

# 琉球大学学術リポジトリ

## 投射拡張と範疇選択

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## Projection Extension and C-Selection

Takeo Kurafuji

### 1 Introduction

This paper discusses the relation between clause-type and C(ategory)-selection with special reference to the obligatoriness of complementizer in examples like (1).

- (1) a. [That/\* $\phi$  John left] surprised Mary.  
b. John regrets [that/\* $\phi$  he didn't attend the conference].

How to account for the ungrammaticality caused by the absence of complementizer in sentences like (1) is a non-trivial question if we adopt Grimshaw's 1991, 1997 theory of category projection and clause structure. The problem is as follows: In her approach (Grimshaw 1997), the presence and absence of the complementizer *that* of the complement to verbs like *think* and *believe* is regarded not as the difference between overt and covert complementizer as in (2), but as the difference between CP and IP projection as in (3), where the *that*-less clause has no C-projection.

- (2) a. Mary thinks [<sub>CP</sub> that [<sub>IP</sub> John will leave]]  
b. Mary thinks [<sub>CP</sub>  $\phi$  [<sub>IP</sub> John will leave]]
- (3) a. Mary thinks [<sub>CP</sub> that [<sub>IP</sub> John will leave]]  
b. Mary thinks [<sub>IP</sub> John will leave]

Clauses do not have to always be IP. If a sentence has no auxiliary verbs, the topmost category is VP, as in (4).

(4) Mary thinks [<sub>VP</sub> John left]

The flexibility of c-selection of *think* is guaranteed by the notion of the extended projection proposed by Grimshaw 1991. The basic idea of the notion is that the projections of I and C have verbal features inherently (i.e. [-N, +V]) and are regarded as projections of V.

It is widely assumed that c-selection is predictable from s(ematic) -selection (cf. Grimshaw 1978, Pesetsky 1982 and Chomsky 1986 among others<sup>1</sup>) and therefore the category of the complement does not have to be specified in the lexicon. For instance, *think* has the information that it takes propositional complement, but the information such as [ \_ CP] is not specified in the lexicon. Categorical realization is determined by the rule like "proposition  $\rightarrow$  CP," which means that a propositional complement is realized as CP.

Grimshaw's approach with the extended projection makes this kind of lexical redundancy rules more underspecified. We no longer need to mention the categorial specification like CP; rather what we need is a rule like "proposition  $\rightarrow$  [-N, +V]." Since CP, IP and VP have the [-N, +V] features, all examples in (3) and (4) satisfy the c-selection requirement.

Once the extended projection approach is adopted, CP, IP and VP are not distinct from each other with respect to selection and projection. The immediate question is then: How can we account for the necessity of the category CP in examples like (1) ?

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<sup>1</sup>See Rothstein 1992 for the relevant discussion.

In Government-Binding Theory, the distribution of *that*-deletion is accounted for by the Empty Category Principle with the assumption that clausal complements are always CP and the C-head is Empty if deleted (cf. Chomsky 1981 and Stowell 1981 among many others). In (1a), the empty C of the sentential subject cannot satisfy the empty Category Principle since it is not head-governed by any lexical head. Likewise, *that* cannot be deleted in (1b) because the clausal complement to the so-called factive verb is assumed not to be in the sister position to the verb (see Erteschik 1973, Stowell 1981 and Cinque 1990).

Such an account cannot be adopted any more since there is no empty CP assumed in *that*-less clauses. In this paper, I will propose an account of the obligatoriness of the complementizer in sentences like (1) and discuss cross-linguistic differences in the framework of Optimality Theory.

## 2 Extended projection and selection of proposition

As I mentioned above, it is assumed in Grimshaw 1991 that C and I have the [-N, +V] features inherently. Here I will propose a slightly different definition of the extended projection as follows.

- (5) ZP is the extended projection of a lexical category X iff
- a. Z is a functional category, and
  - b. Z is a sister to XP, or
  - c. Z is a sister to YP which is the extended projection of X.

A slight but crucial difference between Grimshaw's and my definition is that (5) does not mention the feature specification at all. This feature neutral definition allows any functional categories to be the extended projection of any lexical categories,<sup>2</sup> and the categories of extended

projections are subject to the feature specification given in (6).

(6) Feature Specification of Functional Categories:

The features of a functional category are determined by its head.

For example, the feature of IP is underspecified with respect to  $\pm N$  and  $\pm V$ , but if a verb moves to I (as in French), the IP gets the features  $[-N, +V]$ .<sup>3</sup> By the same token, CP gets the  $[-N, +V]$  feature if auxiliary verbs such as *is* and *have* move to the C-head. The crucial assumption which plays an important role in the present paper is that the complementizer *that* has no feature specification. The CP headed by *that*, thus, has neither  $\pm N$  nor  $\pm V$ , which I represent  $[\phi N, \phi V]$ , henceforth.<sup>4</sup>

Given these definitions, it seems that we no longer capture the optionality of CP- and IP-selection as in (3a) and (3b), repeated here as (7a) and (7c), by means of the lexical redundancy rule “proposition  $\rightarrow [-N, +V]$ .”

- (7) a. Mary thinks [<sub>CP</sub> that [<sub>IP</sub> John will leave]]  
b. Mary thinks [<sub>IP</sub> John will leave]

Since the complementizer *that* has no feature, the CP in (7a) does not

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<sup>2</sup>This is necessary when we consider the cases of gerunds in which DP must be considered to be the extended projection of V in spite of the fact that DP should have the  $[+N, -V]$  features.

<sup>3</sup>Baković 1998 proposes the similar idea on the basis of the analysis of verb movement in Spanish.

<sup>4</sup>More precisely, it should be represented as just “[ $\phi$ ].” The difference between  $[\phi N, \phi V]$  and  $[\phi]$  is not crucial in the discussion here.

bear the [-N, +V] feature. However, we can still obtain the CP/IP-alternation by modifying the lexical redundancy rule as follows.

- (8) \*CL [+N]: A clause is not headed by [+N].

In (7a), the complement clause is realized as CP, and since C does not have the [+N] feature, (8) is satisfied. In the same way, the IP-selection as in (7b) satisfies (8) because IP does not have the [+N] feature, either.

Incidentally note that the CP/IP-alternation is generally not allowed in Romance and Germanic languages (cf. Webelhuth 1992). Grimshaw 1997 argues, following the suggestion by Vivian Déprez and Sten Vikner, that the obligatoriness of C in those languages follows from the constraint PROJ-PRIN in (9) and the fact that those languages have V-to-I movement.

- (9) PROJ-PRIN: No adjunction to subordinate clauses and no movement into the head.

Without C, movement of V to I violates PROJ-PRIN since the I (IP) is the topmost extended projection of the subordinate clause, and therefore movement to the I is regarded as movement to the subordinate clause.

### 3 Factivity

In this section, I will discuss the cases in which embedded clauses must have C-projection. As is well-known, *that*-clauses in (10) are factive (or presuppositional), and these *that*'s cannot be "deleted."

- (10) a. [\* (That) John left] surprised Mary.  
b. John regrets [\* (that) he didn't attend the conference].

The obligatoriness of C seems to suggest that the categorial realization of factive complement may be predicted by a rule like “factive  $\neq$  -N” or “factive  $\neq$  +V.” A cross-linguistic perspective requires more strict rules, however. In many languages, the clausal complement to factive verbs must be nominalized.

Let us consider the case in Japanese.<sup>5</sup> Japanese has at least two types of complementizers; *to* and *no*. *To* is used in the complement to verbs like *omow* ‘think’ and *sinzir* ‘believe’, and I assume that it corresponds to English *that* with no syntactic features [ $\phi$  N,  $\phi$  V]. On the other hand, *no* is analyzed as a nominalizer (which I abbreviate as Nmnlz in the gloss) in the Japanese grammar, but I assume here that it is a complementizer which has the [+N, -V] features. The important point here is that *no* must be used in the complement to factive predicates and *to* must not be used in place of *no* as in (11b).<sup>6</sup>

- (11) a. John-wa [Mary-ga naita]-no-o oboeteiru.  
           -Top       -Nom cried-Nmnlz-Acc remember  
           ‘John remembers Mary’s having cried.’

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<sup>5</sup>Japanese does not allow “complementizer-deletion.”

- (i) John-wa [Mary-ga kuru to/\* $\phi$ ] omotta.  
       -Top       -Nom come Comp thought  
       ‘John thought that Mary would come.’

<sup>6</sup>I use *oboe* ‘remember’ as the matrix verb since *kookais* ‘regret’ can take a quotative complement which is headed by a complementizer *to* as follows.

- (i) John-wa [“pro koko-ni kurubekijaa-nakatta” to] kookaisiteiru.  
       -Top       here-to come-should-not Comp regret  
       ‘John regrets: I should not have come here.’

The quotation marker *to* is homonymous to the [ $\phi$  N,  $\phi$  V] complementizer. To avoid the complexity, I do not use *kookaisu* ‘regret’.

- b. \*John-wa [Mary-ga naita]-to oboeteiru.  
 -Top -Nom cried-Comp remember

The question is why *that* can be used in the complement *to* the factive verbs in English while *to* cannot in Japanese in spite of the fact that both are [ $\phi$ N,  $\phi$ V]. The difference between English and Japanese is summarized below.

(12) Choice of the Category of the Factive Complement

Japanese -->  $\left[ \begin{array}{l} no: [+N, -V] \\ to: [\phi N, \phi V] : that \\ [-N, +V] : IP \end{array} \right] <--English$

In (12) the vertical order of [+N, -V], [ $\phi$ N,  $\phi$ V] and [-N, +V] corresponds to the “nominal hierarchy” of features; The nominality weakens in the order of [+N, -V], [ $\phi$ N,  $\phi$ V] and [-N, +V]. Of the two choices, *no* [+N, -V] and *to* [ $\phi$ N,  $\phi$ V], Japanese chooses the former in the factive complements. On the other hand, in English, *that* [ $\phi$ N,  $\phi$ V] must be used in the factive complement, and unlike the case of the complement to *believe* and *think*, no CP/IP-alternation is allowed.

This fact can be captured by assuming two violable constraints concerning feature realization of factive complement as in (13).

(13) FACT[+N]: The topmost XP of factive complement bears the [+N] feature.

\*FACT[+V]: The topmost XP of factive complement does not bear the [+V] feature.

These constraints are both violable and the ranking between them is

not crucial here. A candidate that satisfies both constraints wins over the one that violates one of them, which is in turn regarded as better than the one that violates both of them. The competition between *no* and *to* in Japanese is given in (14a) and (14b) (I ignore the word-order), and the competition between *that* and IP in English is given in (15a) and (15b).

(14) C-selection of factive complement in Japanese

[V: __ factive]	*FACT[+V]	FACT[+N]
 a. V [CP <i>no</i> [...   [+N, -V]]		
b. V [CP <i>to</i> [...   [ϕ N, ϕ V]]		*!

(15) C-selection of factive complement in English

[V: __ factive]	*FACT[+V]	FACT[+N]
 a. V [CP <i>that</i> [...   [ϕ N, ϕ V]]	*	
b. V [IP...   [-N, +V]]	* (!)	* (!)

In English, the selection of *that* violates \*FACT[+V]

It is worthwhile considering why English does not have a pure nominal complementizer. One possible answer is that it is an accidental gap, which means that English happens not to have a pure nominal complementizer that corresponds to Japanese *no*. Another possible and

more interesting answer is that actually English does have a nominal complementizer but it cannot show up for some reason.<sup>7</sup> The emergence of a nominal complementizer in English is blocked by the constraint in (8), repeated as (15).

(15) \*CL[+N]: A clause is not headed by [+N].

(16) English factive complements

[V: __ factive]	*CL[+N]	*FACT[+V]	FACT[+N]
 a. V [CP that [...   [ϕ N, ϕ V]]			*
b. V [IP/VP... [   [-N, +V]]		*(!)	*(!)
c. V [CP NO [...   [-N, +V]]	*!		

The NO in (16c) stands for the hypothetical nominal complementizer in English, the counterpart of Japanese *no*. The use of the nominal complementizer is blocked since CL[+V] outranks \*FACT[+V] and FACT[+N] in English. On the other hand, in Japanese, CL[+V] is outranked by the other two constraints as shown in (17).

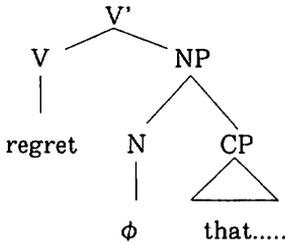
<sup>7</sup> I would like to thank Eric Baković for bringing this possibility to my attention.

(17) Japanese factive complements

[V: __ factive]	*FACT[+V]	FACT[+N]	*CL[+N]
 a. V [CP no [...   [+N, -V]]			*
b. V [CP to [...   [ϕ N, ϕ V]]		*!	
b. V [IP/VP ...   [-N, +V]]		*(!)	

Let us consider another possibility of English factive complement as in (18), which stems from Rosenbaum 1967.

(18)



In this structure, the factive verb takes NP whose head is null, and the CP follows it. Suppose that the null N bears [+N, -V] for the sake of exposition. Let us also assume that the factive complement is realized as CP. Even with these assumptions, (18) is ruled out by OB-HD (cf. Grimshaw 1997).

(19) OB-HD: A projection have a head.

The relevant ranking is given in (20).

(20) English factive complements

[V: __ factive]	OB-HD	*CL[+N]	*FACT[+V]	FACT[+N]
 a. V [CP that [...   [ϕ N, ϕ V]]				*
b. V [CP,VP ...   [-N, -V]]			*(!)	*(!)
c. V [CPNO [...   [-N, +V]]		*!		
b. V [NP ϕ [CPthat...     [-N,-V][ϕ N, ϕ V]]	*!			

(20d) satisfies both \*FACT[+V] and FACT[+N] because the verb subcategorizes for the null NP which has the [+N, -V] feature by assumption. it satisfies \*CL[+N], too, again by assuming that the selected NP is not “clause” and the factive complement is realized as CP. But the candidate violates OB-HD because the N has no head. Since OB-HD outranks \*FACT[+V] and FACT[+N], (20d) never wins the candidate a.

4 Embedded Question

In embedded question, *that* never shows up as follows.

(21) a. \*I wonder [CP that [VP who left]].

- b. \*I wonder [<sub>CP</sub> what [C' that [<sub>VP</sub> John bought]]].
- c. I wonder [<sub>VP</sub> who left]

This fact seems to suggest that the topmost XP of embedded questions bears the [+V] feature. However, both (21a) and (21b) can be excluded by independently motivated constraints. Examples like (21a) violate OP-SCOPE (cf. Sells et. al. 1996).

- ② OP-SCOPE: Syntactic operators must c-command the extended projection over which their scope is interpreted.

In (21a), *who*, which is in the specifier position of VP, does not c-command the projection of C, the extended projection of V, yielding the violation of OP-SCOPE. (21c), on the other hand, does not violate the constraint, so that it wins over (21a). Examples like (21b) violate HD-LFT.

- ② HD-LFT: The head is leftmost in the projection.

In (21b), the head of CP, namely *that*, is not in the left edge of the projection of CP, hence HD-LFT is violated. Again since (21c) satisfies the constraint, (21b) cannot be the optimal candidate. Consequently, we do not need to assume the categorial specification for embedded questions such as the topmost XP of an embedded question does not bear the [+N] feature.

## 5 Deriving the adjacency condition in English

As is wellknown, *that*-“deletion” is sensitive not only to semantic type of complement, but also the position of the complement. It cannot

be “deleted” if it is not adjacent to V.

- (23) a. John believes very strongly \*(that) the hypothesis is wrong.  
b. I believe, unfortunately, \*(that) we’ll be unable to help you.

Putting in terms of Grimshaw’s system, the generalization should be that a propositional complement clause is realized as CP when it is not adjacent to the V that subcategorizes it. The question is, then, how the present system based on the interaction of ranked violable constraints can account for this generalization.

Depending on the analyses of the position of CP, I will make two different proposals, and at this moment I leave open which analysis/proposal is correct. Let us begin with the analysis where the complement clauses are extraposed rightward as in (24).

- (24) a. John believes  $t_i$  very strongly [<sub>CP</sub> that the hypothesis is wrong]<sub>i</sub>;  
b.\*John believes  $t_i$  very strongly [<sub>VP</sub> the hypothesis is wrong]<sub>i</sub>

Descriptively the contrast between (24a) and (24b) tells us that VP cannot be extraposed. This description can be restated as follows: traces left behind by VP are not allowed. This leads us to the conclusion that STAY proposed by Grimshaw 1997 has a subhierarchy as in (25).

- (25) STAY: \* $t_{[-N, -V]} \gg *t_{[+N, +V]}$

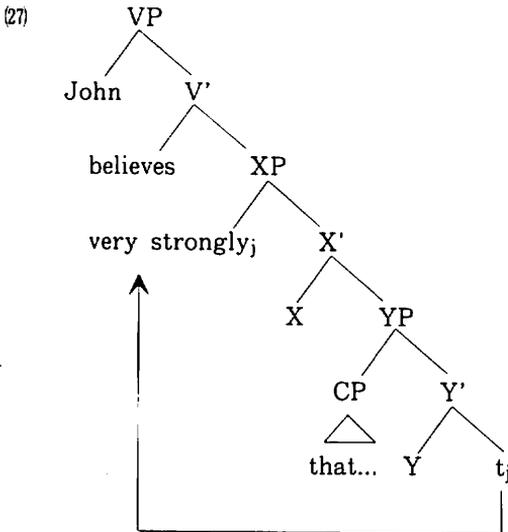
Then, the relevant ranking should be as in (26) where “Extra” stands for the motivation of rightward movement of clausal complement though I do not know what it exactly is.

(26)

Candidates	"Extra"	*t <sub>[-N, -V]</sub>	*t <sub>[φN, φV]</sub>
a. John believes CP very strongly	*!		
b. John believes CP very strongly	*!		
 c. John believes t <sub>i</sub> very strongly CP <sub>i</sub>			*
d. John believes t <sub>i</sub> very strongly VP <sub>i</sub>		*!	

In the competition in (26), the ranking between "Extra" and \*\*t<sub>[-N, -V]</sub> is not crucial. Rather, it is important that the two constraints dominate \*t<sub>[φN, φV]</sub>.

Let us move to another analysis of "CP-extrapolation." Kanye 1994 argues that UG does not allow rightward movement, and (24a) is generated as in (27) where adverbial phrases like *very strongly* undergoes leftward movement.



If the structure in (27) is correct, then the question is why the VP complement cannot be generated in the specifier position of YP.

I propose, here again, that the featural difference between CP and VP plays a crucial role, and VP complement in the specifier position of YP prevents the adverb from moving across it because of the feature-based relativized minimality. As assumed above, CP had no feature with respect to  $[\pm N, \pm V]$ . So, basically it prevents nothing (but CP) from moving. On the other hand, VP blocks movement of elements which have  $[-N]$  and/or  $[+V]$ . I assume that adverbs have the  $[+V]$  feature because most of them are derived from adjectives by *-ly* suffixation. Then movement of adverbs is blocked by VP as shown in (28a).

- (28) a. \*... adverb<sub>j</sub> ... [<sub>VP</sub> the hypothesis is wrong] ... t<sub>j</sub> ...  
           |                  |  
           [+V]          [-N, +V]
- b. \*... PP<sub>j</sub> ... [<sub>VP</sub> the hypothesis is wrong] ... t<sub>j</sub> ...  
           |                  |  
           [-N]          [-N, +V]

The same account holds in (28b) where movement of PP is blocked because VP has the  $[-N]$  feature and so does PP.

## 6 Conclusion

This paper has discussed some remaining problems concerning Grimshaw's 1991, 1997 proposal. She claims (i) that CP and IP are the extended projections of V, with the  $[-N, +V]$  features, and (ii) that a sentential complement can be CP, IP, or VP; If it is headed by complementizer, CP is projected. Her system faces the problem of how

to account for the cases where the complementizer is obligatory. I claimed that although CP is an extended projection of V, its feature specification is [ $\phi$  N,  $\phi$  V], and to capture the intuition that factive complements are nominal, I proposed two violable constraints; FACT [+N] and \*FACT[+V]. The former says the topmost XP of factive bears the [+N] feature whereas the latter requires that the topmost XP of factive not bear the [+V] feature. I demonstrated that the satisfaction or violation of these constraints accounts for the distribution of *that* in English and the choice between *to* and *no* in Japanese. I also claimed that English could have a pure nominal complementizer but the emergence is blocked because the constraint against the use of such complementizer is ranked higher than the constraints requiring that factive complements be nominal.

## References

- Baković, Eric. 1998. Optimality and inversion in Spanish, in Pilar Barbosa, Danny Fox, Paul Hagstrom, Martha McGinnis, and David Pesetsky eds. *Is the best good enough?*, 35-58, MA: MIT Press.
- Cinque, Guglielmo. 1990. *Types of A-bar dependencies*, Cambridge, MA: MIT Press.
- Chomsky, Noam. 1981. *Lectures on government and binding*, Dordrecht: Foris.
- Chomsky, Noam. 1986. *Knowledge of language*, New Yor: Praeger.
- Erteschik, Nomi. 1973. On the nature of island constraints, Doctoral disseration, MIT, Cambridge, MA.
- Grimshaw, Jane. 1979. Complement selection and the lexicon. *Linguistic Inquiry* 10: 279-326.
- Grimshaw, Jane. 1991. Extended projection. ms. Brandeis University,

Waltham, MA.

- Grimshaw, Jane. 1997. Projection, heads, and optimality. *Linguistic Inquiry* 24: 373-422.
- Kayne, Richard. 1994. *The antisymmetries of syntax*. Cambridge, MA: MIT Press.
- Pesetsky, David. 1982. Paths and categories, Doctoral dissertation, MIT, Cambridge, MA.
- Rosenbaum, Peter. 1967. *The grammar of English predicate complement constructions*, Cambridge, MA: MIT Press.
- Rothstein, Susan. 1992. Case and NP-licensing, *Natural Language and Linguistic Theory* 10: 119-139.
- Sells, Peter John Rickford, and Thomas Washow. 1996. An optimality theoretic approach to variation in negative inversion in AAVE, *Natural Language and Linguistic Theory* 14: 591-627.
- Stowell, Tim. 1981. Origins of phrase structure, Doctoral dissertation, MIT, Cambridge, MA.
- Webelhuth, Gert. 1992. *Principles and parameters of syntactic saturation*. NY: Oxford University Press.

## 論文要旨

### 投射拡張と範疇選択

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Grimshaw 1991の拡大投射理論では CP や IP は VP の拡大投射であり[-N, +V]の素性を持つと規定される。一方 Grimshaw 1997等では時制補文は常に CP である必要はなく、補文標識がない場合は IP または VP であると分析される。これら2つの理論を仮定すると、時制補文範疇の選択制限を語彙情報の中に指定する必要がなくなり、「命題は [-N, +V] の素性を有する範疇として具現化する」という規則として規定できるようになる。これは think の補文のように that を任意に省略できる場合には大変都合がよい。しかし、regret の補文や文主語のように that を省略できない場合がうまく扱えない。そこで本稿では素性指定のない拡大投射の定義を提案し、命題の範疇は順序付けられた違反可能な制約の相互作用により決定されることを最適性理論を用いて主張する。特に英語の that や日本語の「と」は語彙素性を持たない（つまり、[ $\phi$  N,  $\phi$  V]）と仮定すると、that の省略が不可能である場合や、「と」ではなく「の」が用いられる場合が原理的に説明できることを示す。