LABELING WITH AFFECTEDNESS IN APPLICATIVE CONSTRUCTIONS

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Abstract

Applicative constructions are employed in languages in different ways. In English and Japanese, there are some restrictions on these constructions. In this paper, I propose that these restrictions can be captured by assuming a formal feature that is associated with the interpretation of affectedness in the framework of Chomsky (2013, 2015). This formal feature is licensed at different positions in English and Japanese, which results in different characteristics of resultative, applicative, and passive constructions. Besides, the mechanism of licensing affectedness also explains idiosyncratic behaviors of a certain type of psych verbs in Japanese.

1. Introduction

Chomsky (2013, 2015) claims that syntactic objects (SOs) have to be labeled to be appropriately interpreted at the Sensorimotor and Conceptual-Intentional interface. In this framework, a SO which contains a DP is in principle labeled with a formal feature. SOs with subjects and objects are

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labeled with φ-features, those which contain wh-phrases are labeled with interrogative features, and according to Rizzi (2015), SOs with topicalized or focalized constituents are labeled with discourse features. From this perspective, it is theoretically expected that applicative constructions involve a potential problem of labeling, since in these constructions additional arguments outside argument structures of verbs are inserted into derivations. Applicative heads are categorized into two types in Pylkkänen (2002): high applicative (HA) and low applicative (LA). HA and LA are different syntactically and semantically, and I will show that only HA causes a problem with labeling because of its syntactic position. In addition, I will propose that a formal feature that is associated with the interpretation of affectedness ([aff]) mediates labeling, and additional arguments in HAs are interpreted with affectedness.

Pylkkänen (2002) suggests that applied arguments in Japanese indirect passives are introduced into derivations by HA. If so, however, syntactic positions of HAs in indirect passives do not fit into the definition of HA in Pylkkänen (2002). I will explain this problem by assuming that [aff] is licensed in a different way from English. In general, it is assumed that thematic interpretations and discourse-related interpretations are connected to external merge and internal merge, respectively. I will show that affectedness which is found in HA has both thematic and discourse-related characteristics. If so, it can be assumed that [aff] is licensed in two ways: by external merge or internal merge. I claim that English employs the former and Japanese employs the latter. The [aff] licensing mechanism in Japanese derives indirect passives employing the same HA as other languages. This mechanism is not specific to indirect passives, but is also available in psych-

verb constructions, which causes idiosyncratic characteristics of a certain type of psych-verbs.

This article is composed as follows. In section 2, I introduce the literature about applicatives, labeling, and affectedness, and point out some problems. In section 3, I propose [aff] licensing mechanism and explain the problems presented in section 2. Besides, I assume the same mechanism in psych-verb constructions and show that peculiar behaviors of these constructions are naturally explained.

2. Theoretical Background

In this section, I overview some literature concerned and point out some problems, that are explained in section 3. In 2.1, I partly overview Pylkkänen (2002), where she subcategorizes applicative constructions into two types: HA and LA. In 2.2 I briefly go through the Labeling Theory (Chomsky (2013, 2015)). After that, I claim that only HA, not LA, poses a syntactic problem in this framework. This problem is explained in 3.1 with reference to cross-linguistic observations that applied arguments in HA constructions bear the interpretation of affectedness. In 2.3, I examine studies about affectedness where the relation between syntactic positions and affectedness is investigated. Besides thematic objects, specifiers of applicative projections and subjects of Japanese passives have been claimed to be associated with affectedness. Although this interpretive factor has been investigated in a lot of literature, it is not strictly defined. In 2.4, a definition of affectedness which is employed in this work is introduced.

2.1. Pylkkänen's (2002) definition of high and low applicatives

Although argument structures specify the number of arguments verbs take, a lot of languages employ measures to introduce additional arguments. The Bantu linguists call them applicative constructions. Pylkkänen (2002) subcategorizes them into two types, HA and LA, in terms of syntax and semantics. The following structures are from Pylkkänen (2002).

(1) a. HIGH APPLICATIVE
[VoiceP He [Voice [wife [ApplBen [eat food]]]]]
b. LOW APPLICATIVE
[VoiceP I [Voice [bake [him [APPL cake]]]]]

(Pylkkänen (2002 : 19))

Syntactically, HA heads project above verbs, and LA heads project below verbs. Semantically, HA relates an applied argument to an event that is described in vP. This argument is interpreted that it is beneficially or maleficially affected by the event. If (1a) converges successfully, the interpretation is close to 'He eats food for his wife.' On the other hand, LA denotes a possessive relation between DPs in the specifier and the complement. What (2b) expresses is 'I bake him a cake.'

Not all languages employ HA. According to Pylkkänen (2002), HA is unavailable in English. In languages that employ HA such as Albanian and Luganda, both unergative verbs and static verbs cooccur with HA, which is not the case in English.

(2) a. *UNERGATIVE VERB *I ran him.
b. *STATIC VERB *I held him the bag.

(Pylkkänen (2002 : 24))

As for Japanese, she suggests that indirect passives are derived with HA as

follows.

(3) a. Taro-ga Hanako-ni shinkousyukyo-o hajime-rare-ta
Taro-nom Hanako-Dat new religion-Acc begin-Pass-Past
'Taro was adversely affected by Hanako starting a new religion him [sic].'

b. [Taro [APPLMAL [Hanako [X [new religion start]]]]]
(Pylkkänen (2002:63))

If X in (3b) is Voice, the syntactic structure is a counterexample against (1a), since the generalization is that HA projects below VoiceP. Pylkkänen (2002) shows the following data and claims that X is not Voice.

(4) *Taro-ga Hanako-ni wazato waraw-are-ta.
Taro-Nom Hanako-Dat on purpose laugh-Pass-Past
'Taro was adversely affected by Hanako's laughing on purpose.'

In Japanese, subjecthood is necessary to be modified with *wazato* 'on purpose.' Since the dative argument in (4) cannot be modified with *wazato*, this argument lacks structural properties of external arguments. However, the judgment for (4) is clearly wrong. I confirmed the acceptability of (4) with five native speakers of Japanese, and all of them answered that (4) is acceptable. Therefore, a problem is still left open about how Japanese indirect passives can be explained with HA.

2.2. Labeling Algorithm

Chomsky (2013, 2015) proposes that every syntactic constituent must have a label to be properly interpreted in the Sensorimotor and Conceptual-Intentional interface. The mechanism of labeling is simple: a head that is found first by minimal search is a label, as shown below.

(5)

（5）｛α H ｛XP X ...｝｝

Suppose we are labeling the syntactic object α in（5）. Two heads are found in the structure: H and X. In minimal search from α, H and XP are found first, which means that the label of α is H. Importantly, labels are not always identified in a such simple way.

（6）a. ｛α XP YP｝

b. remedy 1: internal merge

｛YP ｛α → X XP YP｝｝

c. remedy 2: prominent feature sharing

｛<f, f> XP[f] YP[f]｝

In（6a）, two phrases XP and YP are found as a result of a minimal search from α, which means that it cannot be determined whether X or Y is eligible for a label of α. This situation can be fixed by an internal merge as in（6b）. If YP moves to a syntactically higher position, YP is no longer visible for labeling, so α takes X as its label.（6c）is another possible solution to（6a）. If XP and YP share certain prominent features [f] and undergo agreement, this feature can be a label of α.

As for（6c）, φ-features and interrogative features appear in the discussion in Chomsky（2013, 2015）. In addition, Rizzi（2015）proposes that discourse-related features such as topic features and focus features can contribute to labeling.

Within the framework of Chomsky（2013, 2015）, an interesting contrast is found between HA and LA.

（7）a. HA

｛VoiceP Subj ｛Voice′ Voice ｛α DP ｛Appl′ Appl vP｝｝｝｝

b. LA

{Voice′ Voice {<φ, φ> DP1[φ] {RP R[u-φ] {α → ApplP DP1[φ]
{Appl′ Appl DP2}}}}}

In (7a), HA projects below VoiceP, and an additional DP is introduced into the derivation. A labeling problem arises at α. This SO consists of two phrases, so α cannot be labeled without either movement of a SO or feature sharing. On the other hand, all the syntactic objects in (7b) can be labeled successfully. At the bottom of the derivation, two DPs establish a possessive relation with a low applicative head. Tentatively, α cannot be labeled since it consists of two phrases. Then R takes α as its complement, and DP1 moves over R to undergo φ-feature agreement. This movement allows α to be labeled as ApplP.

In this way, it can be derived that a syntactic structure of HA involves a potential labeling problem. This problem cannot be solved by a movement of a DP, since this measure creates another unlabelled SO. Therefore, it is inferred that a formal feature is necessary for labeling in HA. In this paper, I propose that a key to this problem lies in the interpretation of HA. In the literature, it has been observed that applied arguments in HA constructions are interrpeted as affected entities. In the following subsection, I overview some literature about affectedness.

2.3. Syntactic positions and affectedness

Typically, a thematic object is interpreted with affectedness although not all transitive verbs assign affectedness to its complement. Several tests have been proposed to confirm whether a DP is affected by an event described in a sentence. Among them, a test with resultative constructions is crucial here. According to Rappaport Hovav and Levin (2001), a thematic

object in a resultative construction must be a force recipient.

(8) a. John painted the room blue.
b. She kicked her son black and blue.
c.*John met Mary sad.

In (8a), the state of the room inevitably changes as a result of John's action. Although the verb kick in (8b) does not necessarily imply a change of state, still the sentence is acceptable since the context allows us to infer affectedness. On the other hand, it is difficult to imagine that a meeting event has an effect on a person, which leads to the ungrammaticality of (8c). Interestingly, Japanese shows different constraint on resultatives (Washio (1997)).

(9) a. John-ga heya-o aoiro-ni nu-tta.
John-Nom room-Acc blue-Dat paint-Past
'John painted the room blue.'
b.*Kanojo-wa musuko-o azadarake-ni ket-ta.
she-Top son-Acc black and blue-Dat kick-Past
'She kicked her son black and blue.'

(Washio (1997:6))

Japanese allows verbs that take force recipients as their complements to be used in resultatives as shown in (9a). However, unlike in English, *keru* 'kick' is incompatible with a resultative predicate although it is not difficult to imagine some resultative state after kicking. I claim that the contrast between (8b) and (9b) indicates a difference in licensing affectedness in English and Japanese. We will return to this topic in 3.2.

In addition to a complement position of a verb, it is generally observed that a specifier of a complex verb phrase is related to affectedness. Oehrle

(1976) points out that DOC and to-dative constructions have differences in meaning: DOC implies a change of state of an indirect object, which to-dative construction cannot have. Bruening (2001) captures this fact by assuming that DOC contains a syntactic constituent that is related to the semantics of affectedness.

(10) a. The lighting here gives me a headache.

b.*The lighting here gives a headache to me. (Bruening 2001 : 261)

(11) [vP Subj [v′ v [VP1 Goal [V1′ V1 [VP2 V2 Theme]]]]]

(Bruening 2001 : 260)

Adopting Marantz (1993), Bruening (2001) assumes a syntactic structure (11) for (10a). In (11), the null verbal head V1 introduces the interpretation of affectedness. In contrast, to-dative constructions do not contain such a syntactic head as shown below.

(12) [vP Subj [v′ v [VP V [PP Theme [P′ P Goal]]]]]

(Bruening 2001 : 261)

In the sense that the number of arguments in a predicate increases, DOC is similar to applicative constructions[1]. As shown in 2.1, Pylkkänen (2002) assumes that English does not employ HA. However, some counterexamples are pointed out by Takami (2003). Takami (2003) argues in detail the difference between two types of DOC: one with to-dative alternations and one with for-dative alternations. Generally, it is said that verbs of obtaining and creations are eligible for DOC with for-dative alternations. However, more kinds of verbs can appear as shown below.

(13) a.*John killed Mary the centipede. (Kaga (1997 : 212))

b. John killed Mary a centipede for her collection.

c. John, could you kill me another rat? I'm still hungry.

(Takami (2003 : 204))[1]

(14) a.*John opened Mary the door. (Kishimoto (2001 : 137))

b. John, I see that you are very curious about the new shipment of Lego blocks. Would you like me to open you a box?

c. There now, I'm going to open you a new box and pour you some cereal. (Takami (2003 : 204))

The verb *kill* in (13) and open in (14) do not mean obtaining or creation. Therefore, these verbs are not generally expected to appear in DOC, and (13a) and (14a) are judged to be ungrammatical. However, Takami (2003) points out that appropriate context improves this acceptability as shown in (13b, c) and (14b, c). In these examples, it is highlighted that the indirect objects receive beneficial influence in the event denoted by the predicates, which leads to high acceptability. With this observation, Takami (2003) proposes the following constraint.

(15) Semantic Constraint on the Benefactive Double Object Construction

The benefactive double object construction is acceptable to the extent that it is clearly shown that an action the subject referent performs is intended for the benefit of the indirect object referent, and that the latter receives some benefit from the action.

(Takami (2003 : 213))

On the other hand, Japanese benefactive DOC shows a stricter constraint.

(16) a. Hanako-ga tabeta-soo datta node, boku-wa kanojo-ni

[1] In some studies DOC is categorized into applicative constructions. Since DOC does not contain any overt applicative morpheme, strictly they are different constructions.

Hanako-Nom eat-want-look Past since I-Top her-Dat
ichigo-o tsunde yatta.
strawberry-Acc pick give-Past
'Since it looked like Hanako wanted to eat some, I picked her some strawberries.'

b.*Hanako-ga isogashi-soo datta node, boku-wa kanojo-ni
Hanako-Nom busy-look was since I-Top her-Dat

ichigo-o tsunde yatta.
strawberry-Acc pick give-Past
'Since Hanako looked busy, I picked some strawberries for her.'

(Takami (2003 : 221))

Although the same verb *tsumu* 'pick' is used in both (16a) and (16b), the acceptability is different. This difference is attributed to the possessive relation between the indirect object and the direct object. In (16a), since the adverbial clause implies that *Hanako* wants strawberries, it is clear she is going to receive strawberries from the speaker. In contrast, in (16b) there is no such context that guarantees that *Hanako* will obtain strawberries, although the speaker's action is clearly beneficial for *Hanako*. This fact is reconsidered in 3.2 along with affectedness condition on secondary predicates in Japanese.

At the end of this subsection, I overview the relationship between the passive voice in Japanese and affectedness. Generally, it is assumed that a passive sentence is derived from an active sentence by raising a thematic object to a subject position. This movement is motivated by v which is incapable of accusative case valuation. However, Japanese passive sentences

cannot be defined in the same way.

(17) a. Taro-wa kodomo-no-koro oya-ni shin-are-ta.
Taro-Top child-Gen-period parent-Dat die-Pass-Past
'Taro's parents died on him when he was a child.'

b.*Taro-no-oya-ga kare-ni shin-da.
Taro-Gen-parent-Nom he-Dat die-Past

(18) Taro-ga saifu-o nusum-are-ta.
Taro-Nom wallet-Acc steal-Pass-Past
'Taro had his wallet stolen.'

(17b) is the most likely active counterpart of (17a). The ungrammaticality of (17b) shows that (17a) is not derived from an active sentence. In addition, (18) shows that an accusative-marked DP can appear in a passive sentence. These properties are not expected in the generally assumed passivization mechanism.

Some researchers define Japanese passives in terms of affectedness. In fact, in both (17a) and (18) Taro is interpreted to be maleficially affected by the events described in the predicates. Based on Kawamura's (2003) categorization, Oba (2017) shows plausibility to define Japanese passive voice in terms of affectedness[2]. She claims that implicit affectees can be assumed even in passives where subjects do not undergo a change of state.

(19) a. Kono-syu-no suiri-shosetu-wa nihon-no sakka-ni-wa
this-kind-Gen ratiocination-novel-Top Japan-Gen

[2] Kawamura (2003) categorizes Japanese -ni passives into 5 types: (i) personification type, (ii) implicit affectee type, (iii) property predicative passive, (iv) a report of an event with anonymous agent, and (v) description of circumstances. (v) is difficult to assume implicit affectees, but is assumed to be an exception of passive voice.

novelist-Dat-Top
itido-mo kak-are-ta koto-ga nai.
never write-Pass-Past thing-Nom Neg-Pres
'This kind of mystery novel has never been written by Japanese novelists.'

b. Ano-teiri-wa dareka-ni syoumei-sare-ta hazu-da.
that-theorem-Top someone-Dat prove-Pass-Past should-Decl
'That theorem must have been proved by someone.'

(Kawamura (2013 : 44))

At first sight, (19a) is difficult to assume an implicit affectee, but Amano (2001) explains the acceptability of this sentence with the following examples.

(20) a. Kono-zasshi-wa juudai-no-wakamono-ni yoku
this-magazine-Top teen-Gen-youth-Dat generally
yom-are-teiru.
read-Pass-Pres
'This magazine is widely read by teenagers.'

b. ? Kono-hekiga-wa ooku-no yuumei-aatisuto-ni
this-mural-Top many-Gen famous-artist-Dat
kak-are-teiru.
draw-Pass-Pres
'This mural was drawn by a lot of famous artists.'

(Amano (2001 : 7))

Although (20a) and (20b) have the same syntactic structures, the acceptability degrades in (20b). What makes (20a) perfectly acceptable is the existence of an implicit recipient of the magazine's assessment. The fact

that a lot of teenagers read the magazine guarantees its popularity of it. The popularity of the magazine is important for people who are involved in publishment, who are assumed to be implicit affectees. On the other hand, it is hard to think of such affectees in (20b) since the context does not imply that the mural is possessed by someone, which leads to the degradation of acceptability.

Although (19b) is not discussed in detail in Oba (2017), she suggests that this example can be explained in the same way as (19a). Crucially, in this type of passive sentence, a thematic agent must be anonymous.

(21) * Kono-teiri-ha Taro-ni syoumei-sare-ta.
this-theorem-Top Taro-Dat prove-Pass-Past
'This theorem was proved by Taro.'

I propose that this restriction is related to the detectability of implicit affectee. In (19b) and (21), who is affected by the event that the theorem is proved is not specified. Therefore, when these sentences are interpreted, plausible candidates for affectees are people in general or those who work in a field where the theorem matters. The unacceptability of (21) can be attributed to the difficulty of relating these people to *Taro*. In fact, a sentence that has the same syntactic structure is acceptable in an appropriate context as follows.

(22) Zannenda-ga ano-teiri-ha Taro-ni saki-ni
pitty-but that-theorem-Top Taro-Dat before-Dat
syoumei-sare-ta.
prove-Pass-Past
'It is pity, but that theorem was firstly solved by Taro.'

(22) implies a context where some people were competing to be the first to

prove the theorem. Here, who is affected by the event that *Taro* proved the theorem is clear, which improves acceptability.

The discussion above shows that it is plausible to define Japanese passives in terms of affectedness. Importantly, the interpretation of affectedness that we observed above is not purely thematic. That is, an event that is described in a predicate does not entail a change of state. Rather, a change of state is expected by a speaker. In (22), nothing has changed about the theorem itself. However, for the speaker and related people, it has. Before *Taro* proved the theorem, they could win honor by proving it, so it was meaningful for them. But after *Taro* proved it, it is not worthful anymore. In this sense, the state of the theorem has changed. I claim that this type of affectedness has to be differentiated from purely thematic affectedness. In the next section, I introduce a definition of affectedness that is employed in this paper.

2.4. Definition of affectedness

In order to discuss the correlation between syntactic positions and affectedness, we have to define what the term affectedness actually means. In the literature, affectedness is dealt with by researchers fairly vaguely. Reexamining their works, Beavers (2011) proposes that the degree of affectedness can be divided into four types.

(23) a. x undergoes a quantized change
(e.g. accomplishments / achievements: break, shatter, destroy, devour x)

b. x undergoes a non-quantized change
(e.g. degree achievements / cutting: widen, lengthen, cut, slice x)

c. x has potential for change
(e.g. surface contact / impact: wipe, scrub, rub, punch, hit, kick, slap x)
d. x is unspecified for change
(e.g. all others: see, smell, follow, play (as children), ponder x)

(Beavers (2011 : 21))

Both (23a) and (23b) entail that an entity undergoes a change of state to some extent. On the other hand, (23c) guarantees just a possibility of a change of state. Now, reconsider the discussion on Japanese indirect passives in the previous section. Clearly, the interpretation of affectedness that is observed in Japanese indirect passives is categorized in (23c). In 3.2, I show that discriminating (23c) from (23a) and (23b) is crucial to capture some differences between English and Japanese.

3. Proposal and discussion

In this section, I answer the following questions that are pointed out in the previous section. (i) How is SO that contains an applied argument labeled in HA? (ii) How are indirect passives in Japanese derived assuming HA in the structure? These questions are explained by assuming formal feature licensing in HA. Besides, I show that the same mechanism is employed in psych-verbs constructions in Japanese.

3.1. Labeling in HA in English and Japanese

In 2.3, We have confirmed that applied arguments in HA are interpreted with affectedness. Based on this observation, I propose that this interpretation is caused by a label with formal features of affectedness.

Crucially, English and Japanese have differences in terms of the interpretation of affectedness. Recall the following examples.

(24) a. She kicked her son black and blue. (=(8b))

b.*Kanozyo-wa musuko-o azadarake-ni ket-ta. (=(9b))
she-Top son-Acc black and blue-Dat kick-Past
'She kicked her son black and blue.'

(25) a. There now, I'm going to open you a new box and pour you some cereal. (=(14c))

b.*Hanako-ga isogashi-soo datta node, boku-wa kanojo-ni
Hanako-Nom busy-look was since I-Top her-Dat
ichigo-o tsunde yatta. (=(16b))
strawberry-Acc pick give-Past
'Since Hanako looked busy, I picked some strawberries for her.'

In Beavers' (2011) definition overviewed in 2.4, the interpretation of affectedness that is associated with the verb *kick* in (24a) is categorized into (23c). Beavers (2011) suggests that Japanese resultative constructions have a stricter constraint than English, which says predicates have to involve affectedness that is categorized in either (23a) or (23b). I interpret this constraint that syntactic positions where (23c) type of affectedness is licensed are different between English and Japanese. Remember that language has a tendency that thematic relation is established by an external merge and discourse information arises with an internal merge. Having it in mind, (23a) and (23b) are no doubt thematic information, so these interpretations are assigned by external merge. (23c), on the other hand, is not purely thematic. Whether an entity truly undergoes a change of state is not guaranteed by argument structure, thus it is a speaker who decides the

degree of affectedness. In this sense, (23c) type of affectedness is related to the discourse too, which leads to an assumption that this interpretation may arise as a result of either an external merge or an internal merge. Here, I make a proposal about licensing (23c) type of affectedness in English and Japanese. In English, it is licensed when a DP is externally merged into a derivation. On the other hand, in Japanese, this type of affectedness is licensed when a DP is internally merged to a functional projection above VoiceP. I describe syntactic structures that contain HA in English and Japanese below.

(26) a. English

{VoiceP Subj {Voice′ Voice {<aff, aff> DP [aff] {APPL′ APPL [aff] , vP}}}}

b. Japanese

{<aff, aff> DP [aff] {AFF′ {VoiceP Subj {Voice′ {α → APPLP {DP [aff] {APPL′ vP, APPL}} Voice}} AFF [aff]}}

In (26a), the applicative head itself contains [aff], which mediates labeling with the DP in its specifier. On the other hand, in (26b), the applicative head does not have any formal feature, which causes a labeling problem on α. In Japanese, a functional projection where [aff] checking is implemented, which I call AFFP. The DP with [aff] moves to [Spec, AFFP], which allows α to be labeled as APPL. At the landing site of this movement, [aff] is checked and the SO which contains the applied DP is labeled with this formal feature. The applied DP further moves to the subject position, and the whole structure is spelled out as an indirect passive sentence[3]. as shown in 2.3,

[3] I assume that affectedness heads are irrelevant to the passive morpheme -rare. Although -ni passives imply affectedness, -niyotte passives describe events purely

characteristics of Japanese indirect passives are the interpretation of affectedness on subjects and availability of accusative marked direct objects. These features are captured in the structure (26b). The affectedness interpretation arises from labeling with [aff] . Since the applicative head projects above transitive vP, it is natural for an accusative marked DP to appear.

3.2. HA in psych-verb constructions in Japanese

In the previous section, I proposed a syntactic structure of HA constructions in Japanese, which are derived to be indirect passives. In this subsection, I show that this structure is shared with psych-verb constructions. Japanese psych-verbs can be categorized into some groups, one of which is idiosyncratic in terms of passivization and causativization.

(27) a. Taro-ga sono sirase-ni iradat-ta.
Taro-Nom that news-Dat get irritated-Past
'Taro got irritated at the news.'

b.*Sono sirase-ga Taro-ni iradat-are-ta.
that news-Nom Taro-Dat get irritated-Pass-Past

c.*Hanako-ga Taro-ni sono sirase-ni iradat-ase-ta.
Hanako-Nom Taro-Dat that news-Dat get irritated-Caus-Past
lit. 'Hanako made Taro get irritated at the news.'

As shown in (27b) and (27c), a psych-verb *iradatu* 'get irritated' cannot be passivized or causativized. Henceforth I call this type of psych-verbs

objectively. Tentatively, I assume a morpho-phonological mechanism which refers to thematic information that subjects have. The passive morpheme -rare appears when this mechanism detects theta-roles that are not agent-oriented.

'inducement psych-verbs' borrowing from Shimizu (2007). Before the discussion on this matter, let us review the argument structure of psych-verbs in English. Consider the following examples.

(28) a. I fear thunder.
b. Thunder frightened me.

If (28a) and (28b) convey the same interpretation, a problem arises considering the Uniformity of Theta Assignment Hypothesis (UTAH), which is proposed in Baker (1988).

(29) Uniformity of theta assignment hypothesis: UTAH
Identical thematic relationships between items are represented by identical structural relationships between those items at the level of D-structure. (Baker (1988 : 46))

In (28a), the experiencer appears as a subject. On the other hand, the object is interpreted as an experiencer in (28b). Pesetsky (1995) avoids this problem by pointing out a difference in meaning between (28a) and (28b). In (28a), the speaker is afraid of thunder itself. Even on a sunny day, s/he will get scared imagining thunder. In (28b), it is true that an event happened that the speaker was frightened by thunder. However, s/he is not afraid of thunder itself. That is, just a loud sound or strong light of thunder frightened the speaker. Therefore, *thunder* in (28a) and that in (28b) have different theta-roles. According to Pesetsky (1995), the former is target and the latter is causer.

(30) Causer > Experiencer > Target / Subject Matter
(Pesetsky (1995 : 59))

Now, consider the following example.

(31) Taro-ga sono kiji-ni iradat-ta.

Taro-Nom that article-Dat get irritated-Past
'That article irritated Taro.'

In (31), *Taro* does not necessarily have negative emotions in the article. If the article is about a government, he can think that the article is fantastic, and that government is terrible. Therefore, in Pesetsky's (1995) term, *kiji* is a causer. If so, (31) is a counterexample against (30) since an experiencer appears structurally higher than a causer. Now, I propose that sentences with inducement psych-verbs have the same syntactic structure as indirect passives. Suppose that arguments are introduced into the derivation in (31) following the hierarchy in (30), but the experiencer has to move to [Spec, AFFP] for licensing of [aff].

(32) {<aff, aff> Exp [aff] {AFF′ {VoiceP Causer {Voice′ {RP Exp [aff], R} Voice}} AFF}}

As discussed in the previous subsection, Japanese passives with affectedness is derived as a result of an internal merge of a DP with [aff] into [Spec, AFFP] . In this sense, the syntactic structure in (32) is interpreted as a passivezed causative sentence. In fact, (31) can be added additional passive and causative morphemes.

(33) Taro-ga sono kiji-ni iradat-ase-rare-ta.
Taro-Nom that article-Dat get-irritated-Caus-Pass-Past
'That article irritated Taro.'

The syntactic structure (32) can be spelled out as both (31) and (33) because of a morpho-phonological specification of inducement psych-verbs. Namely, it is optional to spell out passive and causative morphemes overtly. Now, the idiosyncratic features shown in (27b) and (27c) are naturally expected, since the structure of (27a) is already causativized and passivized.

4. Conclusion

In the framework of Chomsky (2013, 2015), HA poses a problem of labeling. A SO that contains an applied argument cannot be labeled properly. This problem is solved assuming [aff] licensing in HA, which results in the interpretation of affectedness in HA. The system of [aff] licensing is different in English and Japanese. In English, [aff] is licensed as a result of an external merge. On the other hand, in Japanese [aff] is licensed by internal merge. This difference is externalized in resultative constructions, double object constructions, and passive constructions. [aff] licensing also takes place in psych-verb constructions, which explains peculiar characteristics of inducement psych-verbs in Japanese.

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