

## EVENT BINDER IN THE ASPP<sup>1</sup>

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### 1. Introduction

In this paper, I will discuss the Japanese "Counter-Equi NP" (henceforth CENP) construction as shown in (1):

- (1) Keisatsu-wa [doroboo-ga nigeru]-tokoro-o tsukamae-ta.  
 police-TOP burglar-NOM escape-occasion-ACC arrest-PAST  
 "The police arrested the burglar while he/she was trying to escape."

In the CENP construction in (1), the *tokoro* "occasion"-clause appears as if it were an object of the matrix verb *tsukamae* "arrest". The standard approach to this construction (Harada (1973), Tsubomoto (1991), Mihara (1994), Murasugi (1995), and Hoshi (1996)) assumes that the *tokoro*-clause in (1) is simply a circumstantial adverbial clause, and that there is a matrix non-overt pronoun "pro" as the object of the matrix verb *tsukamae* "arrest", as shown in (2):

- (2) Keisatsu-wa [doroboo-ga nigeru]-tokoro-o pro tsukamae-ta.  
 police-TOP burglar-NOM escape-occasion-ACC arrest-PAST  
 "The police arrested the burglar while he/she is trying to escape."

However, under the standard assumption, one question arises as to why the *tokoro*-clause in the CENP construction is marked by the Accusative Case marker in example (2). Mihara (1994) among others argues that the particle *-o* in (2) is a real postposition, which is different from the Accusative Case marker. However, as noticed and discussed by Tsubomoto (1991) and Hoshi (1996) among others, it should be noticed that the particle *-o* in this construction exhibits a Case alternation when the potential verbal suffix *-(r)are* is attached to the matrix verb as shown in (3).

- (3) Keisatsu-wa [doroboo-ga nigeru]-tokoro-ga pro tsukamae-are-ta.  
 police-TOP burglar-NOM escape-occasion-NOM arrest-POT-PAST  
 "The police could arrest the burglar while he/she was trying to escape."

In (3), because the potential morpheme *-are* is attached to the matrix verb, the particle *-o* which is attached to the *tokoro*-clause can change to the NOM Case marker. This Case alternation is observed when we have an Accusative Case marker for the object in Japanese as illustrated in (4) to (7):

- (4) Taro-wa sono-hon-o yon-da.  
 TOP the-book-ACC read-PAST  
 "Taro read the book."  
 (5) Taro-wa sono-hon-ga yom-e-ta.  
 TOP the-book-NOM read-POT-PAST  
 "Taro could read the book."

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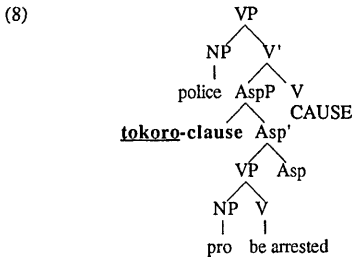
- (6) Taro-wa            Hanako-to            at-ta.  
       TOP                with                    meet-PAST
- (7) \*Taro-wa            Hanako-ga            a-e-ta.  
       TOP                NOM                    meet-POT-PAST

For example, in (5), when the potential morpheme *-g* is attached to the verb *yom* "read", a Nominative Case marker can appear with the object instead of an Accusative Case marker. On the other hand, as shown in (6) and (7), when a non-Accusative Case marker appears with an object, it cannot alternate with a Nominative Case marker even if the potential morpheme *-g* is attached to a verb.

Regarding this NOM-ACC Case alternation of the *tokoro*-clause, the standard analysis does not give a unified account of this phenomenon, because, under the standard analysis, the particle *-o* which is attached to the *tokoro*-clause is simply a postposition and not related to ACC Case.

## 2. Proposal

In this paper, I argue that the *tokoro*-clause in the CENP construction is base-generated in the Spec of the functional category AspectP (AspP) which exists between the Higher VP and the Lower VP of the layered VP structure (Travis (1991) among others) as shown in (8):



In the above structure in (8), following Travis (1991) and Baker (1996) among others, I assume that the head Asp assigns Accusative Case to an NP in the Spec of the AspP.

Furthermore, I propose that the *tokoro*-clause is a type of theta-binder of the event argument of the lower VP. This basically follows the idea of Travis (1994), which argues that Asp theta-binds an event argument of the lower VP. Under the assumption of Travis (1994), an event expressed by a single sentence consists of two sub-events. One sub-event is related to the upper VP. The other sub-event is related to the lower VP. Following Higginbotham's (1985) idea of theta-binding of an event theta role by INFL, Travis assumes that Asp theta-binds an event argument of the lower VP. In this paper, I assume that the *tokoro*-clause is a type of theta-binder of the event argument of the lower VP. For this reason, I refer to the proposed hypothesis as the Event Binder (EB) Hypothesis.

To be more specific, adopting Speas' (1990) idea about the theta-binder "the", I assume that the *tokoro*-clause has the LCS representation in (9):



In (14), the internal argument "burglar" of the head "arrested" corresponds to the event "e<sub>1</sub>". The sub-event e<sub>(VP1)</sub> of the lower VP binds this event "e<sub>1</sub>". When we turn to the denotation of the lower VP of the Counter-Equi NP construction in (15), I assume the denotation in (16) for (15):

- (15) Keisatsu-wa [doroboo-ga nigeru]-tokoro-o pro tsukamae-ta.  
 police-TOP burglar-NOM escape-occasion-ACC arrest-PAST  
 "The police arrested the burglar while trying to escape."

- (16)  $\exists_e [ e (\text{tokoro}) e_{(VP1)} [(pro) \text{arrested} (e_1)]]$

In (15), since pro is a variable, I assume that the event argument "e<sub>1</sub>" in (16) which is associated with the variable pro is an event variable. The sub-event of the lower VP, namely, e<sub>(VP1)</sub> is also an event variable, since it contains the event variable e<sub>1</sub>. In this paper, I suggest that, when the event of the tokoro-clause binds the event variable e<sub>(VP1)</sub>, the event of the tokoro-clause identifies the value of the event variable e<sub>(VP1)</sub> and also the value of the variable e<sub>1</sub> through the e<sub>(VP1)</sub>.

### 3. Argument for the EB Hypothesis

This section gives four arguments for the EB Hypothesis.

#### 3.1. Solution for Case-alternation

The EB Hypothesis gives a unified account of the Case-alternation in (3). Under the EB Hypothesis, the tokoro-clause is base-generated in the Spec of AspP, in which an object usually receives ACC Case. Therefore, the particle -o in (1) is a manifestation of an Accusative Case and it exhibits a Case-alternation when the potential verbal suffix -(r)are is attached to the matrix verb of the CENP construction.

Further support related to Case comes from the following fact. As discussed by Kuroda (1992) and Watanabe (1996), when a matrix verb assigns Dative Case to an object, the tokoro-clause is also assigned Dative Case when it appears with the verb which has the Dative Case assigning ability as shown in (17) and (18):

- (17) Hanako-wa gakusei-ni at-ta.  
 TOP student-DAT come across-PAST  
 "Hanako came across students."  
 (18) Hanako-wa [gakusei-ga hashit-te iru]-tokoro-ni at-ta.  
 TOP student-NOM run-ing occasion-DAT come across-PAST  
 "Hanako came across students when they was running."

If we assume that Dative Case in Japanese is also a structural Case following Baker (1988) and that it is assigned in the Spec of AspP, then the EB Hypothesis correctly predicts that the tokoro-clause is assigned DAT case when it appears with a matrix verb which has the ability to assign Dative Case. That is because the tokoro-clause exists in the Spec of AspP, which is the place for Case-assignment.

### 3.2. takusan "a lot"

The second piece of evidence for the EB Hypothesis comes from the interpretation of takusan "a lot" within the tokoro-clause. When the adverb takusan "a lot" appears in the tokoro-clause, it can multiply the event of the whole CENP construction as illustrated in (19). In other words, under the assumption of Krifka (1990) and Doetjes and Honcoop (1997) among others, the sentence in (19) can have both an "object-related" reading, i.e., "many burglars" reading and an "event-related" reading, i.e., "many events or many different occasions" reading. In contrast, when the adverb takusan appears in the time adverbial toki "when"-clause, the whole sentence with the toki adverbial clause allows the object-related reading, but not the event-related reading as shown in (20).

- (19) Keisatsu-wa [doroboo-ga **takusan** nigeru]-tokoro-o tsukamae-ta.  
 police-TOP burglar-NOM a lot escape-occasion-ACC arrest-PAST  
 (event-related) "The police arrested burglars on many different occasions during which they tried to escape."  
 (object-related) "The police arrested many burglars on one occasion during which they tried to escape."
- (20) Keisatsu-wa [doroboo-ga **takusan** nigeru]-toki-ni tsukamae-ta.  
 police-TOP burglar-NOM a lot escape-time-at arrest-PAST  
 (event-related) \*"The police arrested burglars on many different occasions during which they tried to escape."  
 (object-related) "The police arrested many burglars on one occasion during which they tried to escape."

In (19), because takusan "a lot" is within the tokoro-clause, the sentence can have the interpretation of multiple events. In this interpretation, there are many events, in each of which the police arrested burglars. On the other hand, the sentence in (20) cannot have the multiple event interpretation. In the interpretation that sentence (20) can have, there is one event in which the police arrested many burglars.

The EB Hypothesis gives a unified account of the above phenomena. Under the EB Hypothesis, by event-binding, each event of the Lower VP has the eventual property of the tokoro-clause. This means that the multiplication of the event of the tokoro-clause triggers the multiplication of the event of the Lower VP, which leads to the multiplication of the event of the whole CENP construction. On the other hand, the standard analysis assumes that the tokoro-clause is simply an adverbial clause like toki "when"-clause. Therefore, it does not give a unified account of the above difference between (19) and (20).

### 3.3. Aspectual word

The third piece of evidence comes from the fact that CENP constructions are usually observed when the meaning of the "adverbial" clause is related to an aspectual meaning such as shunkan "the moment" and chuu "in the middle of" as shown in (21):

- (21) Hanako-wa [Taro-ga suugaku-no benkyoo]-chuu-o tatai-ta.  
 TOP NOM mathematics-GEN study(N)-middle-ACC hit-PAST  
 "Hanako hit Taro when he was in the middle of studying mathematics."

The standard analysis simply assumes that, in the CENP construction, the tokoro-clause is a circumstantial adverbial clause. However, this analysis does not give a unified account of why

only the aspectual adverbial clause appears with a structural Case related to the matrix verb in this construction, since, under the standard analysis, the *tokoro*-clause is simply an adverbial clause.

On the other hand, the EB Hypothesis gives a unified account of this property. The adverbial clause in the CENP construction appears in the Spec of AspP, which should be related to an aspectual feature of the head Aspect, and also which is the place where a structural Case associated with a verb is assigned to an NP. Therefore, in the CENP construction, the adverbial clauses which are related to an aspectual meaning appear with a structural Case associated with a matrix verb.

### 3.4. Interpretation of *pro*

The fourth piece of evidence comes from the fact that the CENP construction does not exhibit a Weak Crossover phenomenon, when a *wh*-word appears as the subject of the *tokoro*-clause, as illustrated in (22):

- (22) Keisatsu-wa [dare<sub>i</sub>-ga nigeru]-tokoro-o pro<sub>i</sub> tsukamae-ta-no?  
 police-TOP who-NOM escape-occasion-ACC pro arrest-PAST-Q?  
 "The police, on the occasion in which who tried to escape, arrested him?"

Following discussions by Nishigauchi (1990) and Cho (1987) among others, in (22), even if the adverbial *tokoro*-clause containing a *wh*-word is pied-piped and moves to the Spec of Comp as shown in (23), the *wh*-word *dare* within the *tokoro*-clause must also move to the Spec of Comp position or somewhere within the *tokoro*-clause where a *wh*-feature is checked. The LF-representation will be schematically represented as in the following in (23):

- (23) [CP [Spec [WH (dare)<sub>i</sub> t<sub>i</sub> nigeru]-tokoro-o]<sub>j</sub> [C' [TP Keisatsu-wa t<sub>j</sub> pro<sub>i</sub> tsukamae-ta] [C no]]]?  
 who escape-occasion-ACC police-TOP arrest-PAST Q

However, this movement of the *wh*-word *dare* (WH<sub>i</sub> in (23)) leaves a trace coindexed with the *wh*-word, namely the bold *t<sub>i</sub>* in (23). This trace should cause a problem under assumptions of Saito (1985) and Cho (1987) that a variable cannot be the antecedent of a pronoun it does not c-command. The variable *t<sub>i</sub>* in the subject position of the adverbial *tokoro*-clause in (23) cannot c-command *pro* in the matrix clause. Therefore, the binding relation between the variable and *pro* in (23) should not be able to be realized. However, in fact, the sentence in (22) is grammatical.

The EB Hypothesis correctly predicts the above phenomenon in (22). Since, under the EB Hypothesis, event-binding plays a crucial role in identifying the reference of the matrix *pro* in the CENP construction. The coreferential relation between the matrix *pro* and the antecedent *dare* "who" within the *tokoro*-clause is not realized based on a binding relation. Therefore, the failure to realize the variable binding relation between a variable left by the *wh*-word within the *tokoro*-clause and *pro* in the matrix clause does not affect the identification of the matrix *pro* in the CENP construction.

### 4. Conclusion

In this paper, I have argued that the *tokoro*-clause of the Japanese Counter Equi NP construction is not simply an adverbial clause following Tsubomoto (1991) and Hoshi (1996) among others. Furthermore, I have proposed that the *tokoro*-clause of the CENP construction is base-generated in the Spec of the AspectP.

One implication of the proposed analysis goes to the so-called Japanese "head-internal relative clause". It has been often pointed out by several scholars such as Mihara (1994), Murasugi (1995), and Hoshi (1996) among others that the Japanese head-internal relative clause construction and the CENP construction are similar to each other regarding one property. In both the head-internal relative construction in (25) and the CENP construction in (24), an NP within the embedded clause is also interpreted as the object of the matrix verb.

CENP construction

(24) Keisatsu-wa [doroboo-ga nigeru]-tokoro-o tsukamae-ta.  
 police-TOP burglar-NOM escape-occasion-ACC arrest-PAST  
 "The police arrested the burglar while he/she was trying to escape."

Head-Internal Relative Clause

(25) Keisatsu-wa [doroboo-ga nigeru]-no-o tsukamae-ta.  
 police-TOP burglar-NOM escape-Nominalizer-ACC arrest-PAST  
 "The police arrested the burglar trying to escape."

In both (24) and (25), the NPs doroboo "burglar" within the embedded clauses are interpreted as objects of the matrix verbs tsukamae "arrest".

When we compare the Japanese head-internal relative clause and head-internal relative clauses in other languages, there seem to be some differences between them.

- (i) the internal head of head-internal relative clauses must be an indefinite noun, in at least several languages such as Lakhota, Moore, and Yuman languages (Diegueno, Cocopa, and Mojave) (Williamson (1987), Tellier (1989), and Basilico (1996) among others). On the other hand, this kind of restriction on the definiteness of the internal head is not observed in the Japanese head-internal relative clause.
- (ii) the Japanese head-internal relative clause requires a temporal sequence between the embedded event and the matrix event (Kuroda (1992) and Ohara (1996)). On the other hand, it seems that this kind of restriction is usually not observed in head-internal relative clauses in other languages (Culy 1990).

As also discussed by Ohara (1996), these facts suggest that the Japanese head-internal relative clause is a little different from head-internal relative clauses in other languages. Since the Japanese head internal relative construction does not have any restriction on the definiteness of the internal head and it requires a peculiar relation between the events of the embedded clause and the matrix clause, it seems that we need the event-binding type approach even for the Japanese head-internal relative clause as also discussed by Ohara (1996) concerning the importance of event relation between the matrix clause and the embedded clause.

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