

## Against Bare Infinitive Complements as VP Small Clauses

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### Abstract

これまで生成文法研究では、動詞に後続する要素がどのような範疇を形成し、どのような統語的、意味的ふるまいをするのかが研究され、最近ではミニマリストプログラムの枠組での研究が進められている。本稿では、伝統的な枠組の中で知覚動詞や使役動詞に後続する補助部の特徴を分析する。ここで取り上げる動詞に後続する補助部は、小節と分析されてきたが、その統語的特徴から ECM 構文と同じ IP であることを主張する。さらに、ここでの分析をとることでその他の関連した統語的特徴をも捉えられることを示したい。伝統的には、原形補助部と呼ばれてきた部分が一樣にその統語的範疇を IP と分析することが可能であること、この分析をとることで数量詞の解釈やその他の統語的特徴をうまく説明できることを示すことになる。

Key Words: Bare infinitive complements, categorical status, small clause, IP, inflectional head.

### 0. Introduction

The bare infinitive complements (hereafter, BIC) have been the subject of recent work in the generative grammar. The bare infinitive complements are subcategorized for by perception verbs and a class of verbs with causative meanings. The BICs as in (1) involve and evoke an interesting issue. Even though there is little dispute about the clausal status of the BICs which form constituents, what is controversial is the categorical status of the BICs.<sup>1</sup> Within GB theory in the generative grammar, there have been three prevailing analyses to the categorical status of the BICs: NP analysis, small clause analysis and IP analysis.<sup>2</sup> The main goal of this paper is to provide a phrase structural analysis of the italicized material following the matrix verb in (1): the categorical status of the BICs is not a VP small clause but an IP in the traditional sense.

- (1) a. I saw *the man cross the street*.  
 b. John made *Nancy go there*.  
 c. Mary didn't let *her son go there*.

In section 1, we will discuss Iveland's (1993) arguments in support of the VP small clause analysis for the BIC, and clarify the problems of her analysis. In section 2, we will provide syntactic motivation for analyzing the BIC as the IP, and discuss other syntactic phenomena with respect to the BICs.

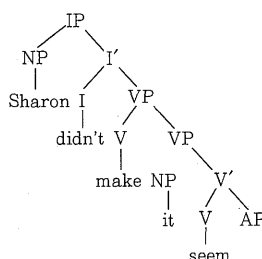
### 1. 0 VP Small Clause Analysis

Iveland (1993) provides the syntactic evidence to argue that the BICs are composed of VP, not IP. The syntactic tests on which Iveland's analysis is based are: VP deletion, VP preposing and negation. Now consider each of the syntactic evidence which Iveland claims is in favor of the VP small clause analysis:

- (2) a. \*Ruth made it seem possible that everyone would get a second helping but Sharon didn't make.  
 b. \*The preceptors let there be parties at the University but the chancellor wouldn't let. (Iveland 1993: 10)

As is clear from (2), VP deletion is impossible in the embedded complements of the BICs. These facts are argued by Iveland to be consistent solely with the assumption that null VP structures in English are acceptable only when they are properly governed by an Infl that is lexically headed by either *modals* or *do*. With this assumption she discusses that the unacceptability of null VP structures in the BIC in (2) is attributed to the fact that there is no Infl in the BIC, which can properly govern the deleted VP. To clarify this point the related structure for the VP small clause analysis is given below.

- (3) VP structure



Iveland also discusses that further evidence for VP small clause analysis can be found in another operation that targets VPs: VP preposing. According to Iveland, as discussed in VP deletion, the constraint on VP preposing depends crucially on an Infl element that is lexically headed by full forms of *auxiliaries*, *modals*, or *do*. Now consider (4) and (5) :

- (4) a. Ellen swore she'd get into Bolte, and get into Bolte she did.  
 b. Amy dared Gino to be screaming loudly and sure enough, screaming loudly he was.  
 c. \*Sue said she would get even, and get even she.
- (5) a. \*Linda said she would have the doctor examine JR and [the doctor examine JR] she had.  
 b. \*Linda said she would have the doctor examine JR and [examine JR] she had the doctor.  
 (Iveland 1993 : 11)

If the VP analysis is correct, the ungrammaticality of (4c) and (5) is straightforwardly explained by the absence of an Infl node.

One final argument for the VP analysis of the BIC by Iveland derives from negation fact. Her observation owes much to Higginbotham (1983), which argues that negation in the BIC does not function as clausal negation. Iveland claims, depending on Higginbotham's observation, that negation does not take wide scope over the event quantifiers, but takes narrow scope. This suggests that negation in the BIC is not the inflectional negation, and that the BIC is not composed of IP which includes the inflectional negation head.

### 1.1. Problems

In this subsection several pieces of counter-evidence to the VP analysis are

presented. First, take a look at the example (6):

- (6) a. \*I believe Mary to be smart, and I believe John to, too.  
 b. \*Mary believes Bill to be smart, but be smart, I don't believe him to.

If the assumption that Iveland makes is correct, then the ungrammaticality of (6) cannot be accounted for. The sentence is not grammatical although the embedded sentence in (6) includes a lexical head in Infl node which governs the deleted VP. She might argue that (6) does not include Infl elements that are lexically headed by *modals* or *do*. If so, she needs another way to explain the parallelism between (5) and (6). (5) and (6) should be explained by the same constraint which targets the VPs, not by the ad-hoc stipulation to exclude (6). The example (6) indicates that the constraint on VP deletion and VP preposing should be stated in a different way. We will return to the definition of the constraint which limits the operation targeting VPs in section 2.

Another piece of evidence for the VP analysis presented by Iveland is negation fact. The argument Iveland presents is, however, dubious. Ritter and Rosen (1993) point out that the inflectional negation is possible in the case of the BIC following a causative verb, *make*, as observed in (7a).<sup>3</sup> The inflectional negation is also possible in the complement of the perception verb as in (7b).

- (7) a. Bill made Ralf not marry Sheila. (Ritter and Rosen 1993: 538)  
 b. I'd like to see John not go to prison.

## 2.0 Syntactic Property of BICs

### 2.1. IP property of BICs

Section 1 shows that Iveland's arguments for VP small clause analysis depend on the constraint that applies to VP deletion, VP preposing, and negation fact, and they are not empirically supported by the linguistic data. In what follows, we will present several pieces of evidence which show that the BICs are in fact IPs. All of the data below are considered specific to the node IP.

First, sentential adverbs can occur in the BICs. The behavior of sentential adverbs have been discussed in the literature and they are assumed to be in IP

(Jackendoff 1972). The occurrence of the sentential adverbs confirms the assumption that the BIC is IP.

- (8) a. I saw the children *probably* touch the cat's tail.  
 b. I saw the children *obviously* touch the cat's tail.

Second, subject-oriented secondary predicates can occur in the BICs. Since the subject-oriented secondary predicates are assumed to be in IP, the BICs can be concluded to be IP.

- (9) a. Which community have you seen a member of *t* walk *naked* in the park?  
 (Declerck 1984: 115)  
 b. I made John walk along the street *naked*.  
 c. I let John walk along the street *naked*.

Third, pleonastic *there* can appear in the subject position of the BICs.<sup>4</sup> Pleonastic *there* is supposed to be inserted into the immediate subject position under IP. Thus the grammaticality of (10) can be explained only on the assumption that the BIC is composed of IP.

- (10) a. I've never seen *there* be anyone executed here without being given a chance to confess first.  
 b. I saw *there* arise over the meadow a blue haze.  
 c. We let *there* arise many problems.  
 d. John made *there* be computers available for all the students.

Fourth, extraposition from subject is possible in the BICs. Extraposition from subject is an operation which is widely assumed to attach the extraposed element to the maximal projection immediately dominating it, namely IP (Baltin 1978, 1981, 1987, Terazu 1979, Gueron 1980, Barss 1986, Nakajima 1989). With this assumption and the assumption, along with Chomsky (1986a) and Nakajima (1991b), that the adjunction operation such as rightward movement observes the adjunction condition (11), the grammaticality of (12) indicates that the landing site of the affected element is the embedded IP. This is consistent with the assumption

that the BIC is IP.

(11) Adjunction is possible only to  $X^{\max}$  that is non-argument.

(12) ?I saw the king leaving the country *who was banished by thousands of the reformers* yesterday.

Fifth, another rightward movement, Heavy NP Shift, shows the IP property of the BICs. Consider (13):

- (13) a. ?Sam believes all his guests to like chocolate very strongly.  
b. Peter saw a man with blond hair leave the room last night.

(14) a. ?Sam believes to like chocolate very strongly all his guests.

(Johnson 1988: 603)

b. John saw leave the room last night a man with long blond hair.

Adverbial phrases in (13), *very strongly* and *last night*, can modify the matrix sentence, or the embedded sentence. According to Johnson (1988), once Heavy NP Shift applies to the subject positions in the embedded sentences, the adverbial phrases in (14) can only modify the lower clauses. The inability of the adverbials placed before the shifted NPs to modify the matrix clauses suggests that the moved NPs must be attached to the embedded clauses. This follows naturally if it is assumed that the BICs are IP.

Sixth, the evidence which favors the IP analysis is obtained in the following example:

(15) I've never seen John seem to be out of it before. (Gee 1977: 471)

In (15) the raising verb, *seem*, is possible when embedded under the perception verb complement. Since it is widely assumed that the subject of raising verb moves from the embedded sentence subject position to [SPEC, IP] in the higher clause, (15) exemplifies the need for IP analysis.

Seventh, as pointed out by Gee(1977), idioms in (16) can occur only in subject position.

- (16) a. We heard all hell break loose.  
b. Then we saw the shit hit the fan.

(16) indicates that the perception verb complement includes the subject position. The proposed IP analysis can account for this fact. The final argument which is in favor of the proposed IP analysis comes from the following fact.

- (17) a. We made Ruth be writing in pain to give Sharon a good scare.  
(Iveland 1993: 7)  
b. We'll let him be putting his clothes back on when Mary walks in the room.  
(Akmajian, Steele, and Wasow 1979: 40)

Given that the progressive *be* is a member of Infl elements, the categorical status of the BIC can be concluded to be the IP.<sup>5</sup> We have presented so far that the BICs consist of IPs. This conclusion is further supported by the argument from the language change. In early English, *to*, which is considered an Infl element, can occur in the BICs. For the evidence of the language change which supports the IP analysis, see Tanaka(1994).

- (18) a. Who heard me *to* deny it or forswear it?  
b. We will make our leisure *to* attend on yours.

All of the arguments above favor our assumption that the BICs are IPs. This conclusion opposes the assumption made by Iveland (1993) and others, who claim that the BICs are not IP.

## 2.2. Some related phenomena

The previous section has offered the syntactic motivation to argue that the BICs are IPs. Now we are ready to discuss the syntactic operations and the negation fact that we have observed in section 1, assuming that the categorical status of the BICs is IP. Consider first the operations which target VPs: VP

deletion and VP preposing. These two transformations can be defined along the line of Saito and Murasugi (1993). Saito and Murasugi (1993), following Lobeck (1990) and Zagana (1982), argue that the generalization on VP deletion and VP preposing can be stated as in (19):

- (19) A functional head licenses an empty category in its complement position when it agrees with its SPEC.

The parallelism between VP deletion and VP preposing can be observed in (20) and (21):

- (20) a. I believe that Mary would win the race, and she did.  
b. I believe that Mary would win the race, and win the race, she did.
- (21) a. \*Mary believes Bill to be smart, but I don't believe him to.  
b. \*Mary believes Bill to be smart, but be smart, I don't believe him to.

Saito and Murasugi further argue that (19) is to be explained by the ECP, head government requirement on empty categories.

- (22) The Head Licensing Condition on Empty Categories
- a. An empty category must be within a projection of a licensing head.  
b. X is a licensing head iff it is lexical or agree with its SPEC.

Now consider the ungrammaticality of (5) and (6), repeated here as (23) and (24) with the assumption (22).

- (23) a. \*Linda said she would have the doctor examine JR and [the doctor examine JR] she had.  
b. \*Linda said she would have the doctor examine JR and [examine JR] she had the doctor.
- (24) a. \*I believe Mary to be smart, and I believe John to, too.  
b. \*Mary believes Bill to be smart, but be smart, I don't believe him.



Given that the BICs in (23) consist of IP, then each of the complements in question contains a null head. The embedded INFL in the second conjunct, the null head, is not a licensing head since it does not satisfy (b) condition in (22).<sup>6</sup> Therefore (22) excludes (23). The condition (22) excludes (24) likewise.

Now consider the negation fact. As discussed in the previous section, the inflectional negation, which does not require that *not* be stressed, can be possible in the BIC as in (7). This is easily explained on the assumption that the BIC is IP including the inflectional head.

Further consequence can be obtained if we assume the BICs are IPs. Now consider the scope ambiguity of a quantified subject in the BIC. Kayne (1981) points out that in (25) the wide scope reading is prominent in a context such as, 'Did you see anyone step forward and steal the jewel? No, sir...'.

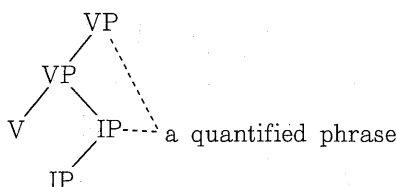
(25) I saw no one step forward.

As to the quantified NPs in subject position in perception verb complements, Reuland (1983) also points out an interesting fact. He claims that both wide and narrow scope interpretation for the quantified subjects are possible.<sup>7</sup> Assuming that the BICs are the IPs, the scope interpretation facts can be accounted for as will be seen below.

- (26) a. I saw no one step forward.  
b. I saw someone leave.

Given that a quantified phrase undergoes Quantifier Raising in LF and the scope of a quantified phrase is determined in terms of its m-command domain, along with May(1985) and Nakajima(1991b), the scope ambiguity of the quantified subjects in (26) can be explained. Since Quantifier Raising adjoins a quantified phrase to a non-argument maximal projection in accordance with (11), the quantified subjects in (26) can be adjoined either to the embedded IP, or to the matrix VP. The relevant derived structure is (27) :

(27)



When the quantified subject in (26) adjoins to the embedded IP, it is m-commanded by the matrix VP. The narrow scope interpretation results from this relation between the quantified subject and the matrix V. When the quantified subject adjoins to the matrix VP, it m-commands the matrix V, resulting in the wide scope interpretation.

### 3.0 Conclusion

We have considered the categoral status of the BICs, and argued that it is not VP small clause, but it is IP in the traditional sense. This conclusion comes from various types of syntactic evidence which shows the property peculiar to the IP node. We have also discussed the phenomena which support the assumption that the BICs are IPs. If the conclusion made here is correct, it follows that the categoral status of the BICs is uniformly IP. I believe that this is a desirable consequence in the literature.

### Notes

I would like to express my deepest gratitude to Catherine Jackson who acted as an informant and corrected stylistic errors. My special thanks go to Mark Tiedemann and Dawn Bowlus who acted as informants. The responsibility of remaining inadequacies is my own.

1. Napoli (1988) claims that BICs are non-constituents which consist of the NPs followed by VPs. See Safir (1993) as the arguments against Napoli's analysis.
2. Arguments against the NP analysis of the BICs can be found in Gee (1977) and Barss (1985). See Nakajima (1991b) as to Small clause analysis of the complements following perception verbs. Nakajima (1991b) claims that the BIC complement which is subcategorized for by perception verbs is small clause consisting of Agr phrase. Nishihara (1993) offers an analysis of

complements following perception verbs as IPs, providing several counter evidence to Nakajima's analysis. Safir (1993) also argues that the complements of the perception verbs can be IP or VP, depending on the semantic property of the complements.

3. Ritter and Rosen discuss two types of negation. One is the inflectional negation head, and the other is adverbial negation, which is assumed to be adjoined to some projection V. They claim that the two types of negation can be distinguished in that only adverbial negation must be stressed.
4. The constraint on *there* in the subjects of the BICs is discussed in Safir (1993).
5. The progressive *be* cannot appear in the complement of a perception verb. Given that the categorical status of the complement following the perception verb is IP, the progressive *be* can appear in the complement. I leave this question open.
6. Nishihara (in preparation) discusses the syntactic property of the null functional head in BICs and the functional head in ECM complements as well.
7. Note that Williams (1983) claims that the narrow scope interpretation is only possible in the case of the complement following a perception verb.

## REFERENCES

- Akmajian, A. 1977. The Complement Structure of Perception Verbs in an Autonomous Syntax Framework, in P.Culicover, T.Wasow and A.Akmajian eds., *Formal Syntax*, Academic Press, New York.
- Baltin, M. 1982. A Landing Site Theory of Movement Rules, *Linguistic Inquiry* 13: 1-38.
- Barss, A. 1985. Remarks on Akmajian's "The Complement Structure of Perception Verbs" and Gree's "Comments on the paper by Akmajian," in B.Levin, ed., *Lexical Semantics in Review*, Center for Cognitive Science MTT.
- Chomsky, N. 1981. *Lectures on Government and Binding*. Dordrecht: Foris.
- 1986. *Barriers*, Cambridge, Mass:MIT Press.
- 1991. A Minimalist Program for Linguistic Theory, MIT *Occasional Papers in Linguistics* #1.
- Chomsky, N. and H. Lasnik. 1991. Principles and Parameters Theory, ms. MIT and University of Connecticut.
- Cinque, G. 1990. *Types of A'-Dependencies*. Cambridge, Mass:MIT Press.
- Declerck, R. 1982. The triple origin of participial perception verb complements, *Linguistic Analysis* 10, 1-26.
- 1984.—The structure of infinitive perception verb complements in a transformational grammar, in Liliane Tasmowski and Dominique Williems, eds., *Problems in Syntax*. 105-128.
- Diesing, M. 1992. *Indefinites*. Cambridge: MIT Press.
- Gausti, M. 1989. Romance Infinitive Complements of Perception Verbs, MIT *Working Papers in Linguistics* 11, 31-45.

- Gee, J. P. 1977. Comments on the Paper by Akmajian, in P.Culicover, T.W, A.Akmajian eds., *Formal Syntax*, Academic Press, New York.
- Gerón, J. 1980. On the syntax and semantics of PP extraposition, *Linguistic Inquiry* 11, 637-678.
- Higginbotham, J. 1983. The Logic of Perceptual Reports: An Extensional Alternative to Situation Semantics, *Journal of Philosophy* 80, 100-127.
- Hornstein, N. 1984. *Logic as Grammar*. Cambridge, Mass: MIT Press.
- Johnson, K. 1985. A Case for Movement, Doctoral dissertation, MIT.
- .1988. Clausal Gerunds, the ECP, and Government, *Linguistic Inquiry* 19, 583-609.
- .1991. Object Positions, *Natural Language & Linguistic Theory* 9, 577-636.
- Kayne, R. 1981. Two Notes on the NIC, in A.Belletti, L.Brandi, and L.Rizzi, eds., *Theory of Markedness in Generative Grammar*, 317-346. Scuola Normale Superiore, Pisa.
- Larson, R. 1988b. "Light Predicate Raising," ms, MIT.
- Lasnik, H. 1993. Lectures on minimalist Syntax. *University of Connecticut Occasional Papers* 1.
- Lasnik, H. and M. Saito. 1984. "On the Nature of Proper Government," *Linguistic Inquiry* 15: 235-289.
- .1991. On the Subject of Infinitives, *CLS27*, 324-343.
- .1992. *Move @*: Conditions on Its Application and Output. Cambridge, Mass.: MIT Press.
- Lobeck, A. 1991a. SPEC-head agreement in DP, *West Coast Formal Linguistics* 10, 297-308.
- .1991b. The Phrase Structure of Ellipsis, in S. Rothstein, ed., *Syntax and Semantics* 26, Academic Press 80-103.
- Martin, R. 1992. On the Distribution and Case Feature of PRO, ms, University of Connecticut
- Melvold, J. 1991. Factivity and Definiteness, *MIT working Papers in Linguistics* 15: More Papers on Wh-Movement: 97-117.
- Nakajima, H. 1989. Bounding of Rightward Movements, *Linguistic Inquiry* 20, 328-334.
- .1991a. Binding Path and Dependent Categories, in Nakajima eds., *Trends in Linguistics*, Mouton De Gruyter, New York.
- .1991b. Reduced Clauses and Argumenthood of AgrP, in H.Nakajima and S. Tonoike eds., *Topics in Small Clauses*, 39- 57, Tokyo: Kuroshio.
- Nishihara, T. 1993. Chikaku Doshi Hobun-ni Tsuite, paper presented at the 11th National Conference of the English Linguistic Society of Japan.
- . in preparation. Syntactic and Semantic Property of Bare Infinitives.
- Reuland, E. 1983. Governing -ing, *Linguistic Inquiry* 14, 101-136.
- Ritter, E. and S.T.Rosen. Deriving Causation. 1993 *Natural Language & Linguistics Theory*. 519-553.
- Rizzi, L. 1990. *Relativized Minimality*, Cambridge, Mass, MIT Press.
- Rochemont, M. & P. Culicover 1990. *English Focus Constructions and the Theory of Grammar*, Cambridge University Press.
- Ross, J. 1986. *Infinite Syntax*. New York:Academic Press.
- Safir, K. 1983. On small clauses as constituents, *Linguistic Inquiry* 14, 730-35.
- 1993. Perception, Selection, and Structural Economy, ms., Rutgers University.

- Saito, M. and K. Murasugi. 1993. Subject Predication within IP and DP, ms. University of Connecticut and Kinjo Gakuin University.
- Suzuki, Y. 1991. Small Clauses as AgrP, in H.Nakajima and S.Tonoike eds., *Topics in Small Clauses*, 27-37.
- Stowell, T. 1981. Origins of Phrase Structure, Doctoral dissertation, MIT, Cambridge, Massachusetts.
- . 1982. The Tense of Infinitives, *Linguistic Inquiry*,
- . 1987. As so, but no so as, ms., University of California, Los Angeles.
- . 1991. Small Clause Restructuring, in R. Freidin eds., *Principles and Parameters in Generative Grammar*, 182-218.
- Tanaka, T. 1994. On the Realization of External Arguments in Infinitives. *English Linguistics* 11, 76-99.
- Terazu, N. 1979. A Note on the Derived Structure of Extraposition Rules, *Studies in English Linguistics* 7, 85-98.
- Williams, E. 1983. Against small clauses, *Linguistic Inquiry* 14, 287-308.
- Wyngaerd, G. 1989. Object Shift as an A-Movement Rule, *MIT Working Papers in Linguistics* vol.11, 256-271.
- Zubizarreta, L.M. 1982. "Theoretical Implications of Subject Extraction in Portuguese," *The Linguistic Review* 2: 79-96.

(1995年1月31日受理)