Title	REMARKS ON THE POSITION OF RELATIVE CLAUSES
Author(s)	Yoshida, Kazuhiko
Citation	(1982), 1: 94-105
Issue Date	1982-12-01
URL	http://hdl.handle.net/2433/87891
Right	
Type	Departmental Bulletin Paper
Textversion	publisher

REMARKS ON THE POSITION OF RELATIVE CLAUSES*

Kazuhiko YOSHIDA

1. INTRODUCTION

First, observe the following sentence:

(1) *The cheese [the rat [the cat chased] ate] was rotten.

In (1), *the cat chased* is center-embedded in the clause *the rat ... ate*, which, in turn, is center-embedded in the matrix sentence. Note that (1) is almost unintelligible. Compare the above sentence with the following one:

(2) The cat chased the rat [that ate the cheese [that was rotten]].

In (2), the innermost relative clause *that was rotten* is right-embedded, not center-embedded, in *that ate the cheese...* , which, in turn, is right-embedded in the matrix sentence. The above sentence is easily understood.

From these example, it is assumed that center-embedding (but not marginal-embedding) reduces comprehensibility of sentences. In this paper, I would like to make some remarks on the position of relative clauses, which have been hitherto ovelooked by scholars, especially by scholars whose native language is English. I would also like to argue that the position of relative clauses plays an important role in the diachronic aspect of languages, particularly in word order phenomena.

2. NOTES ON THE POSITION OF RELATIVE CLAUSES

It is a typologically well-known fact that with overwhelmingly more than chance frequency OV languages have the relative clause before the head noun, whereas VO languages have the relative clause after the head noun (cf. Greenberg 1966 ; Vennemann 1972 ; Lehmann 1978). Unfortunately, typologists leave open the question why this universal exists. The first attempt at explanation of this universal is made by Kuno (1974), in which perceptual difficulties caused by center-embedding have the crucial importance. I will summarize his discussion briefly. Three hypothetical sentences corresponding to (3a-c) will be used:

(3) a. The boy who Mary loved died.

      b.   The boy who Mary loved hated Jane.

      c.   Jane hated the boy who Mary loved.

(3a) involves a relative clause on the subject of an intransitive construction, (3b) a relative clause on the subject of a transitive construction, and (3c) a relative clause on the object position. The problem of where the relative pronoun appears, if it does, will be ignored here to make our discussion less complicated. The sentences that we should consider are:

(4)   *SOV* with *Prenominal* Relative Clauses

      a.   [Mary loved] boy died.

      b.   [Mary loved] boy Jane hated.

      c.   Jane [Mary loved] boy hated. (center–embedding)

(5)   *SOV* with *Postnominal* Relative Clauses

      a.   Boy [Mary loved] died. (center–embedding)

      b.   Boy [Mary loved] Jane hated. (center–embedding)

      c.   Jane boy [Mary loved] hated. (center–embedding)

(6)   *VSO* with *Prenominal* Relative Clauses

      a.   Died [loved Mary] boy. (center–embedding)

      b.   Hated [loved Mary] boy Jane. (center–embedding)

      c.   Hated Jane [loved Mary] boy. (center–embedding)

(7)   *VSO* with *Postnominal* Relative Clauses

      a.   Died boy [loved Mary].

      b.   Hated boy [loved Mary] Jane. (center–embedding)

      c.   Hated Jane boy [loved Mary].

These example show that typologically infrequent types, that is to say, SOV with postnominal relative clauses (see (5)) and VSO with prenominal relative clauses (see (6)), never fail to produce center–embedded structures. On the other hand, in the prenominal positioning for SOV languages (see (4)) and the postnominal positioning for VSO languages (see (7)), which are typologically prevalent, the chances that we get center–embedded structures are one out of three, assuming that transitive and intransitive sentences are equally frequent. On the assumption that center–embedding significantly reduces the comprehensibility of sentences, Kuno (1974) cogently argues that languages minimize syntactic patterns that cause parceptual difficulties. As for the choice between the prenominal and postnominal positioning of relative clauses, SOV and VSO

languages do, in fact, wisely choose the better of the two alternatives available.

It should be noted, however, that neither the prenominal nor the postnominal positioning of relative clauses is free from producing center-embedded structures. To be specific, center-embedded structures will result when a preposed relative clause modifies the object in SOV languages (see (4c)) and a postposed relative clause modifies the subject in VSO languages (see (7b)). I would like to suggest that in these cases languages employ devices to move the center-embedded relative clause into the marginal position of the sentence so as to make the sentence more comprehensible.

We may begin by taking example from Japanese, a typical SOV language :

    (8) ? John ga [Mary ga syoonen ni kaita] tegami o yonda.
                    boy   to wrote letter   read
      'John read the letter that Mary wrote to the boy.'

    (9) [Mary ga syoonen ni kaita] tegami o John ga yonda.

Japanese obligatorily puts a relative clause before the head noun as do almost all the SOV languages. Example (8) is difficult to understand in Japanese because the relative clause *Mary ga syoonen ni kaita* 'that Mary wrote to the boy' is center-embedded in the matrix sentence. On the contrary, (9) resulting from the inversion of the subject and the object in (8) is easy to comprehend. Note that the relative clause *Mary ga syoonen ni kaita* is left-embedded, not center-embedded.

The situation becomes much worse in the case of a sentence with double center-embedded relative clauses :

    (10) *John ga [Mary ga [Jane ga aisite iru] syoonen ni kaita tegami o yonda.
                         loving is   boy   to wrote letter   read
      'John read the letter that Mary wrote to the boy that Jane was in love with'

(10) is extremely awkward because the innermost relative clause *Jane ga aisite iru* '(that) Jane is in love with' is center-embedded in the larger relative clause *Mary ga ... syoonen ni kaita* '(that) Mary wrote to the boy', which, in turn, is center-embedded in the matrix sentence. On the other hand, (11), which results from the inversion of the subject and the object in (10), is perfectly comprehensible :

    (11) [[Jane ga aisite iru] syoonen ni Mary ga kaita] tegami o John ga yonda.

Note that the innermost relative clause *Jane ga aisite iru* is left-embedded in the larger relative clause, which is in turn left-embedded in the matrix sentence.[2]

Another interesting parallel phenomenon is drawn from Irish,[3] a typical VSO language, in which relative clauses appear to the right of their head nouns. Example (12) is not an acceptable sentence in Irish:

> (12) *imeoidh an fear [a tháinig inné] inniu.
> will—go—away the man who came yesterday today
> 'The man who came yesterday will go away today.'

It should be noted that in (12) the relative clause *a tháining inné* 'who came yesterday' is center—embedded, not marginal—embedded. When a relative clause modifies the subject in Irish, the subject—relative clause occupies the initial position of the sentence, followed by the verb.

> (13) an fear [a tháinig inné], imeoidh sé inniu.
> the man who came yesterday will—go—away he today

The acceptable sentence in Irish is not (12), but (13). Special attention must be paid to the fact that in (13) the verb in the matrix sentence *imeoidh* 'will—go—away' is followed by the pronoun *sé* 'he', which is coreferential with *an fear* 'the man', the head noun of the relative clause *a tháining inné* 'who came yesterday'. It is clear that in (13) the subject—relative clause *an fear a tháiniq inné* 'the man who came yesterday' is initially extraposed and that there is a boundary between the relative clause and the *imeoidh* 'will—go—away', so the relative clause is not center—embedded in (13).[4]

On the above discussion in this section, I assume that languages, in general, embody devices to avoid center—embedding which causes perceptual difficulties.

3. A DIACHRONIC ANALYSIS OF THE POSITION OF RELATIVE CLAUSES

In this section I would like to suggest that the position of relative clauses also plays an important role from the diachronic point of view. My analysis will be limited to Indo—European languages. Recent literature shows more and more evidence that the unmarked word order in Proto—Indo—European can be reconstructed as basically SOV, though reconstructive methods taken by scholars are quite varied (Watkins 1964; Dressler 1969, 1971; Lehmann 1974 et al.; Grace 1971). When we consider the subsequent development of daughter languages on the assumption that Proto—Indo—European was a SOV type, we notice that OV characteristics are preserved or even strengthened in the more easterly Indo—European language whereas the western Indo—European languages have generally shifted to VO order. In my recent papers, I proposed that topicalization,

case marking and reinterpretation were closely related to the change from SOV to SVO in the Germanic languages.[5] The position of relative clauses may be conceived as another factor which has affected that word order change.

Recent studies (Haudry 1979; Chr. Lehmann 1979; Raman 1973) show that relative clauses generally preceded antecedents during the time when Proto-Indo-European was spoken, as is illustrated by the following examples in (14) - (16):

(14) Rig Veda: yáḥ sunvatáḥ   sákhā tásmā índrāya

who soma-presser friend to-that Indra

gā́yata

sing(2nd pl.)

'who is the friend of the soma-presser, to that Indra sing ye.'

(15) Hittite: kue   GAL$^{HI.A}$ akkuškizzi

which(acc.pl.n.) beakers   he-is-accustomed-to-drink

ta   ape-pat   ekuzi

Ptc. those(acc.pl.n.) - Ptc. he-drinks

'The beakers that he is accustomed to drink up, those indeed he drinks.'

(16) Greek: οὕστινας ... ἴδοι ... τοὺς νεικέεσκε

who   saw   them he-blamed

'He blamed those who saw...'

In Example (14) from Rig Veda, the relative clause *yaḥ sunvatáḥ sákhā* 'who is the friend of the soma-presser' precedes the antecedent *tásmā índrāya* 'to that Indra'. By the same token, in example (15) from Hittite, the relative clause *kue GAL$^{HI.A}$ akkuškizzi ta* 'the beakers that he is accustomed to drink up' is put to the left of the antecedent *ape-pat* 'those'. Similarly, in example (16) from Greek, the relative clause *οὕστινας... ἴδοι...* 'who saw...' is followed by the antecedent *τοὺς* 'them'.

In the ancient Germanic languages which were basically SOV,[6] however, relative clauses followed head nouns as early as in runic inscriptions, and there seem to be no traces of relative clauses having been preposed to head nouns:

(17) ... sAR [=sa-eR] þat bArutR

he-who   this breaks

'... he who breaks this.'

Example (17) from the Björketorp stone dated about 600-650 A.D. shows that the relative

clause *eR þat bArutR* 'who breaks this' is put to the right of the antecedent *sa* 'he'. It is interesting that in the *Anglo—Saxon Chronicle* there are S − V − [O − Rel] sentences like example (18), but S − [O − Rel] − V sentences like (19) are not attested as far as my survey is concerned:

(18) þær   man sloh eac cc preosta   [þa comon þyder]

        there man slew also 200 of—priests who came   thither

        'there they slew also two hundred of priests who had come thither'

(19) *þær man eac cc preosta [þa comon þyder] sloh

Note that in an attested type of sentences like (18) the relative clause occupies the marginal position (=right margin) of the sentence and that in an unattested type of sen- tence like (19) the relative clause is center—embedded. I suppose on the basis of this fact that the position of relative clauses is one of the important factors which cause change in word order.

4. SUMMARY

At this point I shall summarize the arguments in this paper very briefly. Two general conclusions are to be drawn from this study.

1. I suggest that languages embody devices to move the center—embedded relative clause into the marginal position of the sentence so as to make the sentence more in— telligible.

2. I also suggest that perceptual difficulties caused by center—embedded play an important role in word order change.

5. REMAINING PROBLEMS

Kuno's explanation, based on the assumption that languages avoid perceptual diffi- culties, appears to make an erroneous prediction on the position of relative clauses in SVO languages. Observe the following patterns:

(20) *SVO* with *Prenominal* Relative Clauses

        a. [Mary loved] boy died.

        b. [Mary loved] boy hated Jane.

        c. Jane hated [Mary loved] boy. (center—embedding)

(21) *SVO* with *Postnominal* Relative Clauses

a. Boy [Mary loved] died. (center-embedding)

b. Boy [Mary loved] hated Jane. (center-embedding)

c. Jane hated boy [Mary loved].

Postnominal positioning of relative clauses guarantees center-embedding on the subject position. Such being the case, the theoretically favored type would be SVO with prenominal relative clauses, but it is extremely rare. I do not know any SVO languages with prenominal relative clauses other than Chinese. Kuno attempts to explain this discrepancy by stating that in SVO languages like English, nominals in addition to the object commonly occur more often postverbally than preverbally. Comparing (22) and (23), we notice that center-embedding occurs in (22):

(22) Tom studied (linguistics) with [Mary introduced to him] girls. (center-embedding)

(23) Tom studied (linguistics) with girls [Mary introduced to him].

Kuno argues that if all these postverbal noun phrases are taken into consideration, SVO languages are more similar to VSO languages than to SOV languages.

Besides the above explanation by Kuno, it seems to me that SVO languages have something favorable in the speech perception mechanism which does not exist in VSO and SOV languages. The most crucial difference between SVO languages and the other two types is that the finite verb stands between S and O in SVO languages, whereas in VSO and SOV languages the verb occupies the marginal position of the sentence. In other words, the verb in a matrix sentence in SVO languages, plays a role in marking the boundaries of NP(S) and NP(O), so center-embedding of relative clauses in SVO languages causes, I assume tentatively, less perceptual difficulties than that in VSO and SOV languages.

Another interesting problem which remains to be solved is the position of relative clauses in Old Irish. I shall give a brief description of relative clauses in Old Irish.

Old Irish did not have any definite forms for the relative pronoun. The relative clauses can be classified into *leniting* relative clauses and *nasalizing* relative clauses. When the antecedent is felt as the subject, the former is obligatorily used.

Special relative forms occurs only in absolute (=simplex) forms, and here only in 3sg. and pl. and 1pl., where lenition appears optionally in the initial of these special relative forms:

(24) in claideb c(h)eles   in fer
      the sword   hides(Rel. 3sg.) the man
      'the sword which the man hides'

(25) in claideb c(h)elmae
                (Rel. 1pl)
      'the sword we hide'

(26) in claideb c(h)eltae
                (Rel. 3pl)
      'the sword they hide'

When the verb of the relative clause is 1 or 2 sg. or 2 pl. (i.e. where there is no special relative form), the dummy particle *no* is used and the following conjunct form shows lenition:

(27) in salm   no–chanaim
      the psalm sing(1sg)
      'the psalm I sing'

(28) in salm no–chanai
              (2 sg)
      'the psalm you sing'

(29) in salm no–chanaid
              (2pl)
      'the psalm you(pl) sing'

In compound verbs, the initial of the stressed syllable was lenited (Note that stress never falls on prefixes.).

(30) in fer ad–chí   in macc
      the man see(3 sg) the boy
      'the man who sees the boy *or* the man the boy sees'

The interesting point is that when the subject of a verb is followed by a relative clause and this in turn by an object and / or adverbial phrase, Old Irish, a VSO language, puts the subject and the relative clause first in the sentence, and then the verb, object, etc., as is illustrated in example (31).

(31) In fer no·thēged iarsint   śligi do·bered in
      the man came(Rel) along—the way   brought the

      n—aēi   isin   coire.
      flesh—fork in—the caldron

      'The man who came along the way brought the flesh—fork in the caldron.'

This transformation is obligatory as far as the texts I read are concerned.[7] What should be noted here is that in the resultant sentence like (31) the relative clause is still center—embedded. Jay Jasanoff (personal communication) told me that in (31) *is é* 'it is he' might have been omitted after the relative clause *in fer no·thēged iarsint śliqi* 'the men who came along the way' and that *do·bered* '(he) brought' might be a lenited relative form. (It should be kept in mind that the occurrence of lenition in *do·bered* is ambiguous judging from the spelling only. If *do·bered* is a relative form, *b* of *do·bered* is pronounced as [v] with lenition.) If his interpretation is correct, the English gloss for (31) will be approximately 'The man who came along the way, it is he who brought the flesh—fork in the caldron.' and in that case we do not get center—embedding.

It seems to me, however, that basically the sentence structure of (31) is no different from that of (32):

(32) ind fir file   isin   tempul, ad·ciat inna sacartu
      the men who—are in—the temple see   the priests
      'The men who are in the temple see the priests.'

In (32), *ad·ciat* '(they) see' is obviously a finite verb form, not a relative form, because we would get *ad·chiat* with lenition if it were a relative form. At the present stage of my career I cannot say anything convincing on this problem, but I do not think that there are any substantial reasons supporting that *do·bered* in (31) is a relative form. If it is a finite verb form, Old Irish provides a crucial counter—example against the analysis based on center—embedding.[8] The situation in Old Irish is very difficult to deal with. What we should do next would be to assemble a lot of examples including a relative clause like example (31) and to examine on the basis of the spelling if verb forms following S—Rel show lenition or not. When lenition occurs, *c*, *p*, *t*, *s* and *f* become *ch*, *ph*, *th*, *ś* and *f* respectively.

REMARKS ON THE ROSITION OF RELATIVE CLAUSES

NOTES

＊ I am grateful to Professors Jay H. Jasanoff and James W. Gair for their comments and helpful discussions. Of course, I alone am responsible for any form of errors this paper may contain.

1) In recent years there has been an increasing interest in the study of relative clauses. Gair (forthcoming), among others, deserves special attention. He introduces the idea 'determinancy' into the analysis of relative clauses, which is of value in providing a consistent explanation, but it should be noted that he does not totally reject the virtue of center-embedding.

As for the identical behavior of the relative clause in general which exists within languages of different types, see Benveniste (1957).

2) Turkish, another typical SOV language , also tends to put the heavy object NP in the initial position of the sentence. This suggestion is due to Ared Misirliyan.

3) Modern Irish is meant by 'Irish'. Old Irish provides a situation much more complicated but all the more interesting. A brief description of the position of rel-ative clauses in Old Irish is found in section V of this paper.

4) I am indebted to Hedi Belazi for pointing out to me that colloquial Arabic (not written Arabic) has the same tendency as Irish. Arabic is VSO in basic word order.

5) See Yoshida (1981a, 1981b, forthcoming)

6) In fact, both SVO order and SOV order are attested in old Germanic languages. I would like to assume, however, that SOV is the archaic word order and SVO is an innovation. The reason why I regard SOV as archaism is that the SOV order is pre-vailing in subordinate clauses which are considered to reflect the unmarked word order pattern. As for the detailed discussion on this problem, see Yoshida (forthcoming).

7) *Scéla mecce Meic Dathó*, ed. by Rudolf Thurneysen (The Dublin Institute for Advanced Studies) and *Táin Bó Fraích*, ed. by Wolfgang Meid (The Dublin Institute for Advanced Studies).

8) It is interesting in this connection that when subject is a heavy NP with a mod-ifier , Old Irish tends to move it to the initial position as is shown by the follow-ing example.

Kazuhiko YOSHIDA

díth lúath Lena   cen   logud do·rat úath is airomun
death swift of Lena without pardon gave   terror and fear
'The swift death of Léna without a pardon gave terror and fear'

Notice that the resultant order is SVO, in which a verb marks the boundaries of NP(S) and NP(O).

REFERENCES

Benveniste, É. 1957 "La phrase relative, problème de syntaxe
    générale", *Bulletin de la Société de Linguistique de Paris* 53, 39–54.
Dressler, W. 1969 "Eine textsyntaktische Regel der indogermanischen Wortstellung",
    Zeitschrift für vergleichende Sprachforschung 83, 1–25.
———————— 1971 "Über die Rekonstruktion der indogermanischen Syntax",
    Zeitschrift für vergleichende Sprachforschung 85, 5–22.
Gair, J. W. "Ambiguity is No Relative Matter or How Do You Treat Your Doubtful
    Relatives", To appear in *Festschrift for Charles F. Hockett*.
Grace, E. C. Jr. 1971 *The Order of Constituents in Indo–European*, Ph.D. dissertation,
    The University of Texas at Austin
Greenberg, J. H. 1966 "Some Universals of Grammer with Particular Reference to
    the Order of Meaningful Elements", *Universals of Languages*, ed. by J. H. Greenberg,
    73–113. MIT Press, Cambridge Mass.
Haudry, J. 1979 "L'antéposition de la relative en indo–européen",
    La Linguistique 15, 101–110.
Kuno, S. 1974 "The Position of Relative Clauses and Conjunction",
    Linguistic Inquiry 5, 117–136.
Lehmann, W. P. 1974 *Proto–Indo–European Syntax*, University of Texas Press, Austin.
Raman, C. F. Justus. 1973 *The Old Hittite Relative Construction*, Ph.D. dissertation,
    The University of Texas at Austin.
Vennemann, Th. 1973 "Explanation in Syntax", *Syntax and Semantics* 2, ed.
    by J. P. Kimball, 1–50. Seminar Press, New York.
Watkins, C. 1964 "Preliminaries to the Reconstruction of Indo–European Sentence
    Structure", *Proceedings of the 9th International Congress of Linguists*, ed. by H. G. Lunt.
    1035–45. Mouton, The Hague.
———————— 1976 "Towards Proto–Indo–European Syntax: Problems and Pseudo–Problems",
    Papers from the Parasession on Diachronic Syntax, ed. by S. B. Steever et al., 305–326.
    Chicago Linguistic Society, Chicago.

Yoshida, K. 1981a " Towards Word Order Change in the Indo-European Languages ",
    Paper presented at the 82nd General Meeting of the Linguistic Society of Japan.
————————— 1981b " A Preface to Diachronic Investigation of Indo-European Syntax ",
    Gengo Kenkyu (*Journal of the Linguistic Society of Japan*) 80, 69-95.
————————— " Towards Word Order and Word Order Change in the Older Germanic
    Languages ", To appear in *The Journal of Indo-European Studies*.