

A Minimalist Approach to the θ -system

萱嶋, 崇

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A Minimalist Approach to the θ -system

Takashi Kayashima

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Graduate School of Humanities, Kyushu University

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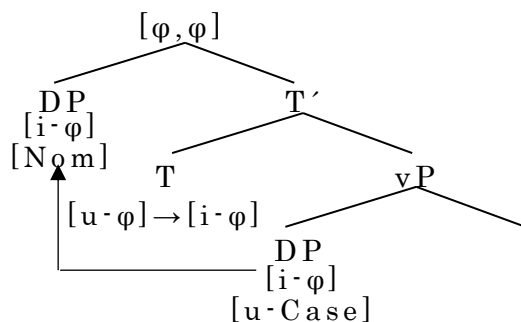
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1 Introduction

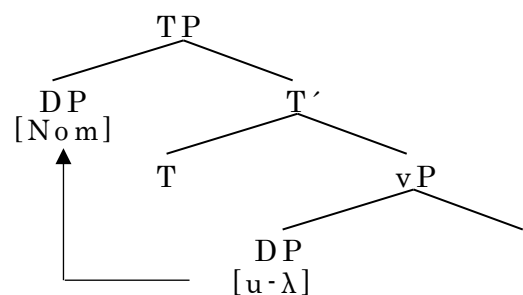
This work is dedicated to exploring the possibility to expand an explanatory adequacy of the Minimalist Program (MP), which has been developed since Chomsky (1995). Although this program is intended to be cross-linguistic, its development is mainly based on Indo-European languages, so the range of explanation is limited. One of the problems of the MP which I focus on in this study is that this theory crucially depends on φ -features. As I discuss in chapter 2, theories from Chomsky (1995) to (2015) do not work without these features. Although the MP has been subject to a great developmental and theoretical shift in Chomsky (2015), the extent of dependency on φ -features has not changed. There are precisely two situations where φ -features are indispensable. In the framework of Chomsky (2013) and (2015), it is assumed that every syntactic object must have a label to be properly interpreted in the C-I interface. We have two ways of labeling: (i) labeling with the closest head, and (ii) labeling with a shared feature between two components of the syntactic object. Crucially, in the derivation of a simple transitive sentence, two syntactic objects are labeled with φ -features. Furthermore, a mechanism of case valuation depends on φ -features. In the MP, it has been assumed that case valuation is a side effect of φ -feature valuation.

However, evidence which shows that some languages lack these features has been found, one of which is Japanese (Saito (2007), Şener and Takahashi (2010)). If Japanese lacks φ -features, ways of labeling and case valuation without φ -features are necessary. Saito (2014) provides a principled explanation to this problem. He employs Bošković's (2007) case valuation system, which does not depend on φ -feature valuation. He proposes that grammatical case is a realization of 'λ-feature,' which makes phrases invisible to labeling. (1) schematizes differences between the frameworks of Chomsky (2013, 2015) and Saito (2014).

(1) a. Chomsky (2013, 2015)



b. Saito (2014)



In (1b), the DP moves to [Spec, TP], where [u-Case] of the DP receives nominative value from T. As a result, the DP becomes invisible to LA, and the syntactic object is labeled with T as a whole in (1b). Although this framework elegantly explains how sentences are derived in a language lacking φ -features, one issue is left unexplained. That is, phenomena related to the dative case cannot be captured in Saito's (2014) framework¹. Dative case

¹ Previous literature has discussed whether *-ni* is a case marker or a

arguments appear in various positions in Japanese.

- (2) a. Taro-ga yama-o/ni nobo-tta.
Taro-NOM mountain-ACC/DAT climb-PAST
'Taro climbed a mountain.'
- b. Taro-ga Hanako-ni/niyotte tasuke-rare-ta.
Taro-NOM Hanako-DAT/by rescue-PASS-PAST
'Taro was rescued by Hanako.'
- c. Taro-ga Hanako-o/ni aruk-ase-ta.
Taro-NOM Hanako-ACC/DAT walk-CAUSE-PAST
'Taro made Hanako walk.'
- d. Taro-ga Hanako-*o/ni ringo-o tabe-sase-ta.
Taro-NOM Hanako-ACC/DAT apple-ACC eat-CAUSE-PAST
'Taro made Hanako eat an apple.'
- e. Taro-*ni/ga eigo-o hanas-er-u.
Taro-DAT/NOM English-ACC speak-POSS-PRES
'Taro can speak English.'

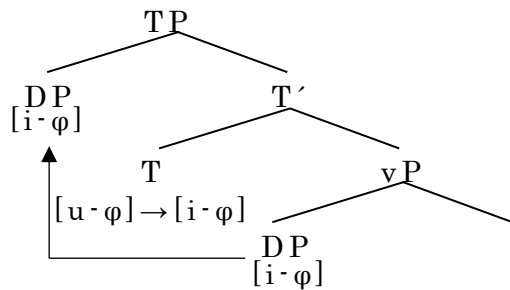
(2a) is a simple active sentence, (2b) is a passive sentence and (2c) is a causative sentence. What is important in (2a-c) is that case marking has an effect on their interpretation. As reviewed in detail in chapter 4, an aspectual difference is found in (2a) and

postposition. Sadakane and Koizumi (1995) divides *-ni* into 31 subcategories and discusses which ones should be treated as case markers and which ones as postpositions. Against this investigation, Imaoka (2012) claims that all the kinds of dative case are case marker. I assume that *-ni* which is attached to a goal argument is a postposition and the others are case markers.

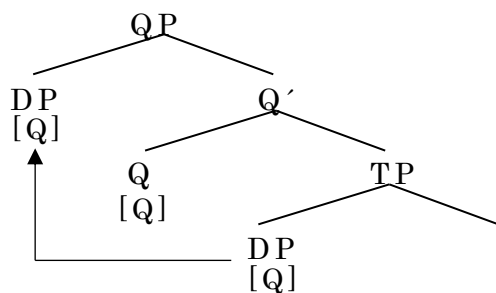
whether a subject is affected by the event or not is different in (2b). In (2c), the degree of coercion changes with respect to case marking. (2d) and (2e) show another issue: restrictions on the distribution of case. (2d) is an example of double-*o* constraint, which bans two occurrences of accusative-marked arguments (Harada (1973)). (2e) shows that a dative-marked subject cannot co-occur with an accusative object.

Since these dative-marked arguments appear in various positions, Bošković's (2007) framework is not available since the functional category which provides the dative value cannot be identified. Furthermore, if the dative case is not a realization of a λ -feature, any syntactic object which contains a dative-marked argument cannot be labeled. In this thesis, I would like to propose a certain kind of feature other than ϕ -features in Japanese, which enables labeling and case valuation. Crucially, (2a-c) show that there is a close relation between case and interpretation. In order to capture this, it is assumed that Japanese utilizes θ -roles as criterial features in the vP domain. The notion of criterial features is introduced by Rizzi (1996). The contrast between uninterpretable features and criterial features is concisely described as follows.

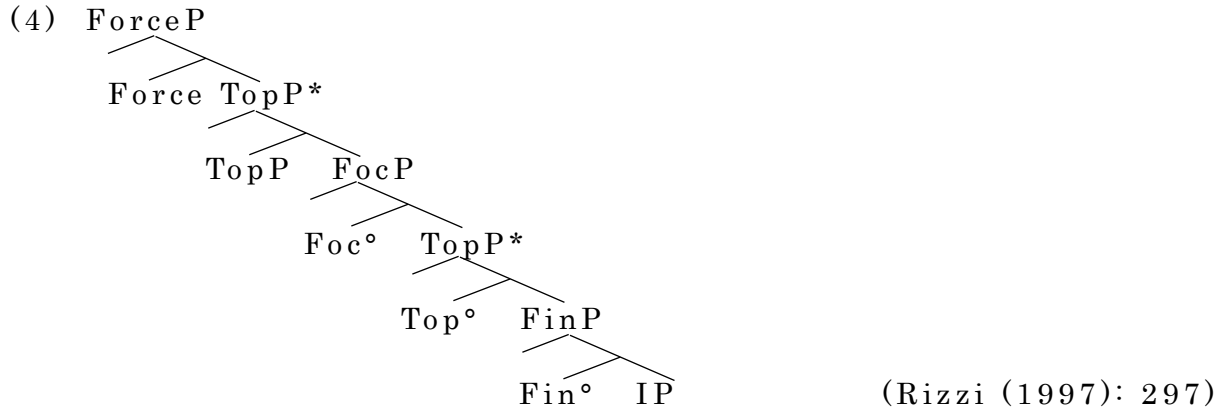
(3) a. uninterpretable features



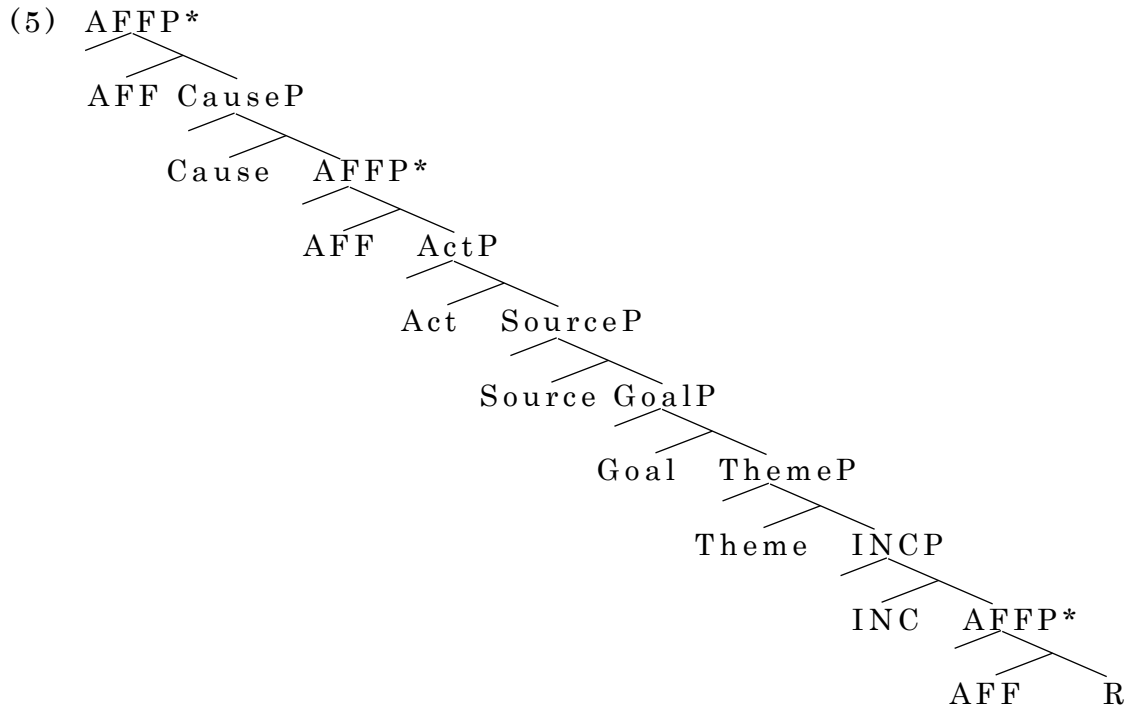
b. criterial features



In (3a), T has uninterpretable features, which have to be provided certain values and then deleted, otherwise they cause the derivation to crash. T probes a goal which has appropriate values and find the DP, which has [i-φ]. Here, agreement takes place and [u-φ] receives a value. In contrast, in (3b) the DP has a criterial feature [Q], which makes the DP move to [Spec, QP] to satisfy the criterion. As a result of this satisfied condition, an interrogative interpretation emerges. Rizzi (1996, 1997) describes a cartography in the CP periphery as follows, and explains the relation between the distribution of arguments and their interpretation.



In this paper, I pursue the same line of reasoning in the vP domain. Importantly, while CP is the discourse-related domain, vP is related to thematic interpretations. Thus, a cartography of the vP domain is based on θ -roles. θ -roles are treated as criterial features (θ -features), which facilitate syntactic derivations in place of φ -features. Namely, the displacement of arguments and case valuation are implemented based on a θ -feature-based mechanism. Observing various constructions, I propose the following cartography in the vP domain.



All the constructions in Japanese have the hierarchy shown above. Concretely, a sentence which describes a movement of some entity is derived utilizing a part of structure from the bottom to SourceP. An external argument of an active sentence is introduced into ActP, and a subject of a passive sentence is externally or internally merged into AFFP above ActP. A causer is introduced into [Spec, CauseP] and AFFP above CauseP hosts either an experiencer or the subject of a passivized causative sentence.

In the next chapter, I review the theoretical background which provides the basis of this paper. Two decades of development of Chomsky's theory, from Chomsky (1995) to (2015), are reviewed, and problems raised by the Japanese data are pointed out. After that, I discuss Saito's (2014) theory, and confirm that Chomsky's

(2013, 2015) theory cannot be directly applied to languages which lack φ -features. As a fundamental previous study, we look at Rizzi (1991, 1997), where the notions of cartography and criterial features are introduced.

In chapter 3, basic proposals which can cover the distribution of arguments and case are given, as well as their restrictions. The vP domain in Japanese has thematic-based cartography, which has effects on word order, case valuation and Voice alternation. In order to describe an accurate cartography, the θ -roles employed here are discussed after reviewing two major frameworks: Dowty (1991) and Jackendoff (1990). In addition, a basic assumption about case valuation, which has close relation with θ -roles is proposed.

In chapter 4, I launch to describe the cartography in the vP domain through various Japanese examples. The voice system and case valuation depend on this θ -feature-based cartography. Simple actives, passives, causatives, and psych verb constructions are considered. All these constructions share the same θ -feature-based system (θ -system), which allows us to capture the distribution of case and its relation to interpretation of the constructions in a unified way. The case valuation system proposed in chapter 3 is shown to capture the distribution of case including dative case. One of the two constraints on case marking, namely the double-*o* constraint, is explained here. This constraint is given a principled explanation by Hiraiwa (2010),

which leaves one problem: the theory can capture most constructions except causatives. I claim that Hiraiwa's (2010) framework is correct, but the case valuation system in the current framework shows that the way accusative case valuation is assigned in a causative sentence is different from that of other constructions.

Chapter 5 has a comparative discussion of English and Japanese. Although English has a φ -feature-based system (φ -system), the language partly employs a θ -system. Some peculiar syntactic and semantic phenomena in a few constructions are covered with this hybrid system. For instance, the derivations of the following sentences contain a θ -system.

- (6) a. John got promoted to a director.
b. John had his wallet stolen.

(6a, b) are passive sentences, but they are idiosyncratic compared to simple BE passives. In (6a), it is emphasized that the event denoted by the sentence is desirable for John. While valency decreases from two to one in simple passives, it stays two in (6b). In this proposal, *get* and *have* are treated as realizations of θ -features, which are the source of their idiosyncrasies.

Chapter 6 focuses on the CP domain. According to Diesing (1992), the subject of a predicate which denotes a permanent state (ILP) is base-generated in [Spec, TP]. If so, the subject of an ILP

does not have any θ -features, which means that the syntactic object which contains the subject cannot be labeled. The only way to solve this problem of labeling is to move the subject to a syntactically higher position, where labeling with discourse features is available. This is the reason why the subject of an ILP must have a specific discourse-related interpretation as shown in (7b).

(7) a. Taroo-ga byooki-da.

Taroo-NOM sick-DECL

‘Taro is sick.’

b. Taroo-ga gakusei-da.

Taroo-NOM student-DECL

‘Taro is a student.’

After considering stative sentences, I focus on a potential construction, which has a constraint on case valuation. In this construction, a dative marked subject cannot co-occur with an accusative marked object. Interestingly, this constraint is avoided when a subject has a specific interpretation.

(8) a.* Kodomo-ni hon-o yom-er-u.

child-DAT book-ACC read-POSS-PRES

‘A child can read a book.’

- b. Boku-ni-*(wa) kare-o uragi-re-nai.
I-DAT-*(TOP) he-ACC betray-POSS-NEG
'I cannot betray him.'

I claim that the ungrammaticality in (8a) originates from a failure of labeling of the syntactic object containing the dative subject. Therefore, in the same way of a subject of an ILP, the dative subject must move to the CP periphery to be labeled with discourse features.

Chapter 7 has the concluding remarks.

2 Theoretical Background

In this chapter, I review the literature on which the current theoretical framework is based, along with some problems, which are explained in this thesis. In section 2.1, I review the framework of the MP, which has been evolving since it was first introduced by Chomsky (1993). In the next section, problems are pointed out which cannot be captured in the current version of the MP. In section 2.3, I review the cartographic approach proposed by Rizzi (1996, 1997), which I extend to the vP domain in chapter 3. In section 2.4, the theta system developed by Reinhart (1991) is outlined, which I also extend in this study.

2.1 Minimalist Program

The enterprise of generative grammar started in 1950s to advocate Universal Grammar (UG). UG is shared among human beings, based on how they come to acquire language. At first, researchers started to describe rules of a language's grammar. With its incorporating Principle and Parameter Theory and Government and Binding Theory, descriptive and explanatory adequacy were gradually strengthened. However, consequently too many rules were apparently necessary to explain all the grammatical phenomena in even one language. This raises a

problem in terms of human evolution. If one were considering human history, the emergence of language is a momentary incident. Therefore, UG cannot be too complicated. The Minimalist Program (MP), which was proposed in Chomsky (1993), has been trying to reduce the rules to more general and simple principles or conditions in order to achieve a high explanatory adequacy. Among them, the most important principle is the economy principle, which states that '[t]he linguistic expressions are the optimal realizations of the interface conditions, where 'optimality' is determined by the economy conditions of UG (Chomsky (1995: 171)).' The MP has been developed strictly with the adherence of this principle, and now UG has been simplified drastically. Specifically, UG has only two language specific properties, Merge and Labeling. In this section, I review the evolution of the MP from Chomsky (1995), where a feature-based approach is proposed, to the most recent one in Chomsky (2015), which introduces the Labeling Algorithm.

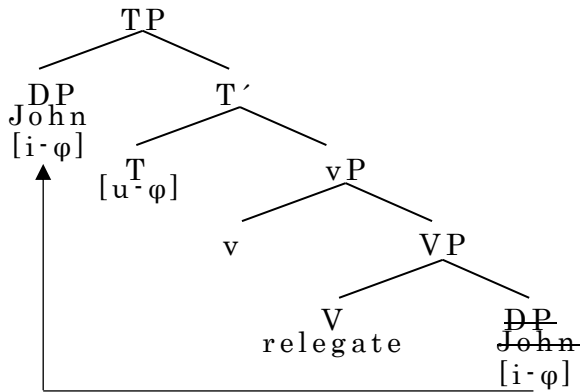
2.1.1 Feature-based Approach

Considering the economy principle, Chomsky (1995) started discussing motivations of syntactic operations. Before Chomsky (1995), syntactic objects could be moved in a derivation freely (move α), which means that many derivations which are not felicitous could be generated. These derivations are filtered out at the interface. Clearly, it is not economical to derive such

structures in vain. Therefore, some mechanism is necessary to reduce the number of meaningless derivations. An important notion is that syntactic operations cannot be applied without motivation. Assuming this, only one syntactic structure is derived, which means that no filter is necessary to rule out inadequate structures. Chomsky (1995) claims that movements of arguments are motivated by feature checking. Observing other languages, we find cases where certain properties of arguments such as number, person and gender are reflected on other categories. For instance, in English, the verbal suffix *-s* is attached to a verb when a subject is third person and singular. According to Chomsky (1995), this is a result of ‘agreement’ between uninterpretable ϕ -features on T and interpretable ϕ -features on the subject. Functional categories such as C and v are assumed to have uninterpretable features, which cannot be interpreted at the C-I interface. Following the Full Interpretation principle, such uninterpretable features must be removed before they are sent to the interface; otherwise, the derivation crashes. Chomsky (1995) proposes that syntactic operations are applied to remove these uninterpretable features. Two kinds of displacement phenomena are exemplified below.

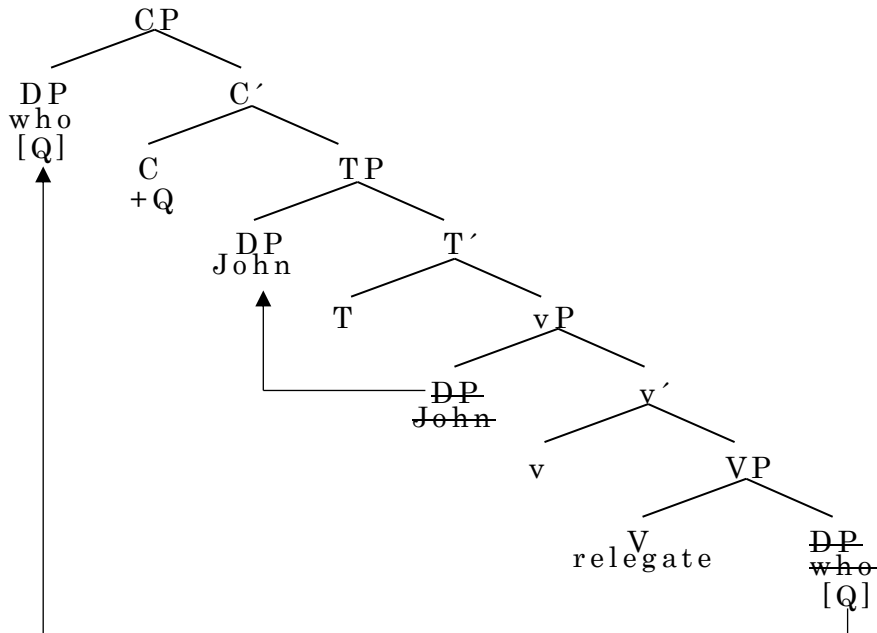
(9) a. $John_i$ was relegated t_i .

b.



(10) a. Who_i did John relegate t_i ?

b.



In (9), $[u-\phi]$ on T has to receive a value, thus it ‘probes’ an appropriate goal and finds *John*. Then agreement is established between them and T receives a value from *John*. Importantly, this agreement makes T attract *John* to its specifier. In the same way, in (10) *who* is attracted to [Spec, CP] because of the Q feature of C head. In this way, motivations of syntactic operations are defined. However, the notion that syntactic operations need some

motivation is abandoned in the later framework.

2.1.2 Labeling Algorithm

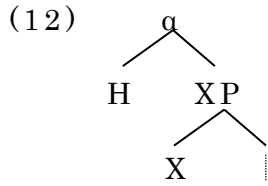
The simplicity of theory is further strengthened in the framework of Chomsky (2015). Chomsky (1993) mentions an importance for labels of syntactic objects: the label of a syntactic object identifies its particular properties. For example, vP is identified as a thematic proposition, while CP is understood as more complex proposition containing discourse-related information. The algorithm to determine labels of syntactic objects is introduced in Chomsky (2014, 2015), which is called the Labeling Algorithm (LA). According to this theory, a label of a syntactic object is determined through a minimal search from the syntactic object. The algorithm is as follows.

(11) a. $SO = \{H, XP\} \rightarrow H$ is the label.

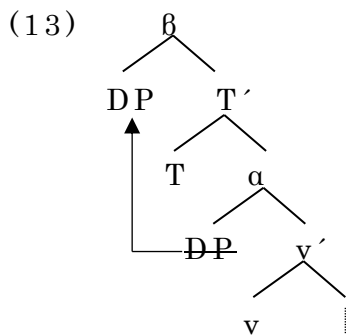
b. $SO = \{XP, YP\} \rightarrow$ (i) if either phrase is raised, the other phrase is the label.

(ii) if XP and YP share a prominent feature [f], the label is [f, f].

Schematizing (11a), we obtain the following schematization.



In (12), α searches for an appropriate entity which is eligible to provide the label for α . The condition of eligibility to be a label is simple: a head can provide a label. In (12) H is a head while XP is a phrase, so the label of α is H. The simplicity of this system is preferable in the MP, but raises some problems as shown in (13). (13) is the derivation of a simple transitive sentence in English, which is an instance of (11b).



In (13), we first face a problem of labeling at α , which has been traditionally called vP. Since both constituents of α are phrases, we cannot determine the label of α . At this point, we can move the DP to a higher position, resulting in no competitor for v to be the label. Therefore, the label of α is identified as v . Next, we face another problem at β , which is called TP in the former framework. Here, DP and T share agreed features, namely ϕ -

features. In this case, the label can be determined with the shared features. Concretely, the label of β is $[\varphi, \varphi]$.

One of the fruits of this theory is that we can eliminate EPP feature from the framework. EPP is a property that [Spec, TP] must be filled, which is observed in many languages. Traditionally, this property had been explained by simply assuming EPP feature. T has an EPP feature, which must be satisfied by filling its specifier position with a DP. However, this is not a principled explanation, but just a description of a fact, using a stipulative constraint. It goes without saying that it would be better if we can accommodate the fact without such a stipulation. In Chomsky's (2013, 2015) framework, it is not necessary to assume the EPP feature, and the EPP property of languages can be reduced to a consequence of LA. That is, if a subject stays at the base position, a failure of labeling occurs and the derivation crashes.

Nonetheless, some issues remain to be explained. In Chomsky (2013, 2015), it is assumed that T is 'weak' in English, which means that it is not capable of providing a label. Whether T is strong or not differs according to the language. For instance, Italian, which has a rich agreement system, is assumed to have strong T. Chomsky claims that in such languages T can be a label, which is the reason why the EPP property is not observed in this language. Now, if we look at (13) again, we should consider a language whose T is strong. In this case, T can be a label, which

means that a subject does not have to move to a higher position. How can we provide α with a label? That is, if there is a language where the subject stays at [Spec, vP], we face a problem of labeling.

In addition, some languages are argued to lack φ -features. In these cases, a problem of labeling occurs at β in (13). Remember that φ -feature sharing is crucial to label the node β . Therefore, for languages which lack φ -features, a labeling strategy without φ -features is necessary.

2.2 Languages Which Lack φ -features

It has been shown that φ -features have played an important role in the framework of the MP. In the feature-driven approach, movements of DPs are driven by agreement of φ -features (Chomsky (2000, 2001)), although the motivation of movements is attributed to the edge feature in Chomsky (2005). In the current version of the MP, φ -features are necessary for the labeling of traditional TP. In addition, since Chomsky (1995) it has been assumed that structural case is given to a DP when the DP undergoes agreement of its uninterpretable φ -feature. Therefore, it is not too much to say that syntactic derivation cannot proceed without φ -features. However, there are some arguments which claim that some languages lack φ -features (Kuroda (1988), Saito (2007), Şener and Takahashi (2010)). Although it had been assumed that Japanese can use PRO freely, Otani and Whitman (1991) show the fact that we can obtain sloppy interpretations with null objects in Japanese

as shown in (14b).

(14) a. Taro-wa itumo zibun-no hakaseronbun-o
Taro-TOP always self-GEN dissertation-ACC
inyoosu-ru
cite-PRES

‘Taro always cites his Ph.D. dissertation.’

b. Demo, hoka-no hito-wa zenzen [e] inyoosi-na-i
but other-GEN person-TOP at all cite-not-PRES

‘But the others don’t cite (it / their Ph.D. dissertations) at all.’...strict or sloppy interpretation

c. Demo, hoka-no hito-wa zenzen sore-o
but other-GEN person-TOP at all it-ACC
inyoo-si-na-i
cite-not-PRES

‘But the others don’t cite it at all.’...strict interpretation only

As we can see from (14c), we cannot obtain sloppy interpretation with a demonstrative pronoun. Therefore, with the assumption that we use PRO in (14b) as proposed by Kuroda (1965), we cannot explain why a sloppy reading is allowed in (14b). Considering this problem, Otani and Whitman (1991) propose that (13b) is derived by VP-ellipsis. Moreover, Oku (1988) and Kim (1999) observe that it is not restricted to null objects. (15) shows that

a null subject allows a sloppy reading.

(15) a. Hanako-wa [CP [TP[zibun-no teian]-ga

Hanako-TOP self-GEN proposal-NOM
 saiyoos-are-ru] to] omot-te-i-ru
 accept-PASS-PRES COMP think-PRES

‘Hanako thinks that her proposal will be accepted.’

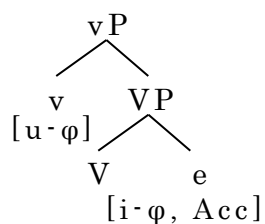
b. Demo, Taroo-wa [CP[TP[e] saiyoos-are-ru] to]

but Taro-TOP accept-PASS-PRES COMP
 omot-te-i-na-i
 think-not-PRES

‘But Taro doesn’t think that her/his proposal will be
 accepted.’...strict or sloppy interpretation

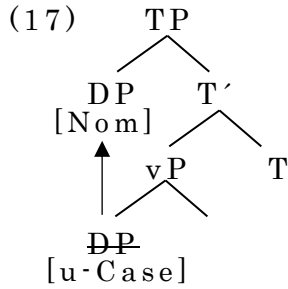
This fact can be properly captured with the assumption that we can accept ellipsis arguments in Japanese as proposed by Oku (1998). If this assumption is on the right track, one crucial problem arises. Saito (2007) claims that argument ellipsis cannot be allowed if Japanese has ϕ -feature agreement. This claim assumes that elided arguments are interpreted by LF-copying (Oku (1998) and Shinohara (2006)). Consider (16).

(16)

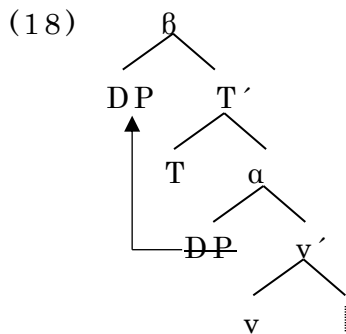


In (16), *v* probes an appropriate goal to check its [u- ϕ]. However, the elided argument has already had its [u-Case] checked and has been assigned an accusative value. Following the Activation Condition proposed by Chomsky (2000, 2001), the elided argument cannot enter the agreement relation. Therefore, the *v* fails to check its [u- ϕ], which causes the derivation to crash. This problem can be solved if Japanese lacks ϕ -features. With this assumption, the *v* in (16) does not have any uninterpretable feature, so there is no cause for the derivation to crash.

If Japanese lacks ϕ -features, two crucial problems arise, as mentioned at the beginning of this section. One is about case assignment. According to Chomsky (1995, 2000, 2001), [u-Case] in a DP is valued when the DP's [u- ϕ] is valued. If Japanese lacks ϕ -features, the way DPs receive their case is unclear. The other is about labeling. Remember that XP-YP configurations are solved by ϕ -feature sharing in Chomsky's (2013, 2015) framework. Then, how can we determine labels for XP-YP configurations in Japanese without ϕ -features? Saito (2013, 2014) answers these problems employing Bošković's (2007) system of case valuation. According to Bošković (2007), valuation of [u-Case] is independent from valuation of [u- ϕ]. Thus, [u-Case] probes a goal by itself as shown in (17).

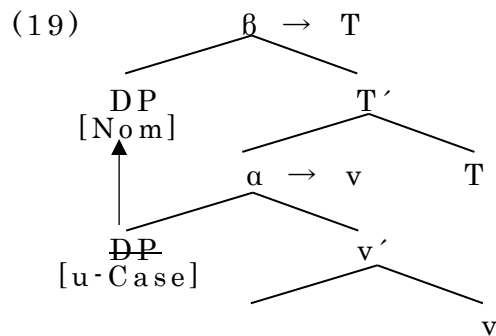


Here, a question arises. If structural case is not a side effect of ϕ -feature agreement, what is its nature? That is, what is this for? Saito's (2013, 2014) answer is that structural case helps with labeling in languages lacking ϕ -features. In his framework, structural case makes a DP invisible to LA. Technically, all the kinds of syntactic objects have an uninterpretable λ -feature, which has an effect to make the host syntactic object invisible to LA. Case is one realization of λ -features: when they receive value from T they are realized as nominative, and v assigns the accusative value to these features. Here, let us review how Saito's (2014) theory works. Remember the situation where ϕ -features are crucial for LA.



In (18), the label of α is determined with the movement strategy.

That is, the movement of DP enables α to be labeled with v . As for β , both constituents of β share the agreed ϕ -features. In this case, β is labeled as $[\phi, \phi]$. Therefore, in a language which lacks ϕ -features, the label of β cannot be determined. In Saito's (2013, 2014) framework, this label is determined as follows.



As noted above, the DP probes T in order to value its [u-Case]. As a result, the DP obtains nominative case, which makes this DP invisible to LA. Since there is no competitor for labeling, the label of β is determined as T.

This mechanism has some ideal consequences, one of which is the fact that Japanese allows scrambling. In the framework of Chomsky (2013, 2015), scrambling raises a problem with labeling. Consider the following example.

- (20) a. Taro-ga ringo-o tabe-ta.
 Taro-NOM apple-ACC eat-PAST
 'Taro ate an apple.'

b. Ringo-o Taroo-ga tabe-ta.
 apple-ACC Taro-NOM eat-PAST
 ‘Taro ate an apple.’

(20a) is a simple transitive sentence in Japanese, and the object is scrambled to the top of the sentence in (20b). Importantly, Saito (2014) claims that this movement is not A-movement nor A'-movement. If this is A-movement, *ringo* cannot move over *Taroo* since this movement violates locality for A-movement. Furthermore, the following question shows that scrambling is not A'-movement either.

(21) a. Minna-ga [CP Hanako-ga dono hon-o eranda
 all-NOM Hanako-NOM which book-ACC choose-PAST
 ka] sir-ita-gat-te i-ru
 Q know-want-keen-PART be-PRES
 ‘Everyone wants to know which book Hanako chose.’

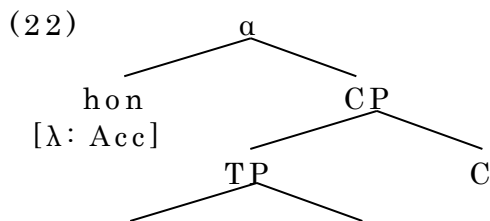
b. Dono hon-o minna-ga [CP Hanako-ga t eran-da
 which book-ACC all-NOM Hanako-NOM choose-PAST
 ka] sir-ita-gat-te i-ru
 Q know-want-keen-PART be-PRES
 ‘Everyone wants to know which book Hanako chose.’

(cf. Saito (2014): 279)

In (21b), *dono hon-o* is scrambled out of the embedded CP to the

top of the sentence. Importantly, this movement does not cause a change of interpretation. If this is A'-movement, it is expected that the relationship of scope between *minna* and *dono hon* is inversed. In this way, this shows that scrambling is neither A-movement nor A'-movement.

Then, let us consider the derivation of (21b), where scrambling occurs.



Since both constituents of α are phrases, this SO cannot be labeled through a minimal search. Furthermore, *hon* and *C* do not share any feature, since scrambling is not A'-movement. Therefore, there is no way to label α in Chomsky's (2013) framework. In Saito's (2014) framework, this problem is straightforwardly explained. Since *hon* in (22) has a valued λ -feature, which is realized as accusative case, this argument is invisible to labeling. Then, α is successfully labeled as *C*.

However, the framework considered above cannot be extended to explain dative case in Japanese. Dative-marked arguments in Japanese appear at various syntactic positions. One instance of the distribution of dative-marked arguments is a goal argument as shown in (23).

- (23) a. Taro-ga yama-o/ni nobo-tta.
 Taro-NOM mountain-ACC/DAT climb-PAST
 ‘Taro climbed a mountain.’
- b. Taro-ga kaidan-o/*ni nobo-tta.
 Taro-NOM stair-ACC/DAT climb-PAST
 ‘Taro went up stairs.’
- c. Taro-ga yama-no-tyoojoo-*o/ni nobo-tta.
 Taro-NOM mountain-GEN-top-ACC/DAT climb-PAST
 ‘Taro got to the top of the mountain.’

In (23a) the object can be marked as both accusative and dative. This optionality is not always available: accusative case is obligatory in (23b) while dative case is obligatory in (23c). From this example only, it might seem that a goal argument is assigned dative case as generally observed cross-linguistically. However, accusative/dative alternation is also observed in the following examples.

- (24) a. Taro-ga Hanako-o/ni hasir-ase-ta.
 Taro-NOM Hanako-ACC/DAT run-CAUSE-PAST
 ‘Taro made Hanako run.’
- b. Taro-ga yasai-o/*ni kusar-ase-ta.
 Taro-NOM vegetable-ACC/DAT rot-CAUSE-PAST
 ‘Taro had vegetables rotten.’

In causatives, a causee can be marked with accusative or dative as shown in (24a). However, even with the same construction, dative-marking is not always available. Considering (24b), a relevant factor seems to be whether a causee is volitional or not, which is irrelevant with the goal status.

In addition, Japanese shows an alternation between nominative and dative marking on subjects.

- (25) a. Taroo-ga/ni eigo-ga hanas-er-u.
 Taro-NOM/DAT English-NOM speak-CAUSE-PRES
 ‘Taro can speak English.’
- b. Taroo-ga/*ni eigo-o hanas-er-u.
 Taro-NOM/DAT English-ACC speak-CAUSE-PRES
 ‘Taro can speak English.’

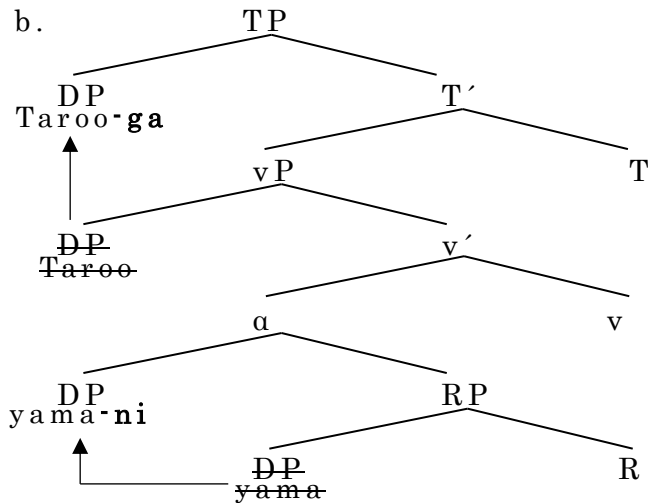
As shown in (25a), a subject of a potential sentence can have either nominative or dative case. An interesting restriction on case distribution here is that an object cannot be marked as accusative when the subject has dative case as shown in (25b). Here, dative case marking has nothing to do with any thematic interpretation of an argument such as ‘goal’ or ‘volition.’

Considering this distribution of dative case, we cannot identify which category assigns dative case to λ -features. Remember that nominative case is provided by T and accusative case is provided by v in Saito’s (2014) framework. This

assumption is plausible because nominative marked and accusative-marked arguments usually appear in fixed syntactic positions. In contrast, dative-marked arguments show various distributions, which leads us to assume that dative case is not a realization of λ -features.

Once it is assumed that dative case is not a realization of λ -features, two questions arise. One is about the mechanism of dative case assignment. Since it is hard to assume that the case is valued structurally, the most plausible option is to consider it as an inherent case. The other question is concerned with labeling. If Saito's (2014) analysis is on the right track, a syntactic object which contains a DP can be labeled only if the DP has a valued λ -feature, which is realized as structural case. However, here we assume that dative case is not a realization of λ -feature, which means that a dative-marked DP is not invisible to LA. Clearly, it is problematic considering a derivation which contains a dative-marked DP.

- (26) a. Taroo-ga yama-ni nobo-tta.
 Taroo-NOM mountain-DAT climb-PAST
 'Taro climbed a mountain.'

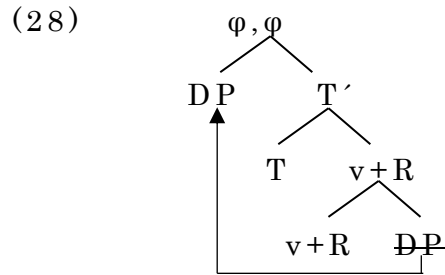


In (26b), α consists of two phrases, which means that the syntactic object cannot be labeled as is. Chomsky assumes two strategies in such cases: moving either phrase or labeling with shared features. Clearly, neither of them is available here since *yama* stays inside α and does not share any feature with RP.

Another problem encountered with case is found in passives. In the MP, it is generally assumed that accusative case valuation does not take place in passives, which is the reason why thematic object moves to the subject position. This assumption is plausible if we consider the following examples.

- (27) a. A purse was stolen by a thief.
 b. * Mary was stolen her purse by a thief.

In (27b), her purse cannot be assigned an accusative case value, which causes the derivation to crash. Following Epstein, Kitahara and Seely (2014), the derivation of a passive sentence is as follows.



In (28), *v* and *R* have externally pair-merged before they merge with the DP. The effect of this operation is that the *v* loses its phasehood. That is, the transfer does not take place in the *vP* domain. Moreover, since *v* becomes invisible to syntactic operation, its uninterpretable ϕ -features is also invisible, which means that object agreement does not occur. Therefore, the DP's [u-Case] remains to be given a value, and it moves to the subject position, where nominative case valuation takes place.

However, Japanese does allow for accusative case valuation in passives as follows.

- (29) a. Saifu-ga doroboo-ni nusum-are-ta.
 purse-NOM thief-DAT steal-PASS-PAST
 'A purse was stolen by a thief.'

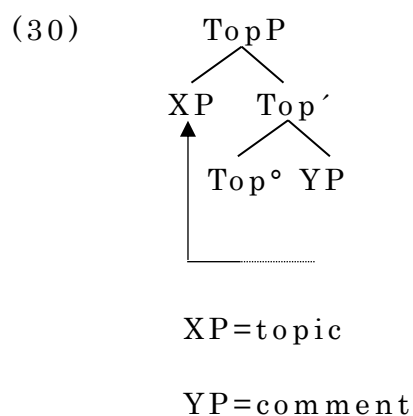
b. Hanako-ga doroboo-ni saifu-o nusum-are-ta.
 Hanako-NOM thief-DAT purse-ACC steal-PASS-PAST
 ‘Hanako had her purse stolen by a thief.’

Clearly, the derivation of (29b) is out of range of explanation of Epstein, Kitahara and Seely (2014). Since a passive morpheme is attached to the verb, *v* and *R* have externally merged in the derivation. This amalgam of *v* and *R* must not have the capability for accusative case valuation, which is not the case. Again, a different case valuation system seems to be necessary. Note that this problem is also beyond Bošković’s (2007) case valuation system. Even in Bošković’s (2007) analysis, we have to assume that *v* in a simple passive sentence does not assign an accusative value. With this assumption, we must stipulate that we have two different *-rare* suffixes in direct passives and indirect passives, which is not ideal. In the next chapter, I propose a case valuation system which covers the problems described here. That is, the mechanism explains how dative value is provided and why accusative case is observed in passives.

2.3 Criteria and Cartography

In the previous section, I reviewed one strategy to label a syntactic object without ϕ -features: grammatical case (valued λ -feature) makes a DP invisible to LA. In this section, I would like to introduce another way of labeling without ϕ -features. Rizzi

(1996) introduces one such criterion. In his framework, a DP which is endowed a criterial feature must be in a Spec-head relation with the corresponding head. Rizzi (1996) introduces the Wh-Criterion and Negative Criterion, and he extends this notion to the Topic and Focus Criteria in Rizzi (1997).



XP, which is a topic, in other words having the topic feature, must move to [Spec, TopP] to satisfy the topic criterion. As a result of this movement, XP is interpreted as a topic and YP as a comment.

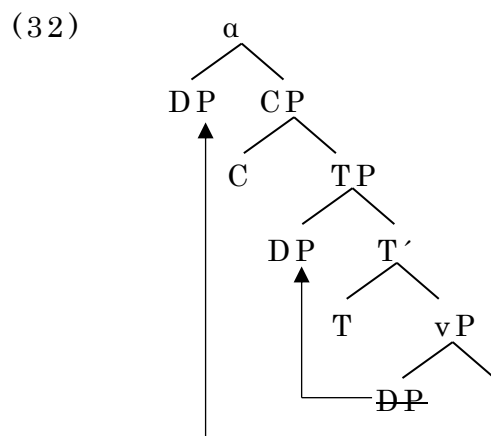
Before the Labeling Algorithm framework is introduced, it has been argued that the cartographic approach is not compatible with the MP. This is because the cartographic approach necessarily assumes the X-bar theoretic schema, which has been abandoned since Chomsky (1995). As we can see from (30), criterial features are satisfied by the Spec-head relationship. This assumption crucially relies on the presupposition that a criterial head necessarily has its specifier. Although Chomsky (2015) keeps his position that the cartographic approach is not compatible with the

MP, Rizzi (2014) claims that the cartographic approach can well be incorporated into to the Labeling Algorithm framework. In fact, dislocation phenomena focused on discourse cannot be captured by Chomsky (2014, 2015). Consider the following example where topicalization occurs.

(31) a. I want to read that book.

b. That book, I want to read.

In (31b), *that book* is topicalized to the top of the sentence. If we assume that this argument is merged with CP, the structure of (31b) is as follows.



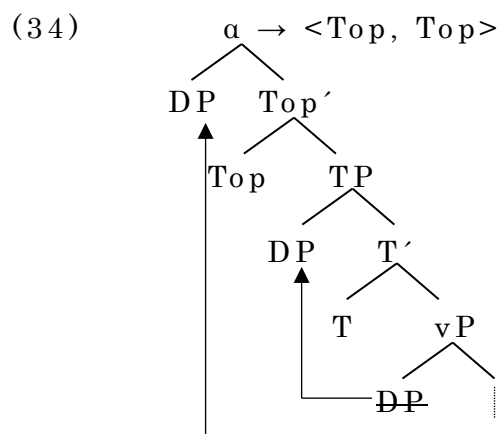
Consider how to label α . Since both constituents of α are phrase, this node cannot be labeled without some strategy. Remember that Chomsky (2013, 2015) proposes two ways to resolve such XP-YP configurations: (i) movement of either XP or YP; or (ii) labeling with the prominently shared feature. However, both strategies

seem impossible. The topicalized DP has no reason to move higher than α , and even if it moves further, another XP-YP configuration arises, which means that (i) is impossible. As for (ii), in the Chomsky (2013, 2014) framework, the ‘prominently shared feature’ refers to agreed-upon ϕ -features. Since the topicalized DP and C do not agree, this strategy is not valid either. Concerned with this problem, Rizzi (2015) claims that (ii) is available assuming the cartographic approach.

(33) Criterial configurations are a permissible ‘halting sites’ (sic) for movement because they permit proper labeling of the criterial configuration by the criterial feature.

(Rizzi (2015: 335))

That is, labels in the CP periphery are determined with criterial features. (34) schematizes an example of labeling in Rizzi’s (2015) framework.



The landing site of the topicalized DP is [Spec, TopP]. Since this DP and Top share this topic feature, the label is determined with that shared feature.

One of major goals of this thesis is to explain how a syntactic object which contains a dative-marked argument is labeled. Since it is difficult to assume that dative case is a realization of a λ -feature, which makes a phrase invisible to LA, another strategy is necessary. As shown in chapter 3 in detail, I claim that the problem can be explained extending the cartographic approach to the vP domain.

2.4 Syntax, Lexicon and Semantics

I believe that problems noted in the previous sections can be solved by clarifying the interface between syntax and lexicon. Notions about the lexicon have been changing since the 1960s. From the 1960s to 1970s, the lexicon had been assumed to bear heavy labor. According to Chomsky (1965), basic syntactic structures are derived with information from the lexicon. Since the 1980s, the extent of labor from the lexicon has been lightened. Baker (1985) observes that the order of affixes corresponds to the order of syntactic operations which is triggered by those affixes (Mirror Principle). This observation suggests that word formation, which had been previously assumed to have occurred in the lexicon, is an operation in the syntax. This notion is further developed in Halle and Marantz (1993) and Marantz (1997), in

which Distributed Morphology is proposed. In this framework, verbs do not have thematic and categorical information. Rather, the lexicon contains verb roots, and specification of category is done in syntax. Phonological form is determined postsyntactically (Late Insertion). For instance, when a root DESTROY merges with v in syntax it receives verbal features, and when it merges with n it receives nominal features. Verbal DESTROY is realized as *destroy* and the nominal version is realized as *destruction* postsyntactically. In this framework, the burden of the lexicon is drastically lighter, in sharp contrast with earlier periods of generative grammar.

One of the important background studies for this thesis, on the interface between syntax and the lexicon, is Baker (1988). He provides a hypothesis concerned with the thematic interpretation of arguments, which is called the Uniformity of Theta Assignment Hypothesis (UTAH).

(35) UTAH

Identical thematic relationships between items are represented by identical structural relationships between those items at the level of D-structure (Baker (1988: 46))

UTAH strengthens the relationship between syntax and semantics, in that certain syntactic positions correspond to certain interpretations. This notion is presented in another way in later

literature (Hale and Keyser (1993), Marantz (1997) and Borer (1998)), where arguments are introduced by functional heads. The syntactic positions of these heads are fixed, and have functions which have effects on interpretation. This is why syntactic positions are related to thematic interpretation.

This study is based on the two notions noted above. That is, (i) the lexicon contains only atomic information, which means that lexical items are unspecified in terms of categories and theta-grids; and (ii) arguments are introduced into derivations by argument introducers, which relates syntax with semantics. In the next section, I review the literature about argument introducers, which forms the basis of the current theoretical framework.

2.4.1 On Arguments

The number of arguments a verb can take depends on what kind of verb it is: transitive, unergative or unaccusative. Transitive verbs take two arguments while unergative and unaccusative verbs take only one argument. Importantly, some verbs can be used in two ways.

(36) a. Tom broke a window.

b. A window broke.

In both (36a) and (36b), the thematic interpretation of *a window*

is the same. Nonetheless, this argument appears in the object position in (36a) and in the subject position in (36b). One possible explanation for (36) is that the lexicon contains two different kinds of *break*: a transitive *break* and an unaccusative one. However, we have to assume a vast amount of lexical items to maintain this explanation, which is not ideal in light of economy consideration. Another way to capture (36) is to assume that both (36a) and (36b) contain the same kind of *break*, and the difference of the thematic object's position is reduced to a functional category related to introducing arguments into syntax. Marantz (1984) and Kratzer (1996) propose that external arguments should be severed from the argument structures of lexical verbs. This claim is based on the following observation that external arguments do not contribute to idiomatic interpretation.

- (37) a. kick the bucket
b. take advantage of

As shown in (37), internal arguments are involved in idioms while external arguments are not. This fact suggests that verbs do not have any information about the external arguments they can take. Based on this observation of Marantz (1984), Kratzer (1996) proposes that external arguments are introduced into derivations by a functional head, Voice.

Furthermore, Borer (2004) propose that internal arguments

should also be severed from lexical verbs. If we consider a deverbal nominal *drop*, this lexical item can be used without an external and internal argument. Under a framework that assumes that internal arguments are associated with transitive verbs in the lexical level, an extra assumption is necessary to suppress internal arguments when transitive verbs are deverbalized. On the other hand, in a framework where both external and internal arguments are severed from verbs, no extra assumption is necessary: the root DROP is embedded under a nominalizing functional structure.

Moreover, some examples are found where an internal argument is ‘externalized.’ Consider Russian examples in (38).

(38) a. Verbal passive

Takix studentov nikogda ne prinjato v universitet.

such students never NEG accepted in university

(M.GEN.PL)

(NEUT.SG)

‘Such students are never accepted in the university.’

b. Adjectival passive

* Takix maner nikogda ne prinjato v
such manners never NEG acceptable in
(F.GEN.PL) (NEUT.SG)
xorosix klubax
good clubs.

‘Such manners are never acceptable in good clubs.’

(Cf. Borer (2004: 61, 62))

In Russian, an unaccusative subject and a subject of a verbal passive with negation can be marked with genitive. On the other hand, genitive of negation cannot mark an unergative subject. The ungrammaticality of (38b) shows that adjectival passives behave like unergative verbs in Russian. In other words, a thematic internal argument is externally merged to a structure as an external argument in an adjectival passive. This fact is also easily captured if we sever out internal arguments from verbs.

The current framework is based on the same line of assumption as the studies noted above. That is, the verb roots have no thematic information, and arguments are introduced into a derivation by functional argument introducers.

2.4.2 Theta System

Reinhart (2016) develops an investigation of the interface between concepts and the computational system in order to explain

why a verb can be realized in different syntactic configurations. Consider (36) again.

- (39) a. Tom broke a window. (= (36))
 b. A window broke.

(39) shows that the verb *break* can be used in two ways. One is a transitive verb as shown in (39a) and the other is an unaccusative verb as shown in (39b). Importantly, unaccusative verbs are different from passivized verbs in terms of the existence of associated implicit arguments.

- (40) a. Max sank the ship [PRO to collect the insurance].
 b. The ship was sunk [PRO to collect the insurance].
 c. The boat sank *(PRO to collect the insurance).

(Reinhart (2016: 79, 80))

In (40b), although there is no overt external argument, PRO is controlled by an implicit agent. On the other hand, in (40c) PRO cannot be controlled by arguments other than *the boat*, which makes it impossible to add the infinitival clause *to collect the insurance*. This fact suggests that unaccusative verbs do not have any implicit agent in their argument structure.

Here, one should remember the argument of whether the lexicon has more than one kind of a same verb, e.g., transitive *sink*

and unaccusative *sink*. Clearly, it is more economical to assume that the lexicon contains only one kind of *sink*. There is no transitive *sink* and unaccusative *sink*, but there is only a ‘neutral’ version of *sink*, which has no thematic information. This assumption is possible with the proposal that arguments are introduced into derivations by functional argument introducers. Importantly, however, the difference between (40b) and (40c) cannot be captured with this proposal. That is, the reason why unaccusative verbs do not have implicit agents remains to be explained.

Reinhart (2016) explains this by explicating the interface between lexicon and syntax. She proposes that a verb has clusters of features, [$\pm c$ (ause change)] and [$\pm m$ (ental state involved)]. All the traditional θ -roles can be represented with combinations of the following features:

- (41) a. [+c+m] -Agent
 b. [+c-m] -Cause/Instrument
 c. [-c+m] -Experiencer
 d. [-c-m] -Theme/Patient
 e. [+c] -Unspecified for [m]; consistent with either (a) or (b)
 f. [-m] -Subject Matter
 g. [+m] -Sentient
 h. [-c] -Goal

A verb has some specification in terms of $[\pm c]$ and $[\pm m]$. For instance, the specification of the verb *sink* is characterized as follows.

(42) $\text{sink}(\theta_1[+c], \theta_2[-c-m])$

(42) means that *sink* takes an external argument which has $[+c]$ and an internal argument which has $[-c-m]$. This is the specification when this verb is used as a transitive verb, and another operation is necessary to use it as an unaccusative verb. This operation is called reduction, which eliminates $[+c]$. Then, the specification of this verb becomes as follows.

(43) $\text{sink}(\theta_1[-c-m])$

As a result, *sink* takes only an internal argument. Here lies the reason why unaccusative verbs do not have implicit agents. In (40c), the verb *sink* is specified at the lexical level, such that this verb takes only one argument which has $[-c-m]$. Therefore, it is impossible to interpret the PRO controlled by an agent. On the other hand, in (40b) the verb *sink* has not undergone reduction, just passivization. Therefore, the verb is specified as $(\theta_1[+c], \theta_2[-c-m])$, which enables us to interpret PRO as controlled by an implicit agent.

In addition, Reinhart (2016) treats accusative case as a

feature, which affects further mapping of arguments. In general, we can find a tendency for the distribution of arguments as follows.

(44) An argument bearing the Agent role is realized in the external position (i.e., merges last). (Reinhart (2016: 55))

Reinhart (2016) captures this tendency with the following assumptions:

- (45) (i) Both verbs and arguments carry the ACC feature.
(ii) An argument which has the ACC feature is selected to be introduced into a derivation first.
(iii) Only arguments which bear [-c] can have the ACC feature.

Now (45) together with (41) explain how arguments are mapped, including the tendency (44). Since an argument which has Agent role is represented in Reinhart's (2016) framework as [+c+m], it is not qualified to have the ACC feature. Therefore, this argument is never introduced into the derivation first, thus ending up appearing in the subject position.

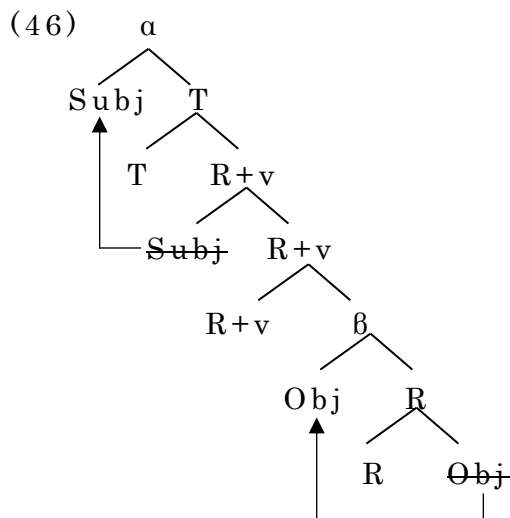
Reinhart's (2016) theory beautifully explains how arguments are mapped onto syntax. In this study, I reinterpret this theory in the cartographic approach. In fact, the two approaches have something in common. That is, features which are related to interpretation are assigned to arguments before they are

introduced into some syntactic derivation, and the features motivate the arguments to appear at different syntactic positions. More specifically, if we assume θ -roles as criterial features, as well as the vP domain having a cartography based on θ -roles, the mapping of arguments can be captured as a result of syntactic operations satisfying these criterial features. One benefit of this reinterpretation is that it allows us to capture relations among the distribution of arguments, case valuation and interpretation, which I would like to propose for Japanese.

To sum up this chapter, I reviewed the theoretical development of the MP, and demonstrated that the theory does not work with languages which lack ϕ -features. Saito (2014) explains these languages in a principled way, leaving data related to dative case unsolved. Another way to explain ϕ -feature-less languages can be pursued with the cartographic approach: labeling with criterial features. This can be achieved if we reinterpret the works of mapping of arguments developed in Dowty (1991), Pesetsky(1995) and Reinhart (2016) into cartographic approach,

3 Proposal

We have seen that the φ -features play a crucial role in the Labeling Algorithm framework, which is problematic for languages which lack φ -features. Saito (2014) provides a principled explanation for this problem, except for data related to dative case. At this point, I have two questions. One is how a syntactic object which contains a dative-marked argument is labeled; the other is how the dative case value is assigned. First, let us consider the former issue. Schematically, syntactic objects whose labels are determined with φ -features are located in the following syntactic positions in English. (46) is a syntactic structure containing a typical transitive verb.



In English, which has φ -features, β is labeled as $[\varphi, \varphi]$ as a result

of the agreement between the object and the the verb root.² Similarly, α is labeled with φ -features which are shared by the subject and T. On the other hand, in languages where φ -features are not present, α and β cannot be labeled without additional assumptions. The fact that dative-marked arguments appear in both α and β positions in Japanese poses a serious problem with labeling. Following Chomsky (2013, 2015), we have two strategies to rectify this situation: moving either phrase to a syntactically-higher position or labeling with a shared feature. Here, the latter strategy is available. As reviewed in section 2.3, Rizzi (2015) introduces the notion of labeling with features other than φ -features such as Q feature and Topic feature. In this study, I propose that the problem of labeling which occurs at α in Japanese can be resolved with discourse-features as proposed by Rizzi (2015). In fact, taking a close look at various subjects in Japanese leads us to assume that they necessarily have a discourse-related interpretation, which means that they stay at the left periphery of CP. Meanwhile, β is contained in R+v (vP), which is deeply associated with argument structures. More importantly, CP and vP are different in their nature: CP is related to discourse and vP represents a thematic proposition. Therefore, I assume that vP has a cartography based on θ -roles. I treat θ -roles as criterial features, namely θ -features. In the same way the Topic or Focus

² Although it is assumed that φ -features are inherited from v to R in the MP, the description of this operation is abbreviated in (46) since it is irrelevant to the current framework.

feature causes displacement of arguments and contributes to their interpretation, these θ -features motivate the movement of DPs inside vP; DP's interpretation is affected by the features. The first task in this chapter is to consider what kind of θ -roles we can employ and to establish their hierarchy, since they are not uniform across perspectives.

3.1 Elaboration of θ -roles

The history of θ -roles starts with Gruber (1965), and is further developed by Jackendoff (1972, 1983), Chomsky (1981), etc. In the development of θ -roles, some researchers divide common θ -roles into a number of subcategories. That is, the definitions of θ -roles generally assumed such as Agent or Theme consist of several divisible factors, which can be defined as independent θ -roles. From a wide survey of previous literature, I review two analyses in detail here: Dowty (1991) and Jackendoff (1990). Dowty (1991) introduces the notion of thematic Proto-Roles. He proposes five properties for both agent and patient as shown below.

(47) Contributing properties for the Agent Proto-Role:

- a. volitional involvement in the event or state
- b. sentience (and/or perception)
- c. causing an event or change of state in another participant
- d. movement (relative to the position of another participant)
- e. exists independently of the event named by the verb

(48) Contributing properties for the Patient Proto-Role:

- a. undergoes change of state
- b. incremental theme
- c. causally affected by another participant
- d. stationary relative to movement of another participant
- e. does not exist independently of the event, or not at all

(Dowty (1991: 572))

Among the five properties above, ‘incremental theme’ should be treated carefully as explained by Dowty (1991). An instance of this notions is found in the following example.

(49) My son mowed the lawn. (Dowty (1991): 567)

(49) denotes a telic event, which can be delimited by the state of the lawn. If the lawn is still unkempt, the event has not yet begun. When it is partly cut, the event has been partially completed, and when it is totally short the mowing event has been completed. In this way, ‘the state of parts of the lawn and their part-whole relationships is reflected in the parts of the event of mowing it and ITS part-whole relationships’ (Dawty (1991): 567).

The definition noted above is not enough to capture all instances of the incremental theme. Consider the following example.

(50) John drove a car from New York to Chicago.

(Dowty (1991): 568)

In (50), to which extent the event has proceeded is confirmed by the location of John. If we find an overt incremental theme in the sentence (50), *John* is the most plausible candidate, but this argument does not fully fit into the definition given above. At any stage of the event, the state of John itself is always the same. Rather, the true incremental theme is the path on which John moves, which is not realized in the sentence overtly. In this example, *John* is a HOLISTIC THEME in that *John* has some relationship to the true incremental theme.

In addition, the REPRESENTATION-SOURCE THEME is introduced as a type of incremental theme in Dowty (1991).

(51) John photographed a scene.

(Dowty (1991): 569)

The entity *a scene* in (51) is not treated as an incremental theme in a traditional way since it is not affected by the event. However, Dowty (1991) claims that this argument is an incremental theme in an indirect way. Consider the relevant example below.

(52) John took a photograph of a scene.

(Dowty (1991): 569)

In (52), *a photograph* is obviously an incremental theme: it is

affected by the event in that it came into an existence by John's action. Importantly, a photograph is a representation of a scene. In this sense, *a scene* is also an incremental theme indirectly, which is also true in (51).

Definitions of other Proto-Roles cited in (47, 48) can be understood straightforwardly from the examples Dowty (1991) provides, which I cite below.

(53) a. VOLITION ALONE: *John is being polite to Bill / is ignoring Mary.*

What he did was not eat [anything] for two days.

b. SENTIENCE / PERCEPTION ALONE: *John knows / believes / is disappointed at the statement, John sees / fears Mary.*

c. CAUSATION ALONE: *His loneliness causes his unhappiness, Teenage unemployment causes delinquency.*

d. MOVEMENT ALONE: *The rolling tumbleweed passed the rock, The bullet overtook the arrow, Water filled the boat, He accidentally fell.*

e. INDEPENDENT EXISTENCE: *John needs a new car.*

(Dowty (1991: 572-573))

(54) a. CHANGE OF STATE: *John made a mistake* (coming into being, therefore also 54e below), *John moved the rock* (indefinite change of position), *John erased the error* (ceasing to exist).

b. INCREMENTAL THEME: *John crossed the driveway / filled*

the glass with water (also stationary relative to other arguments).

c. CAUSALLY AFFECTED: *Smoking causes cancer.*

d. STATIONARY RELATIVE TO ANOTHER PARTICIPANT: *The bullet entered the target / overtook the arrow.*

e. EXISTENCE NOT INDEPENDENT OF EVENT: *John built a house / erased an error* (Coming into and out of existence; not independent of 54a), *This situation constitutes a major dilemma for us, John needs a car / seeks a unicorn / lacks enough money to buy it* (dedicto objects: no existence).

(Cf. Dowty (1991: 573-574))

Before taking a closer look at the notion of Proto-Roles, I review Jackendoff's (1990) framework. He breaks down the meaning of a sentence utilizing semantic functions: GO, AT and CAUSE etc. In particular, this framework categorizes traditional θ -roles into two tiers: a thematic tier and an action tier. In the former, motion and location are considered, while actor-patient relations are associated with the latter. As an illustration, Jackendoff (1990) provides the following examples.

(55) a. Sue	hit	Fred.	
	Theme	Goal	(thematic tier)
	Actor	Patient	(action tier)

- b. Pete threw the ball.
 Source Theme (thematic tier)
 Actor Patient (action tier)
- c. Bill entered the room.
 Theme Goal (thematic tier)
 Actor (action tier)
- d. Bill received a letter.
 Goal Theme (thematic tier)

In (55a), θ -roles of the thematic tier describe the movement of an entity in the event denoted by the sentence. *Sue* is a moving entity in the hitting event, and the end point of this movement is *Fred*. Meanwhile, the action tier provides information in addition to the motion and location of arguments. According to Jackendoff (1990), the terms *actor* and *patient* are inadequate to describe the event and must be subcategorized more in detail. For further elaboration of the action tier, Jackendoff (1990) introduces a function AFF (affect) with a feature [\pm volitional]. This function is exemplified as follows.

(56) Bill rolled down the hill.

GO ((BILL), [DOWN [HILL]])

- a. AFF_{+vol} ([BILL],) (willful doer)
 b. AFF_{-vol} ([BILL],) (nonwillful doer)
 c. AFF (, [BILL]) (undergoer)

In (56a), *Bill* is represented as the first argument of the function AFF_{+vol} , which means that he deliberately rolled down the hill. If *Bill* is not volitional, it is described with the AFF_{-vol} function as in (56b). In (56c), *Bill* is the second argument of the function AFF , so this representation means that someone rolled *Bill* down the hill or he accidentally fell down the hill.

Now, I elaborate the definition of θ -roles by comparing these two frameworks. First, ‘volitional involvement in the event or state’ from Dowty’s (1991) proto-roles is not employed as a θ -feature here. Whether an argument is involved in an event on purpose or not can be controlled easily with adverbs as shown below.

(57) Taro-ga	ukkari/wazato	koron-da.
Taro-NOM	accidentally/on purpose	tumble-PAST
‘Taro tumbled accidentally/on purpose.’		

In (57), *Taro* is interpreted as a non-volitional entity with the adverb *ukkari* ‘accidentally,’ while a volitional one with *wazato* ‘on purpose’. This fact implies that v associated with the verbal root ‘*korob*’ has no specification about its volitionality. Based on this observation, I conclude that the notion of volitionality need not be encoded in argument structure.

In addition, I claim that the property of ‘sentience’ can be abolished. In Jackendoff (1990), two functions relating to psych-

verbs are introduced: AFF and REACT.

(58) a. X pleases Y. [State AFF⁺ ([X], [Y])]

b. X displeases Y. [State AFF⁻ ([X], [Y])]

(59) a. Y likes X. [State REACT⁺ ([Y], [X])]

b. Y fears/hates X. [State REACT⁻ ([Y], [X])]

In (58a), Y receives affectedness from X, and whether that affectedness is positive or negative is conveyed by the notation ‘±.’ REACT, on the other hand, maps an experiencer onto the subject position as shown in (59). The reason why two different functions are necessary is that the position the experiencer is mapped onto is different depending on the kinds of psych-verbs used. In a syntactic analysis, the functional differences via Jackendoff (1990) are paraphrased with difference of syntactic structure. That is, (58) or (59) is derived from the other by syntactic operations (Belletti and Rizzi (1988), Pesetsky (1995)).

‘Movement’ is not employed here either. Consider the examples from Dowty (1991), which are used to describe this proto-role.

(60) a. The bullet overtook the arrow

b. Water filled the boat

In both (60a) and (60b), the subjects are moving entities. Dowty’s

(1991) aim is to explain how arguments are mapped onto syntax, thus the subjects in (60) necessarily have at least one Agent Proto-role in her framework. However, in a derivational approach, they do not have to bear the Agent Proto-role. Even if an argument is introduced at the bottom of a derivation, the argument moves to the subject position when there is no other argument.

In the end, only (47c) and (47e) are from Dowty (1991) here. Problematically, since we have abolished (47a) 'volitional involvement in the event or state' and (47d) 'movement,' we cannot identify any appropriate θ -role for the subject of the sentence below.

(61) John danced for hours.

In Dowty's (1991) framework, *John* has (47a) and (47d), both of which are abolished here. For arguments like *John* in (61), I assume the proto-role 'Actor,' which is a simpler notion compared to the traditional Agent, in that volitionality is not specified. For instance, the thematic subject of the verb *dance* does not necessarily have volitionality as shown below.

(62) John was made to dance for hours.

In short, I borrow (47c) and (47e) from Dowty (1991) and assume Actor as the agent oriented Proto-role. I use contracted terms for

these Proto-roles: Cause for (47c) and Exist for (47e).

Now I consider patient Proto-Roles. Among the properties listed above in (48), ‘undergoes change of state’ can be omitted. As an illustration of this proto-role, the following sentences are introduced in Dowty (1991), which can be described with Jackendoff’s framework as shown in (63b) and (64b).

(63) a. John made a mistake.

b. CS^u ([JOHN], [BE ([MISTAKE])])

AFF ([JOHN], [MISTAKE])

(64) a. John moved the rock.

b. CS⁺ ([JOHN], [GO ([ROCK])])

AFF ([JOHN], [ROCK])

That is, we can describe meanings of (63a) and (64a) with semantic structures which do not contain any function corresponding to ‘undergoes change of state.’ In other words, AFF contains the notion of ‘undergoes change of state.’

Next, the property of ‘stationary related to another participant’ is not employed here. Rather, I would like to borrow several notions from the thematic tier in Jackendoff (1990), namely Theme, Source and Goal. The following is an example from Dowty (1991) for a description of ‘stationary related to another participant.’

(65) The bullet entered the target.

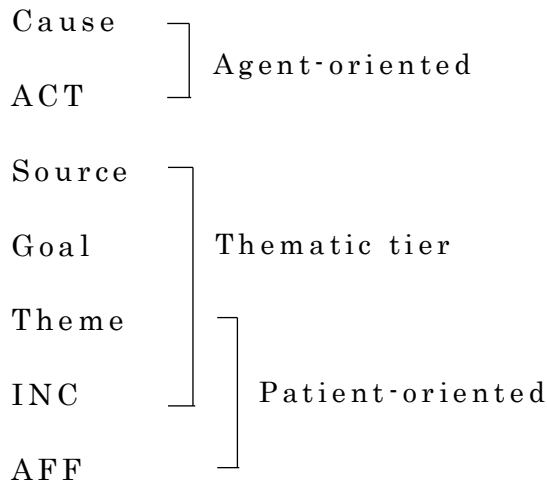
(Dowty (1991))

In Dowty's (1991) framework, *the bullet* has (47d) and *the target* has (48d) and they are successfully mapped onto the subject and object positions respectively. On the other hand, in Jackendoff's (1990) framework *the bullet* is Theme and *the target* is Goal. Since (48d) is not employed here, the notion of thematic tier is necessary to characterize sentences like (65).

One more proto-role property, 'does not exist independently of the event (48e),' can be abolished too. As Dowty (1991) notes, this θ -role is dependent on the notion of 'change of state,' which is contained in AFF in the current framework. In the end, 'causally affected' and 'incremental theme' come from Dowty (1991), and Theme, Source, and Goal come from Jackendoff (1990). (For convenience, I will use the terms AFF for 'causally affected' and INC for 'incremental theme.')

In sum, the θ -roles assumed here are as follows.

(66) Decomposed θ -roles from Agent, Patient and functions of thematic-tier

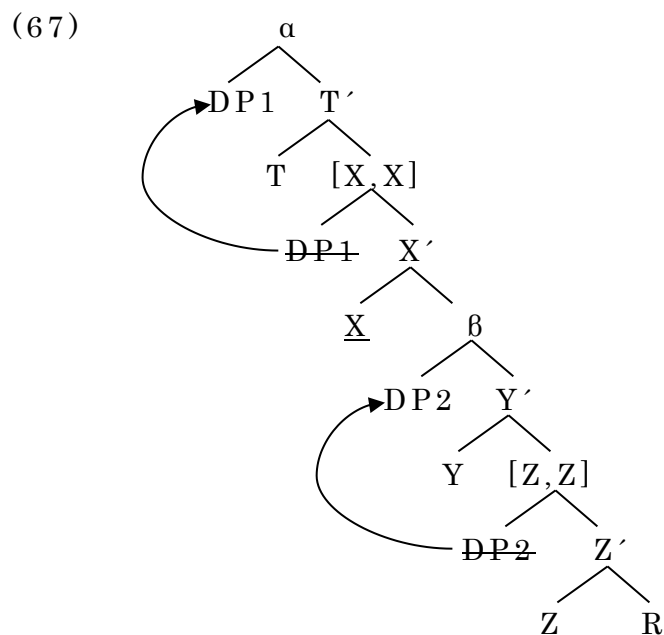


3.2 θ -roles as criterial features

I assume the Proto-Roles discussed in the previous section are criterial features. The motivation for this assumption is the parallelism between Rizzi's discourse-related features and θ -features. If we take a look at Rizzi's framework, a DP assigned a certain criterial feature must move to an appropriate position to be properly interpreted. For example, if we want to put a focus on a DP, we assign [Foc] to the DP before we introduce it into the derivation. In the derivation, the DP with [Foc] must move to [Spec, FocP], which has the effect of this DP being interpreted as a focused DP. This is the same for θ -features. In the current framework, θ -features are in the lexicon and assigned to arguments. The arguments undergo external and internal merges, with which they must satisfy all the criteria of these θ -features.

Now, let us see how a derivation proceeds with a θ -system

schematically. Suppose that X, Y, and Z are θ -features and X is assigned to DP1 while Y and Z are assigned to DP2. In this case, the derivation proceeds as follows.



The first step of the derivation in (67) is to merge R and Z. In a common derivation of the MP, R first merges with an object DP. This is because an object is assumed to receive a θ -role at this position. However, R has no thematic information in the current framework, since all the thematic information is in v. Therefore, there is no reason to assume that R firstly merges with the object. After the merge of R and Z, a DP having a θ -feature which is the lowest in the thematic hierarchy³ is introduced into the derivation. Through this external merge, one of the criterial features of the

³ In chapter 4, I conclude that Japanese has the following thematic hierarchy. $\alpha > \beta$ means that α is hierarchically higher than β .
 (i) (AFF) > Cause > (AFF) > ACT > Source > Goal > Theme > INC > (AFF)

DP2 is satisfied. Since DP2 has another θ -feature Y, this argument is illegitimate without further movement to satisfy this θ -feature. DP1 has a θ -feature which is hierarchically the highest amongst X, Y, and Z, so this argument is externally merged at the top of vP. In this case, DP1, which is at the top of vP, moves to [Spec, TP] to be the subject of the sentence.

Here, let us consider a situation where the DPs in (67) are dative-marked. We should remember that dative case is not the realization of a λ -feature, which means that dative-marked arguments are visible to LA. If DP2 has dative case, no problems occur with labeling. Since syntactic objects contained in vP are labeled with θ -features, β in (67) is successfully labeled as [Y, Y]. α has a different situation. If DP1 has a nominative case value, the DP is invisible for LA, thus α is labeled as T. However, if DP1 is dative marked, it is still visible for LA. Unlike β , DP1 and T do not share any features, which means that there is no way to label α properly. Therefore, it is expected that a dative-marked argument cannot stay at [Spec, TP], which is discussed in detail in chapter 6.

The system proposed above is different from Rizzi's framework in some ways. First, in the current framework a criterial feature can be satisfied by not only internal merge but also by external merge. I believe this does not raise a problem since both internal merge and external merge are the same in nature in that they both involve the syntactic operation 'merge.' Second, in (67) DP2 has

two θ -features and which are satisfied by external and internal merge. This seems problematic in Rizzi's framework because of the existence of a constraint called Criterial Freezing.

(68) Criterial Freezing

In a criterial configuration, the Criterial Goal is frozen in place. (Rizzi (2007): 149)

This constraint bans a DP from undergoing any movement after satisfying a criterion. One of the most valuable benefits of the criterial approach is an explanation of why multiple A-bar checking is banned.

- (69) a. *_{CP} Who thinks [_{CP} that, which problem_i, Mary hates t_i]]?
b. *_{CP} Which book_i C does Bill wonder [_{CP} t_i C she read t_i]]

In (69a), *which problem* is topicalized in the embedded clause, where this syntactic object is frozen according to (68). Therefore, it cannot undergo further covert movement, which is necessary for multiple wh interpretation. Similarly, in (69b) *which book* moves once to the top of the embedded CP, where the Q criterion is satisfied. Here this wh phrase is frozen and cannot move to the spec of the root CP.

Clearly, (68) raises a problem for the current framework, where a DP can have more than one (criterial) θ -features.

Assuming (68), a DP is predicted to be frozen as soon as it meets a criterial feature, which means that a DP cannot have more than one criterial feature. Otherwise, the derivation crashes since criterial features are left unsatisfied. However, (68) is refuted by Gallego (2009). He claims that the effects of (68) are attributed to Boeckx's (2003) *Principle of Unambiguous Chain*.

(70) Principle of Unambiguous Chain

Chains must be defined unambiguously. (Boeckx (2003: 13))

Ambiguity of chains are defined in terms of the number of their checking positions. If a chain contains more than one checking position, the chain is ambiguous, which causes a degradation of grammaticality. Following this principle, (69) is problematic for a reason other than Criterial Freezing. That is, undergoing more than one A-bar checking arises ambiguous interpretation. In fact, (70) can capture a broader range of phenomena than Criterial Freezing. For instance, (70) is observed in the following binding phenomenon:

(71) a. [_{CP} Which pictures of himself and herself_i C did John and Mary think I saw t_i]?

b. * [_{CP} Which pictures of himself and herself_i C did John think Mary saw t_i]? (Gallego (2009): 45)

In (71a), two coordinated anaphors *himself and herself* are bound by *John and Mary*. In contrast, this is not the case in (71b). In (71b), *John* and *Mary* are not coordinated, which means that the coordinated anaphors, *himself* and *herself*, must be involved in two different binding relations. As a result, the chain made by *which pictures of himself and herself* and its trace becomes ambiguous in the sense that two different traces must be interpreted for the purpose of anaphor binding, which violates (70). Given that (70) can capture more phenomena than (68), the latter constraint is no longer necessary, and we can conclude that the freezing effects that Rizzi observes are due to (70).

If Gallego's (2009) claim is on the right track, the current framework is free from the freezing effects. We should remember that traditional θ -roles are recaptured in terms of sub-factors of Proto-roles here, which are criterial features. Even if a DP undergoes more than one checking operations of θ -features, the chain does not become ambiguous. Rather, the DP is properly interpreted only when all θ -features are satisfied. In this way, I conclude that the current analysis is free from Criterial Freezing.

3.3 *v* as an amalgam of θ -features

In the framework of Distributed Morphology, it is assumed that all lexical items are bundles of features, and the morphological realizations of these lexical items depend on how they are composed with these features. Here, in the spirit of

Distributed Morphology, I assume that *v* is an amalgam of θ -features in Japanese. If so, each θ -feature must have its own way with morphological realization, which is discussed in further detail in the next chapter.

In the current analysis, it is assumed that Japanese, which lacks ϕ -features, crucially depends on a θ -system. Meanwhile, since English has a ϕ -system, it does not need a θ -feature-based one. This contrast is reflected in the following examples.

(72) a. A boat sank.

b. John sank a boat.

(73) a. boto-ga sizun-da.

boat-NOM sink-PAST

‘A boat sank.’

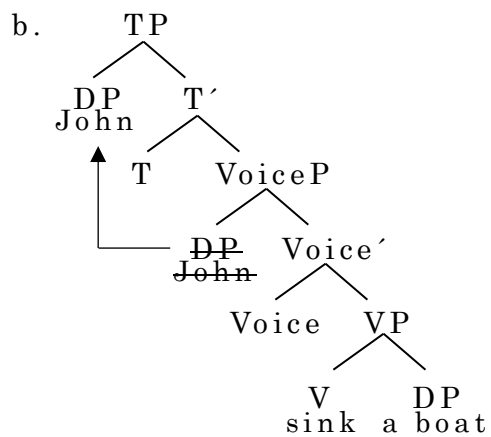
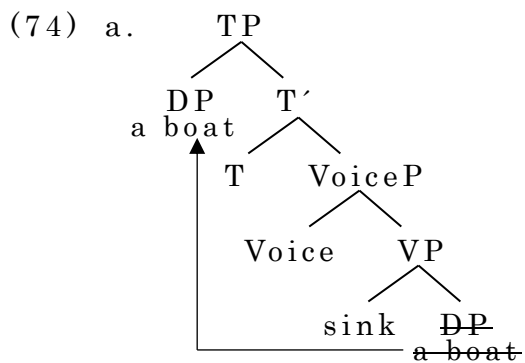
b. John-ga booto-o sizume-ta.

John-NOM boat-ACC sink-PAST

‘John sank a boat.’

Verbs in English can be unaccusative or transitive without changing their morphological forms. In contrast, (73) shows that the form of a verb changes depending on whether it is used as an unaccusative verb or a transitive one. This difference comes from what kind of system a language employs to introduce arguments. As reviewed in 2.4.1, external arguments are introduced by Voice in English. Therefore, derivations of (72a, b) can be briefly

described as follows.

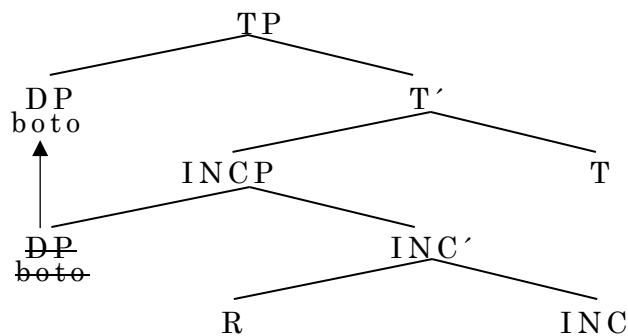


The only difference between (74a) and (74b) is whether Voice introduces the external argument or not. If it does not introduce an external argument, *a boat* moves to [Spec, TP]; if it does, *a boat* stays inside VP and the external argument moves to [Spec, TP]. Most importantly, the kinds of functional categories contained in the syntactic structure are the same in (74a, b). This is the reason why English allows for unaccusative-transitive alternation without morphological change.

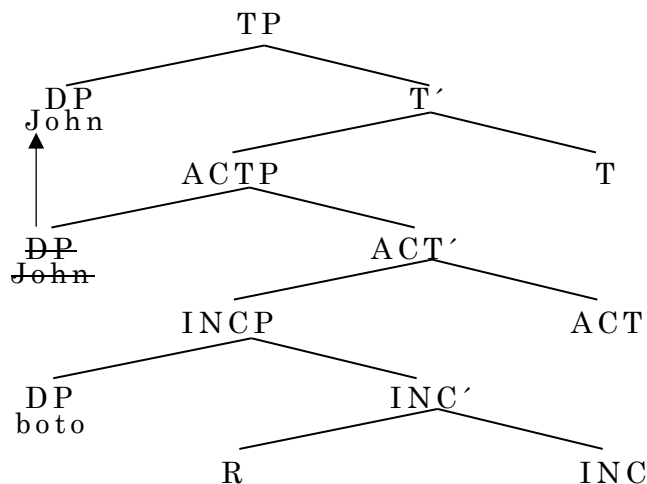
On the other hand, in Japanese *v* consists of θ -features, so *v* shows different morphological realizations depending on how it is

composed. Considering the interpretation of (73a, b), the kinds of θ -features contained in v are different. In (73a), *boto* is a moving entity and the event denoted by the sentence is delimited by how deep the boat has sunk. In Dowty's (1991) terminology, this argument is an incremental theme, so v in (73a) contains only INC. In (73b), another argument *John* is introduced, which is also a function of v . *John* makes a certain action to sink the boat, so this argument has ACT. Thus, v in (73b) consists of INC and ACT, which is realized as a transitive form.

(75) a.



b.



In chapter 4, I show that various constructions in Japanese are derived depending on how v is composed.

3.4 On Case Valuation

As discussed in section 2.2, dative case appears at various syntactic positions. In addition, case alternation where dative case is involved has effects on interpretation. In this section, I propose a mechanism of case valuation, which accommodates these properties of dative case. If dative case is valued in a derivation, a simple question arises. Where in a derivation is the dative case valued? In Bošković's (2007) framework, the nominative case is valued by T and the accusative case is valued by v. In other words, all the syntactic positions are either in the nominative case valuation domain or accusative case valuation domain, with no space for dative case valuation. The most straightforward assumption is, I believe, that nominative and accusative case valuation have a condition, and when this condition is not satisfied, dative value is provided. Taking into the consideration the fact that case alternation affects interpretation, this condition must be related to the thematic system. Tentatively, I assume a mechanism of case valuation as follows.

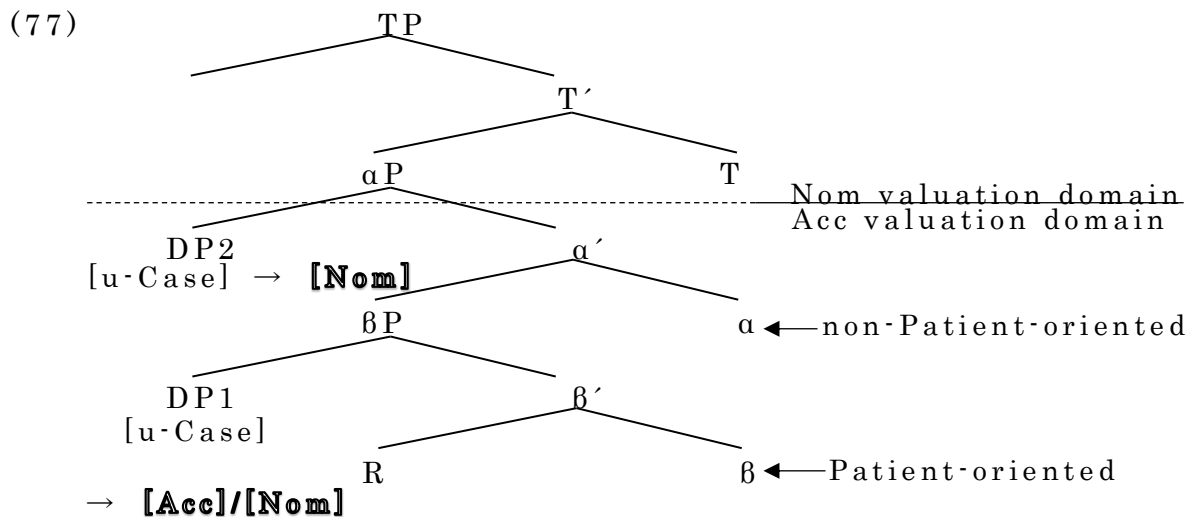
(76) Feature-based case valuation (to be revised)

- (i) Patient-oriented θ -features provide [u-Case] with potential [Acc] and [Nom] while other θ -features provide potential [Nom].
- (ii) Potential case feature receives morphological form depending on syntactic position it is spelled out: [Acc] in

vP and [Nom] in TP.

(iii) When both (i) and (ii) are not satisfied, a case feature receives dative value.

For description, I schematize (76) as follows. Suppose v consists of α , which is not patient-oriented, and β , which is patient-oriented.



Since DP1 checks the patient-oriented θ -feature, the DP receives both potential accusative value and nominative value. Therefore, the DP is accusative-marked if it is spelled out inside vP and nominative-marked if it moves to [Spec, TP]. On the other hand, DP2 receives only potential nominative value. Therefore, it moves to [Spec, TP] to be marked as nominative, otherwise the DP is dative-marked.

3.5 Effects of Labeling on the C-I Interface

According to Chomsky (2013), syntactic labels are necessary for each syntactic node to be properly interpreted at the C-I interface. This notion is developed in Rizzi's (2014) framework. In the cartographic approach proposed by Rizzi, a DP with certain criterial feature is provided a specific interpretation. A DP with [Foc] moves to [Spec, FocP], where labeling is done with the feature [Foc]. As a result, the DP is interpreted as a focalized DP. In other words, the label [Foc, Foc] has an effect on the C-I interface to interpret the DP as a focalized one. Extending this notion, I propose that syntactic objects labeled with θ -features also have effects on interpretation at the C-I interface. While CP cartography has much information about discourse, vP cartography has thematic information. Therefore, if a syntactic structure is derived based on the θ -system, there must be an effect on thematic interpretation. On the other hand, a syntactic operation which does not depend on θ -system does not affect thematic interpretation. We observe this difference in the following chapters.

4. Derivations with the θ -system in Japanese

Now, we should describe the cartography of the vP domain in Japanese from the bottom up. Starting from simple actives, we move onto passives, causatives, and psych-verbs constructions. Basically, θ -features are arranged in v within a strict hierarchy with the exception of one feature, AFF. This feature alone can appear at different positions, which causes voice alternations. In addition, the θ -feature-based case valuation system described in section 3.4 is applied to each construction showing that the distribution of case in all the constructions falls into the system.

4.1 Simple Actives

Active sentences require the smallest number of θ -feature. Therefore, we should start describing a cartography in the vP domain with this construction. The simplest one with this constructions is one which describes the movements of entities, which requires only θ -features from the thematic tier. As shown in chapter 3, the thematic tier contains Source, Goal, Theme, and Incremental Themes. In principle, Theme is indispensable since it is at the center of the semantic scheme of verbs, which denote movements of entities. Now, let us consider individual instances of these verbs.

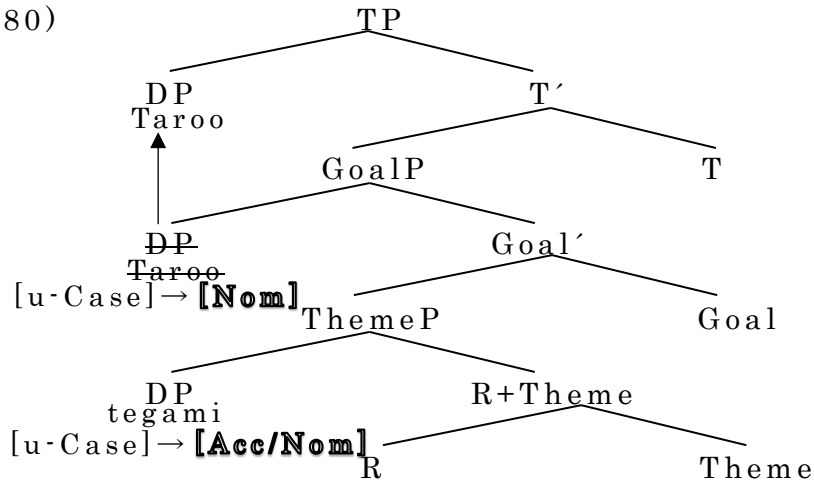
- (78) a. Taro-ga tegami-o uketo-tta.
 Taro-NOM letter-ACC receive-PAST
 Goal Theme
 ‘Taro received a letter.’
- b. Taro-ga tegami-o oku-tta.
 Taro-NOM letter-ACC send-PAST
 Source Theme
 ‘Taro sent a letter.’
- c. Taro-ga Hanako-ni tegami-o oku-tta.
 Taro-NOM Hanako-DAT letter-ACC send-PAST
 Source Goal Theme
 ‘Taro sent Hanako a letter.’
- d. mizu-ga koppu-o mitasi-ta.
 water-NOM cup-ACC fill-PAST
 Theme INC
 ‘water filled a cup.’

If we compare the positions of arguments in the examples above, the following hierarchy seems plausible.

(79) Source > Goal > Theme > INC

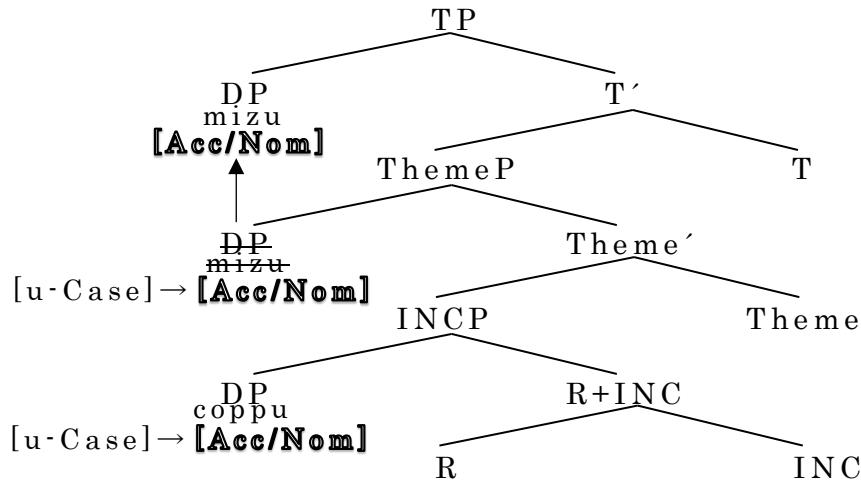
The hierarchy in (79) is held in a particular syntactic structure, whereas (78a) may be schematized as follows.

(80)



In (80), *tegami* satisfies [Theme], which is one of the patient-oriented θ -features, when it receives a potential [Acc/Nom]. Since this argument is spelled out inside vP, this case feature is realized as accusative case. On the other hand, *Taro* satisfies [Goal], which is a θ -feature categorized into the thematic tier. Thus, the [u-Case] of *Taro* receives a potential [NOM] at [Spec, GoalP], which is realized with nominative case after it is spelled out inside TP. (78b) and (78c) are derived in a similar way. Both subjects in these two sentences have hierarchically higher θ -features than that of their objects, and the way of case valuation is the same. The situation is slightly different in (78d), which is schematized in (81).

(81)



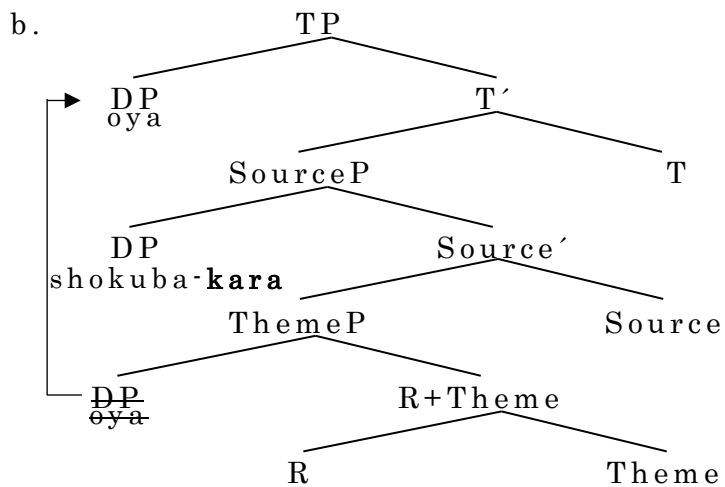
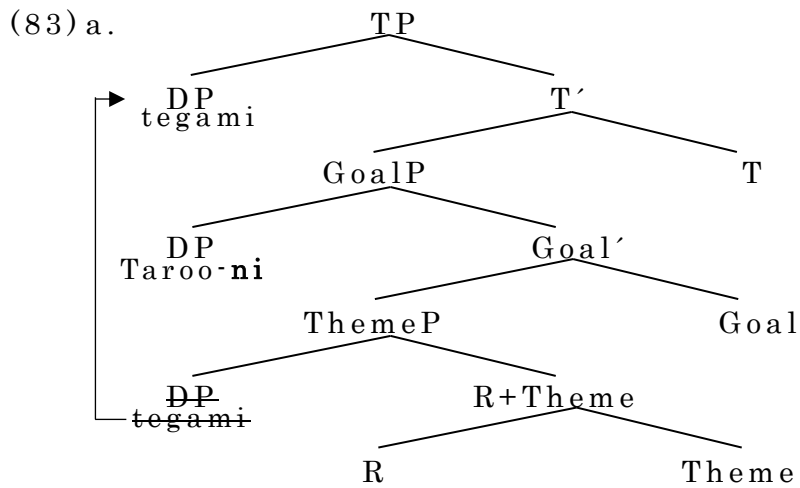
In (81), both *koppu* and *mizu* have Patient-oriented θ -features, thus both receive a potential [Acc/Nom]. However, in the end, *koppu* is spelled out inside vP and *mizu* is spelled out inside TP, so the former is realized with accusative case while the latter is realized with nominative case.

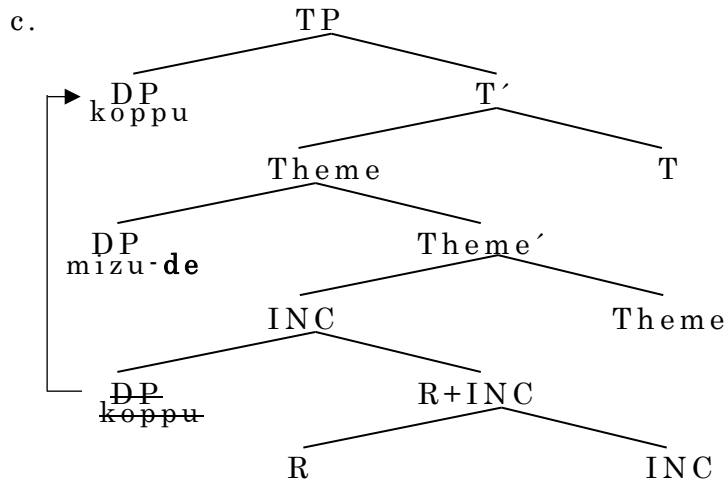
We easily find some cases where the hierarchy in (79) is apparently violated, as shown in (82).

- (82) a. Tegami-ga Taro-ni todoi-ta.
letter-NOM Taro-to reach-PAST
Theme Goal
'A letter reached Taro.'
- b. oya-ga syokuba-kara kae-tta.
parent-NOM workplace-from come back-PAST
Theme Source
'A parent came back from the workplace.'

c. koppu-ga mizu-de miti-ta.
 glass-NOM water-with fill-PAST
 INC Theme
 ‘a glass was filled with water.’

A characteristic of such examples is that accusative case valuation does not occur. In the current framework, the derivation of (82a-c) can be captured as follows. (83a-c) describe the derivation of (82a-c) respectively.





In (83a), the locative postposition *-ni* is attached to *Taro*. This postposition assigns inherent case to *Taro*, which makes the argument inactivate (Chomsky (2000)). Therefore, *tegami* moves to [Spec, TP] and receives the nominative case value from T. The same explanation can be applied to (83b) and (83c). In (83b) a structural case is assigned to *shokuba* from the ablative postposition *-kara* and in (83c) the instrumental *-de* assigns a structural case to *mizu*.

This framework captures the correspondence between case-marking and interpretation. As shown in (84), we can mark an object of a simple active sentence as dative or accusative.

- (84) Taro-ga yama-ni/o nobo-tta.
 Taro-NOM mountain-DAT/ACC climb-PAST
 ‘Taro climbed the mountain.’

However, even with the same verb, occasionally we have no choice

as shown below.

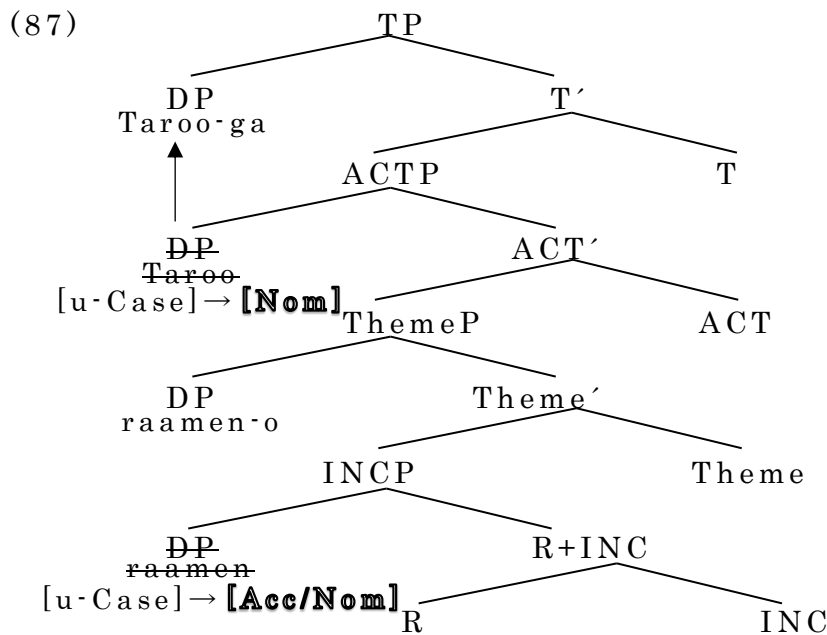
- (85) a. Taro-ga kaidan-*ni/o nobo-tta.
 Taro-NOM stairs-*DAT/ACC climb-PAST
 ‘Taro climbed the stairs.’
- b. Taro-ga tyoojoo-ni/*o nobo-tta.
 Taro-NOM top-DAT/*ACC climb-PAST
 ‘Taro climbed (something) to the top of it.’

What we can see from the contrast between (85a) and (85b) is that the case assigned to an argument depends on its thematic property. In (85a), *kaidan* is the path of *Taro*'s movement. In other words, the event denoted in the sentence is delimited by the step where *Taro* is at, thus *kaidan* has INC in the current framework. On the other hand, *tyoojoo* in (85b) is the goal of *Taro*'s climbing. Therefore, considering the distributions of θ -features, the derivation of (85a) is the same as (81) and that of (85b) is the same as that of (83a). In this way, the composition of *v* is different even with the same root, the difference of which having an effect on case-marking as well as interpretation.

A slightly more complicated proposition is made with ACT, which projects syntactically higher than all the θ -features which belong to the thematic tier. (86) is an instance of such a situation.

(86) Taro^o-ga raamen^o tabe-ta.
 Taro^o-_{NOM} ramen^o-_{ACC} eat^o-_{PAST}
 ACT Theme, INC
 ‘Taro ate ramen.’

(86) is not intended to capture the movement of an entity. Rather, Taro’s eating is captured whereby the ramen is an affected entity by Taro’s action. If we paraphrase this using θ -features, *Taroo* has ACT and *raamen* has Theme and INC. The derivation of (86) is schematized in (87) as follows.



Since *raamen* undergoes checking of patient-oriented θ -features, it receives a potential [Acc/Nom] and is spelled out inside the vP to be realized with accusative case. *Taroo* receives a potential [Nom] from ACT and moves to [Spec, TP] to be marked with

nominative case. Again, accusative/dative alternation in an object is observed in any sentence which contains ACT.

(88) *Taroo-ga* *kabe-o/ni* *sawa-tta.*
Taro-NOM wall-ACC/DAT touch-PAST
'Taro touched a wall.'

In (88), the object *kabe* can be marked with either accusative or dative marking. More importantly, its interpretation is different depending on the case marking on the object. When the object is accusative-marked, the sentence is intended to describe Taro's touching action. In contrast, when *kabe* is dative-marked, the movement on the part of Taro is conveyed and the movement ends when it reaches the wall. In other words, in (88) with the accusative-marked object *Taroo* has ACT and *kabe* has Theme, while in (88) with the dative-marked object *Taroo* has Theme and *kabe* has Goal. Therefore, the derivation of (88) with the accusative-marked object is the same as (87), while the derivation of (88) with the dative-marked object has the same structure as (83a).

One more thing which should be noted in this section is the existence of AFF in a lower part of v. Koizumi (1994) provides several pieces of evidence which show the existence of a syntactic position where an affected argument has to remain. In Japanese, an accusative-marked argument can be a target of a depictive

predicate, while a dative object cannot.

(89) a. Taroo-ga aizin-o hadaka-de koros-ita.

Taro-NOM lover-ACC naked-INST kill-PAST

‘Taro killed his lover naked.’

b. Shinko-ga manekin-o hadaka-de narabe-ta.

Shinko-NOM mannequin-ACC naked-INST display-PAST

‘Shinko displayed the mannequins naked.’

(cf. Koizumi (1994:49))

(90) a. # Taroo-ga Ziroo-ni deesui-zyootai-de mayaku-o

Taro-NOM Jiro-DAT dead-drunk drug-ACC

ut-ta.

inject-PAST

‘Taro injected a drug into Jiro dead-drunk.’

b. # Daitooryoo-ga bisyonure-de Taroo-ni kunsyoo-o

president-NOM wet Taro-DAT medal-ACC

atae-ta.

give-PAST

‘The president gave a medal to Taro wet.’

(cf. Koizumi (1994:45))

Koizumi (1994) captures this difference assuming the following principle of predication.

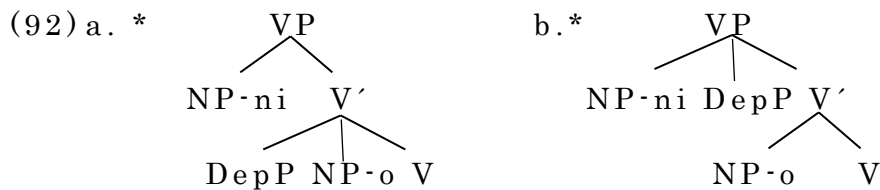
(91) Principle of Predication

Predication relation between an NP and a predicate XP is

licensed only if the following two conditions are satisfied at D-structure:

- (a) the XP is c-governed by the NP⁴
(antecedent government: identification), and
- (b) the XP is c-governed by a zero-level category
(head government: formal licensing) (Koizumi(1994: 47))

In order for a depictive predicate to be c-commanded by a Dative object, possible syntactic positions of the depictive predicate must be (92a) or (92b).



In (92a), the depictive predicate cannot be c-governed by the Dative NP because of the barrier V', which means that (92a) is not satisfied⁵. On the other hand, in (92b) the depictive predicate is not c-governed by head, which violates (92b). This is because (90)

⁴ *Government* is defined based on m-command as follows (Chomsky (1981a)).

(i) m-command: α m-commands β if (a) α does not dominate β and (b) the first maximal projection which dominates α dominates β .
(ii) government: α governs β if (a) α m-commands β and (b) α and β are inside the same maximal projection.

⁵ *Barrier* is defined based on a blocking category as follows.

(i) blocking category: a maximal projection α is a blocking category against β if α is not L-marked and dominates β .
(ii) government: α is a barrier against β if (a) the maximal projection α immediately dominates γ , which is a blocking category against β or (b) the maximal projection α is a blocking category against β ($\alpha \neq$ IP).

is ruled out; an argument which is structurally higher than accusative object cannot satisfy either (91a) or (91b).

More importantly, even accusative-marked objects cannot be associated with a depictive predicate in a few examples.

- (93) a. * Taro-ga Ziroo-o hadaka-de hometa.
 Taro-NOM Ziroo-ACC naked praised
 ‘Taro praised Jiro naked.’
- b. * Taro-ga Ziroo-o hadaka-de oikaketa.
 Taro-NOM Ziro-ACC naked chased
 ‘Taro chased Jiro naked.’ (Koizumi (1994:50))

Koizumi (1994) explains this contrast in terms of whether the objects are affected or not in the event. The affectedness of objects can be detected with the test below, which is introduced by Martin (1975) and Miyagawa (1989). In a *-tearu* sentence, a verb must implies an affectedness on the subject, otherwise the sentence is ungrammatical.

- (94) a. Usi-ga korosi-te aru.
 Cow-NOM kill-CONV be
 ‘A cow is killed.’
- b. Manekin-ga narabe-te aru.
 mannequin-NOM arrange-CONV be
 ‘Mannequins are displayed.’ (cf. Koizumi (1994:50))

(95) a.* Ziroo-ga hom-te aru.

Jiro-NOM praise-CONV be

‘Jiro is praised.’

b.* Ziroo-ga oikake-te aru.

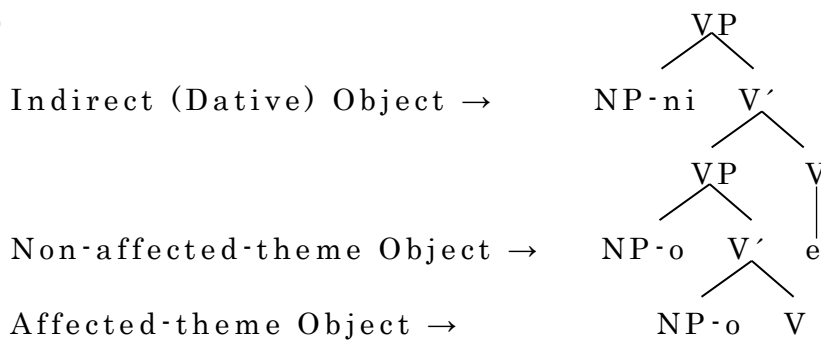
Jiro-NOM chase-CONV be

‘Jiro is chased.’

(cf. Koizumi (1994:))

According to this test, the verbs used in (94) entail affectedness of the objects while the verbs in (95) do not. Koizumi (1994) proposes that syntactic positions of affected objects and non-affected ones are different, as shown in (96).

(96)



Since the concept of government is abolished in the current framework, Koizumi’s (1994) analysis is no longer available without modification. However, the observation above at least guarantees the existence of AFF, which is one of the patient-oriented θ -features, at the lower part of v.

In sum, I have shown that θ -features establish the concept of

v with the following hierarchy.

(97) ACT > Source > Goal > Theme > INC > AFF

Among them, patient-oriented θ -features (Theme, INC, and AFF) are necessary for accusative case valuation. When more than two arguments are inside a vP, a DP with the the hierarchically highest θ -feature moves to [Spec, TP]. However, by attaching a postposition to an argument, the argument becomes inactivated, and a DP with a hierarchically lower argument can move to the subject position.

4.2 Passives

Since Chomsky (2000), it has been assumed that v loses its phasehood in passives. In other words, v is ‘weak’ in passives. A normal weak v does not introduce any external argument, and does not provide an accusative case value, which can be seen in the following ungrammatical example.

(98)* John was stolen his wallet (by Mary).

In (98), since v is not capable of accusative case valuation, *his wallet* fails to have its [u-Case] checked, which causes the derivation to crash.

In contrast, Japanese shows a radically different behavior as shown in (99).

(99) a. Taro-ga Hanako-ni tatak-are-ta.

Taro-NOM Hanako-DAT slap-PASS-PAST

‘Taro was slapped by Hanako.’

b. Taro-ga Hanako-ni saifu-o nusum-are-ta.

Taro-NOM Hanako-DAT wallet-ACC steal-PASS-PAST

‘Taro had his wallet stolen by Hanako.’

(99) shows that both direct and indirect passives in Japanese have the same suffix, *-are*. If this suffix is a realization of *v* in passives, this fact is not compatible with Chomsky’s (2000, 2001) claim, which leads us to assume a different mechanism for passives in Japanese.

Before further considering the mechanism of passives in Japanese, let us review their characteristics. Kuroda (1992) claims that the following two passive sentences should be treated differently following Inoue’s (1976) observation.

(100) a. John-ga Bill-niyotte hihan-s-are-ta.

John-NOM Bill-by criticize-do-PASS-PAST

‘John was criticized by Bill.’

b. John-ga Bill-ni hihan-s-are-ta.

John-NOM Bill-DAT criticize-do-PASS-PAST

‘John was criticized by Bill.’

I borrow the term *niyotte* passive for (100a) and *ni* passive for (100b) from Kuroda (1992). At first sight the difference between (100a) and (100b) is just a stylistic one. However, the following contrast implies that these two passives are different in their nature.

- (101) a. Kaikai-ga gityoo-niyotte sengen-s-are-ta.
 opening-NOM chairman-by announce-do-PASS-PAST
 ‘The opening of the meeting was announced by the
 chairman.’
- b. * Kaikai-ga gityoo-ni sengen-s-are-ta.
 opening-NOM chairman-DAT announce-do-PASS-PAST
 ‘The opening of the meeting was announced by the
 chairman.’

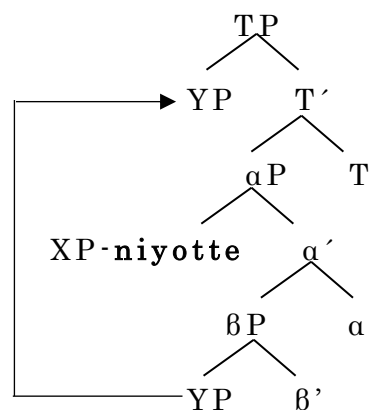
Inoue (1976) claims that in the *ni* passive the subject has influence on the Agent. In (101b), *kaikai* cannot be interpreted as being affected by the chairman’s announcement, which is the reason for the ungrammaticality. Based on this insight, Kuroda (1992) proposes the following structures for these two kinds of passives. (102a) is for *ni* passives, while (102b) is for *niyotte* passives.

- (102) a. NP₁(NP₂...V₂)_S-rare-ru
 b. NP₁...NP₂...V-ru → NP₂NP₁-niyotte...V-rare-ru

(102b) is in nature the same as the generally assumed operation for passivization: an object is raised to a subject position and a subject is demoted and attached with the suffix *niyotte*. On the other hand, (102a) indicates that a *ni* passive is not derived from the corresponding active sentence, but the subject is base-generated in the subject position. Kuroda (1992) stipulates that this subject is an affected argument.

Kuroda's (1992) insight can be reformulated here. In fact, two ways for passivization are available in the current framework. One is attaching the postposition *-niyotte* to an argument at the top of a vP. This strategy is essentially the same as promoting the hierarchically lower argument that was introduced in the former section. Being attached to a postposition, the argument is assigned inherent case and becomes inactive according to Chomsky (2000), which allows a structurally lower argument to move to [Spec, TP].

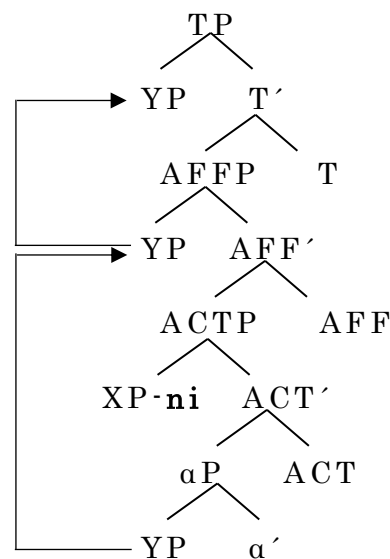
(103) The structure of *niyotte* passives



A characteristic of this passive type is that it does not have any effect on the interpretation. Since θ -features contained in v is the same as its counterpart in the corresponding active sentence, theoretically the interpretation of the two sentences must be the same.

The other strategy is adding a θ -feature to v . In the previous section, we have seen that AFF is hierarchically the lowest in v . Here, I propose that AFF can project structurally higher than ACT, which derives the *ni* passive.

(104) the structure of *ni* passives

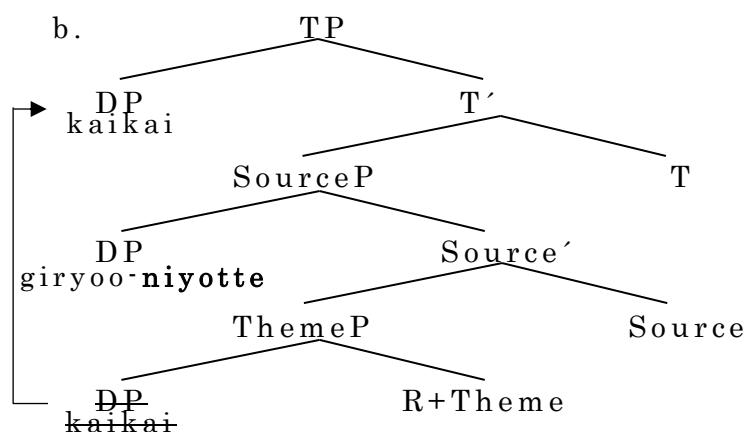


In (104), YP is introduced into the derivation with more than two θ -features: AFF and α . After YP is externally merged, when α is satisfied, it further moves to [Spec, AFFP] to satisfy [AFF]. As a result, YP is structurally higher than XP, which successfully derives the constituent order of passives. Importantly, since YP

has [AFF], this argument is interpreted as being affected by the event denoted by the vP, which is confirmed in (101)

Having assumed mechanism of passivization, let us take a look at concrete examples. First, the *niyotte* passive cited above is derived as follows.

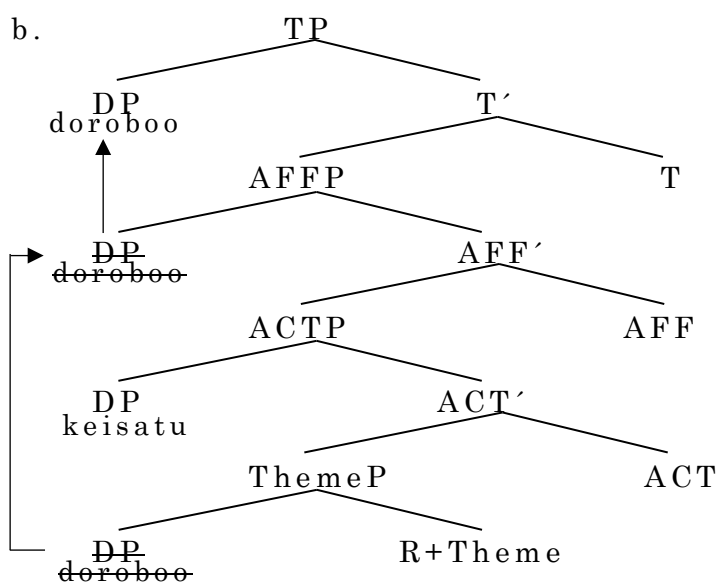
- (105) a. *Kaikai-ga gityoo-niyotte sengen-s-are-ta.*
 opening-NOM chairman-by announce-do-PASS-PAST
 ‘The opening of the meeting was announced by the chairman.’



(105a) is interpreted the opening announcement came from the chairman himself, which can be described with only θ -features belonging to the thematic tier. Since *-niyotte* is attached to *gityoo* ‘chairman,’ the only candidate to move to [Spec, T] is *kaikai* ‘meeting opening.’ As already mentioned, this kind of passivization does not change interpretation since the composition of v is the same as its counterpart in the corresponding active sentence.

On the other hand, the *ni* passive is derived when AFF (which canonically projects at the bottom of a derivation) projects above ACT.

- (106) a. Doroboo-ga keisatu-ni toraer-are-ta.
 thief-NOM police-DAT arrest-PASS-PAST
 ‘A thief was arrested by police.’

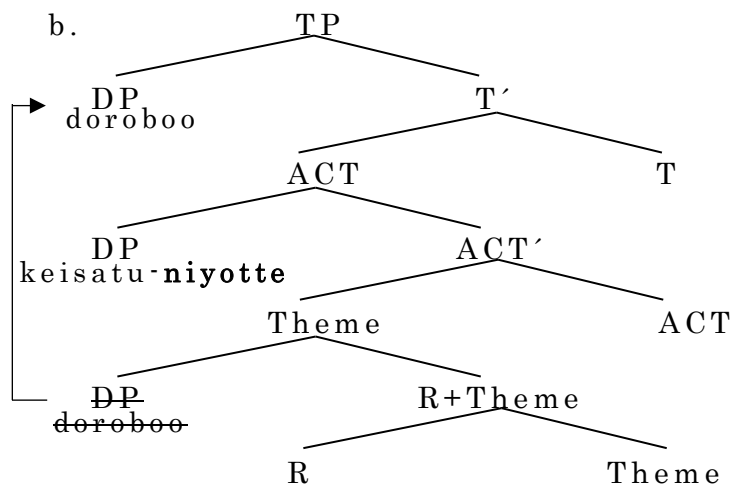


In (106b), *doroboo* ‘thief’ is introduced into the derivation with two θ -features: Theme and AFF. Therefore, after externally merged into the derivation, this argument moves above *keisatu* ‘police’ to [Spec, AFF] to satisfy the criterial feature. As a result, *doroboo* is structurally higher than *keisatu*, and it successfully moves to [Spec, T]. As for case valuation, *doroboo* receives a potential [Acc/Nom] from Theme and is spelled out in TP, so this argument is marked with nominative case. On the other hand, *keisatu* receives a potential [Nom] from ACT, but it is spelled out

inside vP, which means that the case feature of *keisatu* is morphologically realized as dative.

Note that *-ni* in (106a) can be replaced with *-niyotte*. In that case, the sentence is derived in the same way as (105) as follows.

- (107) a. Doroboo-ga keisatu-niyotte torae-rare-ta.
 thief-NOM police-by arrest-PASS-PAST
 ‘A thief was arrested by police.’



In (b) *keisatu* is embedded with the postposition *-niyotte*, which allows *doroboo* to move above *keisatu* to [Spec, TP]. As Kuroda (1992) points out, (106a) and (107a) are slightly different in meaning. In (106a), we can acknowledge that the arresting event is adversative to the thief, while (107a) sounds more objective. This difference arises from whether the derivation contains AFF or not.

Here, I would like to consider the source of morphological realization of these passives, the verbal suffix *-rare*. This

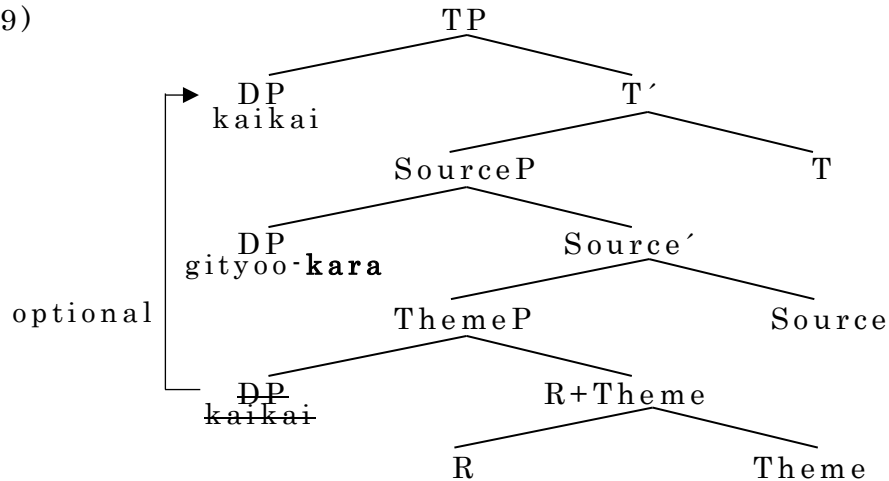
emerges in both *ni* passives and *niyotte* passives, which complicates a situation. The only difference between a *ni* passive and the corresponding active sentence is whether *v* contains AFF or not. Therefore, the most plausible assumption is that *-rare* appears when *v* contains AFF. However, in a *niyotte* passive *v* does not contain AFF even though *-rare* appears, which leads us to conclude that AFF is irrelevant in this situation. For this problem, consider the following examples, which are related to (105).

(108) a. Kaikai-ga gityoo-kara sengen-s-are-ta.
 opening-NOM chairman-ABL announce-do-PASS-PAST
 ‘The opening of the meeting was announced by the
 chairman.’

b. Gityoo-kara kaikai-o sengen-si-ta.
 chairman-from opening-ACC announce-do-PAST.
 ‘The chairman announced the opening of the meeting.’

In the explanation of (105), it is assumed that *gityoo* has [Source], which can be realized as a postposition as in (108a). Importantly, when this option is chosen the movement of the thematic object is optional.

(109)



In fact, Kishimoto (2016) provides a piece of evidence that shows that a subject with a postposition stays inside vP in Japanese. Consider the examples in (110):

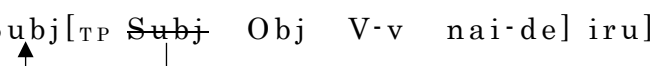
- (110) a. John-ga hon-sika yoma-naka-tta.
John-NOM book-only read-NEG-PAST
'John read nothing but books.'
- b. John-sika hon-o yoma-naka-tta.
John-only book-ACC read-NEG-PAST
'Only John read books.'
- c. * John-ga hon-sika yon-da.
John-NOM book-only read-PAST
'John read only books.' (Kishimoto (2016: 124))

In Japanese, *-sika* is a negative polarity item, which must be licensed inside the scope of negation. In (110), the negative scope is below the TP. Both the object in (110a) and the subject in

(110b) are contained in TP, thus they are licensed by NEG. (110c) is ungrammatical since there is no NEG. Then, consider the following contrast between a subject and an object.

- (111) a. * John-sika ano-hon-o yoma-nai-de-iru.
 John-only that-book-ACC read-NEG-PART-PRES
 Only John has read that book.
- b. John-ga ano-hon-sika yoma-nai-de-iru.
 John-NOM that-book-only read-NEG-PART-PRES
 ‘John has read only that book.’ (Kishimoto (2016: 125))

The ungrammaticality of (111a) shows that the subject is outside the scope of negation. Schematically, the syntactic structure of (111) contains two TPs, and the subjects move from the syntactically lower [Spec, TP] to the higher one as follows.

- (112) [TP Subj₁[TP Subj₂ Obj V-v nai-de] iru]

(Kishimoto (2016: 125))

Since the scope of the negation is limited inside the embedded TP, the NPI in (111a) cannot be licensed. What is crucial here is that the following sentences are grammatical in contrast to (111a).

- (113) a. *Watashi-kara-sika kare-ni hanasikake-nai-de-iru.*
 I-from-only he-DAT talk to-NEG-PART-PRES
 ‘Only I have talked to him.’
- b. *Kodomotachi-de-sika asoba-nai-de-iru.*
 children-with-only play-NEG-PART-PRES
 ‘Only children are playing.’ (Kishimoto (2016: 126))

From the observation in (113), Kishimoto (2016) concludes that a subject marked with a postposition such as the ablative *-kara* and the instrumental *-de* stays inside vP.

- (114) [TP [TP [_{vP} Subj Obj V-v] nai-de] iru]
 (Kishimoto (2016: 126))

Now we go back to the question: what is realized as *-rare*? Without a formalized configuration, I claim that T is sensitive to features of a DP in [Spec, TP]. If the DP has Agent-oriented θ -features, T is realized with a default form. If not, *-rare* is morphologically realized. In fact, this suffix appears in constructions other than passives in Japanese.

- (115) a. *Taroo-wa nan-demo tabe-rare-ru.*
 Taro-TOP whatever eat-POSS-PRES
 ‘Taro can eat anything.’

b. Boku-ni-wa soo omow-are-ru.

I-Dat-TOPSO so think-SPON-PRES

‘Something makes me think so.’

c. Sensei-wa sakana-o konon-de tabe-rare-ru.

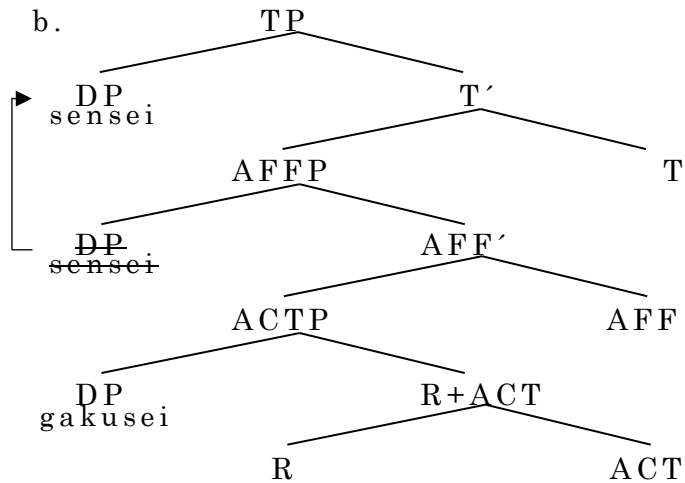
teacher-TOP fish-ACC preferably eat-HON-PRES

‘The teacher prefers to eat fish.’

(115a) is an example of a potential construction, which is discussed in detail in chapter 6. (115b) is an instance of a spontaneous expressions and (115c) is an honorific sentence. All three sentences contain a subject with a specific interpretation. These interpretations are results of assigning semantic features to the subjects, and the interaction between T and these features is overtly realized as *-rare*.

Crucially, the mechanism of the *ni* passive allows some subject to base-generate in [Spec, AFF], which derives a sentence of the indirect passives type.

- (116) a. Sensei-ga gakusei-ni nak-are-ta.
 teacher-NOM student-DAT cry-PASS-PAST
 ‘A teacher was cried on by students.’



The difference of mechanisms between *niyotte* passives and *ni* passives explains the acceptability of a floating quantifier (FQ) in the two passive types. FQ is not always allowed in Japanese, as shown in (117).

- (117) a. Kodomo-ga kyoositu-ni san-nin ki-ta.
 child-NOM classroom-DAT three-CL come-PAST
 ‘Three children came to the classroom.’

- b. * Taroo-ga kodomo-ni ame-o san-nin
 Taro-NOM child-DAT candy-ACC three-CL
 age-ta.
 give-PAST
 ‘Taro gave candies to three children.’

According to Miyagawa (1989), FQ is allowed when the following condition is satisfied.

- (118) The NP or its trace and the numeral or its trace must c-command each other.

In (117a), *kodomo* has moved from the VP inside position, where the mutual c-command relation holds between this DP and the FQ. On the other hand, in (117b) *kodomo* is base-generated at the surface position. This means that this argument asymmetry c-commands the quantifier, which is why (117b) is ungrammatical.

In the current framework, it is expected that FQ is always allowed in *niyotte* passives, where subjects are raised from the thematic object position, while it is banned in some cases of *ni* passives when a subject is base-generated in [Spec, AFF]. This expectation is borne out in the following examples.

- (119) a. Doroboo-ga keisatu-ni/niyotte san-nin
 thief-NOM police-DAT/by three-CL
 toraer-are-ta.
 arrest-PASS-PAST
 ‘Three thieves were arrested by police.’
- b.* Sensei-ga gakusei-ni san-nin nak-(r)are-ta.
 teacher-NOM student-DAT three-CL cry-PASS-PAST
 ‘Three teachers were cried on by students.’

(119a) is grammatical whether *keisatu* is marked with *ni* or *niyotte*. Since *doroboo* has at least Theme, this argument is externally merged to [Spec, Theme] in both *ni* passives and *niyotte* passives, which makes FQ available. On the other hand, in (119b) *sensei* only has one θ -feature, AFF. Therefore, the argument is base-generated at the top of the vP, which means that at no stage of the derivation can it be associated with FQ.

Now, we return to indirect passives which contain an accusative-marked object, which cannot be typically captured in the generally assumed frameworks. As discussed in the literature, a mysterious characteristic of this construction is that its valence increases even though the passive morpheme *-rare* appears, which reduces the number of arguments in simple passives. As we do not notice any overt candidate for such a valency-increasing operation in the form of an *argument introducer*, a possible assumption is that there is a covert functional projection which introduces an argument. Such a possibility is initially pursued by Marantz (1984) and Larson (1988), and developed further in Chomsky (1995), Kratzer (1996), and Pylkkänen (2008). Pylkkänen (2008) proposes seven types of argument introducers, among which is a possible candidate to explain Japanese indirect passives. The argument introducer is called the Low Source Applicative, which expresses a possessive relation between an argument in its specifier and complement position. Pylkkänen (2008) explains Japanese indirect passives in (120).

(120) JAPANESE INDIRECT PASSIVES

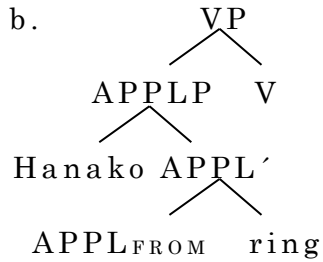
a. Hanako-ga doroboo-ni yubiwa-o to-rare-ta.

Hanako-NOM thief-DAT ring-ACC steal-PASS-PAST

‘Hanako was affected by the thief stealing her ring.’

(Pylkkänen (2008))

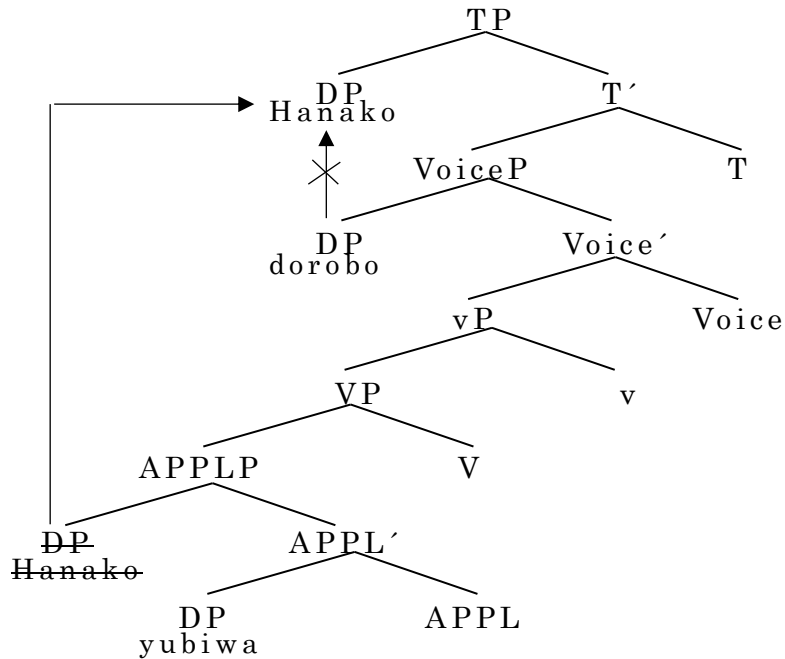
b.



(Pylkkänen (2008))

Since *Hanako* is in [Spec, APPLP] and *ring* is the complement of APPLFROM, these two arguments are in a possessive relation. In addition, *Hanako* has the Source role, which implies that *ring* can be given to or taken by someone. However, as she points out by herself, the derivation of indirect passives is not clear. Following Pylkkänen (2008), the derivation (25b) continues as follows.

(121)



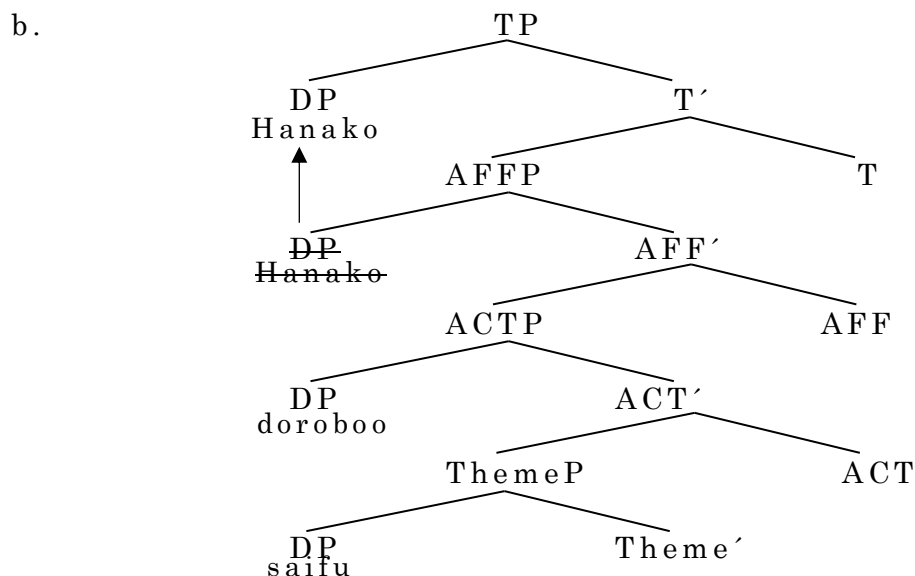
In (121), *v* is introduced to verbalize *V*, and *VoiceP* projects to introduce the external argument *doroboo*. After that, *TP* projects and its *Spec* must be filled with certain *DP*. The problem discussed in Pylkkänen (2008) is why *Hanako* moves to this position above *doroboo*, although *doroboo* is clearly closer to [*Spec*, *TP*] than *Hanako*. In fact, it does not matter in Chomsky's (2015) framework, since the notion of free merge is employed, where any movement can occur without any specific motivation. Therefore, the movement of *Hanako* above *doroboo* itself is not problematic. However, it is still not clear why *doroboo* cannot move to [*Spec*, *TP*]. Since there is nothing to block this movement, the derivation in (121) should be able to proceed as the sentence below.

(122) #*Doroboo-ga Hanako-ni yubiwa-o nusum-are-ta*.

As [Spec, TP] is not a position where thematic interpretation is assigned to a DP, the interpretation of (122) should be the same as that of (120a), which is not the case.

In the current framework, indirect passives are derived as follows.

- (123) a. Hanako-ga doroboo-ni saifu-o nusum-are-ta.
 Hanako-NOM thief-DAT purse-ACC steal-PASS-PAST
 ‘Hanako had her purse stolen by thief.’



Note that the structure in (123b) is the same as that in (106b), which is the structure of a direct passive. The only difference is that the subject is directly introduced into [Spec, AFF]. ACTP and subordinate nodes express the event that a thief stole Hanako’s purse, and this structure is the same as that of a simple active sentence. By projecting AFFP above ACTP and introducing *Hanako* into its Spec, it is expressed that Hanako’s mental state

is adversely affected by the event of the thief stealing her purse. In this way, we can generate the interpretation of the indirect passive.

This analysis contrasts with that of Pylkkänen (2008) in terms of the way of merging a subject; the subject in an indirect passive moves from some lower position to the subject position (internal-merge) while it is introduced into the subject position directly (external-merge). Pylkkänen's (2008) analysis assumes the former while mine the latter. As shown in (124), the latter is correct, which suggests that the current analysis is optimal.

- (124)a. Gakusei-ga sensei-ni san-nin home-rare-ta.
 student-NOM teacher-DAT three-CL praise-PASS-PAST.
 ‘Three students were praised by their teacher.’
- b.?? Gakusei-ga sensei-ni san-nin hyooka-o
 student-NOM teacher-DAT three-CL grade-ACC
 sage-rare-ta.
 lower-PASS-PAST
 ‘Three students had their grades lowered by their
 teacher.’

With the assumption that a floating quantifier is left at the position previously occupied by the associate DP before movement, the contrast in (124) shows that the subject in (124a) moves from the object position while that of (124b) does not. According to

Pylkkänen (2008), *gakusei* and *hyouka* are originally in a Spec-Head relation in APPLP, so a floating quantifier should be condoned, which is not the case. In the current framework, *gakusei* is base-generated in a higher place than *sensei*, namely AFFP, which predicts the ungrammaticality of (124b).

Now we have confirmed the mechanism for passivization, so let us consider one mysterious feature of dative case in passives.

(125) a. Sono yama-wa tennoo-ni nobo-rare-ta.
the mountain-TOP emperor-DAT climb-PASS-PAST

‘The mountain was climbed by the emperor.’

(cf. Tennoo-ga sono yama-o nobo-tta.

emperor-NOM that mountain-ACC climb-PAST

‘The emperor climbed the mountain.’)

b.* Sono tyoojoo-wa tennoo-ni nobo-rare-ta.

that top-TOP emperor-DAT climb-PASS-PAST

‘The emperor got to the top (of something).’

(cf. Tennoo-ga sono tyoojoo-ni nobo-tta.

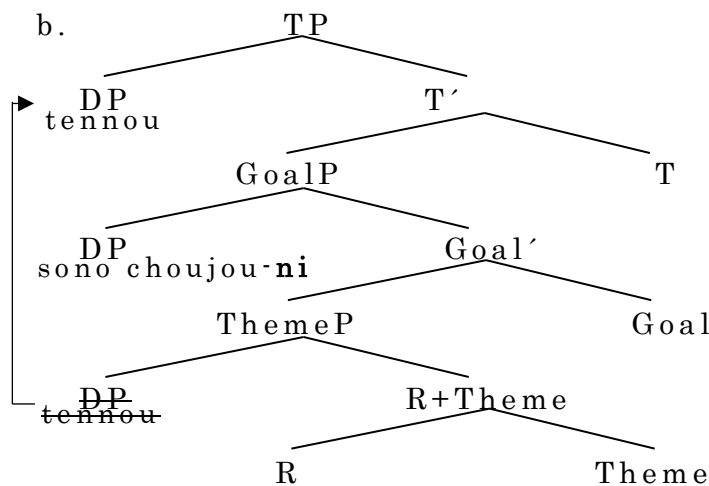
emperor-NOM the top-DAT climb-PAST

‘The emperor got to the top (of something).’)

(125a) is a passive sentence whose corresponding active sentence contains an accusative-marked object. In contrast, the corresponding active sentence of (125b) has a Dative marked DP.

In Japanese, some verbs have a constraint such that they cannot be passivized unless some property is added to the subject of the passivized sentence. In both (125a) and (125b), the subjects receive the property that the emperor climbed them, so the constraint noted above is satisfied. Nevertheless, (125b) is ungrammatical, which shows that an active sentence which contains dative case marked object cannot be passivized. Now, let us describe the derivation of the sentence below, which is the active counterpart of (125b).

- (126) a. *Tennou-ga sono tyoojoo-ni nobo-tta.*
 emperor-NOM that top-DAT climb-PAST
 ‘The emperor got to the top of something.’



Since (126a) expresses the movement of the emperor, *v* consists of θ -features which belong to the thematic tier. The moving entity *tennou* ‘emperor’ has Theme and the end point of the movement *sono tyoojoo* ‘the top’ has Goal. Since the postposition *-ni* is

attached to *sono tyoojoo*, this argument is assigned structural case and becomes inactivated, then *tennoo* moves to [Spec, TP] above *sono choujou*. Clearly, neither type of passivization assumed here are available in (126b). In the first place, *sono tyoojoo* is structurally higher than *tennnou* inside the vP. Remember that *niyotte* passives are derived by attaching *niyotte* to structurally higher DP in a vP, while *ni* passives are derived by assigning AFF to a structurally lower DP as shown in (103) and (104), and neither strategy results in the word order in (125b). Even if *niyotte* is attached to a structurally lower DP or AFF is assigned to a structurally higher DP, (125b) cannot be derived either. Since *sono tyoojoo* is already attached the postposition *-ni*, clearly attaching additional postpositions to this DP has no effect. Assigning AFF to *sono tyoojoo* cannot allow this argument to move to the subject position since it is already inactivated by the inherent case assigned by the postposition *-ni*.

Importantly, in some cases a DP with dative case can be passivized.

(127) a. Taro-ga Hanako-ni nosikaka-tta.

Taro-NOM Hanako-DAT overlie-PAST

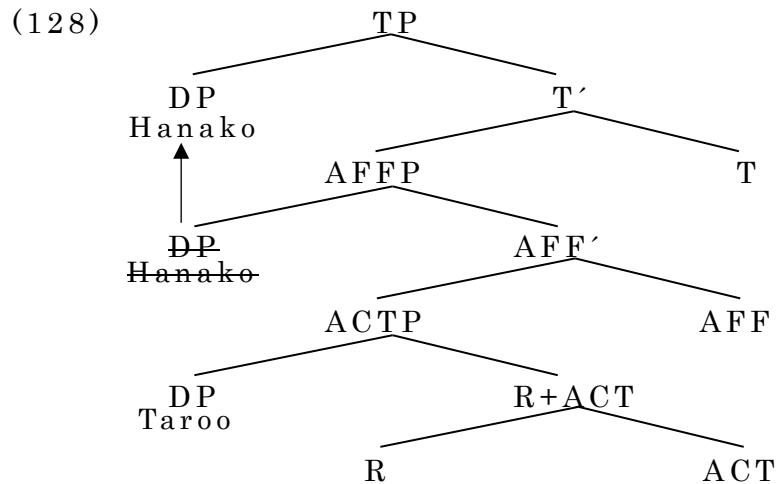
‘Taro overlay Hanako.’

b. Hanako-ga Taro-ni nosikaka-rare-ta.

Hanako-NOM Taro-DAT overlie-PASS-PAST

‘Hanako was overlain by Taro.’

What we can see here is that (127a), which contains the Dative marked DP, can be passivized as shown in (127b). What is different between this example and (125b)? I claim that (127b) is not the corresponding passive counterpart of (127a). In particular, Hanako is adversely affected by Taro's action. This is characterized by *Hanako* having AFF in (127b) within the current framework. If so, the derivation of (127b) can be schematized as follows.



What (128) shows is that *Hanako* is base-generated in a syntactically higher position than *Taroo*, which means that (127b) is not derived from (127a).

In this section, I described two patterns of passivization in the current framework: One is attaching the postposition *-niyotte* to a syntactically higher argument and the other is assigning AFF to a syntactically lower argument. The former strategy has been introduced previously in section 4.1. That is, the attachment of

a postposition to a hierarchically higher argument is found also in simple actives. The latter strategy requires AFF, which results in a modification of interpretation: a subject of a *ni* passive is necessarily interpreted as an affected entity.

4.3 Causatives

For now, the cartography of θ -features has been schematized in (129).

(129) (AFF) > ACT > Source/Goal > Theme > INC > (AFF)

On the top of this hierarchy, Cause has the option of being projected, which makes *v* co-occur with the causative suffix *-sase*. As it is known, in Japanese, the object of a causative can be marked with either the accusative or dative.

(130) Taro_o-ga Hanako_o/ni aruk-(s)ase-ta.
 Taro_{-NOM} Hanako_{-ACC/DAT} walk_{-CAUSE-PAST}
 ‘Taro made Hanako walk.’

In particular, the case marking on the causee is not always optional. Dative marking on the causee is banned in the following sentences.

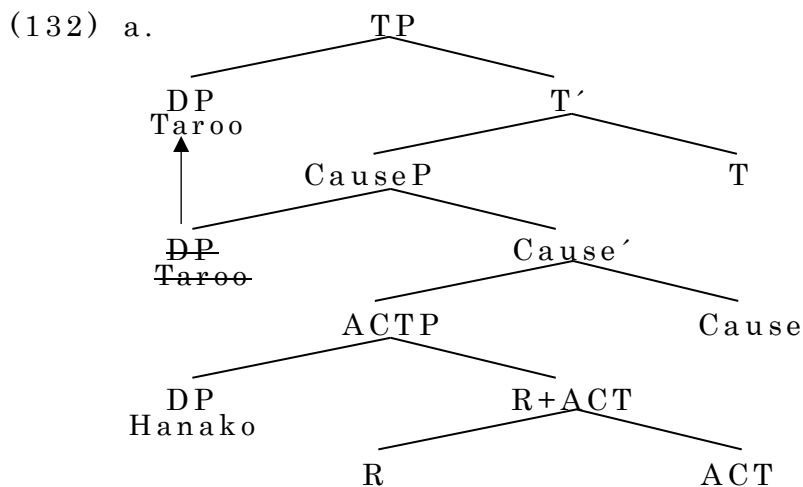
(131) a. Taroo-ga Hanako-o/*ni oko-rase-ta.
 Taro-NOM Hanako-ACC/*DAT angry-CAUSE-PAST

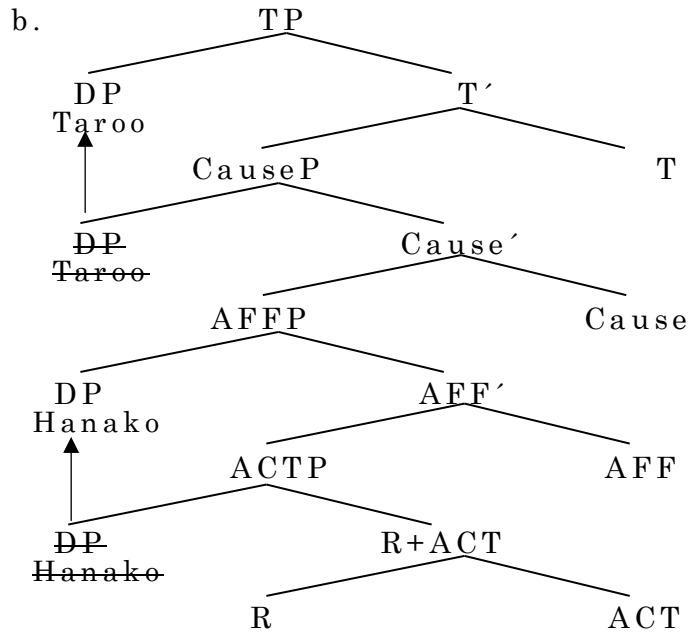
‘Taro made Hanako angry.’

b. Atsusa-ga atama-o/*ni boyake-sase-ru.
 high temperature-NOM head-ACC/*DAT blur-CAUSE-PAST

‘High temperature makes me dizzy.’

The current framework naturally captures this relation between case and interpretation. We should recall that in a θ -feature-based approach, patient-oriented θ -features allow *v* to provide an accusative case value. In the previous section, it is assumed that AFF, which is one of these patient-oriented θ -features, optionally projects above ACT. Therefore, we have two options for causative structures: one containing AFF and the other without. Here, the derivations of (130) with a dative-marked causee and with an accusative-marked causee are schematized as follows.





In (132a), *v* does not contain any patient-oriented θ -feature. Therefore, the [u-Case] of *Hanako* receives a dative value from *v*. On the other hand, in (132b) *v* contains AFF and *Hanako* receives an accusative value.

Moreover, case marking in Japanese causatives has a well-known restriction, which is exemplified in the following example.

- (133)a. Ken-wa Naomi-ni/o gakkō-ni ik-ase-ta.
 Ken-TOP Naomi-DAT/ACC school-DAT go-CAUSE-PAST
 ‘Ken made Naomi go to school.’
- b. Ken-wa Naomi-ni/*o sono-hon-o yom-ase-ta.
 Ken-TOP Naomi-DAT/ACC Dem-book-ACC read-CAUSE-PAST
 ‘Ken made Naomi read the book’

In (133a), the dative/accusative alternation on the causee is

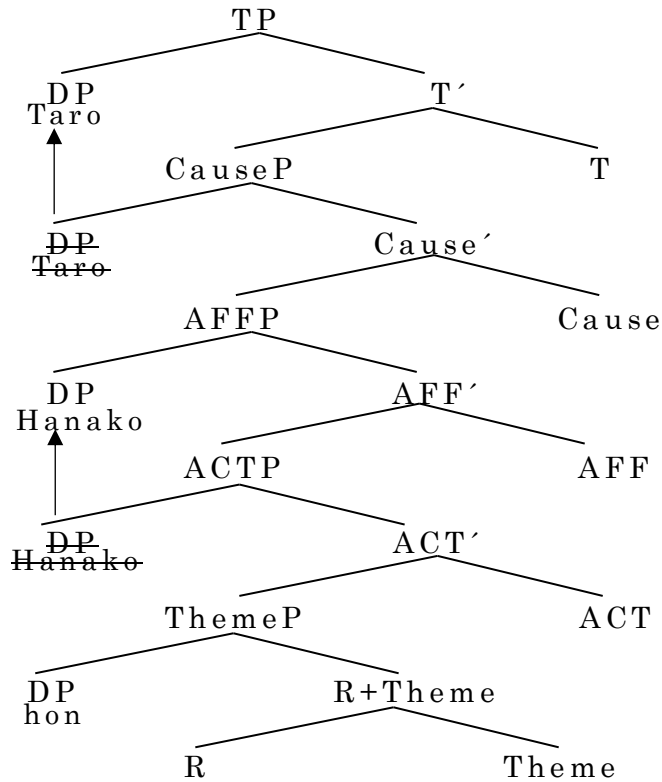
optional. On the other hand, the causee cannot be marked in the accusative in (133b). This restriction is called ‘double-*o* constraint.’ It is first introduced in Harada (1973), which is as follows.

(134) Double-*o* Constraint

A derivation is marked as ill-formed if it terminates in a surface structure which contains two occurrences of NPs marked with *-o* both of which are immediately dominated by the same VP-node.

How can we capture the ungrammaticality of (133b) with an accusative-marked causee? In the current framework, the sentence is derived as follows.

(135)



In (135), both *hon* and *Hanako* receive potential [Acc]/[Nom] since they check patient-oriented θ -features, and they are spelled out inside vP. Therefore, the case valuation system proposed in section 3.4 incorrectly predict that two arguments can be accusative-marked in a causative sentence.

Indeed, instances of the double-*o* constraint are not limited to the causative construction. Here, I cite some examples from Hiraiwa (2010).

(136) Object possessor raising

- a. Ken-ga [Naomi-no atama-o] tatai-ta.
Ken-NOM Naomi-GEN head-ACC hit-PAST
'Ken hit Naomi's head.'

b.?? Ken-ga Naomi-o [e atama]-o tatai-ta.
 Ken-NOM Naomi-ACC head-ACC hit-PAST
 ‘Ken hit Naomi on the head.’

(137) *Tokoro* relative clause

a. Keesatu-ga doroboo-ga nige-yoo to
 policeman-NOM thief-NOM run.away-try C
 si-ta tokoro-o tukamae-ta.
 LV-PAST TOKORO-ACC catch-PAST
 ‘The policeman caught the thief as he tried to run
 away.’

b.?? Keesatu-ga doroboo-o nige-yoo to
 policeman-NOM thief-ACC run.away-try C
 si-ta tokoro-o tukamae-ta.
 LV-PAST TOKORO-ACC catch-PAST
 ‘The policeman caught the thief as he tried run away.’

Furthermore, one of the reasons why this constraint has much attracted attention is that grammaticality improves when two accusative-marked arguments are separated by a number of syntactic operations including scrambling.

(138) Possessor raising and scrambling

a.?? Ken-ga omoikkiri Naomi-o atama-o
Ken-NOM hard Naomi-ACC head-ACC
tatai-ta.
hit-PAST
'Ken hit Naomi hard on the head.'

b. Naomi-oi Ken-ga omoikkiri ei atama-o
Naomi-ACC Ken-NOM hard head-ACC
tatai-ta.
hit-PAST
'Ken hit Naomi hard on the head.'

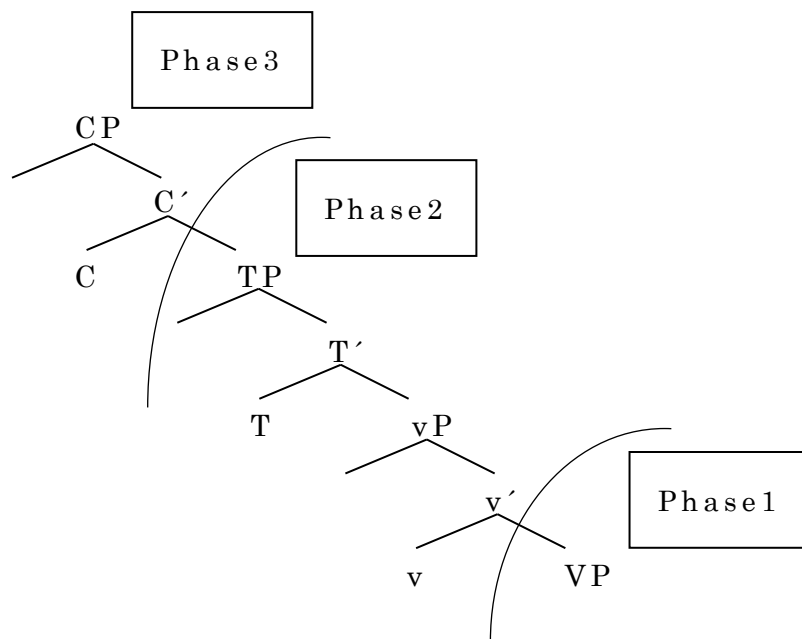
(139) Tokoro relative clause and scrambling

a.?? Ken-ga kinoo ie-de doroboo-o
Ken-NOM yesterday home-LOC thief-ACC
[nige-yoo to si-ta tokoro]-o
run.away-try C LV-PAST TOKORO-ACC
tukamae-ta.
catch-PAST
'Ken caught the thief at home yesterday as he tried to
run away.'

b. Doroboo-oi Ken-ga kinoo ie-de ti
thief-ACC Ken-NOM yesterday home-LOC
[nige-yoo to si-ta tokoro]-o tukamae-ta.
run.away-try C LV-PAST TOKORO-ACC catch-PAST
'Ken caught the thief at home as he tried to run away.'

Hiraiwa (2010) provides a principled explanation for these data based on the phase theory first proposed by Chomsky (2000). According to this theory, a syntactic derivation proceeds phase by phase. That is, a part of syntactic derivation is transferred when a phase is completed. *Phase* is defined as a syntactic object which represents a proposition, namely vP and CP. A domain which is transferred is a complement of phase head. This theory is schematized as follows.

(140)



Under this theory, Hiraiwa (2000) revises the double-*o* constraint as follows.

(141) A Phase Theory of the DoC (The final version)

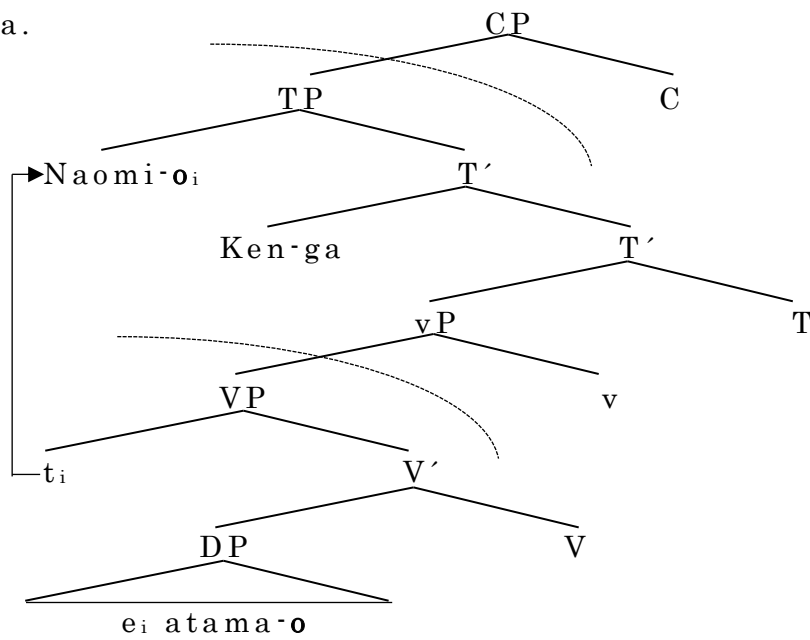
Multiple identical occurrences of the structural accusative case value cannot be morphophonologically realized within

a single Spell-Out domain at Transfer.

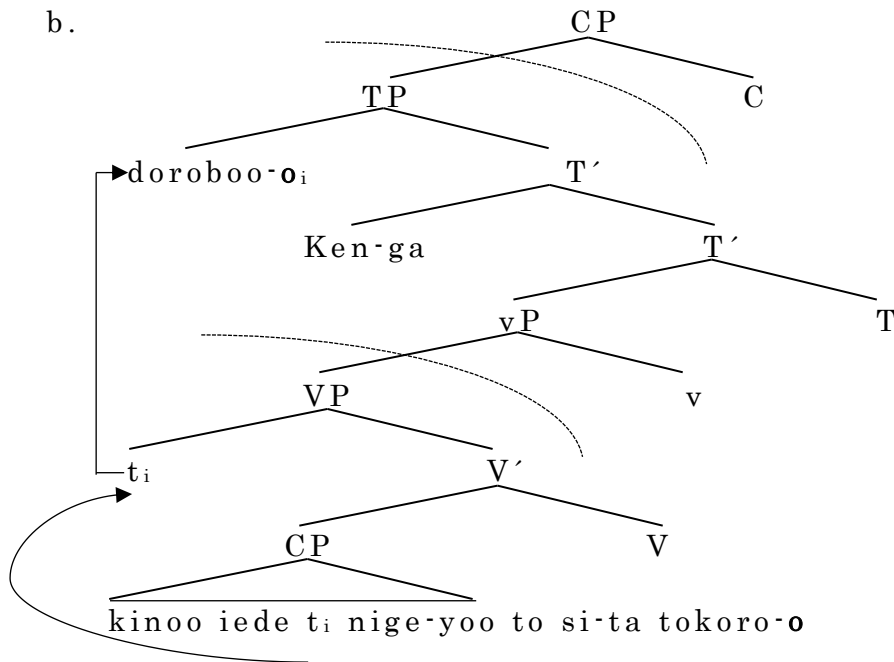
(Hiraiwa (2010: 753))

Considering the derivation of (138b) and (139b), we can see that these derivations avoid violating (141) successfully.

(142) a.



b.



In (142a), since accusative-marked *Naomi* is scrambled out of vP phase, (141) is not violated. Similarly, the accusative-marked CP and *doroboo* are transferred in a different phase respectively in (142b), because of which the derivation circumvents (141).

However, as Hiraiwa (2010) admits, the double-*o* constraint on causatives is beyond his explanation. What is problematic about his analysis is that the ungrammaticality of a causative sentence containing two accusative-marked arguments is not resolved even with this scrambling strategy.

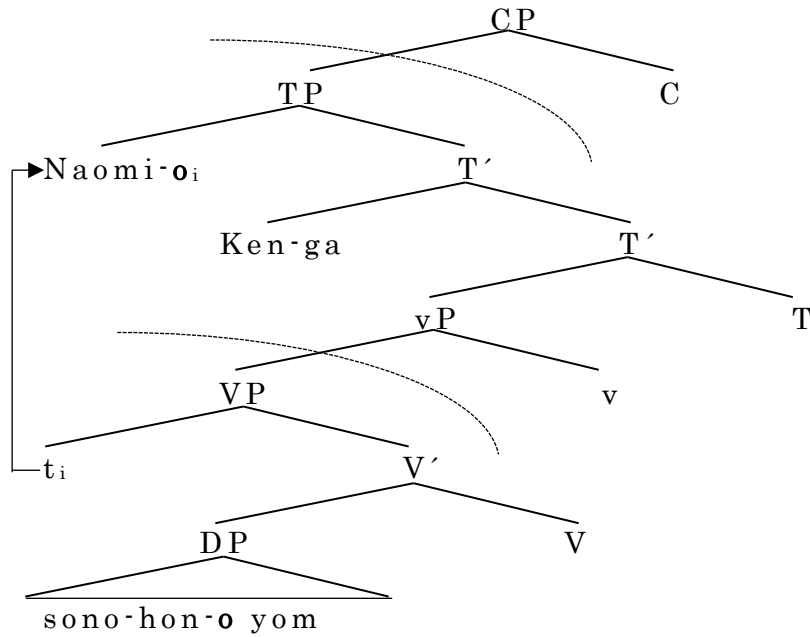
(143) Causative and scrambling

* Naomi- <i>oi</i>	Ken- <i>ga</i>	kinoo	muriyari	<i>ti</i>
Naomi-ACC	Ken-NOM	yesterday	forcibly	
sono-hon-o	yom-ase-ta.			
DEM-book-ACC	read-CAUSE-PAST			

‘Ken made Naomi read the book against her will.’

If Hiraiwa’s (2010) theory can be applied to the double-*o* constraint in causatives, we predict that (143) will be grammatical. Consider the derivation of (143) in (144).

(144)



In (144), the two accusative-marked arguments are transferred in two different phases. Therefore, we expect that the derivation converges successfully, which is not the case.

In Hiraiwa (2010), some other strategies containing clefts, PF-suppression of case, and ellipsis are introduced, all of which improve the grammaticality of sentences which contain two accusative-marked arguments. However, none of them allow a causative sentence which contains two accusative arguments to avoid violating the double-*o* constraint. This fact implies that the ungrammaticality of (133b) with the accusative causee is not caused by the two accusative marked arguments lying next to each other. More specifically, the roots of transitive verbs themselves are not incompatible with causatives.

- (145) a. *Koko-de-wa hiru kodomo-ni hon-o*
 here-LOC-TOP noon child-DAT book-ACC
yom-ase-ru ga, zen-in-o
 read-CAUSE-PRES but all-CL:human-ACC
yom-ase-ru-no-wa muzukasi.
 read-CAUSE-PRES-GEN-TOP difficult
 ‘Here we make students read books at noon, but it is
 difficult to make them all do that.’
- b. *Kazoku-o tabe-sase-ru-no-wa taihen-da.*
 family-ACC eat-CAUSE-PRES-GEN-TOP tough-DECL
 ‘It is tough to feed my family.’

As shown above, the causativized transitive verb roots *yom* ‘read’ and *taber* ‘eat’ are compatible with an accusative-marked causee. Thus, it is fair to suppose that in (133b) the existence of the object *hon* ‘book’ causes the sentence to be ungrammatical.

Taking the double-*o* constraint into consideration, I make the following revision of the case valuation system.

(146) Feature-based case valuation (final version)

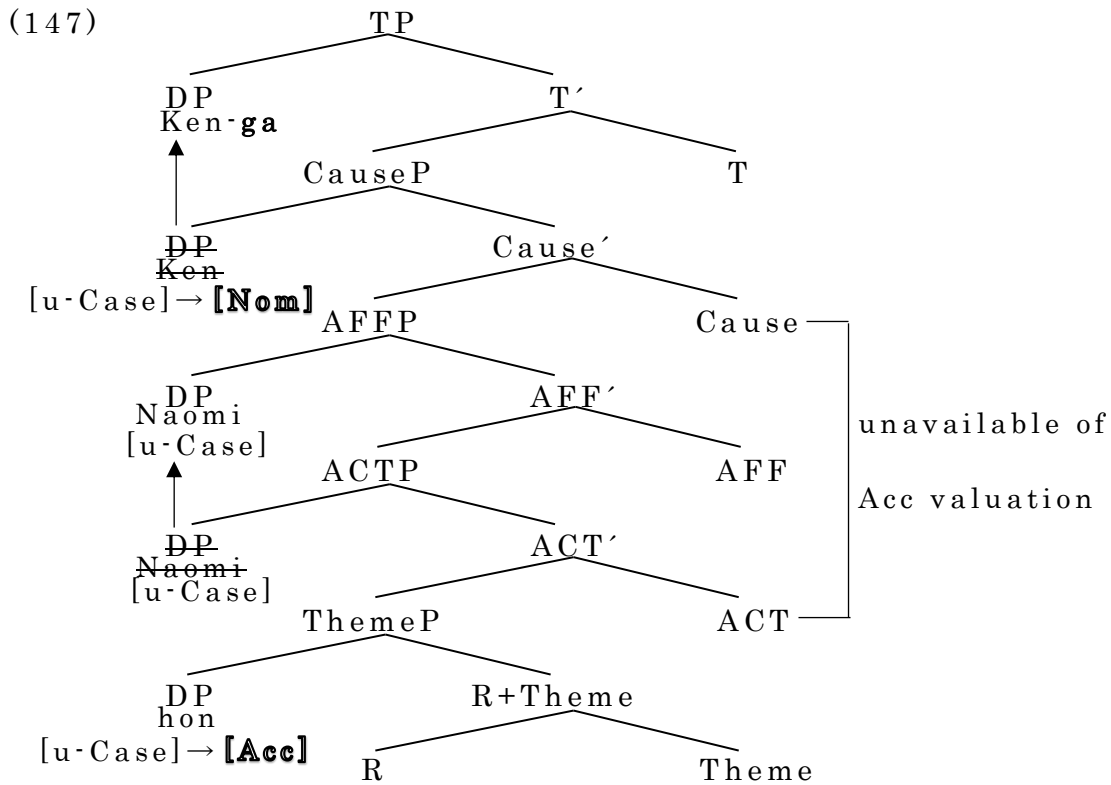
- (i) Patient-oriented θ -features provide [u-Case] with potential [Acc] and [Nom] while non-patient-oriented θ -features provide potential [Nom].
- (ii) Potential case feature receives a morphological form depending on syntactic position: [Acc] in vP and [Nom]

in TP.

(iii) When both (i) and (ii) are not satisfied, a case feature receives dative form.

(iv) *v* loses its ability of accusative case valuation once it provides potential [Acc].

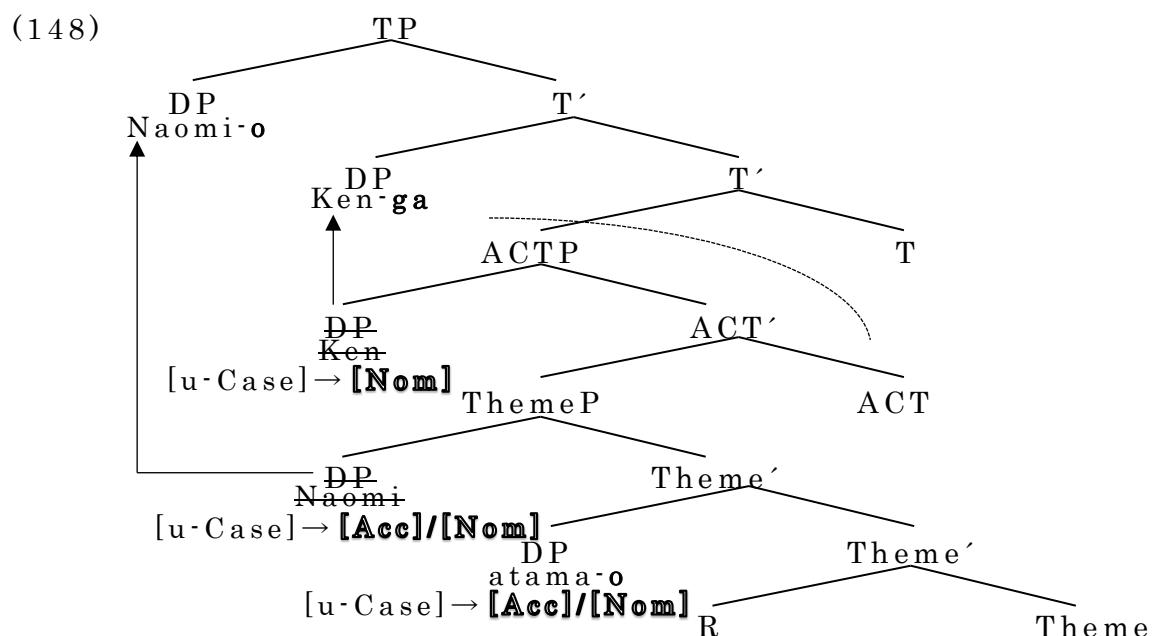
With (146), the double-*o* constraint in a causative is explained as follows. Reconsider the derivation of (133b), repeated in (147).



In (147), *Naomi* has AFF and *hon* 'book' has Theme, so both of them are candidates for accusative case valuation. However, because of (146), *v* loses its ability of accusative case valuation as soon as the checking of [Theme] is completed. Thus, when [AFF] of *Naomi*

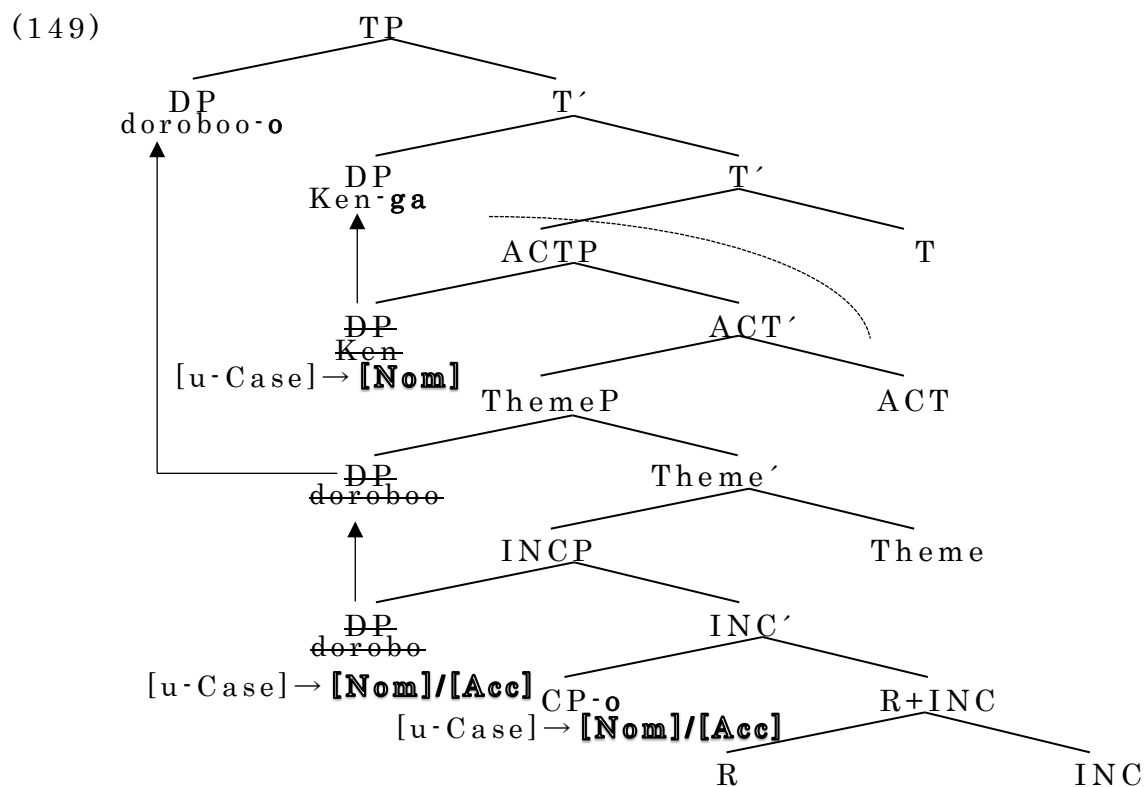
is checked, accusative case valuation does not occur.

We have to return to (138b) and (139b) here. The case valuation system assumed here implies that only one DP can receive an accusative value from *v*. Then, the system incorrectly predicts that (138b) and (139b) are ungrammatical. How are these examples captured in the current framework? What we have to consider is the θ -feature each argument in (138) and (139) has. In (138), Ken's hitting is described and Naomi's head is the target of that action. Therefore, *Ken* has ACT and *Naomi-no atama* 'Naomi's head' has Theme. What happens if *Naomi* is dissociated from *atama*? Since *atama* is associated with *Naomi*, the simplest assumption is that they have the same θ -feature, Theme. In fact, what happened to these two arguments can be described in the same way: they were hit by Ken. Therefore, I claim that the derivation of (138b) can be captured in (148).



In (148), Both *Naomi* and *atama* are introduced into [Spec, Theme]. If both are transferred to the base-generated position, the derivation violates (141), resulting in ungrammaticality. However, since *Naomi* is scrambled out of the lower phase in (148), the derivation converges successfully.

A similar explanation can be applied to (139b). In (139), the DP *doroboo* ‘thief’ and the CP *nige-yoo to si-ta tokoro* ‘as he tried to run away’ share the same θ -feature, INC. In the escaping event, *doroboo* is the moving entity and *nige-yoo to si-ta tokoro* represents the path of this movement. In other words, *doroboo* is a HOLISTIC THEME (see 3.1), a variation on the incremental theme type, while *nige-yoo to si-ta tokoro* is a true incremental theme. Thus, the derivation of (139b) is schematized in (149).

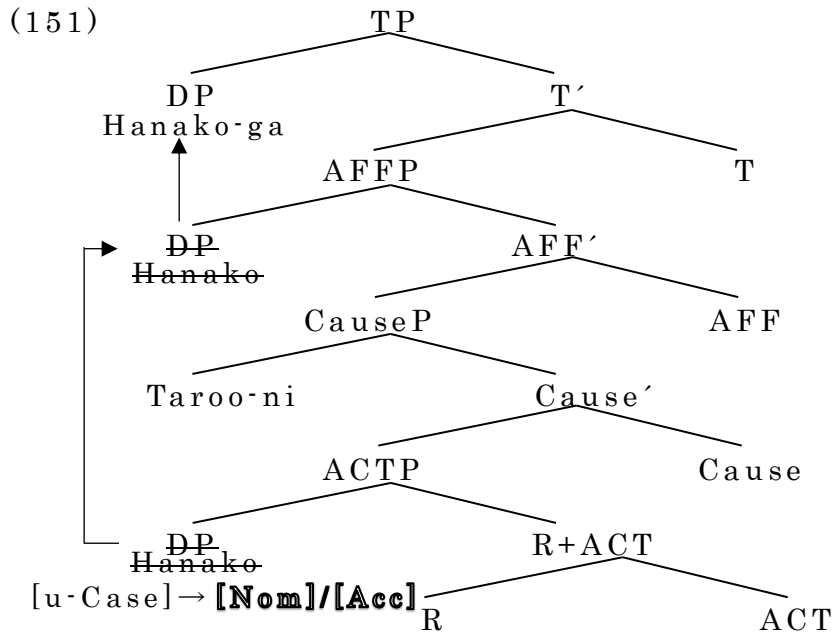


Again, *doroboo* and CP receive an accusative value at the same time, and *doroboo* escapes out of the structurally-lower phase to the top of the derivation. In this way, the θ -feature-based case valuation system captures the idiosyncratic behavior of causatives with respect to the double-*o* constraint.

One thing which should be noted here, which is relevant for the later discussion of psych-verbs, is that AFF can project above Cause, which results in passivized causatives.

- (150) Hanako-ga Taroo-ni aruk-ase-rare-ta.
 Hanako-NOM Taro-DAT walk-CAUSE-PASS-PAST
 ‘Hanako was made to walk by Taro.’

We should recall that causative sentences with an accusative causee versus a dative one have few differences, if any. On the other hand, (150) is obligatorily interpreted in a context where Hanako is coerced to walk. This fact is naturally captured in the current framework.



Now, the cartography based on θ -features is schematized in (152).

(152) θ -features based cartography (final version)⁶

(AFF) > Cause > (AFF) > ACT > Source > Goal > Theme >
 INC > (AFF)

This hierarchy is confirmed with the contrast between causative and passive voice.

⁶ This cartography does not include Exist, since eventive *v* does not contain this θ -feature. This θ -feature appears in a stative predicate, as discussed in chapter 6.

- (153)a. Taroo-ga keisatsu-ni Hanako-o
 Taro-NOM police-DAT Hanako-ACC
 uragir-ase-rare-ta.
 betray-CAUSE-PASS-PAST
 ‘Taro was made to betray Hanako by the police.’
- b.* Keisatsu-ga Hanako-o Taroo-ni
 thief-NOM Hanako-by Taro-DAT
 uragir-(r)are-sase-ta.
 betray-PASS-CAUSE-PAST
 ‘Police made Hanako be betrayed by Taro.’

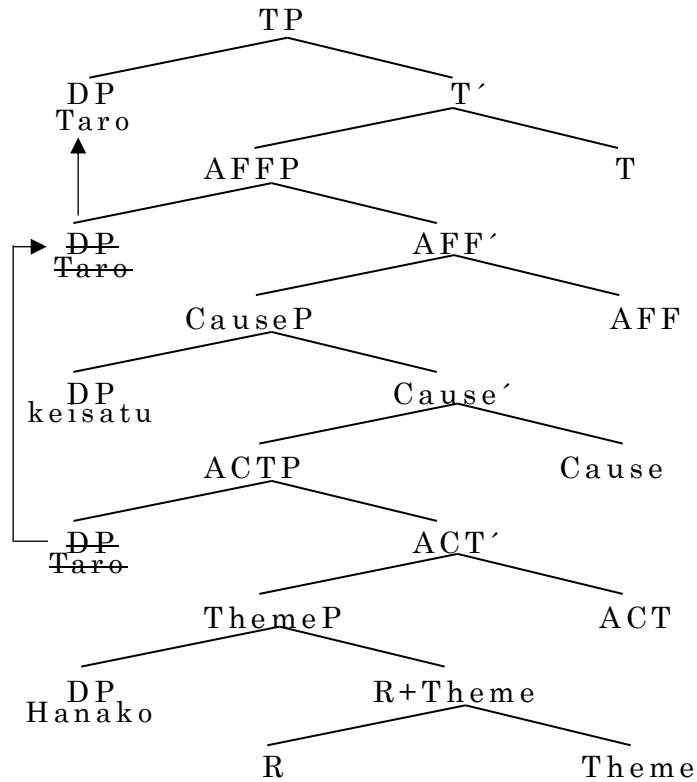
The contrast above shows that a passive cannot be causativized, while a causative can be passivized. Semantically, the causativization of a passive event is possible, which is shown by the fact that a passive can be causativized in English.

(154) a. A thief was made to betray his mates.

b. Police made a thief be betrayed by his mates.

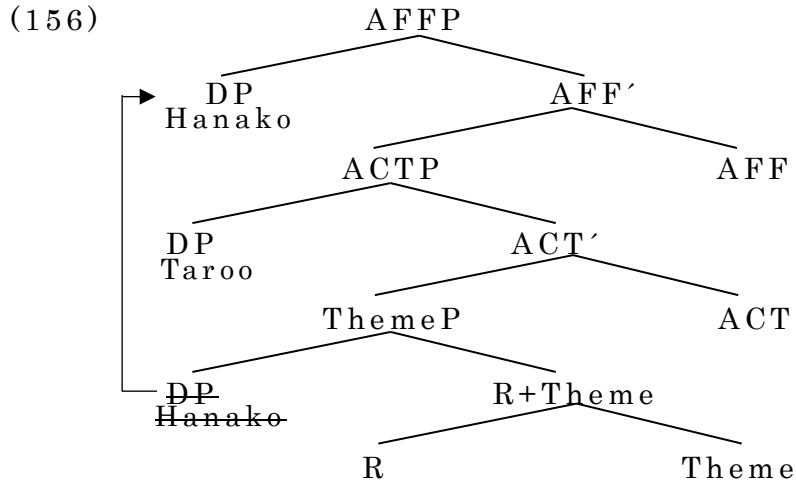
Now, let us consider the derivations of (153a) and (153b) in the current framework. In (153a), *Taroo* has AFF since he is adversely affected by the event caused by the police. In addition, this argument has [ACT] as he is an instigator of the caused event. *Keisatsu* ‘police’ has [Cause] while *Hanako* has [Theme]. All things considered, the derivation of (153a) is as follows.

(155)

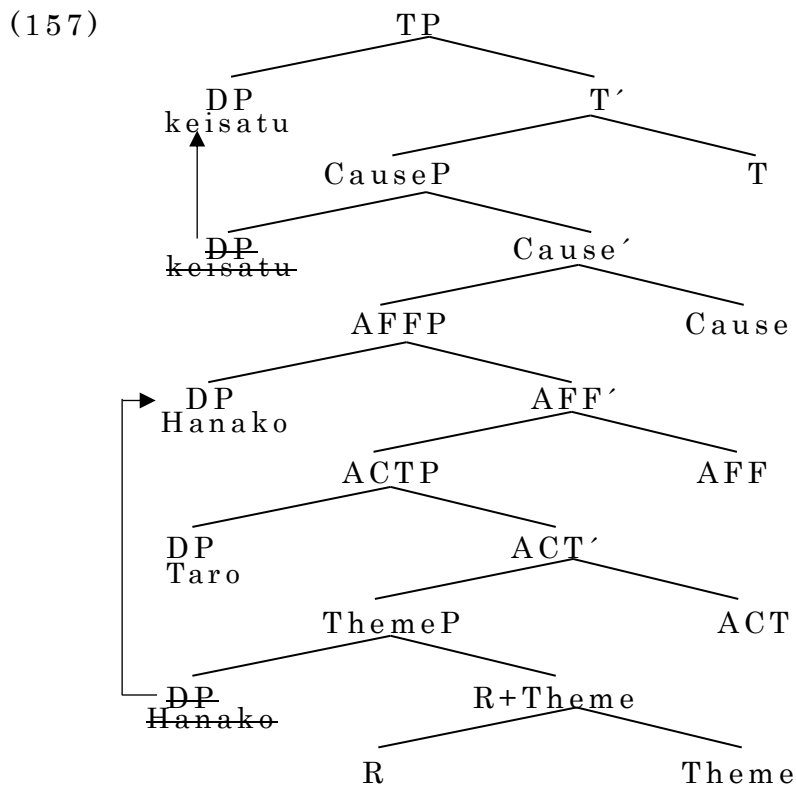


As we have seen above, a passivized causative sentence fits into the hierarchy of the θ -features proposed here.

Now we turn to (153b). In order to obtain the intended interpretation, an event whereby Hanako was betrayed by Taro must be described. As shown in 4.2, the derivation which represent this event is as follows.



The intended interpretation of (153b) is that the event denoted by the syntactic structure above was caused by the police. Therefore, Cause projects above the structure (156) and *keisatu* is introduced into [Spec, CauseP].



In fact, the syntactic derivation in (157) converges successfully. However, considering the composition of *v*, the realization of (157) is as follows.

(158) Keisatu-ga Hanako-o Taroo-ni
 police-NOM Hanako-ACC Taro-DAT
 uragir-ase-ta.
 betray-CAUSE-PAST
 ‘The police made Taro betray Hanako.’

In this study, it is assumed that AFF does not have an independent morphological realization. Rather, the existence of AFF is determined by whether accusative case value is provided to the DP in its specifier. Interestingly, the interpretation of (158) is essentially the same as the intended interpretation of (153b). That is, even in Japanese can we causativize a passive sentence conceptually. However, because of the strict hierarchy of θ -features, the outcome is always a simple causative sentence.

In the end of this section, I would like to refer to lexical causatives. In the literature, differences between lexical causatives and analytical causatives have long been discussed (Kuroda (1965), Shibatani (1973), Miyagawa (1980)). The contrast between lexical and analytical causatives is exemplified in (159).

- (159)a. Taro_{-ga} Hanako_{-o} heya_{-ni} age_{-ta}.
 Taro_{-NOM} Hanako_{-ACC} room_{-DAT} raise_{-PAST}
 ‘Taro raised Hanako to the room.’
- b. Taro_{-ga} Hanako_{-o} heya_{-ni} agar_{-ase-ta}.
 Taro_{-NOM} Hanako_{-ACC} room_{-DAT} rise_{-CAUSE-PAST}
 ‘Taro made Hanako go up to the room.’

(159a) is a lexical causative while (159b) is an analytical causative. They are not just stylistic variants, but we can see a difference between them with the insertion of *zibun* ‘oneself’ before *heya* ‘room’ as follows.

- (160)a. Taro_{-ga} Hanako_{-o} zibun_{-no} heya_{-ni} age_{-ta}.
 Taro_{-NOM} Hanako_{-ACC} self-room_{-DAT} raise_{-PAST}
 ‘Taro raised Hanako to his/*her room.’
- b. Taro_{-ga} Hanako_{-o} zibun_{-no} heya_{-ni}
 Taro_{-NOM} Hanako_{-ACC} self-room_{-DAT}
 agar_{-(s)ase-ta}.
 go up_{-CAUSE-PAST}
 ‘Taro made Hanako go up to his/her room.’

As shown in (160a), *zibun* can only refer to the causer in lexical causatives. On the other hand, it can refer to both causer and causee in analytical causatives, as we can see from (160b). This difference can be provided with a θ -feature-based explanation. In

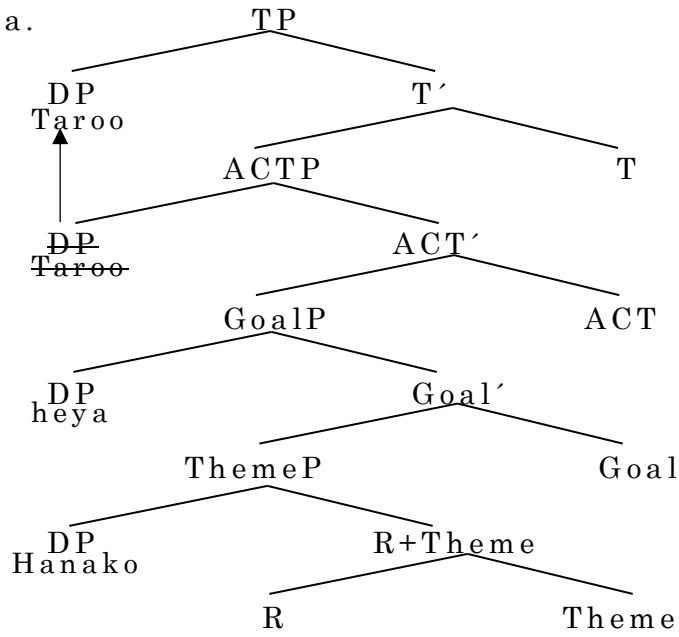
the literature, it has been assumed that *zibun*-binding is a diagnostic of argument subjectivity. Generally, an argument having subjectivity means that the argument is base-generated in [Spec, vP] because the Agent θ -role is assigned there. Therefore, it has been analyzed that (160a) has a monoclausal structure while (160b) has a biclausal structure. In other words, (160a) contains only one vP and (160b) contains two vPs. In the current framework, we do not have to assume vP recursion. Rather, we can define a condition of *zibun*-binding as follows.

(161) *zibun*-binding

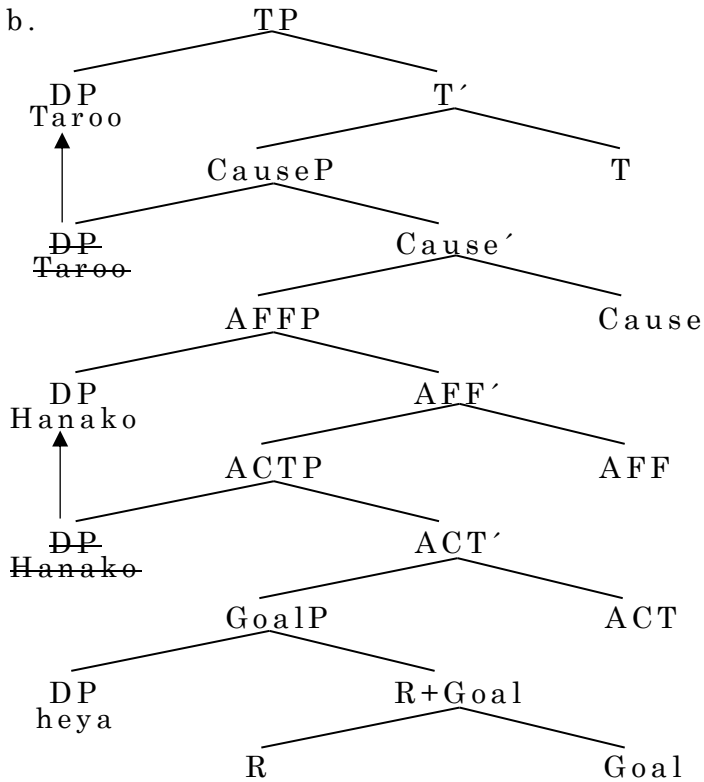
An argument which contains an Agent-oriented θ -feature is qualified as an antecedent of *zibun*.

Considering the interpretation of (160a) and (160b), their derivations are schematized as follows.

(162) a.



b.



In (162a), we only have one argument which contains an Agent-oriented θ -feature, namely *Taroo*. On the other hand, there are two arguments which contain Agent-oriented θ -features in (162b): *Taroo* with [Cause] and *Hanako* with [ACT].

In sum, I have proposed that causatives are derived when Cause is projected above the θ -features hierarchy shown in section 4.2. AFF, which belongs to the set of Patient-oriented θ -features, works crucially in case valuation. I also made a modification of the case valuation proposed in section 3.4. As a result, the coverage of Hiraiwa's (2010) explanation for the double-*o* constraint was expanded to capture double-*o* marking in causatives.

4.4 Psych-verbs Constructions

In this section, I illustrate how θ -features work in psych-verb constructions in Japanese. Now, we have described the cartography of θ -features in (163).

(163) θ -features based cartography (final version) (= (152))

(AFF) > Cause > (AFF) > ACT > Source > Goal > Theme >
INC > (AFF)

I claim that no other additions are necessary for (163) to capture psych-verb constructions in Japanese. First, let us observe the distributions of θ -features in these constructions. Psych verbs in Japanese are categorized into two kinds with respect to distribution of case (Teramura (1982), Bando (1996) and Shimizu (2007)).

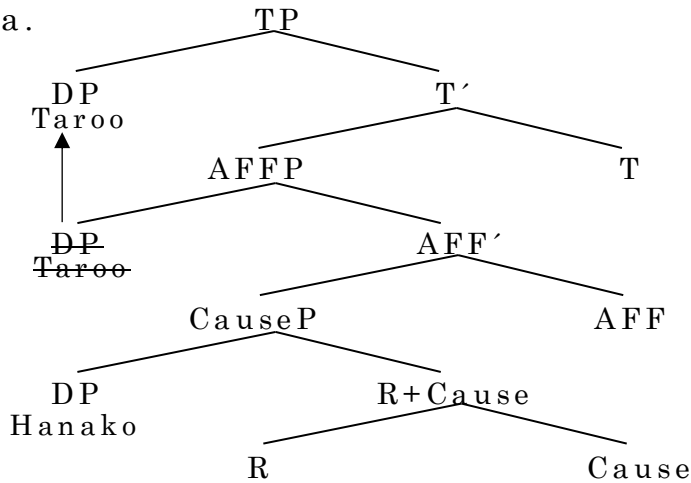
- (164) a. Taro_o-ga Hanako_{ni} iradat-ta.
 Taro_{NOM} Hanako_{DAT} get irritated_{PAST}
 ‘Taro was irritated at Hanako.’
- b. Taro_o-ga Hanako_o utaga-tta.
 Taro_{NOM} Hanako_{ACC} suspect_{PAST}
 ‘Taro suspected Hanako.’

Henceforth I call the type in (164a) Dat-psych verbs and the type in (164b) Acc-psych verbs. Jackendoff (1992) represents the interpretation of psych verbs with the function AFF, which is interpreted in the current framework that psych verbs contain CAU and AFF. We should recall that these two θ -features derive causative sentences as shown the previous section. Interestingly, swapping the two arguments in (164a) causes appearance of the causative suffix *-sase*.

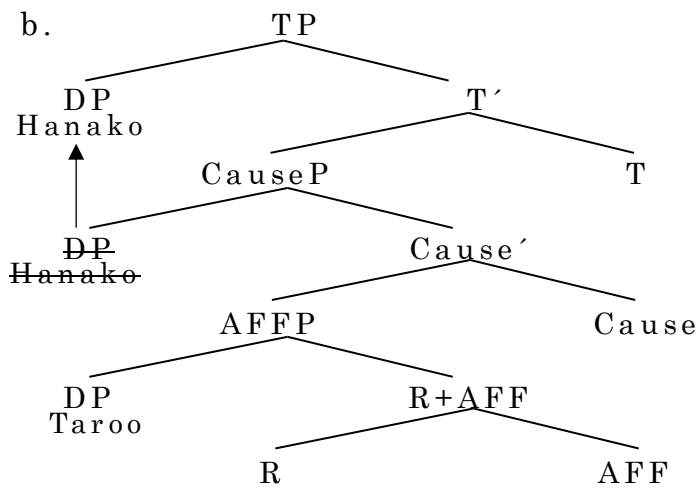
- (165) Hanako_o-ga Taro_o iradat-ase-ta.
 Hanako_{NOM} Taro_{ACC} get irritated_{CAUSE}_{PAST}
 ‘Hanako irritated Taro.’

The same event is described in (164a) and (165), which implies that kinds of θ -features contained in *v* are also the same: Cause and AFF. Following the hierarchy of θ -features here, the derivations of (164a) and (165) are schematized in (164).

(166) a.



b.



The only difference between (166a) and (166b) is the syntactic position of AFF. As confirmed in the previous section, AFF can project both above and below Cause. Although this difference is reflected in the word order, *v* consists of the same θ -features in both derivations, which is why (164a) and (165) have the same interpretation. One possible question is why Cause is not realized morphologically in (166a). Here, I propose that the roots of psych-verbs are idiosyncratic in terms of the morphological realization of *v*. That is, θ -features can be ignored at PF. More importantly, this specification for morphological realization is

optional, which is shown by the following example.

- (167) Taro^o-ga Hanakoⁿⁱ iradat-ase-rare-ta.
Taro^{-NOM} Hanako^{-DAT} get irritated^{-CAUSE^{-PASS}-PAST}
'Taro got irritated at Hanako.'

We have seen that *v* which contains AFF and Cause is realized with the suffix *-sase-rare* in the previous section. Since both kinds of θ -features are contained, the same morphology is expected to appear, which is the case.

Now we turn to Acc-psych verbs. As we did to Dat-psych verbs, let us switch the arguments in (164b) as (168).

- (168) Hanako-ga Taro^o utagaw-ase-ta.
Hanako^{-NOM} Taro^{-ACC} suspect^{-CAUSE^{-PAST}}
'Hanako made Taro suspect someone.'
'Hanako made someone suspect Taro.'

In fact, (168) itself is grammatical sentence. However, as we can see from the interpretation, (168) does not correspond with (164b) in meaning. When we interpret (168), we have to fill in an implicit argument. More specifically, we need a target of Taro's suspicion or a causee. When we add a target we have the upper interpretation; when we add a causee the lower interpretation emerges. This fact shows that *Hanako* in (164b) is not a causer,

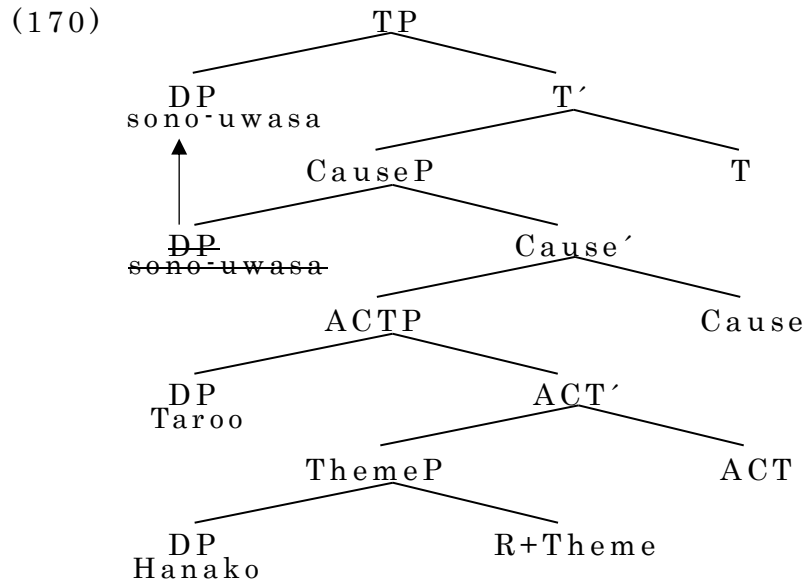
but a target of Taro's suspicion. Based on this observation, I assume that the subject of an Acc-psych verb construction has [Act] and the object has [Theme]. In other words, *v* associated with Acc-psych verbs is the same as that of a simple transitive sentence, which means that the Acc-psych verb construction does not show any specific syntactic behavior.

Having assumed syntactic derivations of psych-verb constructions, we take a close look at specific properties of the construction. As argued in the literature, psych-verb constructions show peculiar behavior with respect to causativization and passivization. The two kinds of psych verbs show a contrast in causativization as shown below.

- (169) a. * Sono-taido-ga Taroo-ni Hanako-ni
 DEM-attitude-NOM Taro-DAT Hanako-DAT
 iradat-ase-ta.
 get-irritated-CAUSE-PAST
 ‘Hanako’s attitude made Taro get irritated at her.’
- b. Sono-uwasa-ga Taroo-ni Hanako-o
 DEM-rumor-NOM Taro-DAT Hanako-ACC
 utagaw-ase-ta.
 suspect-CAUSE-PAST
 ‘The rumor made Taro suspect Hanako.’

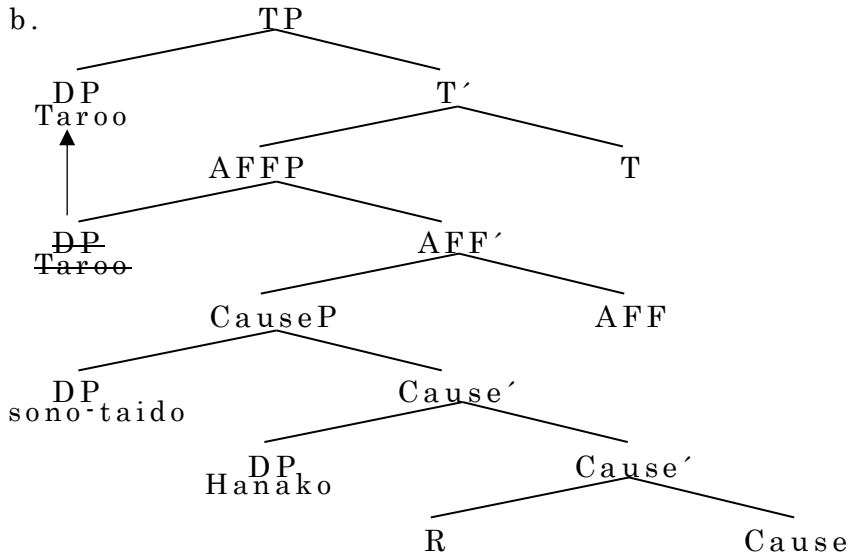
The derivation of (169b) shows nothing new in this study. Since

the v of Acc-psych verbs contains ACT and Theme, the structure of (169b) is the same as that of the causativized transitive sentence. The derivation of (169b) can be schematized as follows.



In contrast, (169a) contains a Dat-psych verb, which is associated with AFF and Cause. With respect to the distribution of θ -features, *Taroo* has [AFF] and *Hanako* has [Cause] to denote the event that Taro was irritated at Hanako. In addition, *sono-taido* ‘attitude’ is the cause of Taro’s irritation, thus this argument also has [Cause]. That is, (169a) contains two arguments which has [Cause]. Interestingly, this distribution of θ -features poses no problem for syntactic derivation.

- (171) a. Taroo-ga sono-taido-ni Hanako-ni
 Taroo-NOM DEM-attitude-DAT Hanako-DAT
 iradat-ta.
 get-irritated-PAST
 ‘Taro got irritated at Hanako seeing her attitude.’



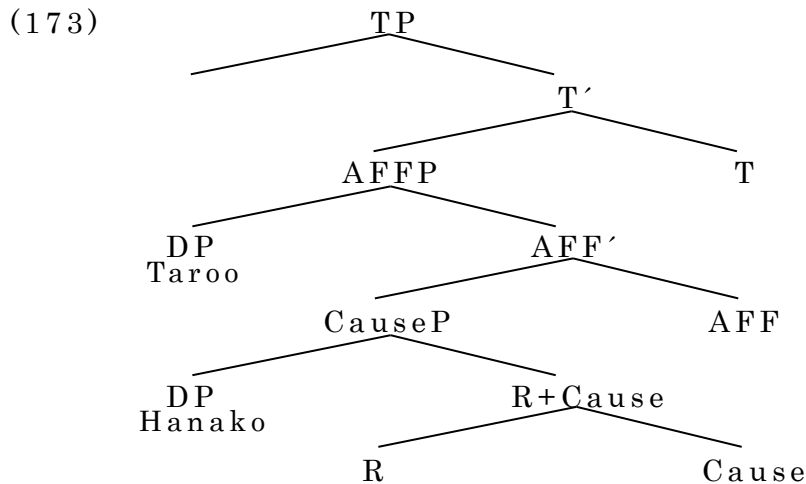
In (171b), Cause has multiple specifiers, where *sono-taido* and *Hanako* checks their [Cause]. In order to derive (169a), we have to causativize this structure. However, since Cause has already been projected, we have no way to accomplish the causativization.

Now we look at another difference between Dat-psych verbs and Acc-psych verbs with respect to passivization. Consider the following contrast.

- (172) a. * Hanako-ga Taroo-ni iradat-are-ta.
 Hanako-NOM Taro-DAT irritate-PASS-PAST
 ‘Taro got irritated at Hanako.’

- b. Hanako-ga Taro-ni utagaw-are-ta.
 Hanako-NOM Taro-DAT suspect-PASS-PAST
 ‘Hanako was suspected by Taro.’

The contrast in (172) shows that Dat-psych verbs cannot be passivized, while Acc-psych verbs can. Again, this fact is naturally derived considering their derivation in the current framework.



Remember that Dat-psych verbs are associated with *v* which consists of AFF and Cause. In order to passivize the structure (171), we have to project AFF above it. However, since AFF has already been projected, there is no way to passivize (173).

4.5 Summary

In this chapter, I showed how the θ -system works in Japanese. Since Japanese lacks ϕ -features, two problems arise.

One is the problem of labeling. If we consider the definition of λ -features proposed by Saito (2014), dative case is not a realization of a λ -feature, which means that a syntactic object containing a dative-marked DP cannot be labeled properly. This problem is circumvented assuming the labeling with a shared θ -feature. Since every DP checks its θ -features in the vP domain, syntactic objects containing a DP in this domain can be labeled successfully. The other problem is the issue of case valuation. Bošković's (2007) case valuation mechanism is independent of ϕ -features, thus it can be applied to Japanese. However, again the distribution of dative case cannot be captured within this framework. In this thesis I have proposed a condition of nominative and accusative case valuation. A dative case value is provided when this condition is not satisfied. This mechanism successfully covers the distribution of dative case in Japanese. Furthermore, assuming the effectiveness of a θ -system in the vP domain has other benefits. Namely, the reason why causatives show different behavior with respect to double-*o* constraint is explained with the case valuation system proposed here, and idiosyncratic properties of psych-verbs with respect to causativization and passivization can be captured with the strict hierarchy of θ -features.

5. Comparing English and Japanese

In this chapter, I focus on English, where φ -features play crucial roles. Specifically, some syntactic objects are labeled with φ -features; in addition, case valuation is a side effect of φ -feature agreement. One might ask here if the θ -system (θ -system) proposed here is completely irrelevant to this language. Here, I show that the language partly employs the θ -system, which broadens the range of expression. The primary thing here is that English differs from Japanese in that θ -feature realization: they surface as lexical verbs. I show that *get*, *let*, *make*, and *have* are overt forms of θ -feature amalgams, which are used in passives and causatives. Also, this θ -system is employed in the psych-verb construction, which is the reason why the construction shows a notable degree of idiosyncrasy in terms of binding relations.

5.1 Simple Actives

First, I investigate simple active sentences in English. How do the two systems, i.e., the θ -system and the φ -system (φ -system), coexist in this language? I claim here that external arguments depend on the former while internal arguments depend on the latter in English. There are two facts leading to this assumption. One is that English does not show overt φ -feature agreement on

objects, which hints at the possibility that objects do not agree with verbs. The other is that in English only internal arguments are involved in idiomatic interpretation as shown in 2.4.1. Marantz (1984) claims that this is because an external argument is introduced into a derivation by a functional head other than v. If this is correct, external arguments cannot be handled by the θ -system, since this system is a part of v. Without the θ -system, external arguments must be handled by another system, namely the φ -system. This assumption makes a prediction that Japanese has idioms that contain external arguments, since both external and internal arguments are handled by the θ -system. This prediction is borne out by the following examples.

(174)a. Kono mise-wa kankodori-ga nai-teiru.
 this shop-TOP cuckoo-NOM bird.sing-PROG
 ‘No one comes to this shop.’ (lit. ‘This shop is where the
 cuckoo sings.’)

b. Mushizu-ga hashi-ru.
 insect.sputum-NOM crawl-PRES
 ‘I feel disgusted.’ (lit. ‘Insect spit is crawling.’)

I claim that this difference reflects certain properties of argument structures in Japanese and English. As we have already seen, in Japanese v contains both agent-oriented and patient-oriented θ -features. This is reflected by the fact that both external and

internal arguments can be incorporated within Japanese idiomatic expressions. On the other hand, the fact that in English, only internal arguments are involved in idiomatic interpretation shows that *v* does not contain agent-oriented θ -features.

If this assumption is right, a sentence which can be described with only patient-oriented θ -features is derived with the θ -system in English. In other words, the following hierarchy is observed in English.

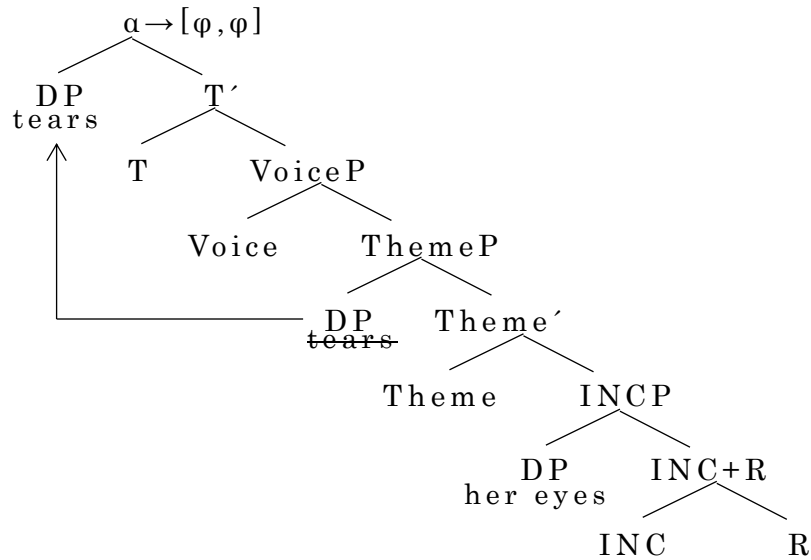
(175) Source > Goal > Theme > INC > (AFF)

Here, let us consider a pair of sentences that describe the same event, which contain Theme and INC.

- (176) a. Tears filled her eyes.
b. Her eyes filled with tears.

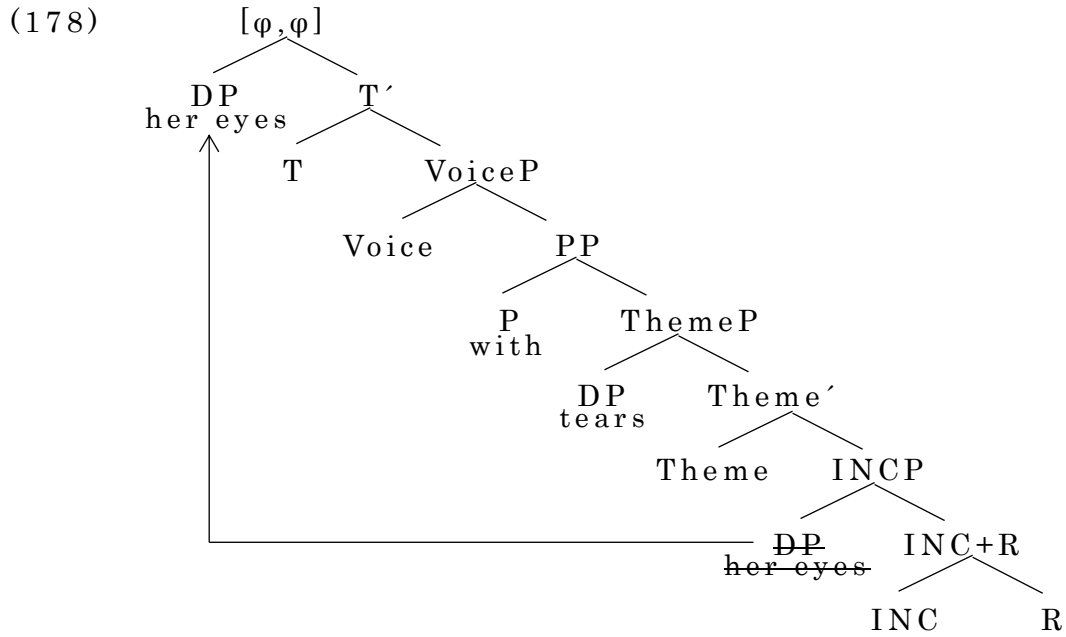
The event described in the sentences above is delimited by the extent to which tears have filled the eyes. Therefore, *tears* has [Theme] and *her eyes* has [INC] in the current framework. Thus, the derivation of (176a) is schematized as follows.

(177)



The DP *her eyes* is externally merged to [Spec, INCP], satisfying the criterion. On the other hand, the subject DP *tears* is firstly externally merged to [Spec, ThemeP], and then internally merged to T. Although this argument does not share any θ -feature with T, they undergo φ -feature agreement. Therefore, α is successfully labeled with φ -features.

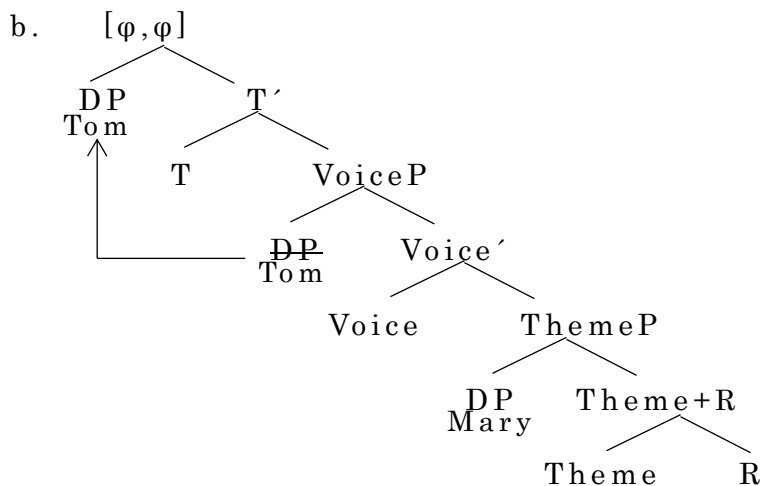
(176b) is derived in the same way as in Japanese, as seen in (178).



In (178), the DP *tears* is assigned structural case from P and becomes inactivated. Thus, the only option is the internal merge of the DP *her eyes* with T'.

Unlike Japanese, external arguments are introduced into derivations by VoiceP. I illustrate a sample derivation of a simple transitive sentence below.

(179) a. Tom slapped Mary.



Assuming that English partly employs the θ -system has an important consequence as explained in the next section. Here, we should consider how θ -features are phonologically realized in English. We should also recall that INC does not affect the verb form in Japanese. For instance, any form of the verb *noboru* ‘climb’ does not change whether the *v* contains INC or not. Rather, the existence of INC is responsible for possibilities of case. For convenience, I show an example of the dative/accusative alternation below.

- (180) Taroo-ga yama-ni/o nobot-ta. (= (84))
 Taro-NOM mountain-DAT/ACC climb-PAST
 ‘Taro climbed the mountain.’

As shown in (180) we can express two interpretations with the same verb *noboru* ‘to climb’, and the difference of interpretation is indicated by whether the DP occurs with accusative case or dative case marking. Now, consider the corresponding examples in English.

- (181) a. John arrived at the top of the mountain.
 b. John reached the top of the mountain.

While (181a) just denotes the fact that John arrived at the top of the mountain, (181b) focuses on the overall process of John’s

climbing. If we paraphrase with the θ -feature-based approach, in (181a) *John* has [Theme] and *the top of the mountain* has [Goal]. On the other hand, in (181b) *John* has [Theme] and *the top of the mountain* has [INC]. From this observation, I claim that θ -features are realized as lexical forms. Taking (181) as an example, I show that a root which denotes the movement of an entity is realized with θ -features, as shown in (182).

(182)a. MOVE + Goal + Theme \rightarrow *arrive*

b. MOVE + Theme + INC \rightarrow *reach*

Here, we find the parametric differences between English and Japanese, i.e., a morphological parameter. In Japanese, θ -features are overtly realized via postpositional case-marking or suffixes. In contrast, in English θ -features are morphologically externalized as lexical items. In the following sections, I demonstrate that this mechanism allows English to expand its range of expressions in passives and causatives.

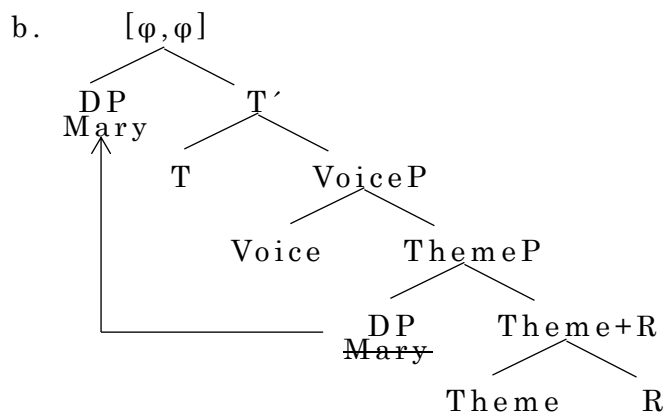
5.2 Passives

In the previous section I claimed that English has a hybrid system, which consists of the ϕ -system and the θ -system. That is, *v* has only theme-oriented θ -features, while case valuation and labeling are accomplished in the same way as Japanese. Since *v* does not contain any agent-oriented θ -features, English employs

another functional projection to introduce external arguments: VoiceP. In this section, we see again that English has both the φ - and the θ -systems of passivization.

First, let us observe the derivation of a passive sentence in the φ -system. In the current framework, a passive sentence is naturally derived when the numeration does not contain an external argument. Consider (183).

(183) a. Mary was slapped by Tom. (Cf. (179))

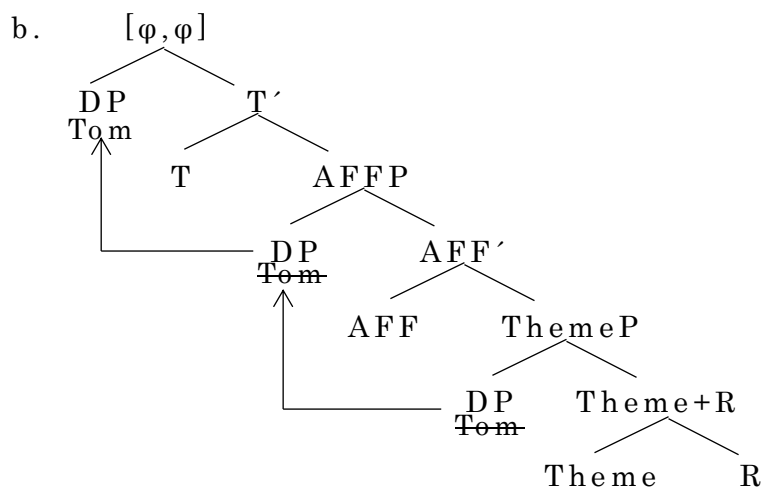


In (183), we have no external argument, so there is no specifier for the Voice head. Without an external argument, the only candidate for T's φ -feature agreement is the thematic object DP. A characteristic of this type of passivization is that there is no difference between a passive sentence and the corresponding active sentence in interpretation. Since the composition of v is the same, its interpretation must also be the same.

Then, how are passives derived with the θ -system in English? As already mentioned in section 3.5, the current framework

predicts that a syntactic structure whose nodes are labeled with θ -features has an effect on the C-I interface in terms of thematic interpretation. Keeping that in mind, let us consider GET passives in English. According to Collins (1996) and Carter and McCarthy (1999), GET passives and BE passives are different in terms of their interpretation. Collins (1996) shows that 67% of GET passives have an adversative implication while 23% have a beneficial implication. Carter and McCarthy (1999) report that more than 90% of GET passives imply an adversative context while fewer than 5% imply a beneficial context. Meanwhile, BE passives do not have such quirky interpretations. This fact can be captured in the current framework if we assume that GET passives are derived with the θ -system while BE passives are derived with the φ -system. Technically, I assume that AFFP projects above vP instead of VoiceP in GET passives. I describe an instance below in (184).

(184) a. Tom got slapped.



In (184), *Tom* is introduced into the derivation with two θ -features, [Theme] and [AFF]. After *Tom* satisfies the criterion of [Theme], it moves to [Spec, AFF] to satisfy the other criterion. The existence of AFF has an effect on the C-I interface in that *Tom* is interpreted as an affected entity. As for its morphological realization, AFF is independently expressed as *get*, and in (184) T is affixed to *get*.

The assumption that GET passives are derived when AFFP projects above *v* illustrates another contrast between BE passives and GET passives.

(185)a. The book was torn on purpose.

b.* The book got torn on purpose.

(Fox and Grodzinsky (1998:327))

In (185a), the adverb *on purpose* modifies an implicit agent. On the other hand, the ungrammaticality of (185b) shows that a GET passive does not contain an implicit agent. This contrast is naturally expected from the assumption here. In a BE passive, the derivation contains Voice, which implies the existence of an implicit agent. On the other hand, in a GET passive there is no syntactic head that indicates the existence of an implicit agent.

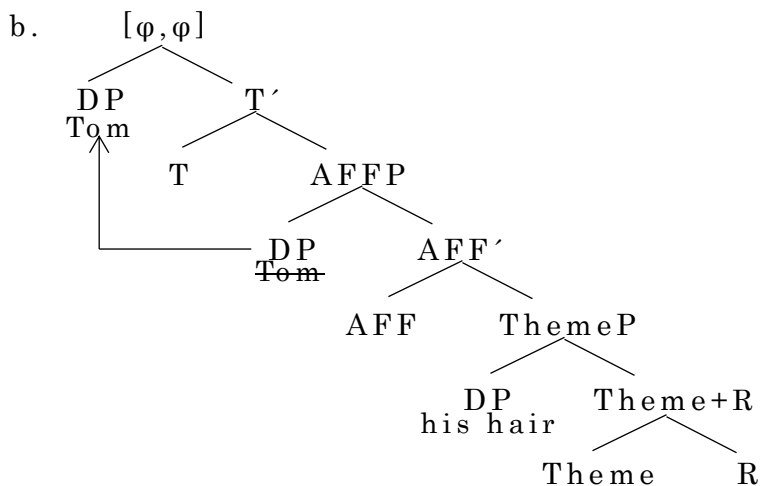
However, the adverb *on purpose* is not necessarily incompatible with GET passives.

(186) The soldier got/*was injured on purpose so he would be sent home. (Kim (2012))

(186) shows a contrast with respect to (185). That is, a GET passive can co-occur with *on purpose* and a BE passive cannot. This fact is also explained with the assumed syntactic structures of BE passives and GET passives. In a GET passive, *on purpose* modifies AFFP, which results in the interpretation that the soldier intended to be injured. On the other hand, in a BE passive the adverb *on purpose* modifies VoiceP. The interpretation which comes from this modification is that an implicit agent deliberately hurt the soldier, which conflicts with the content of the following part of the sentence.

As a characteristic of GET passives, we can increase its valency of it as in (187a). This property is also captured in the assumed syntactic structure of GET passives.

(187) a. Tom got his hair cut. (Cf. (182))



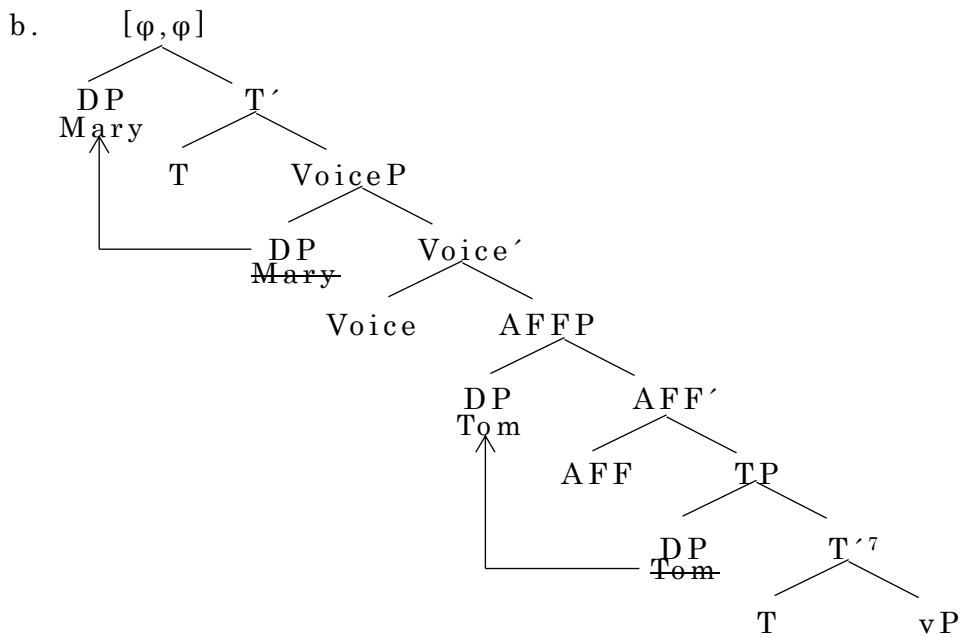
In fact, the structure in (187b) is the same as (184b). The differences between them lies in the number of central arguments and the distribution of θ -features. In (187), *Tom* has [AFF] and *his hair* has [Theme], respectively. As a result, we obtain the interpretation that Tom underwent a change of state in the event of his hair being cut.

In sum, we have seen that English has two types of passivization. One is based on the φ -system and the other is on the θ -system. Crucially, these systems are different in terms of whether they affect interpretation. That is, only θ -feature-based derivations have effects on the C-I interface. GET passives are derived with the θ -system, and the subject is interpreted as an adversative or benefactive entity.

5.3 Causatives

English has many strategies to generate causative sentences. In this section, we focus on four kinds of verbs: *get*, *make*, *have* and *let*. First, let us consider *get*. In the previous section, we saw that *get* is a realization of AFF. Here, I claim that GET causatives are derived when AFFP projects above a TP.

(188) a. Mary got Tom to study hard.



In (188b), the lower TP, which is expressed as *Tom to study hard* as is, is derived. Then AFFP projects and *Tom* moves to the specifier position, and *Mary* is introduced into the derivation as an external argument by Voice. At this point, the causative interpretation is guaranteed.

Now, let us examine other causative verbs in English, which show certain idiosyncrasies in their syntactic behavior. I highlight three causative verbs here: *make*, *have*, and *let*.

⁷ Strictly speaking, this syntactic object cannot be labeled. In the current MP, it is assumed that T is too weak to be a label in English and is ‘strengthened’ through ϕ -feature agreement. Also, uninterpretable ϕ -features are inherited from C to T. In (188b), there is no C immediately above the lower T, which means that the T does not hold any uninterpretable ϕ -features. Thus agreement between *Tom* and T does not occur, which means that the lower T is still weak in (188). Tentatively, I assume that T can be strengthened enough to be a label by another way than ϕ -feature agreement, and as a result T is morphologically realized as *to*, although I do not pursue a concrete mechanism of it here.

- (189) a. Mary let her son play outside.
b. Mary made Tom dance.
c. The child had his mother buy his pencils.

These three causative verbs are different in their interpretation in terms of the level of coercion enacted. Coercion is low in a LET causative as shown in (189a). In the example, Mary's son himself wants to play outside, and Mary allowed him to do that. In contrast, coercion is stronger in a MAKE causative. In (189b), while Tom does not want to dance, Mary forced him to do so. The level of coercion is slightly weaker in a HAVE causative. In (189c), the child asks his mother to buy pencils, which presumably does not bother her. In addition, in a HAVE causative, it is inferred that the subject receives a benefit from the caused event.

A syntactic characteristic of these causative verbs is that infinitival *to* does not occur, unlike in the ECM construction. This property is related to passivization as follows.

- (190) a. * Mary's son was let (to) play outside.
b. Tom was made to dance.
c. * The mother was had (to) by her son's pencils.

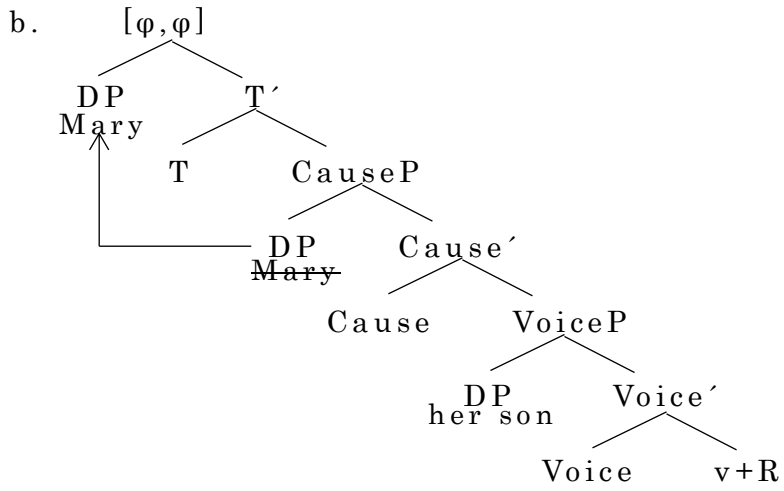
As we can see from (190a) and (190c), *let* and *have* cannot be passivized. In contrast, *make* can be passivized, resulting in the occurrence of infinitival *to*.

In this chapter, I explain these properties with the θ -feature-based framework. As I assumed that *get* is a realization of the θ -feature AFF, I also assume here that these three causative verbs consist of θ -features. If we consider the interpretations of these three verbs, all of them must contain Cause. The difference in levels of coercion between *let* and *make* leads us to assume that *make* contains AFF while *let* does not. In addition, the fact that the subject of a HAVE causative is interpreted that it receives some benefit from the caused event implies that *have* also contains AFF. The difference between *make* and *have* is derived from the hierarchy of the θ -features. In sum, the composition of the three causative verbs are given in (189).

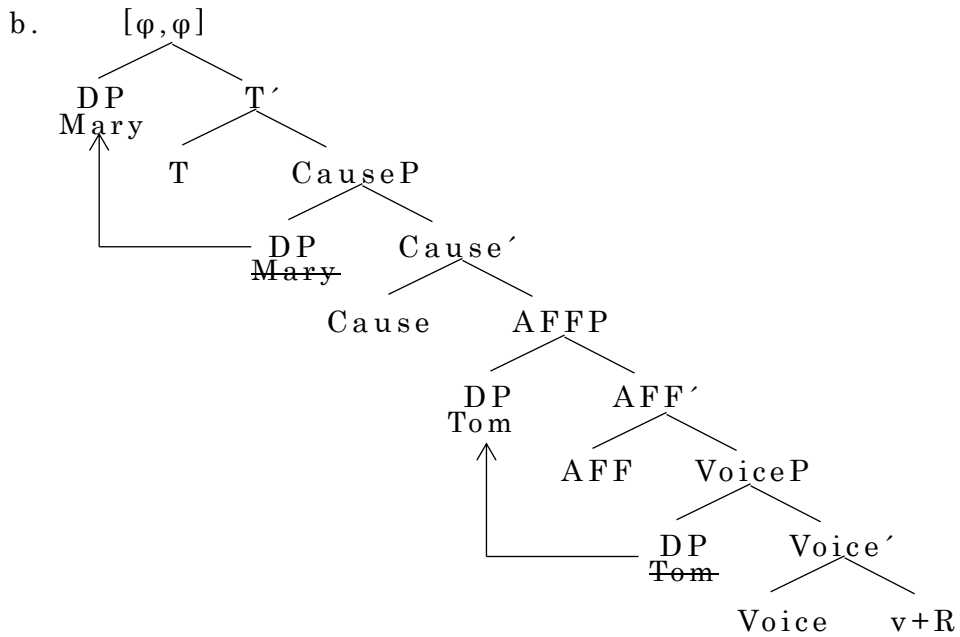
- (191) a. Cause → *let*
 b. Cause + AFF → *make*
 c. AFF + Cause → *have*

Now, let us take a look at the derivations for all three sentences in (189) as given in (192)-(194), respectively.

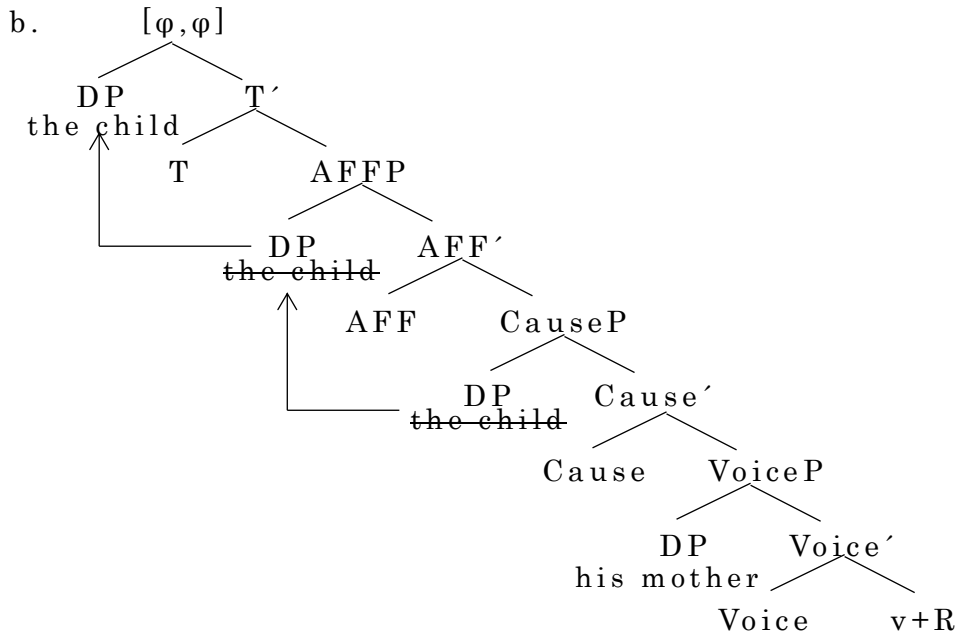
(192) a. Mary let her son play outside.



(193) a. Mary made Tom dance.



(194) a. The child had his mother buy his pencils.



In the derivations in (192) to (194), VoiceP that denotes the caused events projects. After that, θ -features which comprise *let*, *make*, and *have* project respectively.

We should remember the θ -feature-based case valuation system here. In this system, a potential accusative case value is provided when patient-oriented θ -features are checked, namely AFF, Theme and INC. Following this assumption, the causee in (193) alone is assigned accusative case, while those in (192) and (194) are not. Since [u-Case] cannot be left unvalued, the causee in (192) and (194) must be assigned inherent case. This assumption explains the difference in passivization among the three causative verbs as shown in (190). That is, causee in LET causatives and HAVE causatives are assigned inherent case, which makes them incapable of further movement for case assignment.

In contrast, causes in MAKE causatives is provided with a potential accusative and nominative value, which means that the causees can move to the subject position. This explanation is essentially the same as that of Japanese ni-causatives and o-causatives. The argument is repeated in (195).

- (195) a. Taroo-ga Hanako-o/ni aruk-ase-ta. (=130)
 Taro-NOM Hanako-ACC/DAT walk-CAUSE-PAST
 ‘Taro made Hanako walk.’
- b. Hanako-ga Taroo-ni aruk-ase-rare-ta. (=150)
 Hanako-NOM Taro-DAT walk-CAUSE-PASS-PAST
 ‘Hanako was made to walk by Taro.’

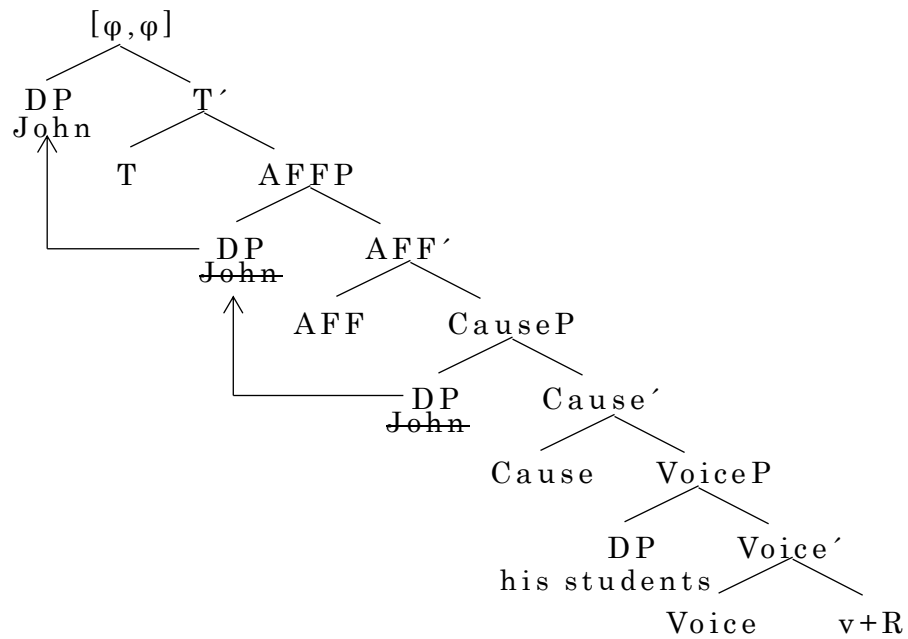
In Japanese causatives, a causee can be marked with either dative or accusative case, and accusative case-marking triggers a stronger coercion interpretation. (195b) is the passivized version of (195a), and crucially the only possible interpretation is that Hanako was forced to walk. This contrast between ni-causatives and o-causatives is parallel to that of LET causatives and MAKE causatives, which strengthen the claim that English employs a θ -system, especially for causative sentences.

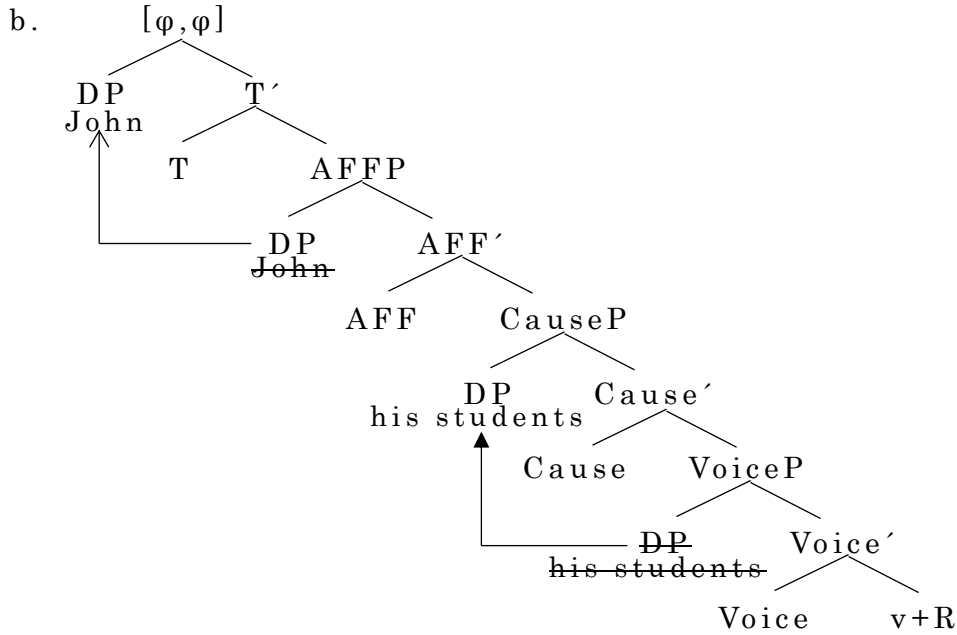
The syntactic structure of *have* assumed here explains another usage of the verb. As shown in (196), *have* triggers a passive interpretation.

(196) John had his students walk out of his class.

(196) has two interpretations. One is a causative interpretation and the other is an adversative interpretation. In the latter, John undergoes adversative change of state, which is caused by the event that his students walked out of his class. The fact that the same representation can have two distinct interpretations can be explained in (197).

(197) a.



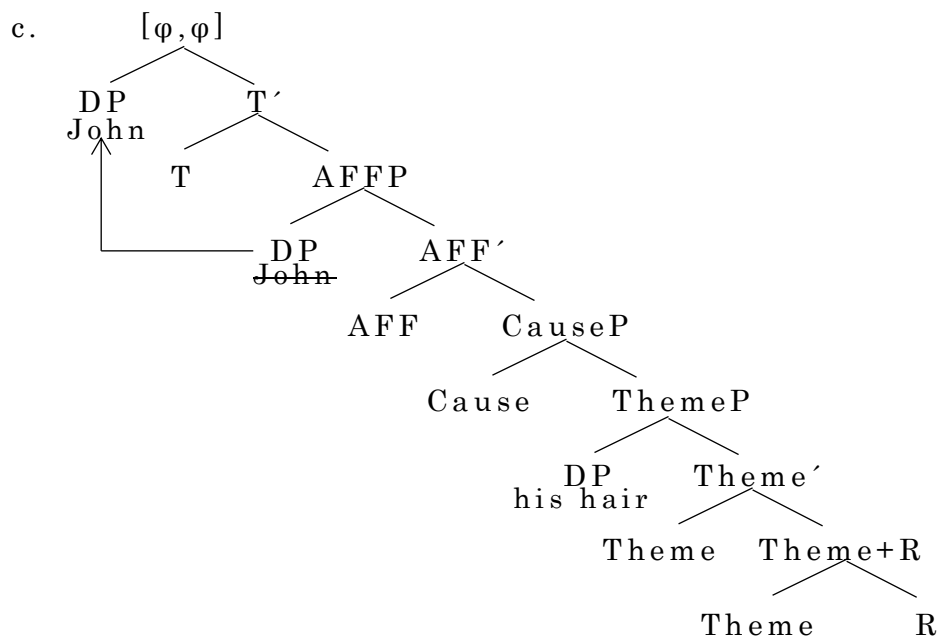
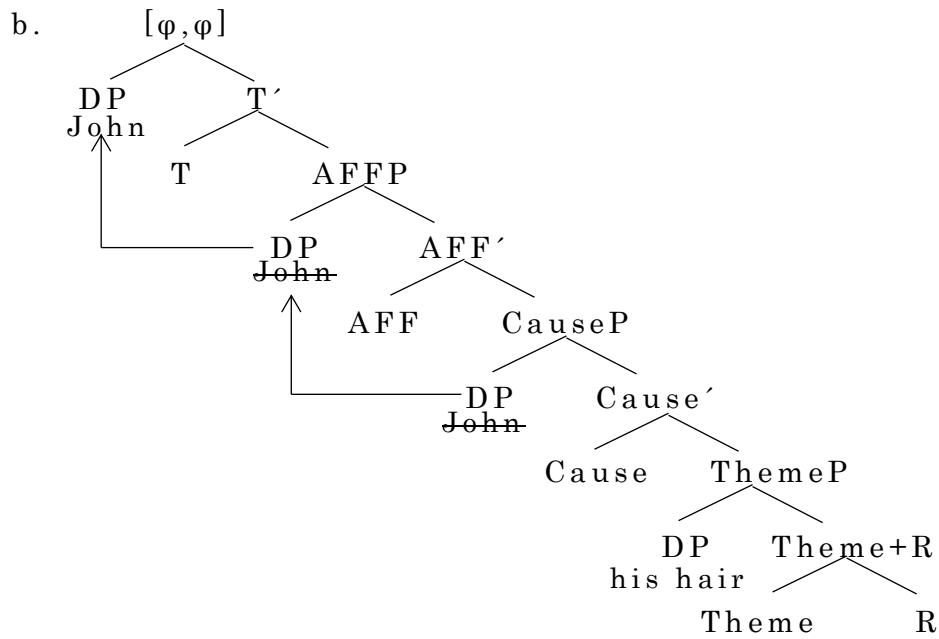


(197a) is the derivation of (196) with a causative interpretation, while (197b) is that of (196) with an adversative interpretation. In (197a), *John* has Cause and AFF. *John* is the causer of the event when his students walk out of his class, and he benefits from this event. In contrast, in (197b) *John* has only AFF and *his students* has Cause. This configuration is interpreted that John is adversatively affected, which is caused by the event that his students walk out of his class.

Furthermore, we have another example where both causative and passive interpretations are obtained. One interpretation of (198a) is that John asked someone to cut his hair. The other interpretation is that John's hair was cut by someone without John's approval. The fact that this sentence has these two interpretations can be captured in (198). (198b) is the derivation with a causative interpretation, while (198c) is that with a passive

interpretation.

(198) a. John had his hair cut.



The only difference between (197b) and (198c) is whether there is a VoiceP below the CauseP. In this way, the θ -feature-based approach captures the multiple uses of have.

In this section, I showed that English employs a θ -system in causatives and shares the θ -feature-based case valuation system with Japanese. I focused on three causative verbs *let*, *make*, and *have*, and their capability to be passivized is captured within the current framework. Furthermore, the assumption that *have* consists of two θ -features, AFF and Cause, explains its multiple uses.

5.4 Psych-verbs Constructions

In the last section of this chapter, I discuss the psych-verb construction. This construction in English has been discussed extensively in the literature because of their idiosyncratic behavior in syntax. In this section, I apply the current framework to these verbs and show the consequences. Specifically, I assume that the θ -system is employed in a syntactic environment which contains psych-verbs. With this assumption, movements which are not expected with a ϕ -system occur, which explains the unusual syntactic behavior of psych-verbs.

Before I discuss the psych-verb construction within the current framework, I would like to review the general point of view on this construction. Pesetsky (1995) provides important data which illustrate the argument structure of psych-verbs.

(199)a. Bill was very angry at the article in the Times.

b. The article in the Times angered/enraged Bill.

As shown in (199), arguments of a sentence containing a psych-verb can be reversed, which is marked with a morphological transformation. Importantly, (199a) and (199b) are different in their interpretation. In (199a), Bill is angry precisely because of the article. In other words, Bill has a critical opinion of the article. The article may have insulted Bill, or what was written in the article may have irritated him. On the other hand, in (199b) Bill is not necessarily angry at the article itself. Rather, he may evaluate the article to be high quality. Imagining a possible context, if the article criticized a government in a persuasive way, Bill may have read it and become angry at the government. From this observation, Pesetsky (1995) assumes the following hierarchy of θ -roles.

(200) Causer > Experiencer > Target/Subject Matter

On the other hand, as discussed in section 4.4, the hierarchy of θ -features assumed here which is related to the psych verb construction is as follows.

(201) (AFF) > Cause > (AFF) > ACT > Theme

In the current framework, it is defined that an experiencer has AFF. Furthermore, in section 4.4 it is claimed that the subject of a psych-verb construction is externally merged to [Spec, AFFP] to

be structurally higher than CauseP. If so, there is a contradiction between Pesetsky (1995) and my assumption: in the former, the experiencer appears structurally lower than a causer, while in the latter, the reversed order is expected.

Now, I show the adequacy of my assumption by discussing a unique property of the psych-verb construction.

(202) a. Pictures of himself please John.

b. These rumors about himself worry John more than anything else.

c. Each other's supporters worried Freud and Jung.

d. Each other's remarks annoyed John and Mary.

In (202), every subject contains an anaphor, which is bound by the experiencer object. This fact leads researchers to assume that in a derivation of a sentence which contains a psych-verb with which the experiencer appears at the object position, certain movements occur which provide a proper binding relation between an anaphor and its experiencer object. Another important fact is that this backward binding relation is possible without a weak cross-over violation.

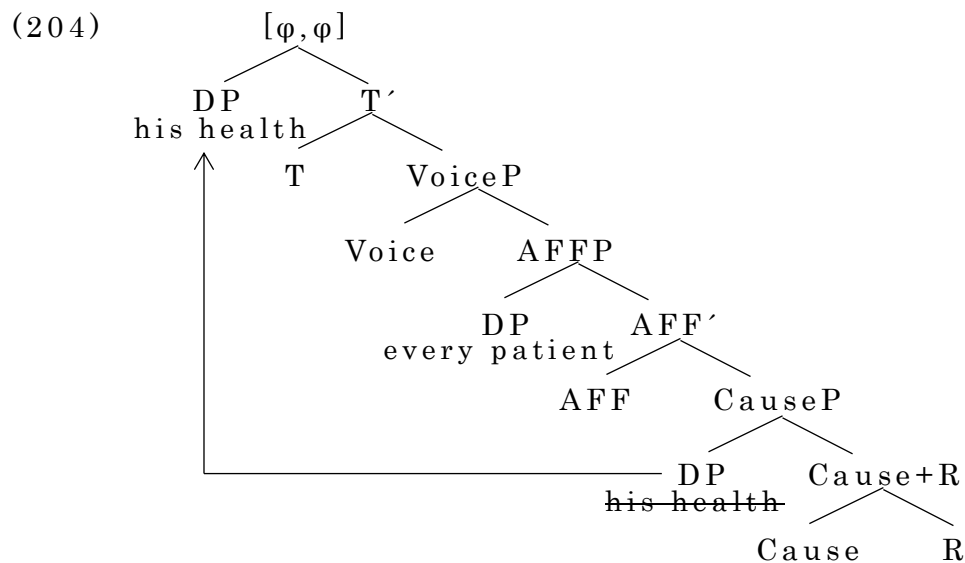
(203) a. His_i health worries every patient_i.

b. His_i promotion pleases everyone_i.

c. * His_i friend hit everyone_i.

In (203c), the subject contains a genitive pronoun which is co-indexed with the object. Covertly, the object undergoes quantifier raising over the subject. This configuration is called weak cross over, which causes the derivation to crash. However, (203a) and (203b) are completely acceptable although the syntactic relation between the subjects and objects are the same as in (203c). This fact implies that in (203a) and (203b) the binding relation between the subjects and the objects are held without quantifier raising.

If the hierarchy of θ -features assumed here is held in English, the derivation of (203a) is as follows⁸.



In (204), v consists of AFF and Cause. *His health* is introduced

⁸ According to May (1977, 1985), Aoun and Li (1993), and Heim and Kratzer (1998), a quantifier must move from its base position. If so, (230) is problematic since *every patient* stays at the base-generated position. A possible solution is that *every patient* is externally merged with R, and internally merged to [Spec, AFFP]. In the current framework I do not assume that an argument merges with R since there is no theoretical necessity, but in principle this derivational step is allowed.

into [Spec, CauseP] and *every patient* is externally merged into [Spec, AFFP] respectively. At this point, the binding relation between *every patient* and *his health* is guaranteed. Here, we have two options to complete this derivation. One is to move *his health* to [Spec, TP], which results in (203a). Note that this is A-movement, which is exempt from WCO. Since AFF assigns a potential accusative case to *every patient*, the derivation converges successfully. The other option is to move *every patient* to [Spec, TP]. Since Cause does not provide an accusative case value, the insertion of a preposition is necessary, and the derivation converges to be spelled out as follows.

(205) Every patient is worried about his health.

5.5 Summary

In this chapter, it was shown that English has a hybrid system which consists of a ϕ -system and a θ -feature-based one. Assuming *get*, *let*, *make*, and *have* as amalgams of θ -features allow us to explain their discriminating behavior in syntax and semantics. Considering differences between Japanese and English, θ -features surface as case or suffixes in Japanese while they are realized as independent lexical items in English. This difference reflects each language's way of combining θ -features. In Japanese, there is a one-to-one correspondence between θ -features and their morphophonological realizations, which means that we map one θ -

feature onto one discrete morphological entity, e.g. Cause as the verbal suffix *-sase* or AFF as the accusative case marker *-o*. On the other hand, in English multiple θ -features can be mapped onto a single form, e.g. Cause and AFF are realized as *make* or *have* depending on the feature's hierarchy. With such a system of the mapping of θ -features, it is economical to set a v recursion parameter rather than to create all possible kinds of combinations of θ -features. Consider the situation in (204).

(206) a. $A+B \rightarrow X, C+D \rightarrow Y, E+F \rightarrow Z$

b. $A+B+C+D \rightarrow \alpha, A+B+E+F \rightarrow \beta, C+D+E+F \rightarrow \gamma$

Suppose we have rules as shown in (204a). How do we then create α , β and γ ? A natural answer is that we combine X, Y, and Z, e.g. $X+Y \rightarrow \alpha, X+Z \rightarrow \beta$. It is the same way we construct something with an intricate complex of multiple components such as automobile. We make small components first, and then we assemble them. In order for speakers to assemble small components, English needs the v recursion parameter. In Japanese, we do not make small components in the first place. Rather, we assemble all the materials at once. Therefore, Japanese does not need the v recursion parameter, which is the reason why the same θ -feature does not appear in a derivation more than once in Japanese.

6. Discourse Features

We have discussed the vP domain, where θ -features work crucially on the displacements of arguments, case valuation, and interpretation. All the examples that were treated up to this point were events, and the accusative case was extensively discussed. In this chapter, I would like to focus on stative sentences and nominative case. A popular perspective starts with Kuno (1973) showing that nominative marked arguments have two kinds of interpretation in Japanese, as illustrated in (207).

- (207)a. Taroo-ga byooki-da.
 Taro-NOM sick-DECL
 ‘Taro is sick.’
- b. Taroo-ga gakusei-desu.
 Taro-NOM student-DECL
 ‘Taro is a student.’

(207a) has two interpretations. One is a neutral interpretation, which has no specific implication. The other is an exhaustive listing interpretation. When (207a) has this interpretation, a list of people including *Taroo* is in mind of an interpreter. An exhaustive listing interpretation picks up *Taroo* as only entity that

is sick. Importantly, (207b) obligatorily has the exhaustive listing interpretation. This difference can be reduced to the types of predicates present. The predicate in (207a) denotes a temporary state. On the other hand, that in (207b) represents a permanent state.

Suzuki (2017) proposes that the observation above can be captured employing Diesing's (1992) and Abe's (1992, 1993) frameworks. Diesing (1992) proposes that different interpretations posited for subjects can be captured syntactically. In her terminology, a predicate which describes a temporary state is called a Stage Level Predicate (SLP) and that which describes a permanent state is called an Individual Level Predicate (ILP). SLP and ILP are also different in terms of the interpretation of their subjects in English.

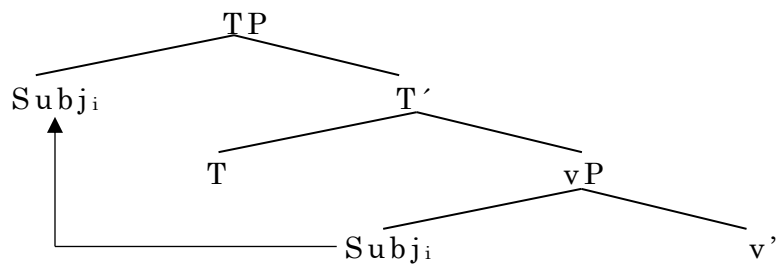
(208) a. Firemen are available.

b. Firemen are altruistic.

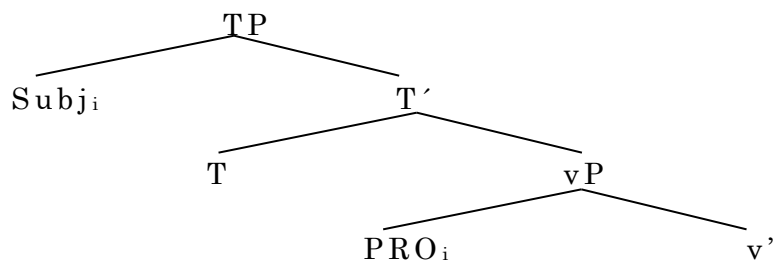
In (208a), which contains an SLP, we obtain two interpretations. One interpretation is an existential reading, which is intended to notify that certain firemen are ready to move. The other interpretation is a generic reading, which states that typically firemen can start their job at anytime. On the other hand, the predicate in (208b) is an ILP, and only one interpretation emerges, namely the generic reading. Diesing (1992) proposes that this

difference can be derived from the syntactic positions of subjects. Specifically, the subject of an SLP is base-generated in VP and then moves to [Spec, TP] while the subject of an ILP is introduced into [Spec, TP] and binds to PRO in [Spec, vP].

(209) a. SLP

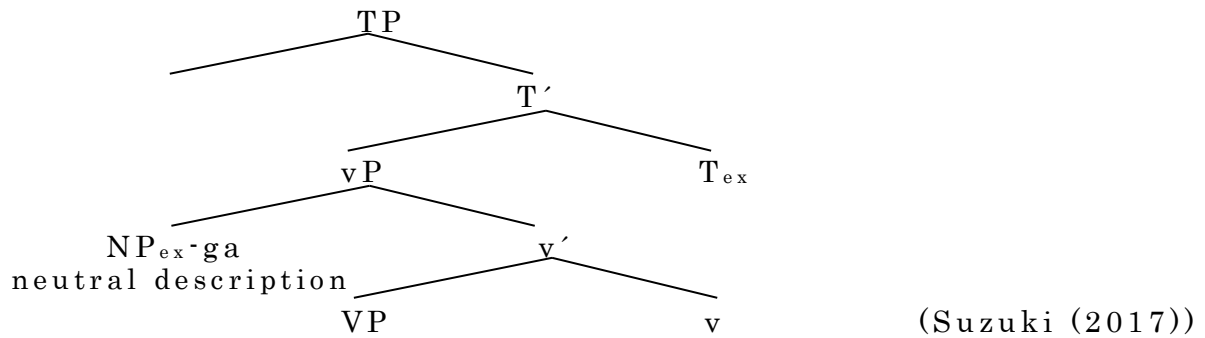


b. ILP

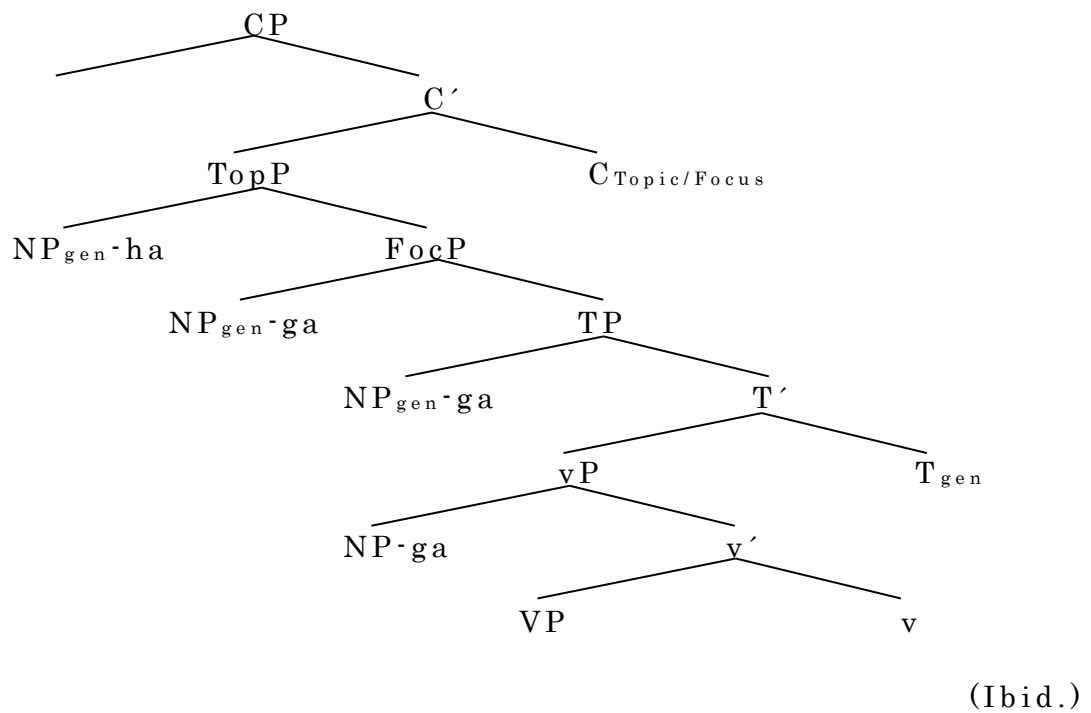


Independently from Diesing (1992), Abe (1992, 1993) observes that two conditions must be satisfied for a sentence to be interpreted as a property ascription.

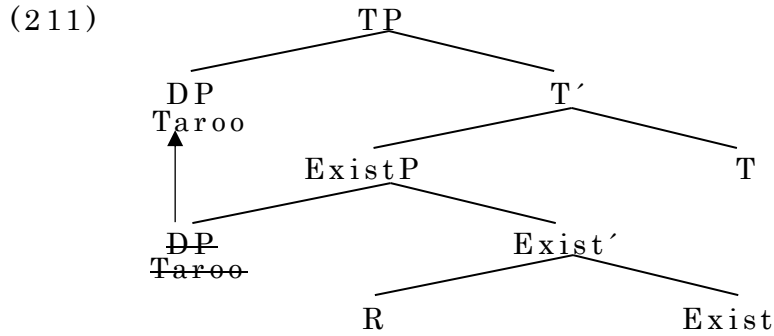
(210) a. Nominative NP with a neutral description interpretation



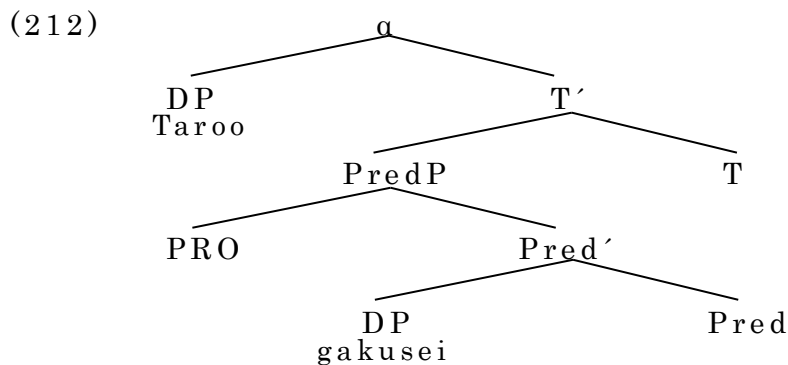
b. Nominative NP with an exhaustive listing interpretation



Here, I propose that the reason why the subject of an ILP in Japanese obligatorily has an exhaustive listing interpretation can be determined by the labeling theory. If we consider the derivation of (207a) in the current framework, *Taroo* has only one θ -feature, namely ‘independent existence (Exist).’ Thus, the derivation is schematized in (209).

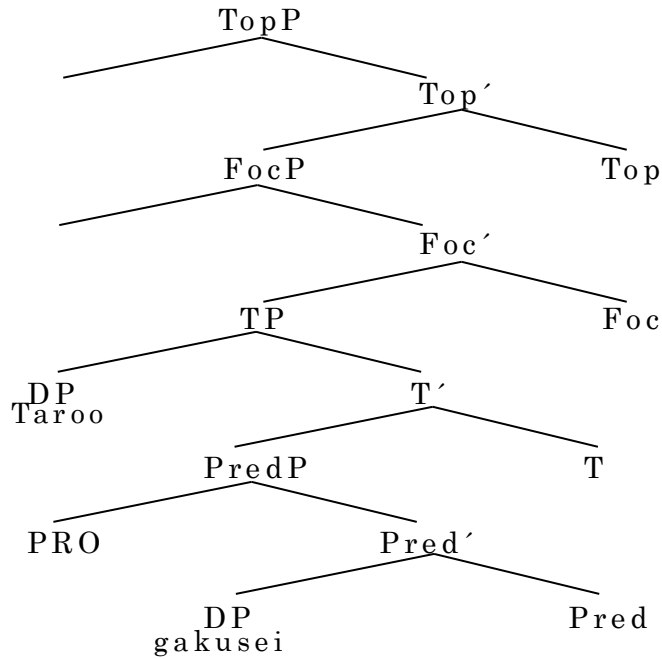


In (211), *Taroo* is introduced into [Spec, ExistP] and checks its [Exist] node, when it receives potential [Nom]. After that, this argument moves to [Spec, TP] to be marked with nominative case. In contrast, (207b) is derived in (212).



In (212), *Taroo* is directly introduced into [Spec, TP]. Importantly, *Taroo* has not undergone θ -feature checking, thus [u-Case] of *Taroo* has no potential case value. Therefore, this argument is visible to LA, which means that α cannot be labeled as is. Since the DP and T do not share any features, the only way to label α is to move the DP to a structurally higher position, namely the CP periphery. Thus, the derivation in (212) continues in (213).

(213)



There are two possibilities for (213). One is that the DP moves to [Spec, TopP]. In this case, the labeling is done with [Top], and the DP is marked with the Topic marker *-wa*. In fact, this derivation converges and is spelled out in (214).

(214) Taroo-wa gakusei-da.

Taroo-TOP student-DEC

‘Taro is a student.’

The other one is that the DP moves to [Spec, FocP]. This is the derivation of (207b), which is the reason why the sentence obligatorily has an exhaustive listing interpretation.

In this way, the current framework explains why the subject of an ILP must have an exhaustive listing interpretation.

6.1 Potential Construction

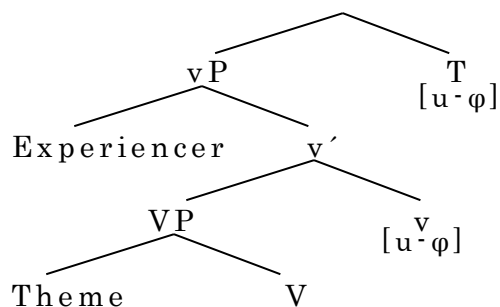
The discussion in the previous section has another consequence. In this section, I focus on the potential construction. As pointed out in previous literature, this construction shows different patterns for case distribution as illustrated in (215).

- (215) a. Kodomo-ga hon-ga/o yom-er-u.
 child-NOM book-NOM/ACC read-POSS-PRES
 ‘A child can read a book.’
- b. Kodomo-ni hon-ga yom-er-u.
 child-DAT book-NOM read-POSS-PRES
 ‘A child can read a book.’
- c. * Kodomo-ni hon-o yom-er-u.
 child-DAT book-ACC read-POSS-PRES
 ‘A child can read a book.’

As we can observe in (215a) and (215b), the subject of a potential sentence can be marked with the nominative or dative case. Also, the object can be either nominative or accusative. Essentially, when a subject is marked with the dative, the object cannot be marked as an accusative as shown in (215c). Ura (1999) provides a principled explanation of this fact, according to which *v* is idiosyncratic in abilitive sentences in terms of case valuation. That is, *v* can assign dative case to a DP in its specifier without

being obligated to do so. Similarly, *v* optionally assigns the accusative case to a theme argument.

(216)



Following this assumption, we have four patterns of case distribution. When *v* does not assign dative case to an experiencer, the experiencer agrees with *T* to the value $[u-\phi]$ of *T* and receives a nominative value. If *v* assigns dative case to an experiencer, the experiencer becomes inactivated and cannot agree with *T*. In this case, the only way for the derivation to converge is that the theme agrees with *T* in value with the $[u-\phi]$. In (109c), it is shown that dative-marked experiencer cannot co-occur with accusative-marked theme. Since the experiencer is assigned dative case, it cannot agree with *T*. In addition, the Theme is marked with accusative case, which means that it has agreed with *v* and become inactivated. Then *T* cannot agree with the theme either, and $[u-\phi]$ of *T* is left unvalued, which is the reason why (215c) is ill-formed.

Although Ura's (1999) explanation elegantly captures the fact in (215), we find some exceptional examples as shown below. The

acceptability of potential sentences which contain dative-marked experiencers and accusative-marked themes improves when the experiencer is topicalized or focused.

- (217) a. *Boku-ni-*(ha) kare-o uragir-e-nai.*
 I-DAT-*(TOP) he-ACC betray-POSS-NEG
 ‘I cannot betray him.’
- b. *kodomo-ni-sae Taroo-o taos-er-u.*
 child-DAT-EMP adult-ACC beat-POSS-PRES
 ‘Even a child can beat Taro.’

If the unacceptability of (215c) is attributed to the unvalued [u- ϕ] of T, it is expected that (217a) and (217b) are also ungrammatical, since topicalization or focalization have nothing to do with [u- ϕ] of T. Therefore, we need another explanation for the ungrammaticality of (215c) which does not depend on ϕ -features.

Here, I propose that the unacceptability of (215c) is attributed to a problem of labeling. A characteristic of potential constructions worth noting is that they have both aspects of eventive sentences and stative sentences. There are several well-known tests which diagnose whether a predicate is eventive or stative, which are exemplified below in (218).

- (218) a. Taroo-wa yukkuri arui-ta.
 Taro-TOP slowly walk-PAST
 ‘Taro walked slowly.’
- b. * Taroo-wa yukkuri kaze-da-tta.
 Taro-TOP slowly sick-DECL-PAST
 ‘Taro was slowly becoming sick.’
- (219) a. Taroo-wa arui-teiru.
 Taro-TOP walk-PROG
 ‘Taro is walking.’
- b. * Taroo-wa kane-ga it-teiru.
 Taro-TOP money-NOM need-PROG
 ‘Taro is needing money.’
- (220) a. Sassato aruk-e!
 quickly walk-IMPER
 ‘Walk quickly!’
- b. * Kane-ga ir-e!
 money-NOM need-IMPER
 ‘Need money!’

(218) shows that manner adverbs do not go with stative predicates. In (219) and (220), we can observe that stative verbs cannot be conjugated in progressive forms nor imperative forms, respectively. With these tests, potential sentences show a mixed behavior from both stative and eventive predicates.

(221) a. Taroo-wa yukkuri aruk-er-u.
 Taro-TOP slowly walk-POSS-PRES

‘Taro can walk slowly.’

b. Taroo-wa aruk-e-teiru.
 Taro-TOP walk-POSS-PROG

‘Taro is successfully walking.’

c. * Yukkuri aruk-er-o!
 slowly walk-POSS-IMPER

‘Be able to walk slowly!’

(221c) implies that a potential construction contains a stative predicate. In contrast, (221a) and (221b) show that the sentences have eventive nature. A simple assumption is that the potential construction consists of both eventive predicate and stative predicate. More specifically, the potential suffix *-rare*, which has stative nature, projects above eventive vP.

Importantly, case-marking is related to the event status of a sentence.

(222) a. Kinoo kodomo-ga ninjin-o taber-e-ta.
 Yesterday child-NOM carrot-ACC eat-POSS-PAST

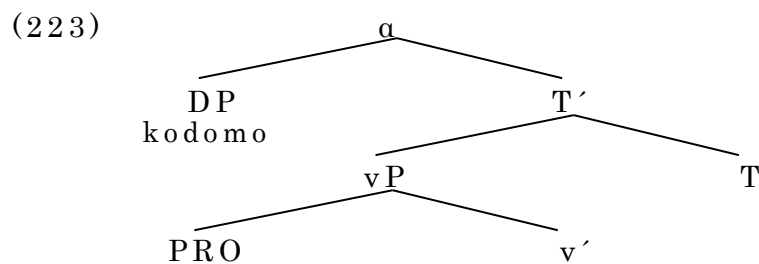
‘My child ate a carrot for the first time yesterday.’

b. ?? Kinoo kodomo-ni ninjin-ga taber-e-ta.
 Yesterday child-DAT carrot-NOM eat-POSS-PAST

‘My child was able to eat a carrot yesterday.’

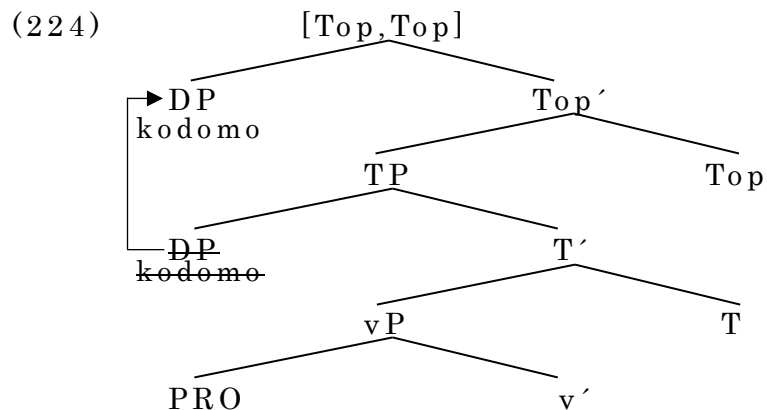
(222a) is successfully interpreted as an eventive sentence. In contrast, (222b) is interpreted as a stative sentence, which is the reason why the acceptability is dubious since it is hard to imagine a situation where a child could eat a carrot yesterday but cannot today. The fact described above can be paraphrased that an potential sentence with a nominative-marked subject contains an SLP while that with a dative subject contains an ILP. We should remember that the subject of an SLP is base-generated in [Spec, vP] and that of an ILP is introduced into [Spec, TP].

Now, let us go back to the ungrammaticality of (215c). If the discussion above is correct, the ungrammaticality of (215c) can be reduced to a failure of labeling. That is, the subject in (215c) is base-generated in [Spec, TP], which means that *kodomo* has no θ -feature. Therefore, *kodomo* does not receive any potential case value, which results in dative case marking.



The ungrammaticality of (215c) is attributed to the label for α . This syntactic object consists of two phrases. For now, *kodomo* and T do not share any features since *kodomo* does not contain φ -features or θ -features.

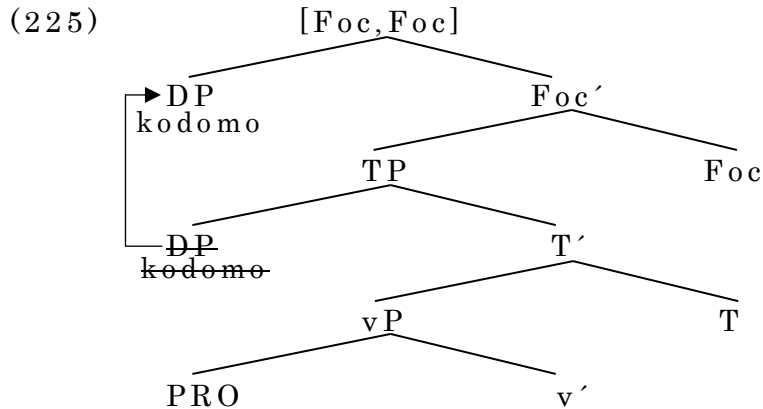
Now, we go back to the counter example from Ura's (1999) analysis. In (217a), the subject has the topic marker *-wa*, which means that the subject has moved to a syntactically higher position than T, as illustrated in (224)⁹.



Since the subject moves from [Spec, TP], α in (223) is successfully labeled with T. At the landing site, *kodomo* and Top share the same feature, [Top], which enables us to label the syntactic object with this feature.

In (217b), the subject is marked with the emphatic marker *-sae*, which means that the subject has [Foc]. Therefore, a similar explanation to (217a) can be applied to (217b), as illustrated in (225).

⁹ According to Saito (1985) and Hoji (1985), non-contrastive topic is base-generated in [Spec, TopP], which is compatible with the current framework. In (224), the derivation converges even if the subject DP is base-generated in [Spec, TopP].



The subject moves to [Spec, FocP] and [Foc] contributes to labeling. In this way, the restriction on case distribution of the potential construction is explained independently of φ -features.

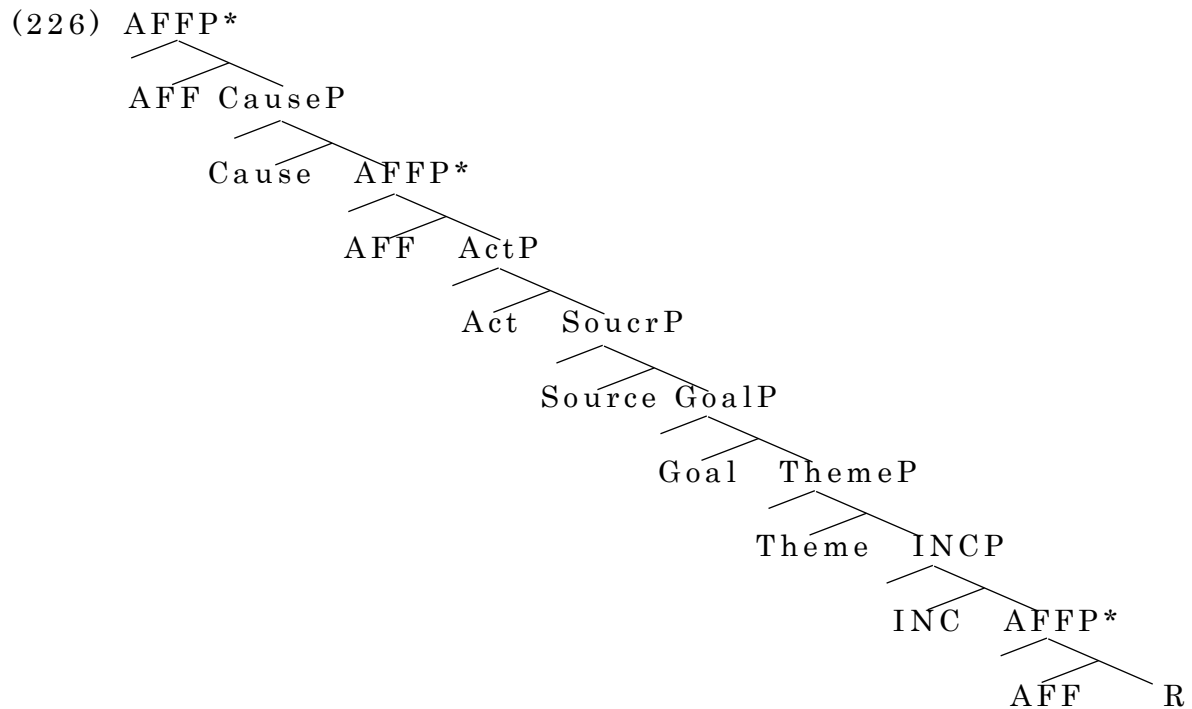
In this chapter, we focused on arguments which are externally merged to [Spec, TP]. These arguments do not have θ -features, which causes a problem of labeling. Since they do not share any features with T, a syntactic object which contains θ -features cannot be labeled. The only way to label these syntactic objects is to move them to syntactically higher positions, where the checking of discourse features occurs. As a result, labeling with discourse features is accomplished, which is the reason why the subject of an ILP and the dative subject of a potential sentence with an accusative-marked object must be interpreted with topic or focus.

7. Concluding Remarks

Chomsky's (2013, 2015) framework crucially relies on the existence of ϕ -features in a given language: the labeling of some syntactic objects and case valuation, which cannot be accomplished without ϕ -features. As pointed out by Kuroda (1988), Saito (2007), and Şener, and Takahashi (2010), Japanese lacks ϕ -features, which poses problems in terms of labeling and case valuation. Saito (2014) explains the problem of labeling by assuming that grammatical case is a realization of a λ -feature, which makes a syntactic object invisible to the LA. As for the problem of case valuation, he employs Bošković's (2007) idea that [u-Case] itself probes an appropriate goal: when it finds T, nominative case is assigned, and if it finds v, accusative case is assigned.

Although Saito's (2014) framework elegantly captures a great portion of the Japanese data, the language's use of dative case is left unexplained. Dative case-marked arguments appear in various syntactic positions, which means that Bošković's (2007) case valuation mechanism cannot explain how dative case is valued. This implies that dative case is not a realization of a λ -feature, so it also poses a problem of labeling. Dative-marked arguments are visible to the LA, thus a syntactic object which contains it cannot be labeled as is.

In this dissertation, I extended the cartographic approach to the vP domain with the assumption that θ -roles are criterial features. Concretely, I assumed the following θ -feature-based cartography.



I confirmed that all the constructions in Japanese follow the hierarchy in (226) in chapter 4. Since any DP checks θ -features inside vP, all the syntactic objects are labeled with these features there as containing dative-marked DPs. As for DPs which stay above vP, I claimed that they must contain discourse features to be properly labeled.

- (227) a. * Kodomo-ni hon-o yom-er-u. (= (109c))
 child-DAT book-ACC read-POSS-PRES
 ‘A child can read a book.’
- b. Boku-ni-*(ha) kare-o uragir-e-nai. (= (111a))
 I-DAT-*(TOP) he-ACC betray-POSS-NEG
 ‘I cannot betray him.’
- c. kodomo-ni-sae Taroo-o taos-eru. (= (111b))
 child-DAT-EMP adult-ACC beat-POSS
 ‘Even a child can beat Taro.’

The dative-marked subject in (227a) is directly introduced into [Spec, TP] without any θ -feature (see section 6.2). Therefore, the syntactic object which contains this argument cannot be labeled as *is*, which causes the ungrammaticality. In contrast, the dative-marked subject is topic-marked in (227b) and focused in (227c). As a result, they move to the CP periphery to check their topic feature and focus feature respectively, and the labeling at the landing sites is successfully done with the topic feature and focus feature.

The other proposal is about the θ -feature-based case valuation system, which is outlined in (228).

(228) Feature-based case valuation (final version) (= (146))

- (i) Patient-oriented θ -features provide [u-Case] with potential [Acc] and [Nom] while non-Patient-oriented θ -

features provide potential [Nom].

(ii) Potential case feature receives morphological form depending on syntactic position it is spelled out: [Acc] in vP and [Nom] in TP.

(iii) When both (i) and (ii) are not satisfied, a case feature receives dative form.

(iv) v loses its ability of accusative case valuation once it provides potential [Acc].

This mechanism captures the ubiquitous appearance of dative case in various constructions. Moreover, (228) explains the constraints on the distribution of case: the double-*o* constraint, and the restriction that a dative-marked subject cannot co-occur with an accusative-marked object. A problem with the double-*o* constraint that is left unexplained in Hiraiwa (2010) is that this constraint cannot be circumvented in causatives, unlike in other constructions.

(229) Possessor raising and scrambling (=138))

a.??	Ken-ga	omoikkiri	Naomi-o	atama-o
	Ken-NOM	hard	Naomi-ACC	head-ACC
	tatai-ta.			
	hit-PAST			
	‘Ken hit Naomi hard on the head.’			

b. Naomi-*oi* Ken-*ga* omoikkiri *ei* atama-*o*
 Naomi-ACC Ken-NOM hard head-ACC
 tatai-*ta*.
 hit-PAST
 ‘Ken hit Naomi hard on the head.’

(230) a. Ken-*wa* Naomi-*ni/*o* sono-*hon-o* yom-*ase-ta*.
 Ken-TOP Naomi-DAT/ACC Dem-book-ACC read-CAUSE-PAST
 ‘Ken made Naomi read the book’ (= (133b))

b.* Naomi-*oi* Ken-*ga* kinoo muriyari *ti*
 Naomi-ACC Ken-NOM yesterday forcibly
 sono-*hon-o* yom-*ase-ta*.
 DEM-book-ACC read-CAUSE-PAST
 ‘Ken made Naomi read the book against her will.’

This problem is rectified if we consider which θ -feature the arguments in (229) and (230) have. In (229), *Naomi* and *atama* share the same θ -feature: Theme. On the other hand, in (230), *Naomi* and *sono-hon* have different θ -features: the former has AFF, while the latter has Theme. Since the two arguments in (229) share the same θ -features, they are introduced into multiple specifiers of Theme. The two arguments receive a potential accusative case value at the same time, and the derivation converges only if either argument moves out of the lower phase. In contrast, in the derivation of (230), *sono-hon* is merged into [Spec, Theme] and receives a potential accusative case. At this

point, *v* becomes incapable of accusative case valuation. Therefore, *Naomi* does not receive accusative case value at [Spec, AFFP], but is spelled out with the dative case marker.

Also, I claimed that English partly employs a θ -system. Specifically, *v* in English contains only patient-oriented θ -features. One key difference between Japanese and English is that θ -features surface as case or suffixes in the former while they are realized as lexical verbs in the latter. Namely, *get*, *let*, *make*, and *have* are amalgams of θ -features, which broaden the range of expression in passives and causatives. ' $\alpha < \beta$ ' means that α is structurally lower than β .

- (231) AFF \rightarrow *get*
 Cause \rightarrow *let*
 AFF < Cause \rightarrow *make*
 Cause < AFF \rightarrow *have*

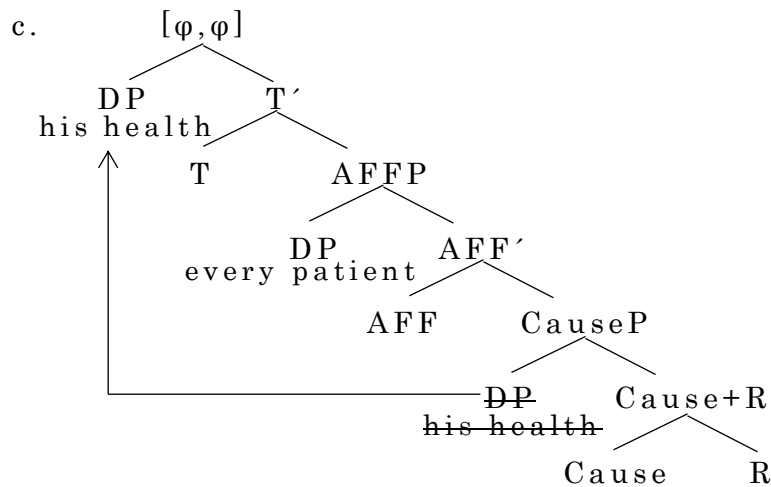
This assumption is based on these verbs' interpretation, and explains (i) why *let* and *have* cannot be passivized and (ii) why *have* denotes both passive and causative events. (i) is explained with (228). Since a causee in a MAKE causative checks [AFF], it receives potential nominative and accusative case. On the other hand, a causee in a LET causative and HAVE causative does not receive potential structural case, so it must be assigned an inherent case. At this time the argument becomes inactivated and

incapable of further movement, which is why *let* and *have* cannot be passivized.

The θ -system is also employed in the psych-verb construction. Counter to the traditional assumption, the current framework predicts that an experiencer is base-generated at a syntactic position that is higher than the causer. This prediction is borne out if we consider the idiosyncratic property of the psych-verb construction.

(232)a. Pictures of himself please John. (= (202a))

b. His_i health worries every patient_i. (= (203a))



(232a) shows that a psych-verb allows a backward-binding relation and (232b) shows that this binding relation is guaranteed without covert quantifier raising. (232c) shows that *his health* is base-generated lower in the structure than *every patient*, where the binding relation is guaranteed. After that, *his health* moves to the subject position, and *every patient* receives accusative case

when it checks [AFF].

I claimed that Japanese and English share the θ -system. However, how these θ -features are realized is different in the two languages: they are realized as suffixes and case-markers in Japanese while they surface as lexical items in English. This difference reflects two ways into utilizing θ -features. One is to configure a strict hierarchy of θ -features like in Japanese. In this case, multiple kinds of constructions are derived inside a single vP, and θ -features are morphophonologically spelled out as suffixes or case markers. The other strategy is to project θ -features independently as in English. If the θ -system is employed in this way, more than one v appear in a sentence. For instance, in the derivation of the sentence 'Mary made John dance,' one v, which denotes the causative relation between Mary and John, projects above the other v that expresses John's dancing. This difference emerges because we have two ways to achieve economic efficiency. Suppose we have features A, B, C, D, E, and F, which have the following rules.

(233) $A+B+C+D \rightarrow \alpha$, $A+B+E+F \rightarrow \beta$, $C+D+E+F \rightarrow \gamma$

One simple way to construct α , β , and γ is to merge the four elements. Alternatively, we can make smaller components beforehand.

- (234) a. $A+B \rightarrow X$, $C+D \rightarrow Y$, $E+F \rightarrow Z$
b. $X+Y \rightarrow \alpha$, $X+Z \rightarrow \beta$, $Y+Z \rightarrow \gamma$

Japanese employs (233) while English employs (234), and both achieve different kinds of economic efficiency. In (233), we have fewer rules. On the other hand, in (234) the number of the rules is large. However, once we have configured (234a), it is easier to make α , β , and γ than in (233).

This dissertation suggests that if a language lacks φ -features, the language must employ a θ -feature and discourse-feature-based system. There are two ways to employ these systems: (233) or (234). Idiosyncrasies in φ -feature-less languages can be investigated within the current framework, which I believe contributes to clarify the nature of languages, especially in terms of the interface between syntax and semantics.

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