

## A Non-constituent Analysis of "Small Clauses"

著者	Kaga Nobuhiro
journal or publication title	Tsukuba English Studies
volume	4
page range	101-114
year	1985-08-31
URL	<a href="http://hdl.handle.net/2241/7422">http://hdl.handle.net/2241/7422</a>

A Non-constituent Analysis of  
"Small Clauses"

Nobuhiro Kaga

One controversial question in current theoretical linguistics is whether the complement of such a verb as consider is a clause or not in the construction in (1):

- (1) Bill considers John intelligent.

Chomsky (1981) and others analyze the complement as a "small clause"; that is, they consider that the string in question forms a clausal constituent in syntax just like to-infinitive and that-finite clauses in (2), though the former differs from the latter in lacking INFL and the copula which are obligatory elements of the latter:

- (2) a. Bill considers [<sub>S</sub> John to be intelligent].  
b. Bill considers that [<sub>S</sub> John is intelligent].

Under this analysis, the semantic fact that John and intelligent in (1) have a so-called subject-predicate relation, in a parallel way with John and intelligent in (2), follows immediately from its clausal constituency in syntax. Williams (1983), on the other hand, regards the complement in question as a non-constituent (hence, as non-clausal), and proposes to account for its subject-predicate relation by using the coindexing rule formulated within his own Predication Theory (see Williams (1980)). Note that under his analysis, "the subject" is not necessarily a structural subject, because an object of some kind (e.g., John in (1)) is also assigned the status of "the subject" by his predication rule.

In this paper I will take sides with Williams against Chomsky and others, claiming that a "small clause" is not a clause in syntax, and develop some arguments in favor of that claim. But I disagree with Williams with respect to the

explanation of the subject-predicate relation mentioned above. Instead of his predication rule, I will propose a new semantic device to capture that relation: the Semantic Constituent Interpretation Convention.

In section 1, I will present syntactic and theoretical evidence for our non-constituent analysis of the "small clause." In section 2, I will reexamine proposition-like properties of the complement in question on the basis of two syntactic phenomena. In section 3, the Semantic Constituent Interpretation Convention will be proposed and some justification of it will be provided through investigation of several other related constructions such as perception verb constructions, motion verb constructions, and so on. Section 4 will contain brief concluding remarks.

1. In this paper I assume the current version of the Extended Standard Theory advanced mainly by Chomsky (1981, 1982), i.e., the Government-Binding (GB) Theory. One salient feature of this theory is its modular approach to explaining linguistic phenomena— an approach based on the hypothesis that the full range of properties of some construction often results from interaction of several components each of which is governed by its particular set of general principles; in this view, the superficially complex properties of that construction are reducible to simple principles of separate subsystems. Note that this modular character of the GB approach makes syntactic argumentation in current linguistics a rather delicate task; under that framework, one is required to pay every attention to the whole system of the theory and consider carefully what property is indeed reducible to what general principle even when he argues about only one construction. One instance of this delicateness can be found in the discussion of our question here: whether the complement of the verb consider in (1) (henceforth, the SC complement, for the

sake of referential convenience) is a clause or not?

For example, it might be suggested, quite naively, that if the SC complement is a syntactic constituent, it can be moved by certain transformational rules or, conversely, if the SC complement cannot be moved by a transformational rule, it cannot be a clause; this suggestion might tell us that the SC complement is not a clause, on the basis of the data in (3):

- (3) a. \*John intelligent, Bill considers. (Topicalization)  
 b. \*John intelligent is considered by Bill (or everyone). (Passive)

However, this argument is untenable under the recent GB framework, because in that framework, the ungrammaticality of the sentences in (3) is accounted for independently by the Case filter, a fundamental principle of the Case theory, which states that every noun (phrase) with a phonetic matrix must have Case. In (3), both occurrences of the noun phrase John are assigned no Case, violating the Case filter, hence the ungrammaticality of the sentences. The Case filter also rules out such sentences as (4) in which to-infinitive clauses are moved:

- (4) a. \*John to be intelligent, Bill considers.  
 b. \*John to be intelligent is considered by Bill (or everyone).

The ungrammaticality of (4) suggests that the immovability of some strings in transformational processes does not necessarily indicate their non-constituency. Thus we cannot conclude that the SC complement is not a constituent because it cannot be moved as shown in (3).

As indicated by even this single example, it is rather difficult to build up an argument with respect to the constituency of the SC complement under the GB framework. In my opinion, however, there are at least two arguments in



interpretable in the same way as (8a-b) if grammatical, the reason for its ungrammaticality should be of syntactic origin; a plausible reason is that the position where there occurs in (8c) is not a subject position, as opposed to the case of (8a-b); in other words, the SC complement in (8c), unlike to-infinitive and that-finite complements, has no dominating node S. This counts as an argument for the non-constituent analysis of the SC complement.

The other argument comes from Kaga's (1982) analysis of the English auxiliary system. Kaga (1982) has proposed the following phrase structure rules on the basis of some syntactic evidence and (implicitly) characterized the AUX as the head of S. (See also Kaga (1983, 1985).)

$$(9) \quad S \rightarrow NP \quad AUX \quad XP. \quad (X = V, A, N, \text{ or } P)$$

$$\quad \quad \quad AUX \rightarrow \left\{ \begin{array}{l} \text{Modal} \\ \underline{\text{to}} \end{array} \right\} \quad - \text{ have} \quad - \text{ be}^1$$

Given this analysis and, in addition, assuming the main theme of the X-bar theory that each phrase of category  $X^n$  is expanded by a phrase structure rule of the form (10), with  $X^{n-1}$  its head,

$$(10) \quad X^n \rightarrow \dots X^{n-1} \dots$$

it is quite natural to regard the SC complement as not being a syntactic clause, because this complement is a string not including the AUX (specifically, to-be), the head of S in our analysis; if, as Chomsky and others claim, the SC complement is dominated by the S node, that complement should be characterized as a headless constituent, that is, the S node lacking its head AUX; but this characterization goes against the general rule schema of the X-bar theory in (10), causing a seriously undesirable situation from the theoretical point of view. Thus assuming both Kaga's (1982) analysis of the English auxiliary system and the rule schema of the X-bar theory leads to supporting the non-constituent analysis of

the SC complement rather than the small clause analysis of it.

2. In the preceding section, I presented two pieces of evidence that the SC complement is not a clause on the syntactic level, in contrast to to-infinitive and that-finite clauses. In spite of this, however, it is true that the SC complement forms a "proposition" in some sense. This property of the SC complement is ascertained not only by our intuition that John and intelligent in (1) exhibit a subject-predicate relation, exactly parallel to John and intelligent of to-infinitive and that-finite constructions in (2), but also by some syntactic facts. In this section we will take up two phenomena to make this point.

A first syntactic phenomenon concerns the alternation between reflexives and pronouns. Consider the sentences in (11):

- (11) a.  $John_i$  considers [<sub>S</sub> Mary to be angry at  $\left\{ \begin{array}{l} *himself \\ him_i \end{array} \right\}$ ].  
 b. John considers [<sub>S</sub>  $Mary_i$  to be angry at  $\left\{ \begin{array}{l} herself \\ *her_i \end{array} \right\}$ ].

In (11a), where the antecedent is outside of the embedded S, a pronoun is chosen; in contrast, in (11b), where the antecedent is the subject of the embedded sentence, a reflexive is appropriate. Under the GB theory these facts are accounted for by the binding theory which consists of the following principles:

- (12) (A) An anaphor (including a reflexive) is bound in its governing category.  
 (B) A pronominal is free in its governing category.  
 (Cf. Chomsky (1982))

In (11), the governing category is the embedded S node (because it contains an anaphorical or pronominal expression, its governor (at), and an accessible SUBJECT (Mary). Hence, the pattern of grammaticality of (11). Now notice that exactly the same pattern of grammaticality is observed also in the SC complement constructions of (13):

- (13) a. John<sub>i</sub> considers Mary angry at  $\left\{ \begin{array}{l} *himself \\ him_i \end{array} \right\}$ .  
 b. John considers Mary<sub>i</sub> angry at  $\left\{ \begin{array}{l} herself \\ *her_i \end{array} \right\}$ .

This may suggest that these examples should be treated as analogous to the to-infinitive clause constructions above; that is to say, the SC complement in (13) are required to function as a governing category with respect to the binding theory, just like the to-infinitive embedded S's in (11). Considering that, in general, only a 'propositional' unit serves as the governing category, we must say that in this respect the SC complement behaves like a "proposition", though we regard it as non-clausal in syntax.

A second syntactic phenomenon concerns the rule of quantifier-floating. It has sometimes been pointed out that quantifiers can be floated only from subject NP's (e.g., see Fiengo and Lasnik (1973)). Hence the following facts:

- (14) a. All the women have built a garage.  
 b. The women have all built a garage.  
 (15) a. The woman has built all the garages.  
 b. \*The woman has built the garages all.  
 (16) a. I consider all the women to be intelligent.  
 b. I consider the women all to be intelligent.

Though we cannot accept this generalization as it is, since, as shown in (17-18), quantifier-floating is allowed also in the SC complement which we have characterized as non-clausal (then, the NP involved is not a subject in a structural sense), yet the grammaticality of the (b) sentences in (17-18) does suggest that the NP of the SC complement has the status of "subject" in some sense, as opposed to the object NP's of (15).

- (17) a. I consider all the women intelligent.  
 b. I consider the women all intelligent.

- (18) a. We consider both of the Joneses unbearably pompous.  
 b. We consider the Joneses both unbearably pompous.

In other words, with respect to quantifier-floating, the SC complement works as a "proposition", parallel to finite sentences as in (14) and to-infinitive clauses as in (16).

3. We have argued in section 1 that the SC complement forms no syntactic constituent. The same complement, however, functions as a "proposition" in some respects, as shown in section 2. Our task here, then, is to account for such proposition-like properties by some means without assuming syntactic constituency. To achieve this end, I propose the following semantic convention:

- (19) The Semantic Constituent Interpretation Convention (SCIC)

In the structure below, NP and XP are interpreted as a semantic constituent if they meet conditions (A-B):

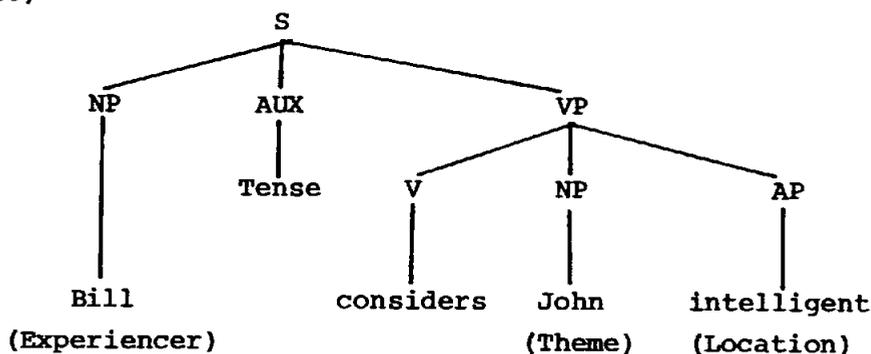
... NP - XP ... (order irrelevant)

conditions: (A) NP and XP are in a sister relation.

(B) NP is assigned the thematic role of Theme and XP the role of Location.

There is reason to think that sentence (1) has such a syntactic structure and thematic relations as in (20), the SC complement satisfying the SCIC.

(20)



Thus, John and intelligent in (1) are interpreted as a semantic constituent and assigned the subject-predicate relation, as required. We can account for the behavior of the SC complement under binding phenomena and the rule of quantifier-floating, seen in section 2, by postulating these:

- (21) a. Semantic constituents given by the SCIC (as well as syntactic constituents (S and NP)) are qualified as the governing category with respect to the binding theory.
- b. Semantic constituents given by the SCIC (as well as syntactic clauses) allow application of quantifier-floating.

The SCIC is not a convention that is useful only for the SC complement constructions. On the contrary, there are not a few English constructions that the SCIC works effectively for. We will see such constructions shortly. Before doing so, however, we will briefly consider some constructions that are not subject to the SCIC.

Let us examine the sentences in (22):

- (22) a. John talked to Mary about Bill.
- b. I lost my purse in London.
- c. John opened the door with the key.

The string following the verb in each sentence does not satisfy the SCIC for some reason. In (22a), because to Mary and about Bill both are prepositional phrases, the structural description of the SCIC (i.e., NP-XP) is not met. In (22b), in London, being an S adverb, is immediately dominated by the node S (or V", in Jackendoff's (1977) X-bar theory) and thus is not in a sister relation with the NP my purse that is immediately dominated by the node VP (or V'), violating condition (A). (22c) does not meet condition (B); with the key seems to be appropriately assigned the thematic role of Instrument, not the role of Location. Thus, these strings are not interpreted as semantic constituents and, as is predicted by this, do not have the subject-predicate relation that the SC complement does.

This non-constituency is confirmed by the facts in (23-24):

- (23) John<sub>i</sub> talked to Mary about  $\left\{ \begin{array}{l} \text{himself} \\ *him_i \end{array} \right\}$ .
- (24) a. He talked  $\left\{ \begin{array}{l} \text{to all the women} \\ *to the women all \end{array} \right\}$  about Bill.
- b. I met  $\left\{ \begin{array}{l} \text{all my children} \\ *my children all \end{array} \right\}$  in Paris.
- c. John opened  $\left\{ \begin{array}{l} \text{all the doors} \\ *the doors all \end{array} \right\}$  with the same key.

In (23), where the antecedent is the matrix subject, a reflexive, not a pronominal, is chosen; in (24) the quantifier-floating sentences are unacceptable; given the postulations in (21), these facts indicate that the strings in question in (22) are not semantic constituents in our sense.

Among the constructions to which the SCIC applies, besides the SC complement, there are the following:

A) Perception Verb Constructions

- (25) a. I saw John sick.  
 b. John found a snake near the girl.

B) Motion Verb Constructions

- (26) a. I gave a quarter to the kids.  
 b. I gave the kids a quarter.  
 c. John put a stamp on an envelope.

C) Other Constructions

- (27) a. She painted the house red.  
 b. Jesse shot him dead.  
 c. I keep my money in the bank.

The underlined strings of the above examples do not form a clausal constituent, as is evidenced by the non-occurrence of there and auxiliary elements within those strings (see the discussion in section 1).

- (28) a. \*I saw there several people in the park.  
 b. \*I gave there a quarter.  
 c. \*She painted there red.<sup>2</sup>

- (29) a. \*I saw John be(ing) sick.  
 b. \*I gave a quarter be(ing) to the kids.  
 c. \*I gave the kids have(ing) a quarter.  
 d. \*She painted the house (to) be red.

The strings, however, satisfy the conditions of the SCIC<sup>3</sup> and then are interpreted as semantic constituents. We can confirm this by looking at the facts of binding phenomena and quantifier-floating again.

- (30) a. John<sub>i</sub> saw Mary<sub>j</sub> looking at  $\left\{ \begin{array}{l} *himself/him_i \\ herself/*her_j \end{array} \right\}$  in  
           the mirror.  
 b. John<sub>i</sub> put the blanket under himself/him<sub>i</sub>.  
 c. John<sub>i</sub> always keeps his wits about \*himself/him<sub>i</sub>.  
 (31) a. Mom found the boys all so dirty when she got home.  
 b. I gave the books all to a girl.  
 c. I gave the kids all a quarter.  
 d. I painted the walls both red.

In (30), reflexives are chosen if the antecedents are in the complements, and otherwise pronouns are used, with the acceptability of the reflexive form in (30b) as the only exception; in (31), quantifier-floating is possible from the 'grammatical' objects; note that these patterns of grammaticality are exactly parallel to that of the SC complement, suggesting the adequacy of our characterization of these complements as semantic constituents.

A comment is necessary about the sentence in (30b), where both reflexive and pronominal forms are acceptable. As stated in note 11, the prepositional phrase of this construction can be regarded not only as the Goal but also as the Location in its broader sense. What is responsible for the acceptability of both options in (30b) seems to be this (pseudo-) ambiguity concerning thematic role assignment; that is to say, if more attention is turned to its aspect as the Goal, (because the SCIC is not met) the reflexive form is chosen and, contrariwise,

if its interpretation as the Location comes to the front, (because the SCIC is met) the pronominal form is adopted. If this explanation is plausible, such sentences as (30b) are not counterexamples to our analysis but interesting examples giving strong support to it. See Kuno (1983) for the subtle difference in meaning between the reflexive and the pronominal versions.

The following might be thought to be serious counterexamples to our analysis in terms of the SCIC.

- (32) a. John has no confidence in himself/\*him.  
 b. John explained { all of his problems } to the  
                           { \*his problems all }  
                           policeman.

In both examples, though it appears that the complements satisfy the conditions of the SCIC, the syntactic facts prove the contrary; the reflexive rather than the pronoun is adopted in (32a) and quantifier-floating is impossible in (32b). Closer investigation, however, tells us that the complements in (32a-b) in fact do not satisfy the SCIC. In (32a), the complement (no) confidence in himself is a nominal expression corresponding to the verbal phrase confide in himself; thus, its structure is something like (33), not conforming to the structural condition of the SCIC.

- (33) [<sub>NP</sub> Spec - N - PP]

In (32b), strictly speaking, the object all of his problems is not the Theme; as long as we assume, following Jackendoff (1972), that 'with verbs of motion the Theme is defined as the NP understood as undergoing the motion' (p. 29),<sup>4</sup> we cannot take the object in question as the Theme, for the truth of (32b) does not imply that the policeman came to possession of (all of) John's problems; (32b) seems to have roughly the same meaning as (34):

- (34) John gave an explanation of all of his problems to the policeman.

As is obvious from this paraphrase, what undergoes the motion (in an abstract sense) is John's explanation of his problems, not his problems themselves; his problems are the objects of which his explanations is made; thus the NP all of his problems cannot be assigned the role of Theme, though the question of what role is actually assigned to it is left aside here. In both (32a-b), thus, the complements in fact do not meet the SCIC, contrary to our first impression; they are not semantic constituents and hence the grammaticality patterns observed in (32).

4. In this paper I have adduced two pieces of evidence that a "small clause" is not a clause and proposed to account for its subject-predicate relation by the Semantic Constituent Interpretation Convention which is introduced in section 3. Our analysis based on this semantic convention is different in several important respects from Williams' predication analysis. As a matter of course, it is our task to clarify those differences and judge between the two analyses. For lack of space, however, we cannot do that task here, leaving it to a future paper.

#### NOTES

<sup>1</sup> The be and have which are generated under the AUX node are stative. The dynamic be and have, on the other hand, are introduced as members of VP. See Kaga (1982) for details.

<sup>2</sup> (28c) is semantically queer as well.

<sup>3</sup> The prepositional phrases of motion verb constructions in (26) (to the kids, etc.) are usually assigned the thematic role of Goal. This role is, however, taken to be the Location in its broader sense. Then (26) meet the SCIC.

<sup>4</sup> The verb explain is a motion verb of an abstract kind, which accounts reasonably for the appearance of the preposition to as a complement element.

## REFERENCES

- Chomsky, N. 1965. Aspects of the Theory of Syntax. Cambridge, Mass.: The MIT Press.
- \_\_\_\_\_. 1981. Lectures on Government and Binding. Dordrecht: Foris.
- \_\_\_\_\_. 1982. Some Concepts and Consequences of the Theory of Government and Binding. Cambridge, Mass.: The MIT press.
- Fiengo, R. and H. Lasnik. 1973. "The logical structure of reciprocal sentences in English," Foundations of Language 9:4, 447--68.
- Jackendoff, R. 1972. Semantic Interpretation in Generative Grammar. Cambridge, Mass.: The MIT Press.
- \_\_\_\_\_. 1977. X-Syntax: A Study of Phrase Structure. Cambridge, Mass.: The MIT Press.
- Kaga, N. 1982. The Syntax of Be and Have: AUX or Main Verb. M. A. thesis, University of Tsukuba.
- \_\_\_\_\_. 1983. "Where does John is being polite come from?" Iwasawa, K. and M. Sano (eds.) Tsukuba English Studies 2, 81-95.
- \_\_\_\_\_. 1985. "Adjectives in complements of perception verbs," Iwabe, K. and N. Kaga (eds.) Tsukuba English Studies 3, 245-54.
- Kuno, S. 1983. "Reflexivization in English," Tasmowski, L. and D. Willems (eds.) Problems in Syntax. 257-72.
- Milsark, G. 1974. Existential Sentences in English. Ph. D. dissertation, MIT.
- Williams, E. 1980. "Predication," Linguistic Inquiry 11:1, 203-38.
- \_\_\_\_\_. 1983. "Against small clauses," Linguistic Inquiry 14:2, 287-308.

Institute of Literature and Linguistics  
University of Tsukuba