Person Restriction and Syntactic Structure of Japanese Modals*

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Japanese modality has been one of the hottest issues in traditional Japanese linguistics. It has been explored in the round and mainly discussed semantically and pragmatically. This paper argues for assuming at least two independent phrasal categories headed by modal forms, Utterance-modal Phrase (henceforth U-modalP) and Epistemic-modal Phrase (henceforth E-modalP), in terms of the following three points: (i) their occurrence in an embedded clause, (ii) person restrictions and (iii) the EPP-satisfaction in C. We would not presume to criticize previous meaning-based fruitful outcomes, but attempt to focus our attention on forms and syntactic positions of Japanese modals.

1. Modal forms to be treated: *Genuine*-modals vs. *Quasi*-modals

In traditional Japanese linguistics 'Kokugo-gaku' and Japanese linguistics 'Nihongo-gaku', modal expressions have been divided into two types, *Genuine-modals* '*sinsei* modals' and *Quasi-modals* '*gizi* modals'. (1)

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indicates the characteristics of *Genuine*-modals and the corresponding examples are given in (2). (2) shows that following (1b) and (1c), Past morpheme *–ta* and Negative morpheme *–nai* are disallowed to follow *Genuine*-modals.

(1) The characteristics of Japanese Genuine-modals
   a. Genuine-modals express speakers' psychological attitude towards the utterance.
   b. no Pres-Past Tense differentiation
   c. no declarative-negative differentiation (Nitta (1991))

(2) Genuine-modals: *nasai* 'imperative', *masyoo* 'inviation', *daroo* 'surmise'
   a. imperative forms
      zettaini, iki-**nasai** /-***nasai-*ta*** /*-**nasai-*nai*.**
      absolutely, go-G-modal -G-modal-Past -G-modal-Neg[1]
      'Go there!'
   b. invitation forms
      ohiru-o tabe-**masyoo** /*-**masyoo-*ta*** /*-**masyoo-*nai*.**
      lunch-Acc eat-G-modal -G-modal-Past -G-modal-Neg
      'Let's have lunch.'
   c. surmise forms
      Asu-wa hare-**daroo** /*-**daroo-*ta*** /*-**daroo-*nai*.**
      Tomorrow-Top fine-G-modal -G-modal-Past -G-modal-Neg
      'It will be fine tomorrow.'

Unlike G(enuine)-modals, Q(uasi)-modals show the property (1a) only. Q-modals have the Pres.-Past differentiation in (1b) and the declarative-negative differentiation in (1c) as illustrated in (3a) and (3c). That is why we call the modal forms *Quasi-modals*.

[1] We use the following abbreviated forms through this paper:
Genuine-modal = G-modal, Quasi-modal = Q-modal

(3) *Quasi*-modals: *-yoo* 'surmise', *-tagar* 'desire', *-beki* 'obligation'

a. surmise forms

Taroo-wa daigaku-e iku-**yooda**/^{OK}-**yooda**-***(a)tta***/^{OK}-**yoode**-***nai***

Taro-Top university-to go-Q-modal -Q-modal-Past -Q- modal-Neg

'Taro seems to go to a university.'

b. desire forms

Taroo-wa daigaku-e iki-**tagaru** /^{OK}-**taga(r)**-***(a)tta*** /^{OK}-**tagar**-***anai***

Taro-Top university-to go-Q-modal -Q-modal-Past -Q-modal-Neg

'Taro wants to go to a university.'

c. obligation forms

Taroo-wa daigaku-e iku-**bekida**/^{OK}-**bekid**-***atta***/^{OK}-**bekide**-***nai***

Taro-Top university-to go-Q-modal -Q-modal-Past -Q-modal-Neg

'Taro should go to a university.'

Moreover, the two types of modal forms show completely different syntactic behaviors in their multiple occurrences as in (4) and the word order relation between the modals and Tense morphemes as in (5).

(4) multiple occurrences

a. *Genuine*-modals

*Taroo-wa daigaku-e iku-***daroo-nasai-masyoo.**

Taro-Top university-to go-G-modal-G-modal-G-modal

b. *Quasi*-modals

^{OK}Taroo-wa daigaku-e iki-***tagaru-bekide-nak-atta-yooda.***

Taro-Top university-to go-Q-modal-Q-modal-Neg-Past.-Q-modal

'It seems to me that Taro should not have wanted to go to a university.'

(4) indicates that *Quasi*-modals can multiply occur in a simple sentence, whereas *Genuine*-modals cannot. With respect to their word order restriction, unlike *Quasi*-modals, Tense morpheme *–(at)ta* 'Past' cannot follow Genuine-modals as shown in (5).

(5) word order relations

a. *Genuine*-modals

*iku-*daroo*-ta.

V-G-modal-$\text{Tense}_{\text{PAST}}$

b. *Quasi*-modals

$^{\text{OK}}$iku-*bekid*-atta.

V-Q-modal-$\text{Tense}_{\text{PAST}}$

'You should have been there'

In traditional Japanese studies, there has been a tendency that the formal distinctions between the two types of modals, *Genuine*-modals and *Quasi*-modals, mentioned above, are ignored and hardly reflect in their analyses in the heat of the semantic and the pragmatic perspectives, though the dichotomy was recognized in the quite early stage of their analyses (Masuoka (1997), Nitta (1991), Nitta and Masuoka (1998)). On the contrary to the previous literature in traditional Japanese studies, we consider that the formal discrimination plays a significant role in distilling the genuine characteristics of Japanese modality from miscellaneous modal forms. Thus, the target of our research is restricted to Genuine-modals only in this paper.[2] (6) is a list of *Genuine*-modals, which we treat in this paper.

(6) Genuine-modals we treat in this paper

< examples >	' forms' (interpretation)
a. Tabun, asu-wa hareru-***daroo***.	'***-daroo***' (surmise)
probably tomorrow-Top fine-G-modal	
'It will probably be fine tomorrow.'	
b. Osoraku, ame-wa furu-***mai***.	'***-mai***' (negative surmise)
perhaps rain-Top fall-G-modal	
'Perhaps, it won't rain.'	

[2] Note that we do not say that the results of previous studies in terms of semantics and pragmatics are incompatible with our results. Rather, it follows that they overlap with our results, because a specific syntactic position is occupied with elements with a specific meaning in syntax.

c. Taroo-mo ikude-***syoo***. '***-syoo***' (surmise)
Taro-also go-G-modal
'Taro will go with us.'

d. Hayaku, kotti-e ko-***i***. '(si)-***ro***', '*(si)*-***mae***', (imperatives)
quickly here-to come-G modal '(si)-***nasai***'
'Come here quickly.'

e. koko-o wataru-***na***. '(suru)-***na***' (prohibition)
here-Acc cross-G modal
'Don't cross here.'

f. Issyoni, tabe-***masyoo***. '(si)-***masyoo***' (invitation)
together eat-G modal
'Let's eat (it) together.'

g. Ame, ame, fur-***e***, fur-***e***. '(suru)-***e***' (desire)
rain rain fall-G modal fall-G-modal
'Ask God to bless with rain!'

h. Konnakoto nidoto suru-***mai***. '(suru)-***mai***' (intension)
such a thing never do-G modal
'I will never do such a thing.'

i. Suguni si-***yoo***. '(si)-***yoo***' (intension)
right now do-G modal
'I will do (it) right now.'

We will observe and discuss the syntactic properties of the *Genuine*-modals above. For the sake of convenience, we will often call the G-modals just *modals* in the subsequent sections.

2. Two types of G-modals

2.1. Modality Analyses in Traditional Japanese Linguistics

In the previous section, we restricted our research targets within G-modals only. This subsection begins with a review of the traditional studies of Japanese modals in which the modals have been roughly divided into two types, *Proposition-purpose modality* 'Meidai meate no modaritii' and *Utterance-Communication-purpose modality* 'Hatsuwa-Dentatsu no modaritii' (Nitta (1991), Masuoka (2000)). (7) is Nitta's (1991) dichotomy of Japanese modality.

(7) Nitta (1991)

a. Proposition-purpose modality:
Grammatical expressions concerning how the speaker recognizes the proposition of the utterance when (s)he utters.

b. Utterance/Communication-purpose modality:
Grammatical expressions concerning speaker's attitudes toward the styles of the utterance and the communicative functions, when (s)he utters.

2.2. Modality Analyses in Generative Grammar

In Generative Grammarian studies, Inoue (1976) proposes hierarchical syntactic structures containing Japanese modality and independently reaches the similar conclusion to Nitta's (1991) dichotomy of Japanese modality as given in (8). Inoue (2006) calls ④ in (8) *Epistemic-modals* 'Ninsikiteki-modal' and ⑤ in (8) *Utterance-modals* 'Hatuwa/Dentatu-modals'.

(8) Hierarchical structures of Japanese Modality: Inoue (1976), Inoue (2006)

Taroo-ga zyobun-o honyaku-si	tei	ru	daroo	ne.
Taro-Nom introduction-Acc translate-do	Prog.	Pres.	will	SFP.
①	②	③	④	⑤
Proposition	Aspect	Tense	Epistemic modal	Utterance modal

'Taro will be translating the introduction.'

Inoue's (2006) definitions for Epistemic-modals and Utterance-modals are given in (9). This is similar to Nitta's given in (7) above.

(9) a. Epistemic-modals:
Epistemic-modals express the speaker's recognition of the content of the proposition. They presuppose neither the existence nor the involvement of addressees.

b. Utterance-modals:
Utterance-modals express the speakers' attitudes toward the utterance (communication, interrogative, imperative, invitation, prohibition, permission). Some modals of this type presuppose

not only the existence of the addressee, but also the involvement of the addressee.

(Inoue (2006))

(10) is an example for the sentence structures containing modals.

(10) Taroo-wa LGB-o kaw-ta ∅(assertion) ∅ (communication).
Taro-Top LGB-Acc buy-Past E-modal U-modal
'Taro bought LGB.'

... kaw-ta + ∅(assertion) + ∅(communication)

V + Tense	**E-modal**	**U-modal**
confirmation	assertion	communication
	surmise	interrogative
	desire	imperative
		prohibition
		invitation
		permission

(Inoue (2007a) with modifications by Ueda)

According to Inoue (2007a), in (10), the verb *kaw* 'buy' takes Tense-morpheme *–ta* 'Past'. The Tense is followed by a phonetically-null Epistemic-modal *–∅(assertion)*. Furthermore, the epistemic modal takes a phonetically-null Utterance-modal *–∅ (communication)*.

However, Inoue's (2006) dichotomy of Japanese modality differs from ours in the following four points. First, contrary to (9b), we assume that *Utterance-modals* do not always presuppose the existence of the addressee(s), following Nitta (1991). Second, Inoue (2006) classifies the modal form *–daroo* (surmise) as an exceptional Utterance-modal. However, we treat *–daroo* (surmise) as an E-modal, on the basis of the result of a syntactic embedding test for the dichotomy of Japanese modality in the next section. Third, we assume that modal forms with intentional interpretation are classified into U-modals, unlike Inoue's (10). The fourth point is concerned with the treatment of sentence final particles *–yo, –ne, –ka,* and *–zo* (henceforth, SFPs). Unlike Inoue (1976), Nitta (1991), and Masuoka (2000), we do not

recognize SFPs as a typical example of Utterance-modals, but as another type of modals, because SFPs multiply occur in a sentence (e.g. *Iku yo ne.* '(You) will go SFP-SFP, won't you.') and co-occur with other Utterance-modals in a sentence (e.g. *Ike yo* 'U-modal(imperative)-SFP'). Therefore, we ignore SFPs in this paper.[3]

On the basis of the dichotomy of Japanese modality in the previous studies, this paper argues for assuming at least two independent phrasal categories headed by modal forms, Epistemic-modal Phrase (henceforth E-modalP) and Utterance-modal Phrase (henceforth U-modalP). We discuss how these modal categories are mapped in Japanese sentence structure and the adequacy for assuming phonetically-null forms of Japanese modals, namely, ∅-modals.

3. The dichotomy of Japanese Modal Forms

In Section 1, we limited our research targets within G-modals only and listed the modal forms to be examined in this paper. In Section 2, it was shown that Japanese modality has been roughly divided into two types, *the E-modal type* and *the U-modal type* in the previous studies. Section 3 discusses which modal form listed in (6) in Section 1 belongs to which type of modals by means of a syntactic diagnosis, *an embedding test.* Furthermore, we propose a sentence structure reflecting the dichotomy of Japanese modality and their syntactic properties we observe.

3.1. An Embedding Test

With respect to the U-modality, we assume (11), following Nitta (1991) and Inoue (2007a and 2007b) and Ueda (2006 and 2007).

(11) One utterance must contain at least one, but not more than one Utterance-modality.

It is conceptually natural that U-modals are not recursively embedded, but rather are elements only in the matrix clause, because they characterize the types of the utterance.

According to Nitta (1991), paradoxical *-ga* clause, which is one of

[3] With respect to SFPs including interrogative *ka*, we assume that they are generated in C-head position, which merges with U-modalP in the CP-domain in a sense of Rizzi (1997). We leave detail discussion on SFPs to the future studies.

Minami's (1974) C-level of subordinate clauses, does not contain U-modality. If it is true, it is predictable that only E-modals in the Genuine-modals given in (6) can occur in the complement position of the paradoxical *–ga* clause, whereas U-modals in (6) cannot. By means of the embedding test, we sort the modal forms into E-modals and U-modals. The result are given in (12) and (13).

(12) E-modal forms

a. ***-daroo*** (surmise)

[Tabun, asu-wa hareru-***daroo***-ga],
probably tomorrow-Top fine-G-modal-conj.Paradox
kasa-o mot-te-ikoo.
umbrella-Acc take-TE-go
'Though it will probably be fine tomorrow, I will take an umbrella with me.'

b. ***-mai*** (negative surmise)

[Osoraku, ame-wa furu-***mai***-ga],
perhaps rain-Top fall-G-modal-conj.Paradox
gogo-wa kumor-te-kuru-kamosirenai.
afternoon-Top cloudy-TE-come-might
'Though it will never be rain, it might be cloudy in the afternoon.'

c. ***-syoo*** (surmise)

[Taroo-mo ikude-***syoo***-ga], watasi-mo iki-masu.
Taro-also go-G-modal-conj.Paradox I-also go-will
'Though Taro also will go (there), I will go, too.'

(13) U-modal forms

a. imperative forms of verbs: (si)-***ro***, *(si)*-***mae***, (si)-***nasai*** (imperatives)

*[Hayaku, kotti-e ko-***i***-ga], ike-nai.
quickly here-to come-G-modal-conj.Paradox go-not
'(lit.) Through come here quickly, but I cannot.'

b. (suru)-***na*** (prohibition)

*[koko-o wataru-***na***-ga], watar-ta.
here-Acc cross-G-modal-conj.Paradox cross-past
'(lit.) Though don't cross here, I crossed there.'

c. (si)-***masyoo*** (invitation)
*[Issyoni, tabe-***masyoo***-ga], deki-nai.
together eat-G-modal-conj.$_{Paradox}$ can-not
'(lit.) Though let's eat (it) together, we cannot.'

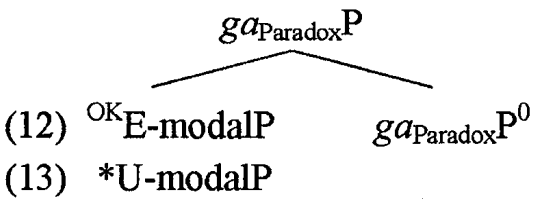
d. imperative forms of verbs: (si)-***ro***, *(si)-**mae*** (anxiety)
*[Ame yo, fur-***e***-ga], fur-anai.
rain fall-G-modal-conj.$_{Paradox}$ fall-not
'(lit.) Though may God bring us rain, it does not rain.'

e. ***-mai*** (intention)
*[Konnakoto nidoto suru-***mai***-ga], sitesimat-ta.
such a thing never do-G-modal-conj.$_{Paradox}$ do-Past
'(lit.) Though I will never do such a thing, I did.'

f. (si)-***yoo*** (volition)
*[sugu si-***yoo***-ga], si-nak-atta.
right now do-G-modal do-not-Past
'Though I will do it right now, I did not do it.'

The grammatical contrast in (12) and (13) can be explained as a selectional restriction if we assume that each modal form functions as a head of the two modal phrases respectively, either *E-modal Phrase* or *U-modal Phrase*, and the E-modalP can be selected by the paradoxical *–ga*, but U-modalP cannot, as shown in (14).

(14)



Here arises a technical question whether we should assume that both E-modal and U-modal are an independent head, which projects an independent phrase. In the subsequent sections, we will claim that each modal form should be generated as an independent head by observing person restriction phenomena in Japanese.

3.2 The co-occurrence between the two modals

Consider whether the two modals, U-modal forms and E-modal forms, co-occur or not.

(15) a. *iku-***daroo-mai**.
V-E-modal-U-modal
b. *iku-***desyoo-na**.
V-E-modal-U-modal

As shown in (15), the two modal forms cannot co-occur in a sentence. As a consequence, some people might say that the two type modal forms occupied one syntactic position because they are complementarily distributed. In other words, U-modals and E-modals each were not an independent head. However, in the subsequent sections, we will claim that U-modal forms and E-modal forms function as an independent head for each modal phrase respectively. We will discuss it by means of observing person restriction phenomena on subject noun phrases.

3.3 Person Restrictions

This section discusses the relation between modal forms and person restrictions on subject noun phrases. What restricts the value of person on subject nominals? First, we will observe person restriction phenomena in the sentences with two types of modals, respectively:

(16) E-modal forms

a. {boku/*kimi/kare}-wa iku-***daroo***. (surmise) [-2nd]
I / you/ he -Top go-will
'I/you/he will go (there)'

b. {boku/*kimi/kare}-wa iku-***mai***. (negative surmise) [-2nd]
I / you/ he -Top go-never
'I/you/he will never go (there)'

c. {boku/*kimi/kare}-wa iku-de-***syoo***. (surmise) [-2nd]
I / you/ he -Top go-will
'I/you/he will go (there)'

(17) U-modal forms

a. {*boku/kimi/*kare}-ga hayaku kotti-e ko-***i***. (imperatives)
I /you/ he -EL quickly here-to come-imperative [+2nd]
'You, not others, come here quickly'

b. {*boku/kimi/*Taroo}-wa sonnakoto kinisuru-na. (prohibition)
I /you/ Taro -Cont. such a thing care-never [+2nd]
'You, not others, don't worry about such a thing.'

c. {*I/boku-tati/kimi/*kare}-mo iki-***masyoo***. (invitation)
I/we /you/ he -also go-let's [+1st pl./+2nd]
'Let's go together.'

d. {(boku)/*kimi/ Taroo}-nanka kiete-***simae***. (desire) [-2nd]
I / you / Taro -humility die-desire
'I hope I/you/Taro will get away from it all.'

e. {boku/*kimi/*kare}-wa kesite iku-***mai***. (intention) [+1st]
I / you / he -Cont. never go-intention
'I'll never go there.'

f. {boku/*kimi/*kare}-ga sugu ik(u)-***oo***. (intention) [+1st]
I / you / he - EL right now go-intention
'I, not others, go there right now.'

(16) and (17) might indicate that both modal forms, E-modals and U-modals, seemed to be involved in their person restrictions on each subject nominals. Contrary to the surface observation, we will claim that it is not E-modals, but only U-modals that cause the subject person restrictions. This will result in leading us to the idea that E-modals and U-modals function as an independent modal head respectively.

3.3.1 Person Restriction and Modals: Verification from paradoxical *ga* clause (Nitta 1991)

This subsection argues that U-modals are involved in person restriction on subject nominals by means of two interesting diagnoses. One is paradoxical *ga*-clause and the other is *ta*-ending clause without a modal form.

As I mentioned in (13) in Section 3.1, paradoxical *ga* clause does not allow U-modal forms, but E-modal forms in its clause, repeated here as (18). (19) is a generalization.

(18) a. *[Hayaku, kotti-e ko-***i**-ga], ike-nai.
quickly here-to come-G modal-conj.Paradox go-not
'(lit.) Through come here quickly, but I cannot.'

c. *[Issyoni, tabe-***masyoo**-ga], deki-nai.
together eat-G modal-conj.$_{Paradox}$ can-not
'(lit.) Though let's eat (it) together, we cannot.'

(19) Phonetically realized U-modal forms do not occur in paradoxical *ga-clause*.

If (19) is on the right track, we have an prediction that if E-modals were involved in person restrictions observed in (16), the restrictions would remain even when the sentences with an E-modal form are embedded in the paradoxical *ga* clause. The facts are given in (20).

(20) E-modal forms are embedded in the paradoxical *ga* clause

a. ^{OK}[kimi-wa iku-***daroo*** ga], boku-wa ik-anai. (surmise)
you-Cont. go-will though I-Cont. go-Neg
'You will go there, but I won't.'

b. ^{OK}[kimi-wa iku-***mai*** ga], boku-wa ik. (surmise)
you-Cont. go-never though I-Cont. go-Neg
'You won't go there, but I will.'

c. ^{OK}[kimi-wa iku-de-***syoo*** ga], boku-wa ik-anai. (surmise)
you-Cont. go-will though I-Cont. go-Neg
'You will go there, but I won't.'

(20) shows that the [-2nd] person restrictions in (16) disappear when the sentences are embedded in the paradoxical *ga* clauses, which disallow U-modality. This means that if a clause has no U-modality, then there is no person restriction within the clause. Therefore, it is U-modality that causes person restriction on subject noun phrases. On the basis of the assumption given in (11), which is repeated as (21), it is plausible that we should assume the existence of a phonetically null U-modal, namely, a zero U-modal (∅-U-modal) in (16), where only E-modal forms are phonetically realized in the main clause.

(21) One utterance must contain at least one, but not more than one Utterance-modality.

In traditional Japanese linguistic framework, Nitta (1991) claims that

person restrictions are caused by Utterance/Communication modality as shown in (22).

(22) a. main clauses: with person restriction
*Kimi-wa gakkoo-e iku-***daroo**-∅.
you-Top school-to go-E modal-U-modal
'You will go to school.'
b. paradoxical *ga* clauses: without person restriction
^{OK}[kimi-wa gakkoo-e iku-***daroo*** ga], boku-wa ik-anai.
you-Cont. school-to go-E modal $Conj._{Paradox}$ I-Cont. go-Neg
'You will go to school, but I won't.'

As Nitta (1991) says, the utterance (22a) with a [+2nd] person subject sounds awkward, whereas (22b) does not when we give the utterances to an addressee directly.

In order to explain the contrast between (16) and (20) and between (22a) and (22b), we should assume a zero-modal related to person restriction, namely, ∅-U-modal. This suggests that we should assume a phrasal projection headed by the ∅-U-modal form, which is completely independent from the phrasal projection headed by E-modal forms.

3.3.2 *Ta*-form 'Tense-form ending'

With respect to the adequacy of assuming U-modal forms as an independent head, the same is true of *ta*-form, where a sentence appears without any modal forms. A sentence just ends up with a Tense form such as *–ta* 'Past' or *–ru* 'Pres.'. In (traditional) Japanese studies, it has been observed that [+2nd] person subjects are incompatible with the sentence ending with *ta* 'Tense-form ending' (Kamio (1990) and Nitta (1991)) as shown in (23).

(23) a. Watasi-ga Taroo-ni tegami-o okut-ta.
I-Nom Taro-to a letter-Acc send-Past
'I send a letter to Taro.'
b. Yamada-sensei-ga Taroo-ni tegami-o o-okuri-ninat-ta.
Prof. Yamada-Nom Taro-to a letter-Acc Pol-send-Pol-Past
'Prof. Yamada send a letter to Taro.'

c. *Anata-ga Taroo-ni tegami-o okut-ta.
you-Nom Taro-to a letter-Acc send-Past
'You send a letter to Taro.'

When you give the utterances in (23) to a [+2nd] person addressee directly, (23c) sounds awkward. However, as illustrated in (25), the awkwardness of (23c) is moderated when (23c) is embedded in *koto*-clause, in which E-modal forms are allowed, whereas U-modal forms are not as in (24).

(24) a. U-modal form
* [Watasi-ga Taroo-ni tegami-o okur-***oo*** koto]-wa
I-Nom Taro-to a letter-Acc send-U-modal NL-Top
mina usuusu kanzi-teiru.
everyone vaguely be aware of
'(Lit) Everyone is vaguely aware that I am willing to send a letter to Taro.'

b. E-modal form
OK[Watasi-ga Taroo-ni tegami-o okuru-***daroo*** koto]-wa
I-Nom Taro-to a letter-Acc send-E-modal NL-Top
mina usuusu kanzi-teiru.
everyone vaguely be aware of
'Everyone is vaguely aware that I will send a letter to Taro.'

(25) OK[Anata-ga Taroo-ni tegami-o okur-***ta*** koto]-wa
you-Nom Taro-to a letter-Acc send-Tense$_{Past}$ NL-Top
mina usuusu kanzi-teiru.
everyone vaguely be aware of
'Everyone is vaguely aware that you sent a letter to Taro.'

The crucial point is that the person restriction disappears under the circumstance where U-modals are disallowed. This indicates that as we claimed in the previous section, U-modals are involved in person restriction phenomena in Japanese. As a consequence, we support the existence of phonetically-null U-modals (∅-U-modals).

4. Mapping Modals into Syntactic Structures

(26) is the properties of Japanese modals which we have observed so far.

(26) a. U-modal forms are disallowed in embedded clauses.
b. Sentences with an E-modal form (see (16)) show subject person restriction in only matrix clauses, but not in embedded clauses.
c. U-modals contains a phonetically-null zero (∅)-modal form with [-2nd] person and the zero-U-modal (∅-U-modal) co-occurs with E-modal forms.

The modal properties to be reflected in our sentence structure, are summarized in the Table 1 given in (27) below.

(27) Syntactic properties of the two types of Japanese modals

	E-Modal forms	U-Modal forms	
Embedding	possible	impossible	
Person Restriction	none	present	
	∅	a. (si)***ro***, (si)***mae*** (imperatives)	[+2nd]
	∅	b. (suru)***na*** (prohibition)	[+2nd]
	∅	c. (si)***masyoo*** (invitation)	[+1st/2nd]
	∅	d. (si)***ro***, (si)***mae*** (desire)	[-2nd]
	∅	e. (si)***yoo*** (intention)	[+1st]
	∅	f. (suru)***mai*** (intention)	[+1st]
	g. (suru)***daroo*** (surmise)	∅	[-2nd]
	h. (suru)***mai*** (negative surmise)	∅	[-2nd]
	i. (de)***syoo*** (surmise)	∅	[-2nd]
	j. (suru)∅ (affirmation)	∅	[-2nd]

Table 1

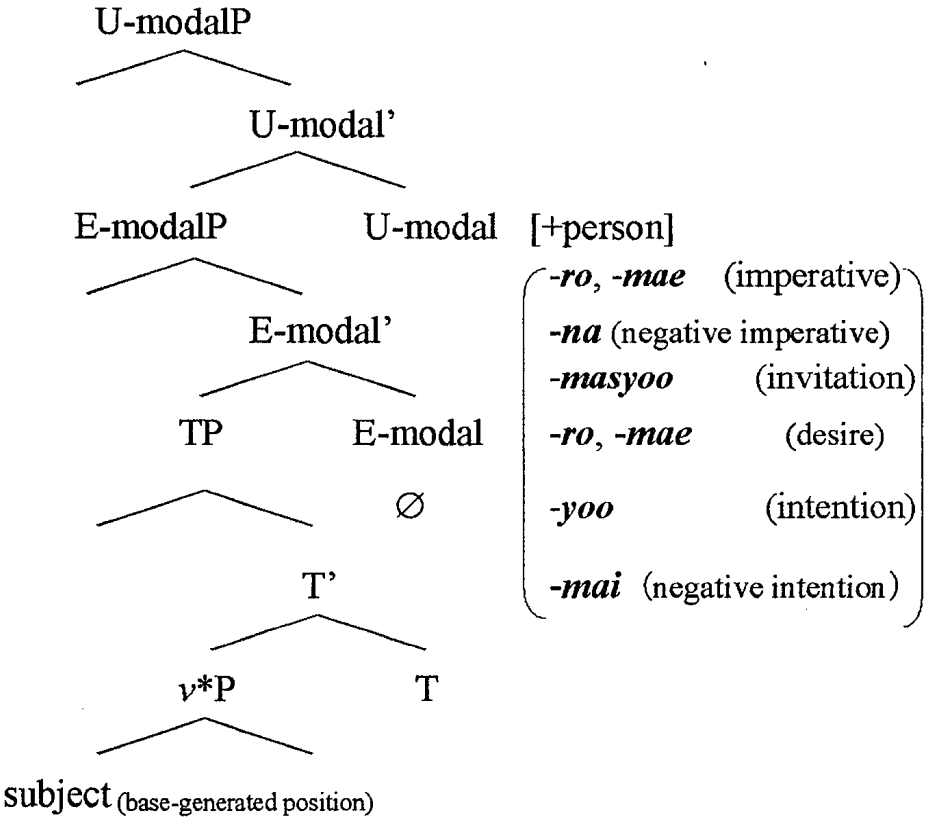
(29a), (29b) and (29c) are the sentence structures we propose. As we discussed in the previous subsections, the two types of modal forms, *E-modal forms* and *U-modal forms*, should be assumed to be an independent head of each modal phrase. (29a) is a matrix clause structure. On the basis of the conceptual consequence (11) (Nitta (1991)), repeated here as (28), a matrix clause never fails to contain one U-modal, whether it is phonetically realized or not.

(28) One utterance must contain at least one but not more than one Utterance-modality.

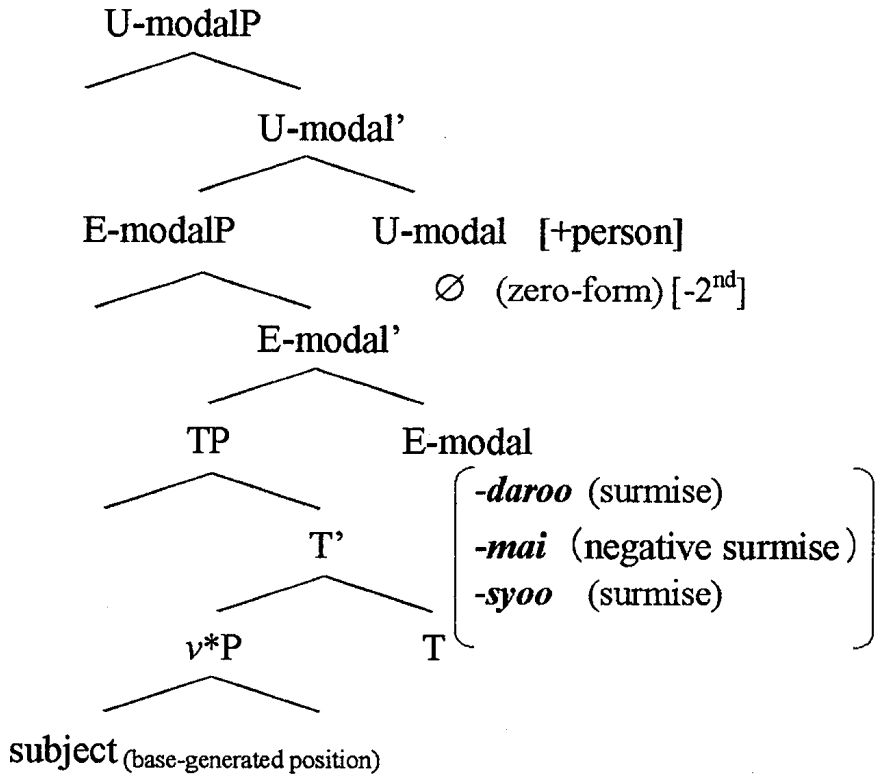
(29b) is also a matrix clause structure, in which E-modal forms are phonetically realized with an zero-U-modal form (∅-U-modal). This ∅-U-modal is involved in subject person restriction. On the other hand, (29c) is the case of an embedded clause, in which there is no person restriction because there is no U-modal head.

(29) Syntactic Structures with modal forms

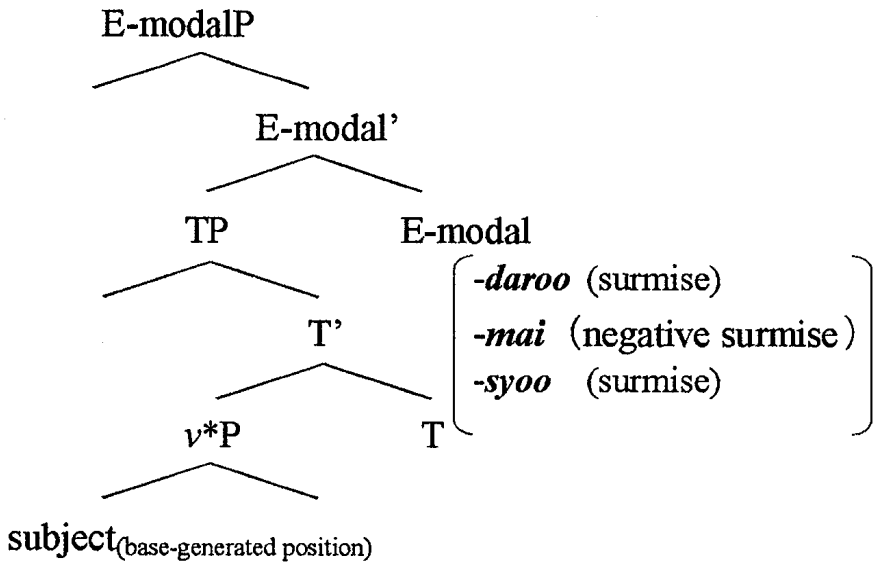
a. U-modal forms (matrix clause only)



b. E-modal forms (in a matrix clause)



c. E-modal forms (in an embedded clause)



5. Topic-*Wa* and the EPP-Satisfaction in C

In addition to the two points in the previous section, (i) the occurrence of two types of modals in paradoxical *ga*-clause and (ii) subject person restriction, Section 5 discusses co-occurrence between Topic *–wa* phrase

and two types of modals.

5.1 Co-occurrence with Topic *–wa*

It has been widely assumed that Japanese *wa*-phrase has two meanings. One is a Topic reading. The other is a Contrastive reading. We focus our attention on the Topic reading here. (30) and (31) are the results of the appearance of Topic *wa*-phrase in the sentences with each modal. They indicate that Topic reading *wa*-phrase is disallowed when U-modal forms are phonetically realized. On the other hand, there is no such a restriction on E-modal forms.

(30) E-modal forms

a. ***-daroo*** (surmise)

Asu-wa hareru-***daroo***-∅.
tomorrow-Top fine-E-modal-U-modal
'It will be fine tomorrow.'

b. ***-mai*** (negative surmise)

Ame-wa furu-***mai***-∅.
rain-Top fall-E-modal-U-modal
'It will never be rain.'

c. ***-syoo*** (surmise)

Taroo-wa ikude-***syoo***-∅.
Taro-Top go-E-modal-U-modal
'Taro will go (there), too.'

(31) U-modal forms

a. (si)-***ro***, *(si)*-***mae*** , (si)-***nasai*** (imperatives)

*kimi-wa kotti-e ko-***i***.
you-Top here-to come-U-modal
'(lit.) You, come here.'

b. (suru)-***na*** (prohibition)

*Kimi-wa koko-o wataru-***na***.
you-Top here-Acc cross-U-modal
'(lit.) You, don't cross here.'

c. (si)-***masyoo*** (invitation)
*Issyoni, watasitati-wa tabe-***masyoo***.
together we-Top eat-U-modal.
'(lit.) We, let's eat (it) together.'

d. (si)-***ro***, *(si)*-***mae*** (desire)
*Ame-wa fur-***e***.
rain-wa fall-U-modal
'(lit.) Rain.'

e. -***mai*** (intention)
*Boku-wa kesite suru-***mai***.
I-Top never do-U-modal
'(lit.) I will never do (such a thing).'

f. (si)-***yoo*** (intention)
*Boku-wa sugu si-***yoo***
I-Top right now do-U-modal
'(lit.) I will do it right now.'

Wa-phrases with phonetically realized U-modals such as (31) have a contrastive reading only, because we cannot use these utterances when we have a singleton member of the topic set. When the singleton member of the topic set, we do not use *–wa* as a Topic marker, rather a phonetically null form, namely, zero-topic.

(32) is a summary of the co-occurrence relation between Topic *wa*-phrase and two types of modals.

(32) *Wa*-phrase with a Topic reading is incompatible with phonetically realized U-modal forms in a sentence.

We sum up the properties of Japanese modals as Table 2 below:

(33) Syntactic properties of the two types of Japanese modals

	E-Modal forms	U-Modal forms	
Embedding	possible	impossible	
Person Restriction	none	present	
Topic *–wa*	present	impossible	
	∅	a. (si)***ro***, (si)***mae*** (imperatives)	[+2nd]
	∅	b. (suru)***na*** (prohibition)	[+2nd]
	∅	c. (si)***masyoo*** (invitation)	[+1st/2nd]
	∅	d. (si)***ro***, (si)***mae*** (desire)	[-2nd]
	∅	e. (si)***yoo*** (intention)	[+1st]
	∅	f. (suru)***mai*** (intention)	[+1st]
	g. (suru)***daroo*** (surmise)	∅	[-2nd]
	h. (suru)***mai*** (negative surmise)	∅	[-2nd]
	i. (de)***syoo*** (surmise)	∅	[-2nd]
	j. (suru)∅ (affirmation)	∅	[-2nd]

Table 2

How can we explain the properties given in (32) and (33) in the syntactic structure we proposed in Section 4? Before going into the explanation, we shall confirm the functions of two types of modals:

(34) a. U-modal: C-type property
To decide a sentence type: an attitude of communication with an utterance
b. E-modal: T-type property
To decide how to grasp a proposition

U-modals function as a sentence type decider, which is a typical function of CP. It is plausible that U-modal Phrase belongs to a CP-domain in a

sense of Rizzi's (1997) complex CP-system. On the other hand, E-modals function to express how the speaker grasps a proposition in a sentence. This indicates that nothing seems to be wrong with the assumption that E-modal Phrase belongs to a TP-domain.

On the basis of the assumptions above, the subsequent subsections discuss how to treat the modal properties observed in (32) and (33) in our syntactic structure.

5.2 The EPP-satisfaction and head realization

This subsection attempts to explain the properties of Japanese modals in terms of the EPP-satisfaction.

5.2.1 Alexiadou and Anagnostopoulou (1998)

First, we begin with the Extended Projection Principle (henceforth the EPP) given in (35).

(35) The Extended Projection Principle
A clause has a subject.
(Chomsky 1982)

On the basis of the assumption of the EPP, We have assumed that a subject NP moves to the Spec of TP to satisfy the EPP on T.

However, Alexiadou and Anagunostopoulou (1998)(henceforth A & A (1998)) propose an alternative analysis in which the EPP can be satisfied with either a subject NP or a head (X^0):

(36) The EPP parameter
In Null Subject Languages (NSLs), it is parameterized as to whether the EPP-feature in T can be satisfied with a head X^0.
(Alexiadou and Anagunostopoulou (1998))

According to A & A (1998), Greek and Catalan take a value such that the EPP-feature on T is satisfied with X^0 via V-raising as shown in (37).

(37) $[_{TP}\ [_{T'}T^0+V^0\ [_{vP}$ Subj. $[_{VP}\ t_V\ ]]]]$
~~{EPP}~~

Hasegawa (2005) also proposes a similar analysis called *Marking grammatical functions: Spec vs. Head* as given in (38).

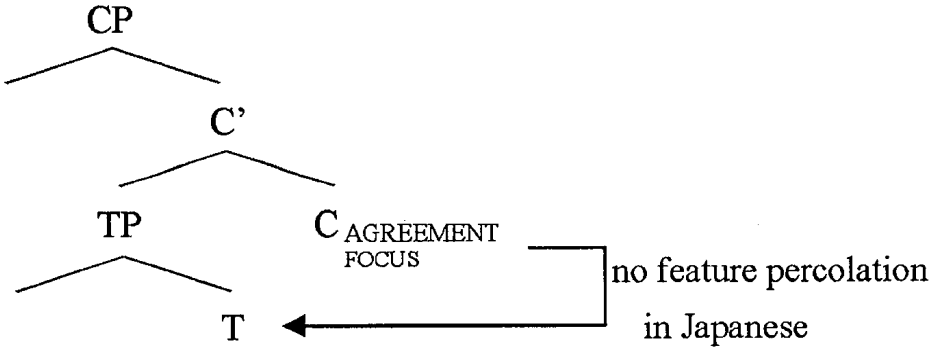
(38) A particular grammatical function, such as question, is MORPHOLOGICALLY marked EITHER by Head OR by Spec.
(Hasegawa (2005))

5.2.2 An explanation: Japanese as a Null Subject Language and the EPP-satisfaction

On the basis of the idea of the EPP parameter proposed by A & A (1998), Ueda (2002) claims that in Japanese, the EPP-feature in C rather than in T can be satisfied with either XP or X^0 because Japanese is one of the NSLs and from the typological perspectives, it has been widely discussed that Japanese is a Topic-prominent/Focus-prominent language rather than an Agreement-prominent language.

Furthermore, Ueda (2006 and to appear) give an account why C rather than T in Japanese bears the EPP-feature by means of Chomsky's (2005) framework. Unlike Chomsky (2005) and Miyagawa (2005), Ueda (2006b and to appear) propose that a set of phi-features in C does not percolate down into T as shown in (39).

(39)



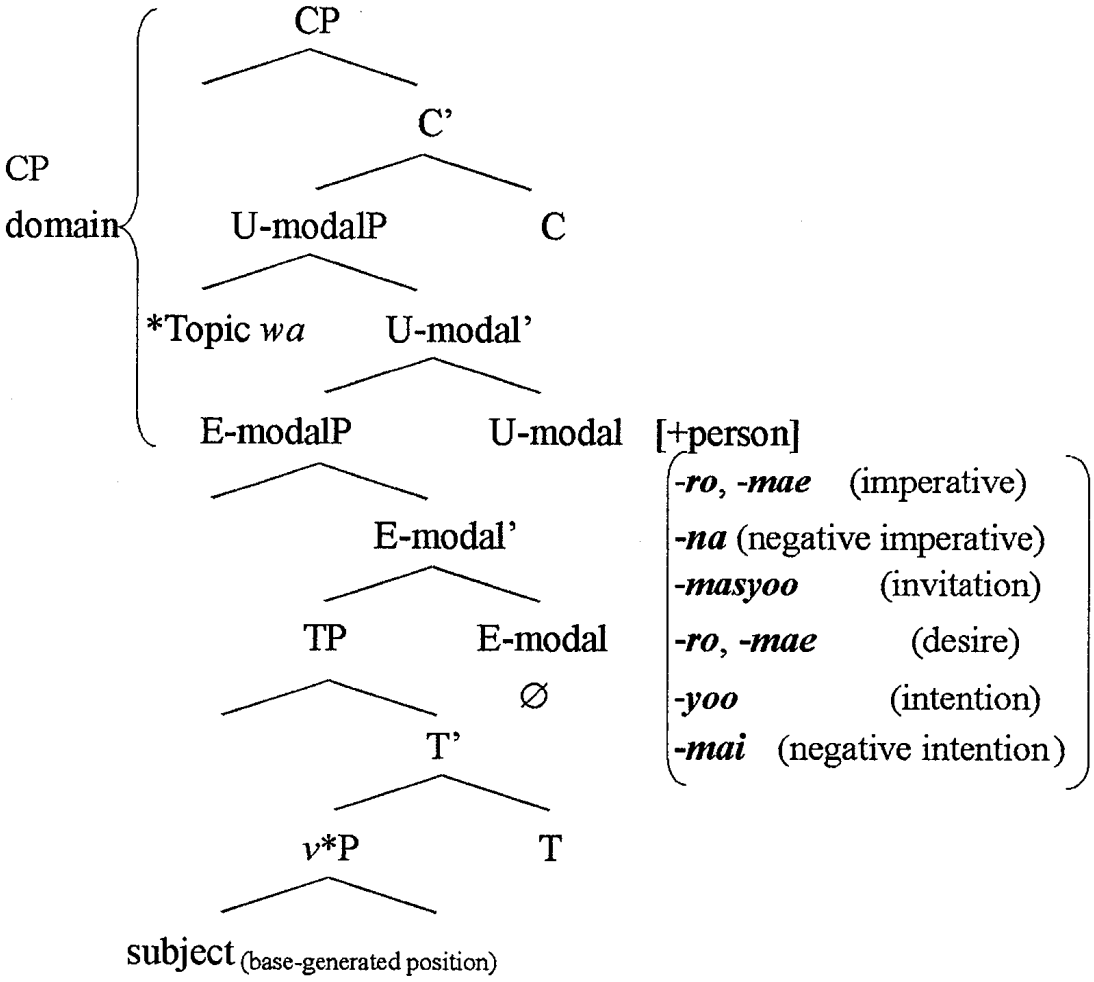
Therefore, Japanese T neither have any phi-features nor have the EPP-feature if the existence of phi-feature reflects the appearance of the EPP-feature as Miyagawa (2005) mentioned, nor enter into any syntactic operations because T cannot activate itself without any phi-features.

If we adopt the following assumptions listed as (40), we can explain the modal properties observed in the previous sections.

(40) a. In Japanese, the EPP-feature in C can be satisfied with any head X^0 of CP-domain, such as an U-modal head and a C-head.
b. Topic *wa* phrase appears in the Spec of U-modalP.

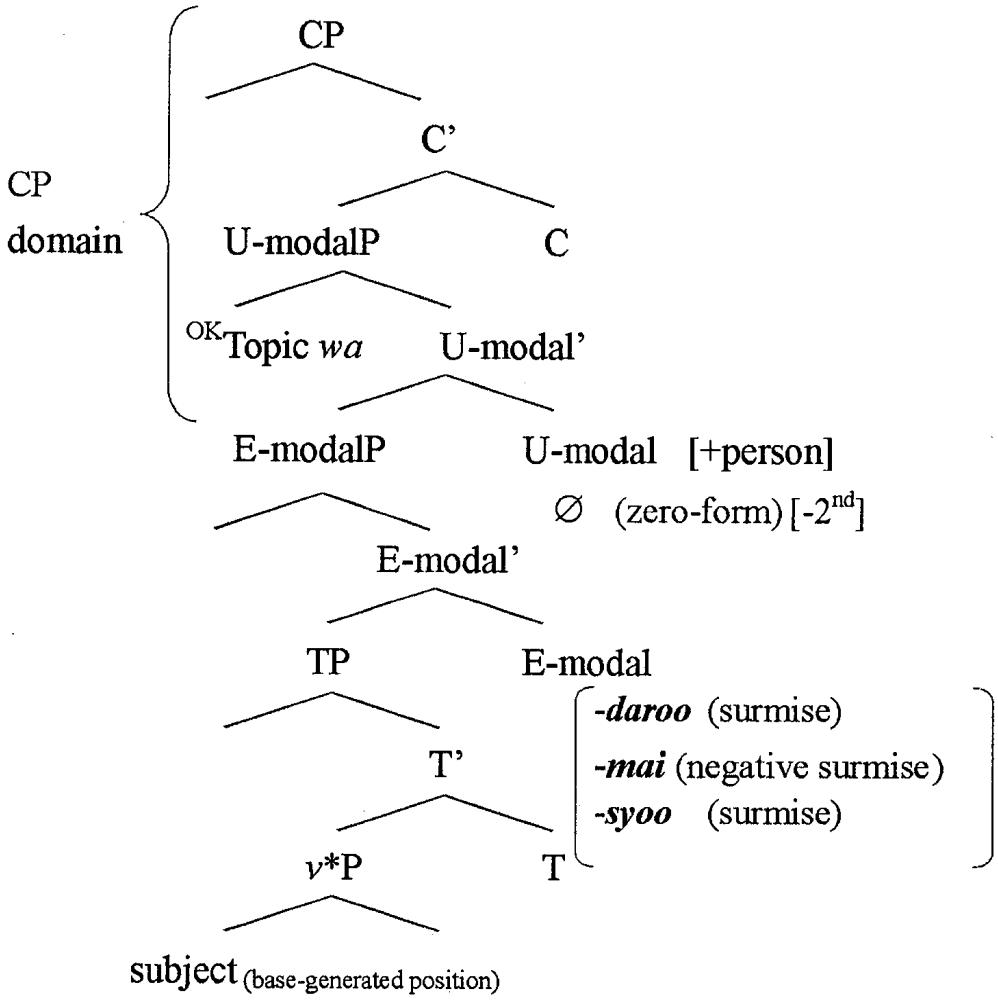
In (41), when U-modal forms are phonetically realized, the EPP-feature of a CP-domain is satisfied with the U-modal head X^0 by external merge. Spec of U-modal cannot be generated without the EPP-feature/EF. That is why Topic *wa*-phrase is incompatible with U-modal realization.

(41) U-modal forms (matrix clause only)



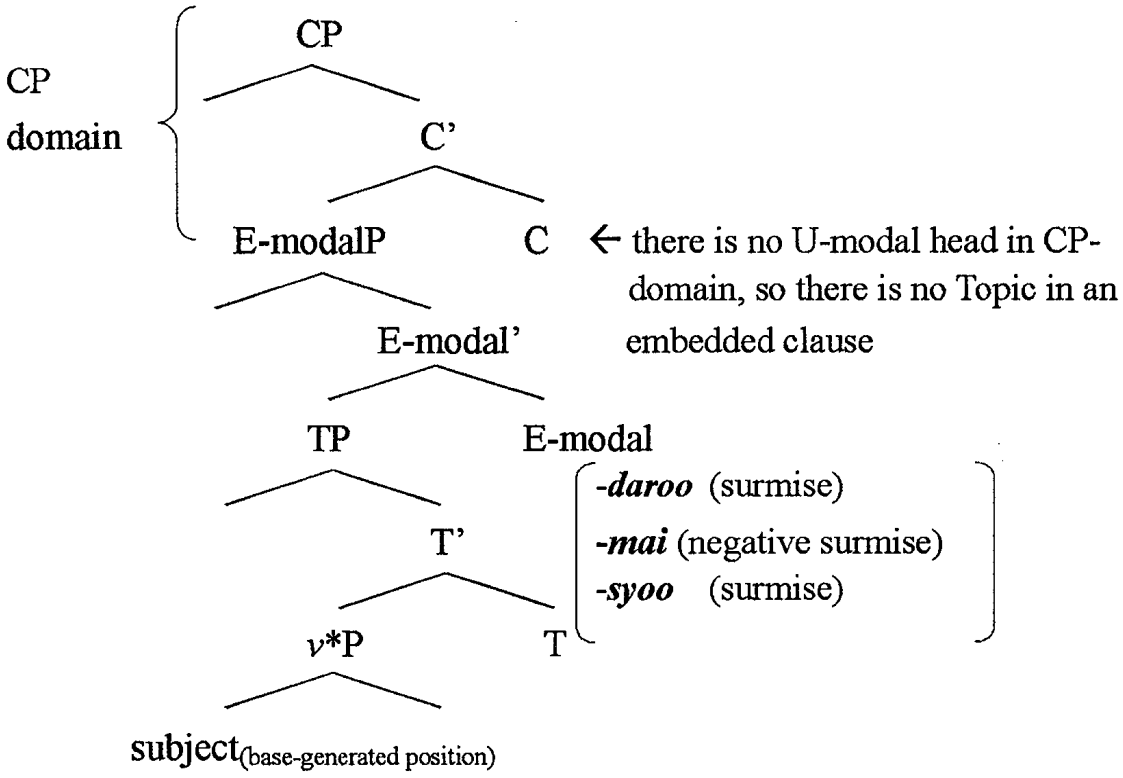
On the other hand, in (42), the U-modal head is phonologically null, namely, a morphological zero-form. Therefore, Topic *wa*-phrase can appear in the Spec of U-modalP.

(42) E-modal forms (in a matrix clause)



(43) is the case in which the U-modal head cannot be generated in embedded clause as we discussed from the conceptual perspective in Section 3.1. Therefore Topic *wa*-phrase cannot appear in any embedded clauses.

(43) E-modal forms (in an embedded clause)



6. Conclusion

We argued the properties of Japanese modality intentionally focusing our attention on their forms and syntactic positions. First, we divided modal forms into *G(enuine)-modals* and *Q(uasi)-modals* and we decided to treat the G-modals only in this paper, because we considered that the formal discrimination plays a significant role in distilling the genuine characteristics of Japanese modality from diverse modal expressions. Furthermore, the G-modal forms are divided into two types, *E(pistemic)-modals* and *U(tterance)-modals.* We claimed that each modal form syntactically functions as an independent head in terms of the following three points: (i) the occurrences of two types of modals in paradoxical *ga*-clause, (ii) person restrictions on subject NPs, and (iii) the EPP-satisfaction in C. We finally proposed sentence structure containing modal phrases which give a unified account to the properties of Japanese modals observed in this paper and traditional Japanese linguistics.

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