In this paper, I will consider some questions concerning the syntactic structure of Japanese relative clauses. In particular, I will compare two analyses which differ crucially in the presence or absence of an empty operator in COMP. The two analyses are informally sketched in (1) and (2) for the noun phrase Hanako-ga kaita tegami 'the letter which Hanako wrote'.

(1) NP ~ S ~ COHP ~ Hanako-ga e kaita tegami
(2) NP ~ S ~ COHP ~ Hanako-ga e kaita tegami

In (1), the relative clause contains an empty operator in COHP binding the gap - essentially the mirror image of English relative clause structure. The head NP tegami is related to the relative clause by predication. The relationship between head NP and gap is indirect, mediated through the COHP position. In (2), on the other hand, there is no empty operator; the head NP tegami itself is the relativization operator, and it binds the gap in the relative clause directly.

In one form or another, these two basic approaches are familiar from the literature on Japanese linguistics. I will compare them here in the framework of the Government and Binding Theory (Chomsky 1981, 1982), and I will tentatively conclude that there is some evidence in favor of the structure in (2), without empty operator, a result which has some consequences for the theory of empty operators in general.

Since an analysis with an operator in COHP is well motivated for relative clauses in a variety of languages, English among them, it could be argued that (1) is the unmarked assumption. (2), on the other hand, seems closer to the surface facts of Japanese, where overt elements corresponding to operators never appear in COMP, neither in relative clauses nor in questions. Chomsky (1982) considers both possibilities for other cases where no overt element appears in COMP in relative clauses, without reaching a firm conclusion.
Let us consider, then, whether there is any evidence in Japanese which could bear on the issue. One sort of evidence can be found in the behavior of relative clauses with respect to weak crossover. In English, it is well known since Wasow’s (1972) dissertation that relative clauses differ from questions in this respect: questions, but not relative clauses, show weak crossover effects. We can see this in the paradigm given in (3), which is taken from Chomsky (1992).

(3) a. his mother loves John
   b. the man who his mother loved best
   c. who did his mother love best
   d. *his mother loves everyone

(3a) is grammatical with coreference between his and John. The corresponding relative clause in (3b) is grammatical, too. But the question (3c) is ungrammatical. Similarly, if we replace John in (3a) by a quantifier like everyone, the result is ungrammatical under the intended interpretation.

Chomsky (1992: 92–95) proposes the following explanation for these facts. (3c) and (3d) are excluded by the Bijection Principle proposed by Koopman and Sportiche (1981), which is given in (4) (in the formulation of Saito & Hoji (1983)).

The Bijection Principle

Every operator must locally bind exactly one variable, and every variable must be locally bound by exactly one operator.

The Bijection Principle applies at LF. (3c) now has the LF representation in (5), and we see that the operator who is coindexed with two elements: his and the gap.

(5) [ who (di)w] [ his mother love e best] [NP i S' j S i ]

(3a) is excluded in the same way, since everyone undergoes Quantifier Raising, leaving a trace, and ends up coindexed with both the pronoun his and the trace in object position.

The relative clause in (3b), on the other hand, can have the LF representation (6).

(6) [ the man [ who [ his mother loved e best]]
   NP i S' j S i ]

In this case, the operator who is only coindexed with one element, the gap, whereas the pronoun his is coindexed with the head noun, and the indices of head and operator differ at LF. So there is no violation of the Bijection Principle. After LF, a rule of Predication applies to (6), and this rule sets i equal to j. This gives us the intended interpretation of (3b), but there is no violation of the Bijection Principle, since this principle applies only at LF, not later. Notice that this explanation relies on the fact that there are two elements – head NP and operator in COMP – which play a role in relative clauses, while there is only one element – namely the wh-operator in COMP – which plays a role in questions. This difference is reflected in differing indexing structures which we can schematically represent as follows:

(7) a.
   [ operator pronoun gap ]

b.
   [ head operator pronoun gap ]

Now, if Japanese relative clauses have the structure in (1), we would expect them to behave just like English relative clauses, there should be no weak crossover effects. But if they do not have an operator in COMP, we might expect them to behave like English questions, because then head noun and operator would be one and the same entity, and there could be no later coindexing between the two which could circumvent the Bijection Principle. The indexing structure would be like this:

(8)
   [ pronoun gap head/operator ]

It is not easy to test these predictions. As pointed out by Saito and Hoji (1983), we cannot use pronominal forms like kare or sono hitsu to correspond to English pronouns in potential weak crossover situations. These forms can never be bound by an operator, whether locally or nonlocally. For example, even the sentence (9) is ungrammatical, if kare is intended to be bound by soremekara.
This fact implies that these forms cannot be variables, and therefore the Bijection Principle is irrelevant to them. Saito and Hoji (1983), who studied weak crossover in Japanese, found that jibun is the right element to look at; it can function as a variable and shows weak crossover effects. Two of their examples are given in (10) and (11) (Saito & Hoji 1983: 248-249).

(10) Hanako-ga jibun -no koto-ga Jirö -o yūutsu-ni shita
   everyone-ACC his -GEN failure-NOM depressed made
   The fact that Hanako dislikes him depresses Jirö.

(11) ?* Hanako-ga jibun -no koto-ga
      everyone-ACC his -GEN failure-ACC dislikes
      His failure depressed everyone.

(11) is considered to be worse than (10), and this contrast can be accounted for by the Bijection Principle: daremo in (11) undergoes Quantifier Raising, and at LF, it is in an S-adjoined position, from where it binds both its trace and the jibun which is part of the subject NP, violating the Bijection Principle. Notice that only certain somewhat exceptional occurrences of jibun can enter into weak crossover violations; in order to fall under the Bijection Principle, jibun must be a variable; in order to be a variable, it must not be locally A-bound, in particular, not A-bound by a subject (assuming that the subject position is an A-position). Normally, however, jibun has to be bound by a subject. Relevant cases, then, are those — first pointed out by Noriko Akatsuka — where certain psychological predicates like yūutsu-ni suru 'make depressed', zetsubō-ga oiyakazu 'drive into despair' allow tacotual object-antecedents for jibun.

(12) exemplifies the full weak crossover paradigm in Japanese, including relative clauses, parallel to the English paradigm in (3).
There is no empty operator, therefore the head noun *hito* has to be coindexed with both the gap and the pronoun *jibun*.

There are several ways to show that what is involved is really a violation of a principle at LF. It is well known that the so-called aboutness relation plays an important role in Japanese thematicization and relativization, a matter to which I will return. It is plausible that aboutness relations, which involve pragmatic factors of various kinds, are not established at a syntactic level, but at some point later than LF. Aboutness relations do not create weak crossover effects corresponding to those in (9b). This is illustrated in (15) and (16). (15) is a simple sentence with a psychological predicate.

(15) jibun -no shippai-ga e yōtsu-ni shita
    \[ jibun \text{-no} \quad \text{head noun} \quad \text{hit}\text{.}'s failure was in depression \]

(16) shows two different relative clauses formed from this sentence.

(16) a. ?*jibun -no shippai-ga e zetsubō-e oiyatta
    \[ jibun \text{-no} \quad \text{head noun} \quad \text{hit}\text{.}'s failure drove into desperation \]

b. jibun -no shippai-ga kodomo-o zetsubō-e oiyatta
    \[ jibun \text{-no} \quad \text{head noun} \quad \text{children}'s failure drove into desperation \]

(16a) has a real gap in object position, and it is ruled out by the Bijection Principle at LF. In (16b), on the other hand, there is an aboutness relation between *hito* and *kodomo* (under a certain interpretation). According to my informants, (16b) is more acceptable than (16a). This indicates that (16a) is excluded by a principle which applies strictly at LF.

A second kind of evidence leading to the same conclusion comes from certain facts about head-internal (or pivot-independent) relative clauses in Japanese. Kuroda pointed out the existence of such relative clauses in Japanese (see Kuroda 1974, 1975-76, 1976-77). The examples in (17) and (18) illustrate the phenomenon. (17) contains a normal headed relative clause.

(17) omawari-wa [e akiya-kara mono-o hakubidasuiteiru]
    \[ \text{policeman-TOP empty house-from things-ACC carry out} \]
dorobō -o tsukamaeta.
    \[ \text{thief-ACC caught} \]

(18) shows a head-internal version of the same relative clause.

(18) omawari-wa [dorobo-ga akiya-kara nō o hakubidasuiteiru]
    \[ \text{policeman-TOP thief-HON empty house-from things-ACC carry out} \]
hakubidasuiteiru-no-o tsukamaeta.
    \[ \text{thief-ACC caught} \]

Kuroda showed that head-internal relative clauses, historically a residue of a productive relative clause formation strategy in Classical Japanese, have a highly restricted occurrence in Modern Japanese. They are possible only under certain pragmatic conditions (Kuroda's Relevancy Condition). Itō (1984) shows that head-internal relative clauses differ from ordinary headed relative clauses with respect to weak crossover. The examples (19) and (20) (from Itō 1984) illustrate this difference.

(19) ?*[Hanako-ga jibun -o kiratteiru koto-ga e
    \[ Hanako-ga \text{-no} \quad \text{subject} \quad \text{Hanako} \text{'s dislike fact} \]
yōtsu-ni shiteiru Jiro -o nagusameta.
    \[ depressed made -ACC consold \]

(20) *[Hanako-ga jibun -o kiratteiru koto-ga
    \[ Hanako-ga \text{-no} \quad \text{subject} \quad \text{Hanako} \text{'s dislike fact} \]
Jiro -o yōtsu-ni shiteiru no-o nagusameta.
    \[ depressed made -ACC consold \]
Let us turn to the first question. There is indeed direct evidence for a relative clause structure without empty operator, and it is familiar from the literature. The many similarities between relativization and thematicization first pointed out by Kuno (1973: 243-260), and in particular the existence of relative clauses without a gap, are relevant in this context. (23) and (24) are representative examples.

(23) konya kusa-ga shinde shimatta Hanako
   fiancé - Nom died
'Thanako, who (was affected by the fact that) her fiancé died'

(24) Richard Burton-ga shinde shimatta Elizabeth Taylor
   - Nom died
'Elizabeth Taylor, who (was affected by the fact that)
Richard Burton died'

In (24), there can be no empty operator, because there is no variable it could possibly bind, and vacuous operators are prohibited in general. This evidence is fairly straightforward, and it immediately tells the child learning Japanese that relative clauses without empty operators are possible.

There can be no serious doubt, then, about the existence of this structure. This does not imply, however, that relative clauses with empty operator are impossible in cases where the relative clause contains a gap, and this leads us to our second question: How can we rule out a second, alternative, derivation with empty operator in these cases?

To arrive at this result, we have to find a plausible way of restricting the distribution of empty operators in Universal Grammar, we have to give some more content to the theory of empty operators. Let me make a tentative suggestion. Keeping the properties of empty elements as close as possible to those of overt elements has been a leading idea in GB theory, well represented in Chomsky (1995). Apart from principles of local identification and local sanctioning (like the ECP) and apart from the Case Filter, their typology and distribution is identical, and a proliferation of empty categories with special properties and distribution is undesirable. From this perspective, empty operators in COMP would be somewhat disturbing in Japanese, since overt elements corresponding to operators are never moved to this position in the syntax. The problem poses itself still more seriously when we consider languages with a sentence-final COMP position in general: rightward wh-movement of overt elements into a sentence-final COMP seems to be nonexistent. It would be quite undesirable if we had to allow rightward movement to COMP only for empty elements.
Generalizing from these considerations, we could assume that, in a given language, empty operators can occur only in structural positions where overt operator-elements can occur as well, in Operators. We could call this the “principle of paradigmatic implausibility” for empty operators. Such a principle is not in COI? in Japanese relative clauses, as desired.

To conclude, I would like to return to the question of relative clause structure and weak crossover, extending the analysis generally weak crossover effects should occur when the relative clause head functions simultaneously as a relativization operator. It is interesting that this prediction is borne out even in languages normally do not occur in relative clauses. We have to look at a relative clause, namely free relatives. If head analysis proposed by Bresnan & Grimshaw (1978), we expect weak crossover effects in free relatives. And they do indeed occur, as illustrated in (25). I will here concentrate on the German example is also unacceptable. (26) shows a corresponding normal relative clause, there is no weak crossover effect.

(26) der Mann, der (sogar) seine Mutter e hasst
    the man who (even) his mother hates

The reason why (25) is bad cannot be attributed to the quantified nature of the noun phrase, because (27), with a quantified head NP, is perfectly acceptable in German.

(27) jeder Mann, den (sogar) seine Mutter e hasst
    every man, who (even) his mother hates

Assuming that (25) has the LF representation in (28), the weak crossover effect in (25) is explained by the Bijection Principle, analogous to the Japanese examples discussed above.*

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Bibliography


