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ON JAPANESE INTERNALLY HEADED RELATIVE CLAUSES*

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1. Introduction

This paper re-examines the acceptability conditions for so-called internally headed relative clauses (IHRCs) in Japanese. Unlike previous attempts which have stated the acceptability of IHRCs solely in terms of their pragmatics, I will show that some of the conditions must be stated in syntactic and semantic terms.

After presenting the structural descriptions of typical relativization and IHRCs, I will discuss the acceptability conditions for three aspects of the construction, namely, syntax, semantics, and pragmatics¹. Furthermore, I will argue that the construction has two functions: to present a part-whole relationship between two events; and to identify a physical entity within the embedded clause. Finally, I will argue that this duality is apparent in the interaction and discrepancy between the syntax and semantics of the construction. Unless specified, IHRCs and relative clauses refer to those in Japanese.

2. Structural differences between typical relativization and IHRCs

A common type of relative clause in Japanese is externally headed relative clauses (EHRCs). An EHRC corresponds to an argument or an adjunct in the embedded clause and it is unexpressed inside the clause. In (1) below, (NP_i-case_x) represents the phonetically missing target of relativization and its case marker, or a "gap" in the embedded clause. The first instance of NP_i (the target of relativization) and the second instance of NP_i (the head NP) both refer to the same entity. Case_y which is attached to the NP as a whole indicates its role in the main clause. Throughout this paper, the term typical relativization refers to EHRCs as in (2)².

- (1) [[... (NP_i-case_x) ... V] NP_i]-case_y
 where NP_i: the target of relativization
 case_{x,y}... : case markers
 (NP_i-case_x): a gap
 V: the predicate
 NP_i : the head NP
- (2) Taroo-wa [[(NP_i-ga) hasittekita] Hanako_i]-o tukamaeta.
 TOP NOM come-running-TA ACC catch-TA
 'Taro caught Hanako who came running.'³

An IHRC, on the other hand, is a gapless embedded clause followed by the nominalizer *no* instead of a full NP as shown in the structural description (3). In (4a), the target of relativization is *Hanako* and no argument is lacking in the embedded clause. Here, the morpheme *no* following the embedded clause cannot be replaced by the target *Hanako* as shown in (4b), which suggests that this *no* is not a pronominal, but a nominalizer⁴.

- (3) [[... NP_i-case_x ... V] no]-case_y
 where NP_i : the target of relativization
 case_{x,y}... : case markers⁵
 V: the predicate
 no: Nominalizer (NO)
- (4) a. Taroo-wa [[Hanako_i-ga hasittekita] -no] -o tukamaeta.
 TOP NOM come-running-TA NO ACC catch-TA
 'Taro caught Hanako who came running,' or 'Hanako came running, and
 Taro caught her.'
 b. *Taroo-wa [[Hanako-ga hasittekita] Hanako]-o tukamaeta.

Although the claim in this paper is that IHRCs are different from typical relativization, the term IHRC is used by convention. As can be seen in (4a), IHRCs can be translated into English using either a 'restrictive' relative clause (to focus on the relativizing function of IHRCs) or a so-called 'non-restrictive' relative clause (to focus on their difference from typical relativization). However, only the translation using a 'restrictive' relative clause is given for the IHRCs in the rest of the paper.

3. The acceptability conditions of IHRCs

While typical relativization can be an argument or an adjunct of the main predicate in any sentence, the acceptability of an IHRC depends on how it is used in a sentence. For example, in (4a), the *no*-marked IHRC *Hanako-ga hasittekita-no* 'Hanako's coming running', is followed by the accusative case and is used with the main predicate *tukamaeta* 'caught', giving rise to an acceptable sentence. However, in (5b), the same IHRC, when followed by the dative case and used with the verb phrase *purezento-o watasita* 'handed a present' in the main clause, results in an unacceptable sentence unlike its EHRC counterpart in (5a).

- (5) a. Taroo-wa [hasittekita] Hanako-ni purezento-o watasita.
TOP come-running-TA DAT present -ACC hand-TA
'Taro handed a present to Hanako who came running.'
b. *Taroo-wa [Hanako-ga hasittekita]-no-ni purezento-o watasita.
NO-DAT present-ACC hand-TA
Intended: 'Taro handed a present to Hanako who came running.'

In the following sections, I will define the conditions for an acceptable IHRC. Kuroda proposed what he calls a "relevancy condition" in which he stated that an IHRC must be interpreted pragmatically in such a way as to be directly relevant to the main clause event (Kuroda 1976: 270). In other words, his "relevancy condition" exclusively dealt with the pragmatic relationship between the embedded clause event and the main clause event. In contrast, I argue that in addition to the pragmatic conditions, there are syntactic and semantic conditions which must be fulfilled and which must be stated separately.

3.1. Syntactic conditions

I argue that the main predicate takes an IHRC followed by the nominalizer *no*, as its argument. The case marking after the nominalizer indicates that the *no*-marked IHRC as a whole is syntactically an argument of the main predicate. In (6a) (same as (4a)), the *no*-marked IHRC is syntactically the direct object of the main predicate *tukamaeta* 'caught' as the accusative case marker after *no* suggests. The sentence can be passivized as shown in (6b), and here the *no*-marked IHRC

becomes the subject of the sentence taking the nominative case. Thus, the *no*-marked IHRC is a part of the main clause in that it is syntactically an argument of the main predicate.

(6) a.=(4) a.

Taroo-wa [Hanako-ga hasittekita] _____ -no -o tukamaeta.
 TOP NOM come-running-TA NO ACC catch-TA

'Taro caught Hanako who came running.'

b. [Hanako-ga hasittekita] _____ -no-ga Taroo-ni tukamaerareta.
 NOM come-running-TA NO NOM by catch-PASS-TA
 'Hanako who came running was caught by Taro.'

3.2. Semantic conditions

The semantics of an IHRC is determined by the semantics of the main predicate. First of all, the main predicate requires, as will be discussed later, at least one of its semantic arguments to be present in the IHRC. For example, in (6c), the main verb *tukamae-ta* 'caught' takes a physical entity as the patient of the action, but not an event. Therefore, even though the syntactic direct object is the *no*-marked IHRC, the patient of the main predicate within the IHRC, namely *Hanako*, is taken as the semantic argument of *tukamaeta*.

(6) c. Taroo-wa [Hanako-ga hasittekita] _____ -no -o tukamaeta.
 TOP NOM come-running-TA NO ACC catch-TA
 'Taro caught Hanako who came running.'

At the same time, the main predicate has to be a verb of physical action in order for it to take a physical entity within the IHRC as one of its arguments. Thus, typically the main predicate of an acceptable IHRC is a verb of physical contact such as *tukamaeta* 'caught' in (6c).

Hirose and Ohori (1992) have observed that compared to typical relativization, IHRCs have restricted distribution. An IHRC usually occurs either as the direct object or as the subject of a main predicate, while there is no such restriction with typical relativization⁶. For example, (6c) is acceptable since the IHRC occurs as the direct object with the accusative case. The restricted distribution of IHRCs can be accounted for in terms of their syntax and semantics. Since a *no*-marked IHRC is a syntactic argument of the main predicate, its case marking is determined by what the main predicate requires. Moreover, since a main predicate is typically a verb of physical action, the case markings of *no*-marked IHRCs are restricted to the case markings required by verbs of physical action. For further discussions of the restricted distribution, see Hirose and Ohori (1992).

Lastly, the time of the event described in an IHRC cannot be later than the main clause event⁷. This is another constraint that typical relativization does not have. In each of the sentences in (7), the embedded clause contains a time adverbial *kinoo* 'yesterday', which shows that the event happened later than the time of the main clause event, which was *sensyuu* 'last week'. Although (7a) with an EHRC is perfectly grammatical, (7b) with an IHRC is unacceptable. The function of typical relativization is merely to identify an entity by modifying it with an embedded clause, and there is no constraint regarding the tense of an EHRC. Thus, (7a) with an EHRC is acceptable. An IHRC, however, must also obey the temporal constraint. At the time of Hanako's marriage, which took place last week, the groom could not have been identified as the man who won the lottery yesterday.

Thus, because of the temporal constraint on IHRCs, (7b) with an IHRC is unacceptable.

- (7) a. Hanako-wa [kinoo takarakuzi-ni atatta] otoko-to sensyuu
 TOP yesterday lottery DAT win-TA man-COM last-week
 kekkonsita.
 marry-TA
 'Last week Hanako married the man who won the lottery yesterday.'
- b. *Hanako-wa [kinoo otoko -ga takarakuzi-ni atatta] -no-to sensyuu
 man NOM lottery DAT win-TA NO-COM last-week
 kekkonsita.
 marry-TA

3.3. Pragmatic conditions

So far I have shown that there are syntactic and semantic conditions that an acceptable IHRC has to fulfill which were not treated in Kuroda's "relevancy condition". However, in addition to those syntactic and semantic requirements mentioned above, an IHRC event must be interpreted as pragmatically relevant to the content of the main clause. Thus, regarding the aspectual interpretation of an IHRC⁸, an IHRC event must be: not yet completed; still on-going; or its resulting state must be present at the time of the main clause event. Examples are shown in (8). Here the IHRCs contain different forms of the verb *oti* 'fall'. Since each of them can be interpreted as having an aspectual meaning relevant to the main clause event, the sentences are acceptable (see also Nakau 1976).

- (8) At the time of the main clause event:
- a. (the embedded clause event has not completed)
 Taroo-wa [hon-ga tana-kara otiru] -no -o uketometa.
 TOP book NOM shelf ABL fall-RU NO ACC catch-TA
 'Taro caught books that fell off of the shelves.'
- b. (the embedded clause event is on-going)
 Taroo-wa [hon-ga tana-kara otitekuru /otitekita] -no-o uketometa.
 fall-come-RU fall-come-TA
 'Taro caught books that were falling off of the shelves.'
- c. (the resulting state of the embedded clause is present)
 Taroo-wa [hon-ga tana-kara otita] -no -o hiroiageta.
 fall-TA pick-up-TA
 'Taro picked up books that had fallen off of the shelves.'

Typically the event described in an acceptable IHRC is interpreted as occurring in the same location as the main clause event, as can be seen in (8)⁹.

When an IHRC fulfills all of the conditions stated above, the sentence is acceptable. It might be noted in passing, however, that there are some cases where it is difficult to determine what the target of relativization is, even though the sentence is acceptable. In these cases, pragmatic contexts play a role in narrowing the range of possible targets. In (9a), although the verb phrase *tukamaeta* 'caught' can either take *neko* 'cat' or *nezumi* 'mouse' as its patient, the preferred reading is the one in which the cat is taken as the target. However, if an adverbial phrase such as *saki-ni* 'in advance' is added in front of the main predicate, the interpretation 'Taro was competing with the cat to catch the mouse and Taro caught the mouse that the cat was chasing' becomes stronger in (9b). In (9c), it is the quantifier

nihikitomo 'both of the two' rather than the main predicate which requires the target to be plural, and thus the only reading is the one in which Taro caught both of the animals.

- (9) a. Taroo-wa [neko-ga nezumi-o oikaketeiru] -no -o tukamaeta.
 TOP cat NOM mouse ACC chase-PROG-RU NO-ACC catch-TA
 'Taro caught the cat that was chasing the mouse.'¹⁰
 b. Taroo-wa [neko-ga nezumi-o oikaketeiru]-no-o saki-ni tukamaeta.
 in-advance
 'Taro caught the mouse that the cat was chasing (before the cat did).'
 c. Taroo-wa [neko-ga nezumi-o oikaketeiru]-no-o ni-hiki-tomo tukamaeta.
 both-two
 'Taro caught both the cat and the mouse while the cat was chasing the mouse.'¹¹

4. Duality of IHRCs

Having defined the syntactic, semantic, and pragmatic conditions for an acceptable IHRC, I will discuss the properties of the IHRC construction. I argue that a dual function is what distinguishes this construction. One function of an IHRC is to present an event which is a part of a larger event described in the main clause. This construction also identifies a physical object which is within the IHRC. I will discuss these two functions of the construction in the following sections.

4.1. Part-whole relationship between the two events

A part-whole relationship between the two events described in the embedded clause and the main clause can be seen, first of all, in the syntax of the construction. I have suggested that an entire *no*-marked IHRC has to be a syntactic argument of the main predicate (see (6a)). Thus, as McCawley observes, unlike typical relativization, IHRCs cannot be preceded by determiners, numeral expressions or EHRCs (McCawley 1991). An example of an IHRC preceded by an EHRC is given in (10). When the EHRC (*haha-ga katta* 'that mother bought') precedes the IHRC (*Hanako-ga ringo-o kakusita* 'Hanako hid an apple'), they do not form a grammatical sentence, and thus the nominalizer *no* cannot nominalize the sequence. Consequently, the two embedded clauses followed by *no* cannot be a syntactic argument of the main predicate. Put differently, the two embedded clauses as a whole cannot describe a single event, and they cannot be a part of the main clause event. Thus, (10) is ungrammatical.

- (10) *Taroo-wa [[[haha-ga katta] [Hanako-ga ringo-o kakusita]]-no] -o
 TOP mother NOM buy-TA NOM apple ACC hide-TA NO ACC
 sagasidasita.
 find-TA
 Intended: 'Taro found the apple that mother bought and that Hanako hid.'

I have argued that the embedded clause event cannot occur later than the main clause event in an acceptable IHRC. If the embedded clause event were to occur later than the main clause event, it could not be a part of the main clause event. This temporal constraint is a semantic aspect of the part-whole relationship between the two events. Pragmatic conditions also reflect a part-whole relationship between the two events. At the time of the main clause event, the IHRC event must be: not yet completed; still on-going; or its resulting state must be present (see (8a-

c)). This aspectual constraint can be viewed as requiring the IHRC event to belong temporally to the larger event described in the main clause. I have noted that the IHRC event is typically interpreted as occurring in the same location as the main clause event. This means not only temporally but also spatially an IHRC event can be viewed as a part of the main clause event.

4.2. Identification of a physical entity

The IHRC functions to identify an entity introduced in the embedded clause. A physical entity introduced in an IHRC is a semantic argument of the main predicate (see (6c)). Thus, despite all the differences between the IHRC construction and typical relativization, which is due to the IHRC construction's having a part-whole relationship, the two constructions at least have in common the function of identifying an entity.

4.3. Interaction and discrepancy between syntax and semantics

The dual function of IHRCs is apparent in the discrepancy between the syntax and semantics of this construction. Syntactically, the entire *no*-marked IHRC is an argument of the main predicate, but at the same time a physical entity within the clause is taken as a semantic argument of the main predicate. It seems that previous analyses have avoided acknowledging the syntax-semantics discrepancy by trying to predict one from the other. My approach, in contrast, is to recognize this discrepancy.

When IHRCs are compared with event nominalizations, the discrepancy between the syntax and semantics of this construction becomes clearer¹². In both of the constructions, a *no*-marked gapless embedded clause occurs as one of the arguments of the main predicate. When the main predicate is a verb of cognition instead of a verb of physical action, the same *no*-marked embedded clause cannot be interpreted as an IHRC. Instead, it is interpreted as an event nominalization. For example, in (11), the main predicate *sir* 'know' is a verb of cognition. Here, the sentence means that 'Taro knew the event in which Hanako came running' (an event nominalization reading); it does not mean that 'Taro knew Hanako who came running' (an IHRC reading) as in (6c) (reproduced below).

Event nominalization

- (11) Taroo-wa [Hanako-ga hasittekita] -no -o sitteita.
 TOP NOM come-running-TA NO ACC know-TA
 'Taro knew that Hanako came running.'

IHRC

- (6) c. Taroo-wa [Hanako-ga hasittekita] -no -o tukamaeta.
 TOP NOM come-running-TA NO ACC catch-TA
 'Taro caught Hanako who came running.'

The difference between the two can be stated in terms of whether or not there exists a discrepancy between syntax and semantics. In event nominalizations, there is no discrepancy between syntax and semantics. In (11), the entire embedded clause is not only a syntactic argument of the main predicate *sittei-ta* 'knew', but it is also its semantic argument. Thus, (11) can only mean 'Taro knew that Hanako came running' and cannot mean 'Taro knew Hanako'. On the other hand, in (6c), the main predicate's syntactic argument is the entire embedded clause, but its semantic argument is *Hanako* inside the embedded clause¹³.

It is also necessary to note the interaction between syntax and semantics of the construction. That is, although the semantic argument is a physical entity within the embedded clause, the fact that the syntactic argument is the whole embedded clause enables the construction to semantically describe a part-whole relationship between the embedded clause event and the main clause event¹⁴. This function of describing a part-whole relationship between two events (or the semantic duality) is what distinguishes the IHRC construction from typical relativization.

5. Conclusions

In this paper, I have shown that in addition to the pragmatic relationship between the two events described in the embedded clause and the main clause, there are syntactic and semantic conditions for acceptable IHRCs. By defining these conditions I have demonstrated that this construction has a dual function, namely, to describe a part-whole relationship between the two events, and to identify a physical entity inside the IHRC. I have also argued that there exists a discrepancy between the syntax and semantics due to the dual function of the construction. This discrepancy is what distinguishes this construction from event nominalizations. Furthermore, the syntactic condition interacts with the semantics, and this is why the construction contains a duality.

Thus, in order to account for the Japanese IHRC construction, it is necessary to have a theory that can describe both syntactic and semantic constraints, and interactions between the two.

NOTES

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¹ The term construction is used in its classical sense, to refer to the encoding of the organizational schema.

² With the term EHRC, I include the type of relative clause in Japanese, examined in Matsumoto (1988). In that construction, the embedded clause is gapless but it is followed by a full lexical NP (unlike IHRCs) as in (a) taken from a TV commercial and reported in Ohori (1991). For a detailed account of this construction, see Matsumoto (1988).

- (a) [[Zinsee-ga barairo-ni naru] wain]-da yo.
 life NOM rosy DAT become-RU wine-PRED PRT
 '(This) is the wine such that (if you drink it, your) life becomes rosy
 (=happy).'

³ The target of relativization (or the modified NP) in Japanese EHRCs does not have to be an indefinite noun. It can also be a proper noun as shown in sentence (2).

⁴ For detailed discussions of *no* as a nominalizer in the IHRC construction, see Kuroda (1976-77) and Tsubomoto (1981).

⁵ In certain subordinate clauses in Japanese, the case marker *ga* alternates with *no*. Charles J. Fillmore called my attention to the fact that in IHRCs, however, *ga* does not alternate with *no*. See Kuroda (1976-77) for details.

⁶ Ishii (1989) argues that an IHRC cannot occur in the subject position with any verb at the D-structure, but an IHRC can appear in the subject position with a transitive verb as well as that with an intransitive verb.

⁷ I would like to thank Charles J. Fillmore, Yoko Hasegawa, and Derek Herforth, for calling my attention to this point.

⁸ I would like to thank Masayo Iida, Minoru Nakau, and Peter Sells for bringing to my attention the aspectual meaning of IHRCs.

⁹ Kuroda calls this 'co-positionality' between the embedded clause event and the main clause event (Kuroda 1976: 273).

¹⁰ Minoru Nakau argues that other things being equal, the subject of an IHRC becomes the target (personal communication). However, for some speakers of Japanese, the reading in which the mouse (i.e., the object of the IHRC) is the target, namely, 'Taro caught the mouse that the cat was chasing.' is also possible. Furthermore, as McCawley observes, the following sentence has two readings: one in which the indirect object of the IHRC is the target; and the other in which the subject of the IHRC is the target (McCawley 1991):

- (b) Doroboo-wa [Ziroo-ga Taroo-ni okane -o yatta] -no -o osotta.
 thief TOP NOM DAT money ACC give-TA NO ACC attack-TA
 'A thief attacked Taro as Jiro was giving him the money.' or 'A thief
 attacked Jiro as he was giving Taro the money.'

In any case, the point here is that pragmatic contexts narrow down the range of possible targets as exemplified in (9b,c).

¹¹ Kuroda calls this phenomenon of having more than one target 'split pivot' (Kuroda 1976). This phenomenon seems to be quite rare among the languages that have IHRCs (Culy 1990). See also Cole (1987) and Nichols (1984) for cross-linguistic and typological study on IHRCs.

¹² Horie defines event nominalizations as "a syntactic process of nominalizing a physically (directly) and/ or mentally (indirectly) perceived event" (Horie 1991).

¹³ There are several other tests to determine whether a *no*-marked embedded clause is an IHRC or an event nominalization. First of all, an IHRC cannot contain a time adverbial which shows that the embedded clause event happens at a different time than the main clause event, while there is no such restriction with event nominalizations. Thus, adding time adverbials *kinoo* 'yesterday' in the embedded clause and *kyoo* 'today' in the main clause to (11) still yields an acceptable event nominalization interpretation as can be seen in (c) below. However, if the two adverbials are added to the clauses in (6c), it does not result in an acceptable IHRC sentence as seen in (d) below.

Event nominalization

- (c) Taroo-wa [kinoo Hanako-ga hasittekita] -no -o kyoo sitteita.
 TOP yesterday NOM come-running-TA NO ACC today know-TA
 'Taro knew today that Hanako came running yesterday.'

IHRC

(d) *Taroo-wa [kinoo Hanako-ga hasittekita] -no -o kyoo tukamaeta.
 TOP NOM come-running-TA NO ACC catch-TA
 Intended: 'Taro caught Hanako today who came running yesterday.'

Paul Kay called my attention to the fact that it is not possible to have a conjoined sentence in the embedded clause for an acceptable IHRC, while it is possible for an acceptable event nominalization. In addition, an IHRC cannot contain auxiliaries such as *wa* and *mo*, whereas event nominalizations can (Kuroda 1976-77: 174-178).

¹⁴ I would like to thank Eve Sweetser for suggesting this point.

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