A unified approach to the CENP Construction and the IHRC Construction*

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1. Introduction

In this paper, I argue that the internally-headed relative clause (IHRC) construction in

Japanese shown in (1) is basically the same as the Counter-Equi NP (CENP) construction

shown in (2):

The IHRC construction
(1) keisatsu-wa   doroboo-ga   nigeyoo-to shi-ta]-no-o   tsukamae - ta .
    police-TOP   burglar-NOM   escape-try to-PAST-NO-ACC   arrest-PAST
    "The police arrested a burglar in the occasion in which he/she tried to escape."
The CENP construction
(2) keisatsu-wa   [doroboo-ga   nigeyoo-to shi-ta]-tokoro-o   tsukamae-ta.
    police-TOP   burglar-NOM   escape-try to-PAST-occasion-ACC   arrest-PAST
    "The police arrested a burglar on the occasion on which he/she tried to escape."

With regard to the IHRC Construction and the CENP Construction, one standard

approach assumes that the internally-headed relative clause of the IHRC Construction,

namely, the no-clause is the complement of the matrix verb (Kuroda (1975-76), (1976-77),

Hoshi (1995) among others), while the tokoro-clause of the CENP Construction is an

adverbial clause (Harada 1973 among others), in spite of several affinities between these

constructions.   Under the standard analysis of the CENP Construction, the non-overt

pronoun "pro" is assumed to exist as a matrix argument in addition to the adverbial tokoro-

clause.   I will refer to the above two standard approaches of the IHRC Construction and

the CENP Construction as the Complement Clause Analysis and the Adverbial Clause

Analysis, respectively.

However, as often mentioned in previous literature (Tsubomoto (1981), Murasugi (1995), Watanabe (1996) among others), the CENP Construction in (2) is quite similar to the IHRC Construction in (I) in several respects. In this paper, drawing on those similarities, I argue that the IHRC Construction is basically the same construction as the CENP Construction and propose a unified account of those two constructions.

2. Similarities between the IHRC Construction and the CENP Construction

It has often been argued that the internally-headed relative clause of the IHRC Construction is an argument of the matrix verb, whereas the tokoro-clause of the CENP Construction is an adverbial clause. However, in spite of those analyses, there are several affinities between these two constructions.

One crucial similarity between these two constructions is that an NP within the embedded clause is interpreted as an argument of the matrix clause in both the IHRC Construction and the CENP Construction. This similarity is observed in the comparison between the IHRC construction in (1) and the CENP construction in (2). In the interpretation of both sentence (1) and sentence (2), the embedded NP doroboo "burglar" is interpreted as an object of the matrix verb tsukamae "arrest". As predicted by the above fact that the internal head is interpreted as an argument of the matrix clause, floating quantifiers and secondary predicates in the matrix clause can modify the internal head in both the IHRC Construction and the CENP Construction, as illustrated in (3) and (4):

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suggestions. Needless to say, all the remaining inadequacies are solely my own.

Floating quantifiers

The IHRC Construction
(3) Keisatsu-wa   [doroboo-ga.   nigeyoo-to shi-ta]-no-o   sannin
    police-TOP   burglar-NOM   escape-try to-PAST-NO-ACC   three person

    tsukamae-ta.
    arrest-PAST
    "The police arrested three burglars in the occasion in which they tried to escape."

The CENP construction
(4) Keisatsu-wa   [doroboo-ga   nigeyoorto shi-tal-tokoro-o   sannin
    police-TOP   burglar-NOM   escape-try to-PAST-occasion-ACC three person

    tsukamae-ta.
    arrest-PAST
    "The police arrested three burglars on the occasion on which they tried to escape."

Secondary predicates

The IHRC construction
(5) Keisatsu-wa   [doroboo-ga   nigeyoo-to shi-ta]-no-o   hadakade
    police- TOP   burglar-NOM   escape-try to-PAST-NO-ACC   naked

    tsukamae-ta.
    arrest-PAST
    "The police arrested a burglar in the occasion in which he/she tried to escape."

The CENP construction
(6) Keisatsu-wa   [doroboo-ga   nigeyoo-to shi-ta]-tokoro-o   hadakade
    police-TOP   burglar-NOM   escape-try to-PAST-occasion-ACC naked

    tsukamae -ta .
    arrest-PAST
    "The police arrested a burglar naked on the occasion on which he tried to escape."

In (3) and (4). the floating quantifier sannin "three person" can modify the internal head

doroboo "burglar". In (5) and (6), the secondary predicate hadakade "naked" can also

modify the internal head doroboo "burglar".

In addition to the above similarities given in (3) to (6), there are other syntactic

similarities between the IHRC Construction and the CENP Construction. For example,

the particle attached to the internally-headed relative clause and the tokoro-clause behaves like the Case marker related to the matrix verb both in the IHRC Construction and in the CENP Construction. This property is observed in the Case-matching phenomena and the Case-alternation phenomena of the IHRC Construction and the CENP Construction.

First of all, the particle attached to the internally-headed relative clause or the tokoro-clause must be identical with the Case particle which is related to Structural Case assigned to the object by the matrix verb, as shown in (7) and (12):

(7) Taro wa   Hanako-o/*ni   tatai-ta.
    TOP   ACC/DAT   hit-PAST
    "Taro hit Hanako."

(8) Taro-wa   [Hanako-ga   hashit-te iru]-no-o/*ni   tatai-ta.
    TOP   NOM   run-ing-NO-ACC/DAT   hit-PAST
    "Taro hit Hanako in the occasion in which she was running."

(9) Taro-wa   [Hanako-ga   hashit-te inil -tokoro-o/*ni   tatai-ta.
    TOP   NOM   run-ing-occasion-ACC//DAT   hit-PA ST
    "Taro hit Hanako on the occasion on which she was running."

(10) Taro-wa   Hanako-ni/*o   at-ta.
     TOP   DAT/ACC   meet-PAST
     "Taro met Hanako."

(11) Taro-wa   [Hanako-ga   hashit-te ru]-no-ni/*o   at-ta.
     TOP   NOM   run-ing-NO-DAT/ACC   come across-PAST
     "Taro came across Hanako in the occasion in which she was running."

(12) Taro-wa   [Hanako-ga   hashit-te iru]-tokoro-ni/* o   at-ta.
     TOP   NOM   run-ing-occasion-DAT/ACC   come across-PAST
     "Taro came across Hanako on the occasion on which she was running."

The verb tatak "hit" assigns ACC Case to an object as shown in (7). When both the no-clause of the IHRC Construction and the tokoro-clause of the CENP Construction appear with the verb tatak "hit", the ACC Case marker must appear with those clauses as shown in

(8) and (9). In the same manner, the verb at "meet" assigns Dative Case to an object as shown in (10). When the no-clause and the tokoro-clause appear with the verb at "meet", the Dative Case marker appears with those clauses, as shown in (11) and (12).

Second, when the potential morpheme -(r)are is attached to the matrix verb of the IHRC Construction and the CENP Construction, the Accusative Case marker -o, which is attached to the no-clause and to the tokoro-clause, exhibits the so-called "NOM-ACC" Case alternation, as shown in (13) and (14):

The IHRC construction
(13) keisatsu-wa [doroboo-ga nigeyoo-to shi-tal-no-ga tsukamae-rare-ta.
police-TOP burglar-NOM escape-try to-PAST-NO-NOM arrest-POT-PAST
"The police could arrest a burglar in the occasion in which he/she was trying to escape."

The CENP construction
(14) keisatsu-wa [doroboo-ga nigeyoo-to shi-ta]-tokoro-ga
police-TOP burglar-NOM escape-try to-PAST-occasion-NOM

tsukamae-rare-ta.
arrest-POT-PAST
"The police could arrest a burglar on the occasion on which he/she was trying to escape."

In both (13) and (14), the potential morpheme -(r)are is attached to the matrix verb tsukamae "arrest". The particle which is attached to the no-clause and to the tokoro-clause can be the Nominative Case marker -ga, as shown in (13) and (14).

In addition to the above phenomena related to Case markers, there is another striking similarity between the IHRC Construction and the CENP Construction, which has never been well examined by prior research. As also noticed by Watanabe (1995), when the matrix verb is passivized, the internally-headed relative clause can still appear with the particle -o in the IHRC Construction exactly like the tokoro-clause in the CENP

Construction, as illustrated in (15) and (16):

The IHRC constuction
(15) Doroboo-wa   [nigeyoo-to shita]-no-o   keisatsu-ni   tsukamae-rare-ta.
     burglar-TOP   escape-try to-PAST-NO-ACC   police-by   arrest-PASS-PAST
     "The burglar was arrested in the occasion in which he/she tried to escape."

The CENP construciton
(16) Doroboo-wa   [nigeyoo-to shita]-tokoro-o   keisatsu-ni
     burglar- TOP   escape-try to-PAST-occasion-ACC   police-by

     tsukamae-rare-ta
     arrest-PASS-PAST
     "The burglar was arrested on the occasion on which he/she tried to escape."

In (15) and (16), the passive morpheme -(r)are is attached to the matrix verb tsukamae

"arrest", and the matrix verb is passivized.   However, the internally-headed relative clause,

namely, no-clause of the IHRC Construction and the tokoro-clause of the CENP

Construction can still appear with the particle -o.

The standard analysis of the IHRC Construction (Kuroda (1975-76), (1976-77), Hoshi

(1995) among others) has assumed that the internally-headed relative clause in the IHRC

Construction is an argument of the matrix verb in the IHRC construction.   On the other

hand, the standard analysis of the CENP Construction (Harada (1973) among others)

assumes that the tokoro-clause of the CENP Construction is an adverbial clause.   In spite

of the above similarities between the IHRC Construction and the CENP Construction,

however, if we adopt the standard approach of either the CENP Construction or the IHRC

Construction, we cannot give a unified account of the similarities between these

constructions.   Under the standard analyses of the IHRC Construction and the CENP

Construction, these two constructions are different constructions.

For example, under the standard analysis, the tokoro-clause is an adverbial clause.

Therefore, we need some accounts of those phenomena, which are different from the accounts of the same phenomena of the IHRC Construction. On the other hand, those phenomena can be explained easily under the standard Complement Clause Analysis of the IHRC Construction.

Furthermore, under the standard approaches of the IHRC Construction and the CENP Construction, the modifiability of the internal head by the matrix secondary predicate or the floating quantifier, which is observed in the same manner in the IHRC Construction and the CENP Construction, also needs to be given different accounts in those two constructions.

As mentioned above, in this paper, I argue that the CENP Construction is basically the same construction as the IHRC Construction. To be specific, I argue that both the tokoro-clause of the CENP Construction and the internally-headed relative clause of the IHRC Construction are arguments of the matrix verbs.[1] In this sense, regarding the IHRC Construction in Japanese, I follow the standard approach of the IHRC. Construction. Thus, in the following sections, I will show how this kind of so-called "Complement" Clause analysis can also account for the CENP Construction as well as the IHRC Construction.

3. A Unified analysis of the IHRC Construction and the CENP Construction

In this section, I will propose a unified analysis of the CENP Construction and the IHRC Construction.

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[1] Mihara (1994) and Murasugi (1994) propose the totally opposite approach of mine. Their approach assumes that the internally-headed relative clause is also an adverbial clause, like the tokoro-clause in the CENP Construction. Though I cannot discuss their approach in this paper for lack of space, their adverbial-clause analysis would face potential problems with the phenomena related to Case, such as the Case-matching phenomena and the Case-alternation phenomena.

3.1. The Syntax of the IHRC Construction and the CENP Construction

With regard to the syntactic status of the IHRC Construction and the CENP Construction, as mentioned above, following the standard analysis of the IHRC Construction, I assume that both the internally-headed relative and the tokoro-clause are an argument of the matrix verb in the IHRC Construction and the CENP Construction, respectively.

This unified analysis of the IHRC Construction and the CENP Construction correctly predicts the Case matching phenomena shown in (7) - (12) and the Case alternation shown in (13) and (14).

With regard to the Case matching phenomena, under my proposed analysis, the internally-headed relative clause and the tokoro-clause are syntactically the complement of the matrix verb. Therefore, the Case particle attached to those clauses must match structural Case which is assigned to the complement by the verb. For example, when a matrix verb assigns Dative Case to the complement, the internally-headed relative clause and the tokoro-clause are assigned Dative Case, and, when a matrix verb assigns Accusative Case to the complement, then those clauses are assigned Accusative Case. As shown in (7) - (12), my proposed analysis correctly predicts that structural Case related to the matrix verb is assigned to the internally-headed relative clause and the tokoro-clause.

Furthermore, my proposed analysis correctly predicts that the particle attached to the internally-headed relative clause and the tokoro-clause exhibits Case-alternation. Under my proposed analysis, since the particle attached to the internally-headed relative clause and the tokoro-clause is a structural Case marker, it exhibits Case-alternation when these clauses appear in a context where Case-alternation occurs. For example, in Japanese, the Accusative Case marker -o alternates with the Nominative Case maker -ga when the

potential morpheme is attached to a verb.   As predicted under the proposed analysis, the particle -o attached to the internally-headed relative clause and the tokoro-clause also alternates with the Nominative Case marker -ga when the potential morpheme is attached to the matrix verb of the IHRC construction and the CENP Construction, as shown in (13) and (14).

3.2. no and tokoro

As discussed in the previous section, in this paper, I assume that the internally-headed relative clause and the tokoro-clause are an argument of the matrix verb.   In order to give a unified account of the IHRC Construction and the CENP Construction, I propose that no in the IHRC construction and tokoro in the CENP construction are a relational noun which has a denotation in (17):

(17)   [λy∈D [λz∈D [participant-in-situation' (y, z)]]]

In the above semantic representation, "y" is a variable over events or situations and "z" is a variable over individuals.

Furthermore, I propose that the morpheme no of the internally-headed relative clause and the morpheme tokoro of the tokoro-clause have a property to yield the following denotation in (18) for the whole internally-headed relative clause in the IHRC construction.

(18) λR [$R(\forall w$ [w =max y (situation_of_the tokoro-clause' $(y))$], $\forall x$ [x = max z ($\forall w$ [w =max y (participant_in_situation' $(y, z))$])])][2]

(18) denotes the set of all relations R that hold between a maximal situation which has the property denoted by the no-embedded clause and a maximal individual in each situation.

Under this assumption, the semantic interpretation of sentence (19) is given in (20) :

(19) Keisatsu-wa   [doroboo-ga   nigeru]-no/tokoro-o   tsukamae-ta.
     police-TOP   burglar-NOM   escape-NO/ occasion-ACC   arrest-PAST
     "The police arrested a burglar in/on the occasion in/on which s/he was trying to escape. "

(20) λR [$R(\forall w$ [w =max v (run away' $(v, \exists x$ [burglar' (x) & run away' $(x)]))$], $\forall y$ [y = max z ($\forall w$ [w = max v (participant_in_situation' $(v, z))$])])] (be-arrested' $(w, y))$[3]

The semantic interpretation of (20) means that the sentence in (19) will be true just in case the relation denoted by the matrix clause, namely, $(\lambda y$ [λw[be-arrested' (w,y)]]) holds between a maximal situation denoted by the no/tokoro-embedded clause and a maximal individual in each situation.

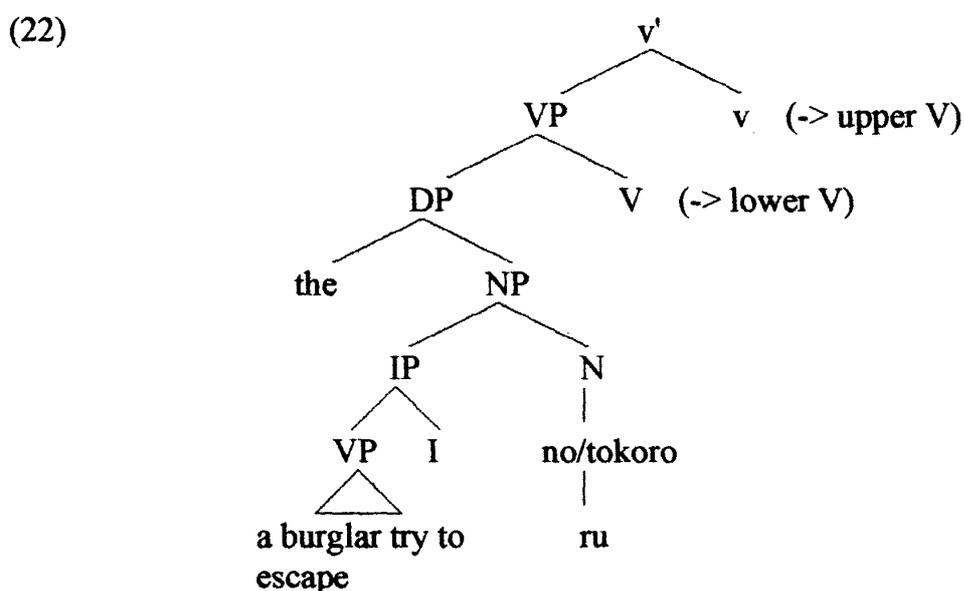### 3.3. The Syntax and Semantics Interface of the IHRC Construction and the CENP Construction

Under the above assumption of semantics of the internally-headed relative clause and the tokoro-clause, I will discuss how syntax and semantics are related to each other in the IHRC Construction and the CENP Construction.   Under my proposed unified analysis, I

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[2] Following Dayal (1995), I assume that "max" is like an iota operator except that uniqueness is checked for maximal individuals only.
[3] 1 assume an event argument for verbs, following Davidson (1967).   In the semantic representation in (20), "v" is an event argument of the embedded verb run away and "w" is an event argument of the matrix verb arrest.

assume the following syntactic representation in (22) (Chomsky (1995) Kratzer (1996) among others) for the example sentence in (21):

(21) Keisatsu-wa   [doroboo-ga   nigeru]-no/tokoro-o   tsukamae-ta.
     police-TOP   burglar-NOM   escape-NO/occasion–ACC   arrest-PAST
     "The police arrested a burglar in/on the occasion in/on which s/he was trying to escape. "

(22)

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                              v'
                          ___/ \___
                       VP          v   (-> upper V)
                    __/ \__
                 DP        V   (-> lower V)
              __/ \__
           the      NP
                 __/ \__
               IP        N
             _/ \_       |
           VP    I    no/tokoro
          /__\             |
     a burglar try to      ru
     escape
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I assume that no of the internally-headed relative clause and tokoro of the tokoro-clause denote a set of ordered pairs of events/situations and individuals such that the individual is in the situation.   As discussed in section 3.2., this property is shown in (17).

Furthermore, in addition to the above property, no and tokoro also have another property.   As discussed above in this section, they have a property to yield a function from relations to truth values, as illustrated in (19) and (20).   This function maps every set of relations onto 1 (the value of "true") if and only if the embedded situation of the no-clause or tokoro-clause and a participant of the embedded situation hold for the relation denoted by the matrix verb, namely, "be-arrested (w,y)".   Under this assumption, the

nouns no and tokoro are assumed to have the following denotation given in (23):

(23) $\lambda w \ [\lambda x \ [\lambda R \ [R(w,x)]]]$

The variable "w" is related to the situation (or event) related to the embedded clause. The variable "x" is related to an entity corresponding to "a participant in the situation of the embedded no-clause".

In (22), when no or tokoro takes the embedded clause, it fills in the first position of the relation (or function) "$[\lambda y \in D \ [\lambda z \in D \ [\text{participant-in-situation}' \ (y,z)]]]$". However, at the same time, it also fills in the first position of the semantic representation in (23), namely "w" in (23), as illustrated in (24):

(24) $[\lambda x \ [\lambda R \ [R(\forall w \ [w = \text{max} \ v \ (\text{run away}' \ (\exists x \ [\text{burglar}' \ (x) \ \& \ \text{run away}' \ (x)], \ v))], \ x)]]]$

Furthermore, after the position "y" of (17) is discharged by the θ-marking of the embedded clause by no, the theta-binding of the position "z" by "the" yields an entity expression, namely, "the (unique) participant (or participants) in the (unique) situation expressed by the embedded clause." In this stage, the denotation of the entity expressed by the no-clause or tokoro-clause fills in the position of "x" of (24). As a result, we have the following denotation in (25) for the whole no-clause or tokoro-clause:

(25) $\lambda R \ [\ R(\forall w \ [w = \text{max} \ z \ (\text{situation\_of\_the tokoro-clause}' \ (z))], \ \forall x \ [x = \text{max} \ y \ (\forall w \ [w = \text{max} \ z \ (\text{participant\_in\_situation}' \ (y, \ z))])])]$

When the no-clause or the tokoro-clause, namely, DP in (22) is governed by the lower V,

the function denoted by the whole no-clause or tokoro-clause, namely, "λR [R(∀w [w =max z (situation_of_the tokoro-clause' (z))], ∀x [x = max y (∀w [w =max z (participant_in_situation' (y, z))])])]" is applied to the denotation of the relation expressed by the matrix verb.   As a result, we have the following semantic interpretation in (26):

(26) λR [R(∀w [w =max v (run away' (∃x [burglar' (x) & run away' (x)], v))], ∀y [y = max z (∀w [w = max v (participant_in_situation' (z, v))])])] (be-arrested' (y, w))

By lambda conversion, we have the following semantic interpretation in (27) for the whole IHRC construction given in (19):

(27) be-arrested' (∀w [w =max v (run away' (∃x [burglar' (x) & run away' (x)], v))], ∀y [y =max z (∀w [w = max v (participant_in_situation' (z, v))])])]]

The semantic representation in (27) means that "a unique participant in a unique situation" is arrested in the "unique situation".

3.4. Dual Relation of individuals and events

In sections 3.2. and 3.3., I discuss the semantic aspect of my unified analysis of the IHRC Construction and the CENP Construction.   In this section, I will give evidence which supports my analysis discussed in sections 3.2. and 3.3.

3.4.1. Interpretation of takusan 'a lot'

When the adverb takusan "a lot" appears in the internally-headed relative clause or the tokoro-clause, as shown in (28) and (29), the IHRC Construction and the CENP

construction can have both an object-related reading and an event-related reading (Krifka 1990):

(28) Keisatsu-wa [doroboo-ga   takusan   nigeru]-no-o   tsukamae-ga.
     police-TOP burglar-NOM   a lot   escape- NO-ACC   arrest-PAST
(object-related)   "The police arrested many burglars in one occasion in which they
          escaped. "
(event-related)   "The police arrested burglars in many different occasions in which
          they escaped. "

(29) Keisatsu-wa [doroboo-ga   takusan   nigeru]-tokoro-o   tsukamae-ga.
     police-TOP burglar-NOM   a lot   escape-occasion-ACC   arrest-PAST
(object-related)   "The police arrested many burglars on one occasion on which they
          escaped. "
(event-related)   "The police arrested burglars on many different occasions on which
          they escaped. "

Under the object-related reading, there is one occasion in which many burglars tried to escape. Under the event-related reading, there are many different occasions in each of which a burglar tried to escape. In each case, the number of occurrences of events and the number of burglars in the matrix-clause must be the same as those of the internally-headed relative clause or the tokoro-clause.

My proposed unified analysis of the IHRC Construction and the CENP Construction correctly predicts the above two interpretations of these constructions. Under my proposed unified analysis, the semantics of the internally-headed relative clause or the tokoro-clause denotes the set of relations which hold between a unique situation and a unique individual. Furthermore, the matrix clause denotes a relation which holds between the unique situation and the unique individual. Therefore, both a unique event (or situation) and a unique individual in the event must be shared by the relations denoted by the matrix verb and the internally-headed relative clause or the tokoro-clause. Thus,

under my proposed analysis, when we put the adverb takusan "a lot" within the embedded no-clause or tokoro-clause, the number of occurrences of events and the number of burglars in the matrix-clause should be the same as those of the no-clause or tokoro-clause. In other words, when we have the interpretation of an object-related reading, the matrix object also has the interpretation of "many burglars", as illustrated in the examples in (28) and (29). In the same manner, when we have the interpretation of an event-related reading, the matrix event is also considered to have occurred many times, as illustrated in the examples in (28) and (29).

3.4.2. Maximality effect

As discussed by Hoshi (1995) and Shimoyama (1999), with regard to the interpretation of the internal head NP in the IHRC construction, we observe the so-called "maximality" effect in its interpretation, as shown in (30) and (31):

(30) John-wa [[Mary-ga hotondo-no ringo-o muitekure-ta]-no] -o
        TOP   NOM   most-GEN   apple-ACC peel-PAST-NO-ACC

tabe-ta.
eat-PAST
"Mary peeled most apples and John ate them all. "

(31) John-wa [[Mary-ga muitekure-ta] hotondo-no ringo] -o   tabe-ta.
        TOP   NOM   peel-PAST   most-GEN   apple-ACC eat-PAST
"John ate most of the apples which Mary peeled."

As discussed by Shimoyama (1999), in the interpretation of the example in (30), there is a contextually restricted set of apples in the universe of discourse. Mary peeled most of them. However, hotondo "most" in (30) takes scope only over the embedded clause. In other words, with regard to the example in (30), we do not have the interpretation in which

most apples are such that Mary peeled them and John eat them.   The interpretation of the matrix clause is something like "John ate all of the apples which Mary peeled".   Thus, the interpretation of the internal head in (30) exhibits the so-called "maximality effect".

The same phenomena can also be observed in the CENP Construction, as illustrated in (32) and (33):

(32) John-wa   [[Mary-ga   hotondo-no   ringo-o   muitekure-ta]-tokoro]-o
     TOP   NOM   most-GEN   apple-ACC   peel-PAST-occasion-ACC

     tabe-ta.
     eat-PAST
     "Mary peeled most apples and John ate them all."

(33) John-wa   [[Mary-ga   muitekure-ta] hotondo-no   ringo]-o   tabe-ta.
     TOP   NOM   peel-PAST   most-GEN   apple-ACC   eat-PAST
     "John ate most of the apples which Mary peeled. "

What is interesting is that in both the IHRC Construction and the CENP Construction, the event as well as the entity of the matrix clause exhibits a "maximality" effect in its interpretation, as shown in (34) to (37):

(34) Keisatsu-wa   [doroboo-ga   tokidoki   nige-ta]-no-o
     police-TOP   burglar-NOM   sometimes   run away-PAST-NO-ACC

     tsukamae-ta.
     arrest-PAST
     "A/burglars sometimes ran away. and the police arrested them in all those occasions."

(35) Keisatsu-wa   [doroboo-ga   nige-ta]-no-o   tokidoki
     police-TOP   burglar- NOM   run away-PAST-NO-ACC   sometimes

     tsukamae-ta.
     arrest-PAST
     "A/burglars ran away (many times), and the police sometimes arrested them."

(36) Keisatsu-wa   [doroboo-ga   tokidoki   nige-ta]-tokoro-o
     police-TOP   burglar-NOM   sometimes   run away-PAST-occasion-ACC

tsukamae-ta.
arrest-PAST
"A/burglars sometimes ran away, and the police arrested them in all those
occasions."

(37) Keisatsu-wa   [doroboo-ga   nige-ta]-tokoro-o   tokidoki
     police-TOP   burglar- NOM   run away-PAST- occasion -ACC   sometimes

tsukamae-ta.
arrest-PAST
"A/burglars ran away (many times), and the police sometimes arrested them."

In the interpretations of (34) and (36), an event of a burglar/burglars escaping sometimes

occurred. Furthermore, on all those occasions, the burglar/burglars were arrested. This

interpretation clearly contrasts with the interpretations of (35) and (37). In (35) and (37),

an event of a burglar/burglars escaping occurred many times. In/on some of those

occasions, a burglar/burglars were arrested. In other words, in the same manner as the

interpretation of the internal head, the adverb tokidoki "sometimes" within the embedded

clauses of (34) and (36). takes only scope over the embedded clause and does not extend

its scope to the matrix clause. Thus, the interpretation of the embedded event exhibits

"maximality" effects in (34) and (36).

My unified analysis of the IHRC Construction and the CENP Construction correctly

predicts these "maximality effects" of individuals and events. As discussed in sections

3.2. and 3 .3., under my proposed analysis, before both a situation corresponding to the

embedded clause and an entity corresponding to a participant in the embedded situation

fills in each position of the semantic formula of the morpheme no and tokoro in (23),

which is repeated as (39) for convenience, both of them become a maximal situation and a

maximal individual, under my proposed analysis, as illustrated in (40) :

(38) Keisatsu-wa [doroboo-ga nigerul-no/tokoro-o tsnkamae-ta.
police-TOP burglar-TOP escape-NO/occasion-ACC arrest-PAST
"The police arrested a burglar in/on the occasion in/on which s/he was trying to escape. "

(39) $\lambda w \, [\lambda x \, [\lambda R \, [R(w,x)]]]$

(40) $\lambda R \, [\, R(\forall w \, [w = max \, z \, (situation\_of\_the \, \underline{tokoro}\text{-clause'} \, (z))], \, \forall x \, [x = max \, y \, (\forall w$
$[w = max \, z \, (participant\_in\_situation' \, (y, z))])])]$

As discussed in section 3, the above semantic representation in (40) is the interpretation of the whole internally-headed relative clause or <u>tokoro</u>-clause of the sentence in (38).

Furthermore, in the interpretation of the whole IHRC Construction or CENP Construction, the relation denoted by the matrix clause holds between the maximal situation denoted by the internally-headed relative clause or the <u>tokoro</u>-clause and the maximal individual in each situation. Thus, the maximal situation and the maximal individual are interpreted for the event and the object of the matrix clause. Thus, my proposed analysis correctly predicts that a maximal situation and a maximal individual leads to the maximality effect in the interpretation of both the entity and the event of the IHRC Construction and the CENP Construction.

3.5. Floating quantifiers and secondary predicates

In this section, we will discuss the phenomena of floating quantifiers and secondary predicates. My proposed unified analysis does not face any problem with the account of floating quantifier and secondary predicate phenomena of the IHRC Construction and the CENP Construction which have been discussed in section 2.

3.5.1. Floating quantifiers

As discussed in section 2, even though floating quantifiers appear in the matrix clause of the IHRC Construction or the CENP Construction, they look like modifying an internal head of those constructions. My unified analysis can also give a unified account of this phenomenon.

Under my unified analysis of the IHRC Construction and the CENP Construction, the no-clause or tokoro-clause, namely, the bold-faced DP in the IHRC Construction or CENP construction in (42) has a denotation "the burglar in the situation in which he/she escaped", as discussed in sections 3.2. and 3.3. This bold-faced DP can be a local licenser for a floating quantifier.

In syntactic structure (42) of the example in (41), the bold-faced DP, namely, no-clause or tokoro-clause, can be in mutual c-commanding relation with the floating quantifier NQ, namely, sannin "three person", as illustrated in (42):

(41) Keisatsu-wa   [doroboo-ga   nigeru]-no/tokoro-o   sanmn
     police-TOP   burglar-NOM   escape-NO/occasion-ACC   three person

tsukamae-ta.
arrest-PAST
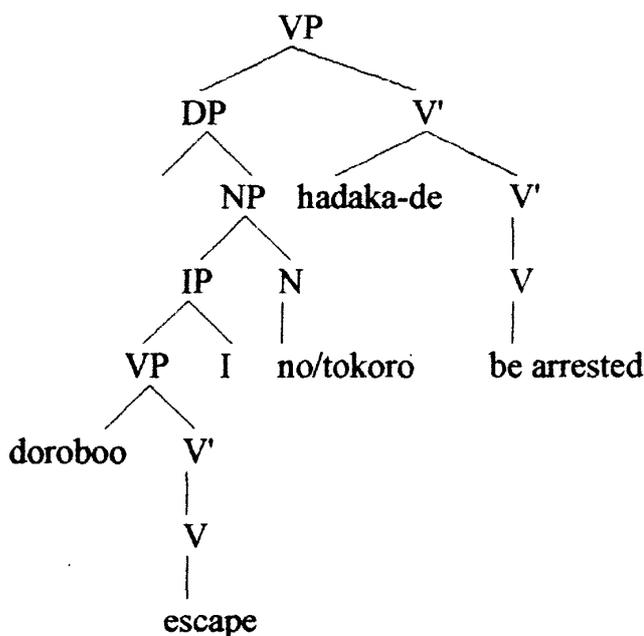"The police arrested three burglars in/on the occasion in/on which they escaped."

(42)

```
                        VP
                     ___|___
                    /   |    \
                  DP    NQ    V
                 / \    |
                D   NP  sannin "three person"
                   / \
                  IP  N
                 / \  |
               VP   I no/tokoro
              / \
            NP   V'
            |    |
          burglar V
                  |
                escape
```

Furthermore, the no-clause or tokoro-clause has a denotation "a burglar in the situation in which he/she escaped". Under the assumption of the Locality Requirement on Floating Quantifiers discussed by Ueda (1986) and Miyagawa (1989), namely, the requirement of the mutual c-command relation between floating quantifiers and the host NPs, the locality requirement on floating quantifiers is satisfied between the bold-faced NP, namely, no-clause or tokoro-clause and the NQ, namely, the floating quantifier sannin, in the syntactic structure given in (42). Thus, my unified analysis of the IHRC Construction and the CENP Construction correctly predicts that the IHRC construction or the CENP Construction with a floating quantifier expression in (41) is grammatical.

3.5.2. Secondary predicates

In the same manner as the licensing of floating quantifiers, my unified analysis of the IHRC Construction and the CENP Construction also correctly predicts the grammaticality

of the secondary predicate phenomena. The following syntactic structure in (44) is the syntactic structure of the example in (43). In (44), the bold-faced DP, namely, no-clause or tokoro-clause can m-command the secondary predicate expression hadaka-de "naked".

(43) Keisatsu-wa   [doroboo-ga   nigeru] -no/tokoro-o   hadakade
     police-TOP   burglar-NOM   escape-NO/occasion-ACC   naked

tsukamae-ta.
arrest-PAST
"The police arrested a burglar naked in/on the occasion in/on which he was trying to escape. " (We can have the interpretation under which a burglar was naked.)

(44)

```
                        VP
                   ┌────┴────┐
                  DP         V'
                 ╱ ╲      ┌──┴──┐
               NP  hadaka-de    V'
              ╱ ╲            │
            IP   N           V
           ╱ ╲   │           │
         VP   I  no/tokoro  be arrested
        ╱ ╲
   doroboo  V'
            │
            V
            │
          escape
```

Furthermore, the no-clause or tokoro-clause has the denotation "a burglar in the situation in which he/she was trying to escape". Under the assumption of the Locality Requirement on Secondary Predicates discussed by Rothstein (1983), McNulty (1988) and Hoshi (1995), the locality requirement on secondary predicates is satisfied between the bold-faced DP, namely, no-clause or tokoro-clause and the secondary predicate, namely, hadaka-de "naked" in the syntactic structure given in (44). The above requirement on secondary

predicates requires that the secondary predicate be m-commanded by its associated NP (= antecedent) at D-structure. Under my analysis, in (44), the secondary predicate, namely, hadaka-de "naked" can be m-commanded by its associated NP, namely, the bold-faced DP. Thus, under my analysis, the Locality Requirement on Secondary Predicates is satisfied in example (43). Thus, my unified analysis of the IHRC Construction and the CENP Construction correctly predicts that the IHRC construction or the CENP Construction with a secondary predicate expression in (43) is grammatical.

3.6. The case of passives — the adverbial clause?

In this section, we will discuss one remaining problem for my proposed unified Analysis of the IHRC Construction and the CENP Construction. My unified analysis of these constructions assumes that the internally-headed relative clause and the tokoro-clause are the complement of the matrix verb. However, this analysis potentially faces a problem with the following phenomenon given in (45), which motivated Harada (1973) to assume that the tokoro-clause is a circumstantial adverbial clause in the CENP Construction.

The CENP construction
(45) Doroboo-wa   [nigeyoo-to shita]-tokoro-o   keisatsu-ni
     burglar-TOP   escape-try to-PAST-occasion-ACC   police-by

tsukamae-rare-ta
arrest-PASS-PAST
"The burglar was arrested on the occasion on which he/she tried to escape."

The IHRC construction
(46) Doroboo-wa   [nigeyoo-to shita]-no-o   keisatsu-ni   tsukamae-rare-ta.
     burglar-TOP   escape-try to-PAST-NO-ACC   police-by   arrest-PASS-PAST
     "The burglar was arrested in the occasion in which he/she tried to escape. "

In the CENP Construction, the _tokoro_-clause can still appear with the particle -o, even

when the matrix verb is passivized, as shown in (45). Furthermore, as also noticed by

Watanabe (1995), the same phenomenon can also be observed in the IHRC Construction,

as shown in (46). Under my proposed analysis, the internally-headed relative clause and

the _tokoro_-clause are the complement of the matrix verb. Therefore, my analysis should

incorrectly predict that, when the passive morpheme is attached to the matrix verb and

absorbs its structural Case, the internally-headed relative clause and the _tokoro_-clause

cannot appear with a Case particle.

To solve this problem, my unified analysis resorts to the following Quasi Counter-Equi

NP (henceforth, Quasi-CENP) Construction discussed by Hosoi (2000), given in (47):

(47) Keisatsu-wa   doroboo-o   [nigeyoo-to shita]-tokoro-o   tsukamae-ta.
     police-TOP   burglar-ACC   escape-try to-PAST-occasion-ACC   arrest-PAST
     "The police arrested the burglar on the occasion on which he/she was trying
     to escape."

(48) Keisatsu-wa   doroboo-o   [nigeyoo-to shita]-no-o   tsukamae-ta.
     police-TOP   burglar-ACC   escape-try to-PAST-NO-ACC   arrest-PAST
     "The police arrested the burglar in the occasion in which he/she was trying
     to escape."

The Quasi-CENP Construction in (47) is a construction in which an NP corresponding to

an "internal head" of the _tokoro_-clause of the CENP construction appears as a matrix

object, e.g. _doroboo_ "burglar" in (47). Furthermore, the NP precedes the _tokoro_-clause in

this construction. The IHRC Construction also has its counterpart of the Quasi-CENP

Construction, namely, the Quasi-IHRC Construction, as illustrated in (48).[4]

---

[4] Watanabe (1995) also notices the same phenomenon as (48).

With regard to the passives given in (45) and (46), I argue that those passives are the passives of the Quasi-CENP Construction in (47) and the Quasi-IHRC Construction in (48). To be specific, when the passive morphemes -(r)are is attached to the matrix verb, the matrix participant NP of the Quasi-CENP Construction in (47) and the Quasi-IHRC Construction in (48), namely, doroboo "burglar" becomes the passive subject. Since the passive morpheme absorbs Case of the matrix verb, the participant NP must move up to the subject position to obtain Case in the same manner as the subject of the usual passive.

Under my analysis, the reason why the particle -o can be attached to the internally-headed relative clause in (46) and the tokoro-clause in (45) is because the passive morpheme -(r)are in Japanese absorbs only one Case. There is evidence for this assumption. In the double object construction in Japanese, when the verb is passivized and the dative object becomes the subject of the passive of the double object construction, the Accusative Case marker can still appear in this construction, as shown in (49) and (50):

(49)   Jiro-ga   Hanako-ni   shashin-o   watasih-ta.
        NOM   DAT   picture-ACC   hand-PAST
     "Jiro handed Hanako a picture."

(50)   Hanako-wa   Jiro-ni   sono-shashin-o   watas-are-ta.
        TOP   by   the-picture-ACC   hand-PASS-PAST
     "Hanako was handed the picture by Jiro."

The example in (49) is a double object construction. When the verb is passivized and the Dative object becomes the subject of the passive, the object sono-shashin "the picture" can still appear with the Accusative Case marker, as shown in (50).

Under the above assumption of the Case absorption of the passive morpheme -(r)are, my proposed analysis correctly predicts that the particle -o can still appear with the

internally-headed relative clause in example (46) and the tokoro-clause in (45). As

discussed above, I assume that the examples in (46) and (45) are the passives of the Quasi-

IHRC Construction in (48) and the Quasi-CENP Construction in (47), respectively. In

the Quasi-IHRC Construction and the Quasi-CENP Construction, there are two NPs

marked by the Accusative Case marker. The passive morpheme -(r)are absorbs only one

structural Accusative Case assigned to the participant NP, namely, keisatsu in (47) and (48).

Therefore, the structural Case maker -o can still appear with the internally-headed relative

clause or the tokoro-clause, even when the matrix verb is passivized.

My account of the existence of the particle -o attached to the internally-headed relative

clause in (46) and the tokoro-clause in (45), however, raises one question about the

difference between the so-called "inalienable possession construction" given in (52) and

the Quasi-IHRC/CENP in Japanese.

(51) Masao-ga   Hanako-no   hoho-o   but-ta.
        NOM   GEN   cheek-ACC   hit-PAST
        "Masao hit Hanako's cheek."   (Kuroda 1988)

(52) *Masao-ga   Hanako-o   hoho-o   but-ta.
        NOM   ACC   cheek-ACC   hit-PAST
        "Masao hit Hanako on her cheek."   (Kuroda 1988)

As shown in (47) and (48), the Quasi-IHRC Construction and the Quasi-CENP

Construction allow two NPs marked by the particle -o, whereas the inalienable possession

construction in Japanese does not allow two NPs marked by the particle -o, as shown in

(52). Then, one question arises as to why we have this kind of difference.

The reason why the Quasi-IHRC Construction and the Quasi-CENP Construction

allow two NPs marked by the particle -o is because the particle -o attached to the no-clause

or the tokoro-clause in these constructions is the manifestation of a kind of inherent Case. On the other hand, in the inalienable possession construction, no inherent Case related to the verb is available for the two NPs, namely, the possessor NP and the body part NP. Therefore, only one NP is allowed in the inalienable possession construction.

As discussed by Poser (1981) among others, Japanese has the particle -o as an oblique Accusative Case marker in addition to the pure structural Accusative Case marker, as illustrated in (53) to (56):

(53) Hanako-ga   hamabe-o   arui-ta.
         NOM   beach-ACC   walk-PAST
     "Hanako walked on the beach."

(54) Taro-ga   yama-o   nobot-ta.
        NOM   mountain-ACC   climb-PAST
     "Taro climbed a mountain."

(55) John-wa   michi-o   yokogit-ta,
        TOP   street-ACC   cross-PAST
     "John crossed the street. "

(56) Jane-wa   sora-o   ton-da.
        TOP   sky-ACC   fly-PAST
     "Jane flew through the sky."

As discussed by Kuno (1973), in examples in (53) to (56), the NPs taken as an object of the verbs specify the place where the motion designated by the verb takes place covering the entire dimension (or the major portion thereof) of the NP continuously and unidirectoinally. Poser argues that the above Accusative Case is an oblique Accusative Case. Furthermore, because of this oblique Accusative Case, the following Double Accusative Constructions shown in (58) and (59) are marginal, but not totally unacceptable.

(57) *Taro-ga   Hanako-o   meshi-o   tak-ase-ta.
         NOM   ACC   rice-ACC   cook-CAUSE-PAST
     "Taro made Hanako cook rice."   (Poser 1981)

(58) ?Kare-wa   uma-o   kawa-o   watar-ase-ta.
      he-TOP   horse-ACC   river-ACC   cross-CAUSE-PAST
     "He made a horse cross the nver."   (Poser 1981)[5]

(59) ?1sao-wa   Yooko-o   hamabe-o   aruk-ase-ta.
         TOP   ACC   beach-ACC   walk-CAUSE-PAST
     "Isao made Yoko walk along the beach."   (Poser 1981)

I assume that the particle -o attached to the no-clause in the Quasi-IHRC Construction and

the tokoro-clause in the Quasi-CENP Construction is this kind of oblique Accusative Case,

namely, inherent Case associated with an internal theta role or the meaning of the verb.[6]

This analysis raises one question as to whether we can take advantage of this inherent

Case for the account of the particle -o in the passive in (45) or (46).   In other words, the

question is whether we can argue that, since the particle -o attached to the no-clause in the

passive in (46) or the tokoro-clause in the passive in (45) is an inherent Case marker, it

cannot be absorbed by the passive morpheme -(r)are and can still appear with the no-clause

or the tokoro-clause even in the passive.

This line of analysis for the particle -o in the passive seems not to be so convincing.

In fact, it seems that the above inherent Case can be absorbed by the passive morpheme, as

illustrated in (60) and (61):[7]

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[5] For the example in (59), past tense is used in the original Poser's example corresponding to it. However, this example sounds better with past tense.   Thus, I am now using past tense in this example here.

[6] In fact, with regard to the CENP Construction in Japanese, Harada (1973) speculates that the Accusative Case marker attached to the tokoro-clause is related to the oblique Accusative shown in (53) - (56).

[7] I think that the reason why the examples in (61) and (62) sound a little awkward is because

(60) ?Ano-yama-wa   Dr Hinds-ni yotte   nobor-are-ta.
      that-mountain-TOP   by   climb-PASS-PAST
      "That mountain was climbed by Dr Hinds."

(61) ?Ano-kireina-niwa-ga   nora-neko-ni yotte   aruk-are-ta.
      that-beautiful-garden-NOM   stray-cat-by   walk-PASS-PAST
      "That beautiful garden was walked by a stray cat."

Therefore, the assumption that an inherent Case cannot be absorbed by the passive morpheme -(r)are does not give a convincing account of the reason why the Accusative Case is not absorbed by the passive morpheme in (45) and (46).

3.7. Conclusion

In this paper, I have proposed a unified analysis of the IHRC (Internally-Headed Relative Clause) Construction and the CENP (Counter-Equi NP) Construction. Even though the standard approaches to these two constructions have assumed that they are different constructions, there are several affinities between these constructions, as discussed in section 2. The standard approaches need different accounts of these phenomena for each construction, in spite of the affinities. On the other hand, my proposed analysis can give a unified account of these phenomena, as discussed in this paper. Therefore, I argue that my analysis is better than the standard approaches to the IHRC Construction and the CENP Construction.

Furthermore, in section 3.6., I have also discussed an alternative analysis of one phenomenon, namely, the passive of the CENP Construction which motivated Harada (1973) to assume that the tokoro-clause is an adverbial clause. My analysis can account for the problematic phenomenon without giving up a unified analysis of the IHRC

Japanese, in general, has a strong tendency to avoid inanimate subjects.

Construction and the CENP Construction.

However, as pointed out by Shimoyama (1999), there seem to be some differences between the IHRC Construction and the CENP Construction. I will discuss the remaining issues later in a different paper, without giving up my unified analysis proposed in this paper.

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