.

8) The focused element in the examples such as (19c), e.g. *three whole days, yesterday, now*, etc., has nominal properties as well as adverbial ones. For the category of those elements, some scholars introduce a new type of category, e.g. type *adv-noun* in Kim (2001), while others introduce a noun with the [ADV +] specification onto a noun, as in GKPS (1985), Larson (1985), Chung (2005), in which we can see a more precise analysis of the so-called bare-NP adverbs.

the omission of *that*-clauses and the categories of the preceding element. Thus, tentatively we conclude that the appositive *that*-clause is one of the complement *that*-clauses with its peculiar characters. The cleft *that*-clause and the relative *that*-clause show a common behavior only in the "*that*-trace" effect, while the cleft clause and the complement clause share in common the properties in functions of *that* and recursion and omission of *that*-clauses.

Based on the observations above, we conclude that only the relative *that*-clause is an adjunct while the other three *that*-clauses are all complements of each head. Note that the complement *that*-clause and the cleft *that*-clause are obligatory while the appositive *that*-clause might be optional. Also we conclude that only the relative word *that* has a pronominal status while the other three have a complementizer status.

3. A Lexicalist Analysis

With the categorial and grammatical status for the four kinds of *that*s and *that*-clauses given, we attempt to provide a lexicalist analysis for the syntactic characteristics, namely in terms of the lexical properties of each *that*. In this section, we show that such an attempt is possible in the framework of HPSG, pursuing a lexicalist approach.

3.1. Lexical properties of *that*s

The different properties of *that* and *that*-clauses of the four constructions observed in the previous section can be captured by the lexical properties of *that* in each construction.

First of all, *that* of the complement clause is a complementizer, which subcategorizes for a finite clause S as its only complement. This explains the finiteness of the complement *that*-clause, indicated in (2a). The subcategorized complement S does not allow a missing element in it. Such properties are specified in the lexical entry for the complementizer *that*:

(20) lexical entry for the complementizer *that*[9]

$$
\begin{bmatrix}
\text{HEAD} & \begin{bmatrix} comp \\ \text{VFORM} \quad fin \end{bmatrix} \\
\text{SUBJ} & < \quad > \\
\text{COMPS} & < S \begin{bmatrix} \text{VFORM} \quad fin \\ \text{SUBJ} \quad < \ > \\ \text{CONT} \quad [1] \\ \text{SLASH} \ \{ \ \} \end{bmatrix} \quad > \\
\text{CONT} & [1]propositional
\end{bmatrix}
$$

The appositive *that*, as observed in the preceding section, generally behaves in the same way as the complementizer *that*. They all form a *that*-clause together with a finite clause without a missing element. The difference lies in the preceding element, not in the word *that* or the *that*-clause itself. Thus, the appositive *that* is, tentatively in this paper, also given the same lexical entry as the complementizer *that*.[10]

We have seen that the cleft *that* is also a complementizer which subcategorizes for a finite clause as its only complement. Unlike the existing complementizer, however, the cleft *that* allows a missing element within the complement clause. Since it is still a complementizer, it does not function as subject or object. Such characteristics can be captured as the lexical properties of the cleft *that*:[11]

(21) Lexical entry for the cleft *that*

$$
\begin{bmatrix}
\text{HEAD} & \begin{bmatrix} \textit{comp} \\ \text{VFORM} \quad \textit{fin} \end{bmatrix} \\
\text{SUBJ} & < \quad > \\
\text{COMPS} & < \begin{bmatrix} \textit{verb} \\ \text{VFORM} \ \textit{fin} \\ \text{CONT} \quad [1] \\ \text{SLASH} \ \{[3]\} \end{bmatrix} > \\
\text{CONT} & [1]\textit{propositional}
\end{bmatrix}
\quad \text{(Chai \& Lee, 2001, p. 73)}
$$

In the previous section, we have concluded that only the relative word *that* has a pronominal status that it can function as subject or object within the following clause. Since it is not a head selecting for the following clause but a pronoun modifying the preceding noun phrase, the relative word *that* and the preceding noun share some information each other, which is represented in the lexical entry for the relative word *that* in terms of IND value sharing.

(22) Lexical entry for the relative *that*

$$
\begin{bmatrix}
\text{HEAD} & \begin{bmatrix} \textit{noun} \\ \text{MOD} \quad \text{NP[IND [2]]} \end{bmatrix} \\
\text{CONT} & [1]\begin{bmatrix} \text{IND [2]} \\ \text{RESTR} \ \{ \ \} \end{bmatrix} \\
\text{REL} & \{[2]\}
\end{bmatrix}
\quad \text{(Chung, 2005, p. 125)}
$$

In the above entry, the [RESTR { }] specification means the relative word *that* has no its own meaning, but just relates to the noun phrase which it modifies through the very IND value sharing.

3.2. Structures of *that*-clauses

With the lexical properties of each *that* given in the preceding subsection and theoretical tools in HPSG, we can provide a structure for each *that*-clause.

First of all, the complement *that*-clause, CP, consists of the complementizer *that*, the head, and its complement clause, S. Since the complement clause does not allow any missing element, the SLASH value must be empty. The *that*-clause of the example (23a) has a structure as in (23b).
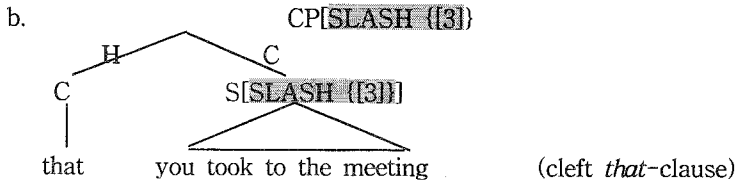
(23) a. We know [that the idea was yours].

b.

CP[SLASH { }]

H   C

C   S[SLASH { }]

|

that   the idea was yours   (complement *that*-clause)
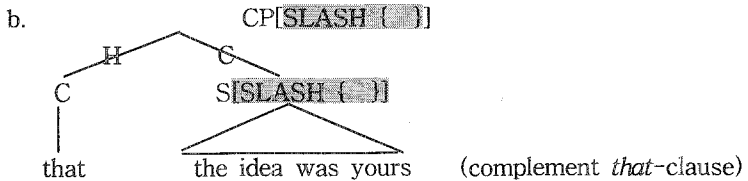
In the theories of HPSG, a head amalgamates all the SLASH values from its complements and passes them to its mother node. Therefore, in (23b) the [SLASH { }] specification on the S node, though it is an empty set, is passed upward to the CP.

As mentioned earlier, since the appositive *that* is the same kind of a complementizer, the appositive *that*-clause also has the same structure as the complement *that*-clause in (23b). However, the former is selected for by a restricted set of noun phrases while the latter by relatively various categories such as verbs, adjectives as well as nouns.
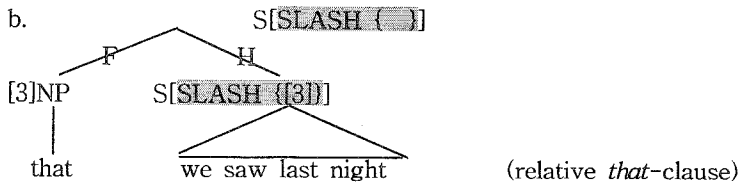
Next, let us move on to another complement clause, i.e. the cleft *that*-clause. The cleft *that*-clause also consists of complementizer *that*, the head, and its only complement clause. One of the big differences is that the complement clause of the cleft *that*-clause is missing one element. Thus, the SLASH value of the complement clause is nonempty, and the nonempty SLASH value is also passed upward to the mother, CP. The *that*-clause of the example (24a) has a structure as in (24b).

(24) a. It was Velma [that you took to the meeting].

b.

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                            CP[SLASH {[3]}]
          H                C
      C            S[SLASH {[3]}]
      |
    that      you took to the meeting          (cleft that-clause)
```

Finally, the relative *that*-clause has a relatively different structure. It consists of *that,* the filler, and the head clause, which is finite. The head clause is always missing one element, which shares information with the filler *that*.[12] That is why the relative word *that* functions as subject or object within the following clause. The *that*-clause of the example (25a) has a structure as in (25b).
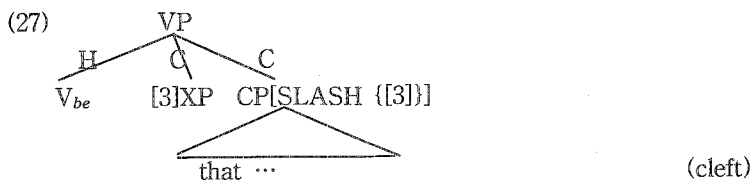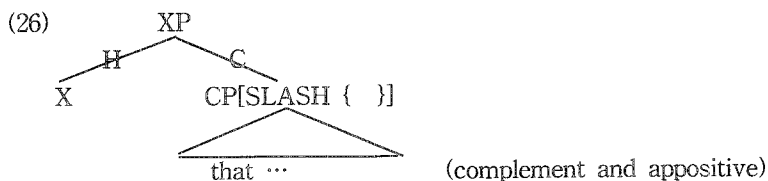
(25) a. The TV program [that we saw last night] had a powerful
        impact on us.

b.

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                        S[SLASH { }]
           F            H
      [3]NP        S[SLASH {[3]}]
        |
      that       we saw last night          (relative that-clause)
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In the structure consisting of a head and a filler like (25b), the local information on the filler is shared with the slashed element of the head. In other words, the filler functions as the role of the missing element of the head. Note that the information on the slashed element is discharged here, and is not passed upward any more. This is the property of the construction of this type in HPSG.

To explicitly compare the three constructions, we need to see the very upper node of each *that*-clause, represented below.

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12) This property is captured by the constructional constraints of type *head-filler-phrase* in HPSG. The constraints provide that in the structure of type *head-filler-phrase*, the LOC value of the filler must be shared by the SLASH value of the head clause. Then, the SLASH value of the head clause is discharged, and it is not passed upward any more, indicated in (25b).

(26)

XP
 H   C
X   CP[SLASH { }]
        that ⋯   (complement and appositive)

(27)

VP
 H   C   C
Vbe [3]XP CP[SLASH {[3]}]
     that ⋯   (cleft)

(28)

NP
 H   A
NP   S[SLASH { }]
         that ⋯   (relative)
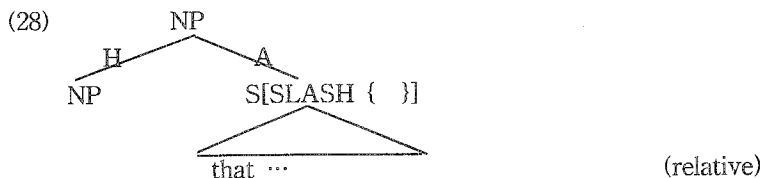
Note that among the four *that*-clauses, only the relative *that*-clause is an adjunct, which is omissible. The complement *that*-clause and the appositive *that*-clause are presumed to have the same structure. The latter is subcategorized for only by a noun. That is, the X node in (26) can only be an NP for the appositive *that*-clause. Both *that*-clauses, as in (26), are the only complement of their head X, while the cleft *that*-clause, as in (27), has a sister complement XP, which is finally matched with the missing element of the *that*-clause. Note also that the cleft *that*-clause is subcategorized for only by the *be*-verbs.

4. Conclusion

So far, we have examined the four *that*-clauses which look similar but show different behaviors. They have in common that they consist of two parts, i.e. the word *that* and a finite clause, and that they cannot stand

alone as an independent clause. However, we observed they behave differently with regard to the "*that*-trace" effect, the functions of *that*, recursion and omission of *that*-clauses, and the categories of the preceding element.

Based on such observations, we conclude that only the relative word *that* is a pronoun while the others are complementizers, and that only the relative *that*-clause is an adjunct, which is omissible, while the others are complements.

In this study, we have attempted to explain that the different syntactic behaviors of the four *that*-clauses are attributed to the lexical properties of each *that*. We have shown that such an attempt is successful in HPSG, which pursues a lexicalist approach. With the lexical entries for each *that*, we could distinguish the four constructions by providing a distinct structure for each.

This study can be valued in that by showing that syntactic differences can be explained in terms of lexical properties, it supports the idea that the HPSG theories can be a solution to such an attempt because it pursues strong lexicalism. Nevertheless, it is needed to study further on the appositive *that*-clause, for example, how it is similar to the complement *that*-clause, and how they are different and why, etc. Further study on those issues is left for next research.

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