Rethinking typological universal, deontic > epistemic
—The case of Japanese modal marker *'monoda'* —

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要旨

　モダリティを表す語彙形態であるモーダルマーカーが、１つの形式で２つ以上のモダリティとして機能する多義性（polysemy）を持つことは異なる言語間で確認され、この多義性は義務や許可を表す「行為拘束的モダリティ（deontic modality）」と話者の命題に対する意見の表明を表す「認識的モダリティ（epistemic modality）」の間で議論される。またこの多義性は「行為拘束的モダリティ」から「認識的モダリティ」が派生したものであり、その逆ではないという文法化の「一方向性仮説（unidirectionality hypothesis）」が言語類型論的普遍性（typological universal）であると見なされている。しかし、最近ではこの類型論的普遍性である多義的アプローチに対して、モーダルマーカーは１つの中核的意味特性からなり、どの用法を意味するかは文脈によって決定されるという単義的アプローチ（例：Kratser 1981, Papafragou 2000）が注目を集めている。本研究では、複数の機能をすると見なされている日本語のモーダルマーカー「ものだ」の「行為拘束的モダリティ」と「認識的モダリティ」の用法の関係を考察し、単義的アプローチによる説明の妥当性を主張する。分析において、機能主義言語学に基づく言語習得理論である「競合モデル（Competition Model）」（Bates & MacWhinney 1981）による「キュー（cue）」の概念を用い、競合モデルが言語習得だけでなく文法化の分野においても適用可能であることを述べたい。

Key words, the unidirectionality hypothesis, grammaticalization, Competition Model, polysemy, monosemy

1. Introduction

　Linguistic typology advocated by Greenberg (1966) enables us to analyze both language-universal and language-specific features simultaneously, and its contribution to the area of second language acquisition is highly expected (Comrie 2003). Modality is in general defined as a grammatical/semantic category expressing speakers' psychological attitude. There is great variance in the lexical/grammatical items encoding modality among languages, which is one of the reasons why we cannot find

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contrastive studies in the area of modality as many as in the areas of other grammatical features such as tense and aspect. Linguistic typology, however, identifies semantic as universal category across languages. Hence, the contrastive study based on linguistic typology is an effective method in order to conduct a cross-linguistic comparison from the universalistic viewpoint.

In our previous studies (Tamaji & Horie 2006a, 2006b, 2006c, 2006d forthcoming), we had been analyzing the process that Chinese learners acquire Japanese modality from the viewpoint of linguistic typology. We predicted that the difficulties on the acquisition would be the difference in the form-meaning mapping of modal markers between Chinese and Japanese as a result of contrastive study of typological perspective. Hence, we employed Competition Model (Bates & MacWhinney 1981, 1982), one of the models of language acquisition. We noticed that the notion of 'cues' by Competition Model is not only applicable to the analysis of the process of language acquisition but also applicable to the explanation of the process of grammaticalization. The aim of this study is to explain the direction of grammaticalization of Japanese modal marker *'monoda'* using the notion of the cue and to suggest the possibility that 'the unidirectionality hypothesis' of grammaticalization in modality known as deontic modality derives epistemic modality (Bybee et. al. 1994, Sweetser 1990) is not typological universal. The structure of this study is surrmmarized as follows: the section 2 is a brief explanation of typological study of modality by Palmer (2001) and typological universal, the section 3 is description of 'the unidirectionality hypothesis' of grammaticalization in the area of modality, section 4 introduces the monosemic approach as an alternative to explain the relationship between deontic modality and epistemic modality, section 5 describes typological specific characteristics of Japanese modal marker, section 6 explains the grammaticalization of *'monoda'* by previous studies, section 7 introduces the ntion of cue by Competition Model, section 8 is the analysis of the grammaticalization of *'monoda'* based on the notion of cues, and section 9 is the conclusion.

2. Typological Study of Modality by Palmer (2001)

Modality in the area of general linguistics is defined as "a grammatical/semantic category expressing speakers' psychological attitude". Based on this definition, it is possible to interpret modality in two ways. One is the interpretation of modality as expression of some sort of subjectivity of the speakers (e.g. Lyons, 1977, Palmer 1986, Bybee 1994) and the other is the interpretation of modality as expression of difference between realis/irrealis [1] or degree in factuality (e.g. Givon 1995, Palmer 1998, 2001, Narrog 2002) . We employ the typological study of modality by Palmer (2001) as the theoretical framework among these studies, since Palmer' s study excels to others in the point that it distinguishes modal markers from mood [2] and does not regard both of them are not exclusive to each other.

Palmer (2001: 9-12) identified four categories, dynamic, deontic, epistemic, and evidential as the common semantic categories comprising of modal system. Dynamic modality means that conditioning factors are internal to the relevant individuals, which are related to ability or willingness. Deontic modality refers to conditioning factors are external to the relevant individuals such as obligation and permission. Epistemic modality is the modality that speakers express their judgment about the factual status of the proposition. Evidential modality indicates the evidence they have for its factual status of the proposition. Palmer categorized dynamic and deontic as event modality (modality related to the event) and epistemic and evidential categorized as propositional modality (modality related to the proposition) based on their characteristics.

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[1] Realis refers to something realized or despcription of the situation which actually occurred and one can directly perceive it, whereas irrealis refers to something happened in one' s imagination or thinking (Mithun 1995: 173).

[2] Mood is encoded by grammatical items such as inflection and modal markers are the lexical item such as auxiliary verbs. While mood refers to both realis and irrealis, modal markers are specific items referring to irrealis (Declerck, 1992: 188, Frawley 1992: 386, Palmer 2001: 4).

3. Typological universal of the unidirectionality: deontic > epistemic[3]

It is not typologically uncommon that single modal marker, lexical items like auxiliary verbs conveying modal meanings, have more than two meanings/functions. This phenomenon is defined as polysemy (Traugott & Dasher 2002: 9), and the polysemy between deontic and epistemic is often argued. This polysemy is frequently observed to have emerged as a result that deontic meaning derive epistemic modality meaning according to the studies of cognitive linguistics as a result of force-dynamics (Talmy 1988) or as metaphoric mapping (Sweetser 1990) and studies of grammaticalization (Bybee et.al. 1994, Traugott & Dasher 2005).

Grammaticalization is one of the subfields of linguistics dealing with the mechanism of arising the grammatical feature from a lexical word and explaining the process that it becomes and fixes itself as grammatical categories. In the area of modality, the phenomenon of grammaticalization is witnessed as semantic change of modal marker. While new meaning arises, the original meaning survives. Hence, this results in the derivation of modal meaning. The direction of grammaticalization is always unidirectional and not *vice versa*, which is called "the unidirectionality hypothesis" (Bybee et.al. 1994: 9). In the area of modality, the unidirectionality hypothesis is exemplified by the derivation from deontic to epistemic and not *vice versa*. According to the typological studies of semantic regularity (grammaticalization) of modality, epistemic modal has polysemy with other modal meanings, it is reported that historically epistemic usage of the modal developed later than other modal meanings (Shepherd 1982, Traugott 1989, Bybee et.al. 1994, Van der Auwera 1998). Therefore, it is normally considered that deontic modal meaning is 'core'/'prototypical' and epistemic modal meaning is 'periphery'.

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[3] The sign > indicates the directionality of grammaticalization. In this case, this means that deontic modality derives epistemic modality.

4. Monosemic approach

Unlike polysemic approach, there is another view that regards modal marker itself is monosemic and comprises of single core meaning. The core meaning is possibly interpreted in different ways according to the contexts such as interaction between the speakers and hearer. This approach is called monosemic approach (e.g. Kratser 1981, Papafragou 2000). Therefore, it is determined by the contexts whether certain modal marker indicates deontic or epistemic usages.

The background that monosemic approach was advocated is that there are some cases unable to be explained by polysemic approach, namely the hearers cannot easily distinguish whether a single modal marker functions as deontic modality or as epistemic modality. While polysemic approach regards the grammaticalization from deontic to epistemic as metaphoric mapping of force-dynamics of socio-physical domains onto epistemic domains, it regards modal meanings as clear-cut of either deontic or epistemic. However, as a matter of fact, there are cases that only modal marker itself cannot convey the modal meaning.

The example (1) is typical deontic usage of MUST, because the sentence comprises of explicit animate subject 'you' and the verb in the predicate is an action verb 'play'. Furthermore, it is obvious that the speaker imposes to 'play' on the subject 'you'.

（1） "You <u>must</u> play this ten times over" , Miss Jarrova would say, pointing with relentless fingers to a jumble of crotchets and quavers. (Coates 1983: 34).

While there are typical deontic usage like (1) , there are non-prototypical deontic usage like (2) and (3).

（2） You <u>must</u> have respect for other people' s property. (Coates 1983: 34)

（3） Clay pots <u>must</u> have some protection from severe weather. (Coates 1983: 35)

The sentence (2) has an explicit animate subject 'you', but its verb 'respect' is not action verb but state verb. Although this sentence refers to that it is necessary for the subject to be in the certain psychological attitude, this sentence does not impose the subject to take certain action. The subject in the sentence (3) inanimate. Thus, both (2) and (3) are regarded as non-prototypical deontic usage.

There is also the case that the sentence can be interpreted as both deontic and epistemic usages like (4).

（4） I think mental health is a very relative thing –I means, mental health <u>must</u> be related to the sort of general mentality or whatever other word you use of the community you' re living in. (Coates 1983: 47).

Coates (1983) defines this kind of sentence as 'merger' and Halliday (1970) defines it as 'ambiguous' . Palmer (1990) considers this phenomenon that modal marker itself contains ambiguity inherently and even maintained 'ambiguous approach' .

On the contrary to these approaches, monosemic approach regards that modal meaning is not determined *a priori* but it is determined by the context. For example, the sentence (4) is deontic if it refers to that it is necessary that 'mental health' be relevant to general psychological situation and that (4) is epistemic if it refers to that it is necessity that 'mental' be relevant to general psychological situation. Thus, monosemic approach maintains that the modal meaning is determined according to the contexts which are used. They notified that there are sentences which surface structures are the same when they function as both deontic and epistemic like (4). Papafragou (2000: 258) identifies this type of sentence 'descriptive usage of epistemic modality', since this sentence is epistemic as long as the speaker describes the situation that the subject executes certain action. If the speaker requires the situation that the subject executes certain action (the speaker requires the subject to take certain action), it turns to be deontic. Thus, monosemic approach regards that the difference between deontic and epistemic usages of modal marker depends on the contexts and its

difference is not clear-cut.

5. Typological Specific Characteristics of Japanese Modal Marker :

   Both polysemic approach and monosemic approach premised that the fact that a single modal markers functions as both deontic modality and epistemic modality. This phenomenon is witnessed among typologically different languages, therefore this is considered as typological universal (Bybee et.al 1994) . On the contrary, Japanese modality does not exhibit this tendency. It is normal that two distinct modal markers function as deontic modality and epistemic modality. For example, SHOULD in English and *yinglgail* in Chinese function as both deontic and epistemic, whereas their translational equivalence in Japanese modality are encoded by *'bekida'* (deontic) and *'hazuda'* (epistemic).

   Due to the absence of this deontic-epistemic polysemy in Japanese, the relationship between deontic and epistemic in Japanese has been argued. One of the hypotheses is that there is no relationship between these two types of modality (Yamada 1990), and the other is that epistemic derived deontic (Kurotaki 2005). The former view is similar to polysemic approach, since both consider that deontic and epistemic are two distinct cognitive domains. The latter view is similar to monosemic approach, since both consider that deontic and epistemic are not segregated semantic domain and share a common/core semantic feature. The common/core semantic feature between two domains is defined as 'the descriptive usage of epistemic modality' (Papafragou 2000: 249), therefore this approach is a basis of Kurotaki's view, although monosemic approach does not considers that the grammaticalization of modal marker is epistemic > deontic as Kurotaki maintains. On the process of grammaticalization, the ocurrence of phonetic change coincides with that of semantic change. For example, a copula '–ta' in the modern Japanese meaning past which derived from an auxiliary verb *'tari'* in the classical Japanese meaning perfective/progressive. If we suppose that *'bekida'* derived *'hazuda'* or *vice rersa*, there should be some sort of phonetic similarity between them. Therefore, we should not assume that *'hazuda'* derived *'bekida'* as Kurotaki

hypothesizes.

However, it is reported that *'monoda'* is a polyfunctional modal marker and some of its usages are possibly interpreted as deontic and epistemic usages. Therefore, this implies the possibility that the deontic-epistemic polyfunctionality of *'monoda'* is as a result of grammaticalization. In the next section, we will argue the possibility of grammaticalization of *'monoda'* based on the previous studies. Then, we will examine this using the notion of the cues by Competition Model by (MacWhinney and Bates 1981).

6. the Grammaticalization of *'monoda'* by Previous Studies

The word 'grammaticalization' originated from the area of general linguistics. In the area of Japanese linguistics, the notion of grammaticalization is exemplified by the word *'keishikika*: formalization' . Mikami (1972: 194) defined *'keisikika'*: pragmatic usage changes the original meaning of certain word , fixes the meaning in certain usage (unidirectionality) and occationally causes change of lexical category. In this case, that word is formalized. The fixed the meaning in certain usage can be considered as unidirectionality and the change of lexical category is synonymous with the notion of 'decategorization' occurred on the process of grammaticalization. In Japanese decategorization is known as that nouns such as *tokoro, koto, toki* themselves/ with case-marking particles suffixed to them become suffixes or sentence-final particles, causes decategorization (Horie 2001). Such decategorization is exemplified by functional change of the words, reanalysis of morphological boundary, abbreviation and so forth (Horie 2005).

In the case of noun, the category of *'keishikimeishi*: formal noun' has been traditionally recognized as appropriate category for grammatical description. *'keishikimeishi'* has been experiencing the process of grammaticalization, change from content word to grammatical feature. Heine & Kuteva (2002: 295-296, 239-240) observed three paths of the process of grammaticalization from noun to grammatical feature regarding the words 'thing' and 'place' correspond to *'mono'* and *'tokoro'* in Japanese respectively.

Thus, 'monoda' , the formal noun *mono* with sentence final particle *da* , experienced the process of grammaticalization. In the Modal Japanese, four usages of *monoda* are identified, *kantan: exclamation* , *touzen · jooshiki: naturalness*/common sense' , *jogen · meirei*: advice/imperative' , *kako no kaisoo*: expressing nostalgic toward the past event' . The following examples (5) to (8) are the examples of each usage.

(5) *Kodomo ni konna muzukashii kyoku ga hikeru monoda!?*
     Child. OBJ such difficult music. piece TOP can.play
     How can children play such a difficult musical piece!? (Exclamation)

(6) *Renshu sureba piano ga jozuni naru monoda.*
     Practice do. if piano TOP well become will
     'If you practice the piano, it should follow that you' ll be able to play it.'
     (Naturalness/common sense)

(7) *Shiken ni gokaku shita kattara, 1 nichi 3 jikan wa benkyoo suru monoda.*
     Exam OBJ pass want.to. if 1 day 3 hour OBJ study do natural
     'If you want to pass the exam, you are obliged to study three hours a day.' (advice/ imperative)

(8) *Kodomo no koro ha yoku kawa de asonda monoda*
     Child DAT time TOP often river in play.past used.to
     'When I was a child, I often used to play in the river.' (nostalgic feeling toward a past vent)

Thus, *monoda* is a polysemic modal marker and all these usages are considered as the original usage of *mono* (thing) is extended to describe certain situation. The meanings of (6) and (7) are similar in terms of indicating something being natural or taken for granted (Tsubone 1994, Fujii 1999) . According to Fujii (1999) , the usage of (7) is not a result of grammaticalization that (6) derived (7) but that pragmatic

use of (6) became (7) . Therefore, (7) is considered as a specific usage of (6) or the extension of its pragmatic use.

7. The Notion of Cue by Competition Model

Competition Model, a functional based theory of language acquisition, is advocated by Bates & MacWhinney (1982, 1994) . Unlike formalists view of grammar such as generative grammarians and transformative grammarians (i.g. Chomsky 1957, 1972) , functionalists consider that language acquisition is the acquisition of mapping the meaning onto the form (Van Patten 2004). Competition Model adopted the minimalist approach, and there are two levels of information structure *a priori*. One level is functional level which expresses all the meanings and communicative intentions. The other level is formal level which expresses surface structure of the sentence (MacWhinney 1987) . Language learning and processing is interactive process of these two levels.

Word order, lexical/semantic animacy, morphological markers, and prosody are called 'cue' (MacWhinney 1982, 1992) , this term includes all the information to determine the relationship between form and meaning utilized by speakers and listeners. According to this understanding, cue refers to both form and meaning. This model, however, focuses on the understanding of sentence processing, cues normally refers to surface forms of the sentences to activate the underlying function utilized by listeners.

While the mapping between surface forms and underlying function is direct, the relationship of mapping is not necessarily to be one-to-one. In other words, same cue expresses different functions and these cues to produce particular meaning are competed/converged in real-time processing. Hence this model is called Competition Model. It is assumed that a correspondence of certain form and certain function is a solution of the conflict due to the strength of the competition/convergence, this model pararrels to sentence-processing model (see Marlsen-Wilson & Tyler 1980).

8. The Analysis of the Grammaticalization of 'Monoda' based on the Notion of Cue

The different types of cues require different ways of processing. Some types of cue do not recquire learners' effort in the sentence processing so much, but others do. Kail (1989) categorized the types of cues based on the amount of effort in the sentence processing into two types, local cues and global cues. Local cues refers to the cues requiring local processing: it refers the cue that we can recognize particular usage based on one lexical word and not necessary to consider other lexical word. On the contrary, global cues require topological processing that we need to consider other lexical word. For example; global cues is the cue that we take the more than two types of cues such as word order and morphological cohesion in the single sentence. Thus, Competition Model regards language acquisition is cue-driven distributional analysis between linguistic form.

Cue refers to the surface forms which activate the underlying functions. The previous studies of second language acquisition based on the Competition Model mainly focus on the question the learners' utilization of the cues for the sentence processing on second language: whether they use the cues used in their first language or the cues that the native speakers of the target language (learners' second language) use (e.g. Sasaki 1994, Su 2000) . In this study, there exist the competed cues between the usages of modal marker in the target language. Furthermore, choice of appropriate usage needs to read whole sentences and contexts. This means learners are required to take several cues into consideration. Hence, we assume that learners would use the difference in the surface structures of the sentences to distinguish two usages and categorized the cues for each usage respectively in the tables below.

Table1 Form-meaning connections of deontic *monoda* in Japanese

Subject	explicit or implicit, [+ volitional, +animate]
Predicate	action verb
Negation	negative form of the modal marker (*~suru mono deha nai*)
Tense	past form of the modal marker (*~suru mono datta*)
Voice	active

Table 2 Form-meaning connections of epistemic *monoda* in Japanese

(Real) subject	the speaker
Thematic subject	explicit or implicit, [+ or – animate]
Predicate	verb, noun, adjective
Negation	negative form of the modal marker (~*suru mono dewha nai*) negative form of the embedded predicate (~shinai *monoda*)
Past tense	past form of the modal marker (~*suru mono datta*) past form of the embedded predicate (~shita *monoda*)
Voice	active, passive, potential

Comparing the Table 1 & 2, it is obvious that epistemic '*monoda*' has more variety in the surface formal structures than thoese of deontic '*monoda*' . For example, the sentences with inanimate subject, predicates are noun, adjective, past forms, negative forms, passive forms or potential forms of verbs are in the embedded predicates are specific to the epistemic sentences.

(9) *Donna   hito   ka   hanashite minai   kotoniwa   wakaranai   monoda.*

What.kind person question speak   not.try   as.far.as not.understand   natural

As far as you don' t try to speak to (him/her) , you would not understand what kind of person he/she is.

On the other hand, sentences comprise of an explicit or implicit subject (s) with the semantic features [+ volitional, +animate] and action verbs are typical deontic sentences.

(10) *Kuwashii jijoo mo shiranai kuseni, jogen wo suru mono dehanai.*

Detail   circumstance even not.know, advaice OBJ do not.natural

If you don' t know our circumstance well, you should not give us any advice.

It is therefore possible for learners to distinguish deontic usage from epistemic usage or *vice versa* utilizing the difference on these surface structures as cues. These cues require learners to pay attention to the cues for one of the competed modal markers, in other words need local processing, are defined as local processing.

However, there are cases that the sentences of epistemic 'monoda' have the same suface structures with thoese of deontic *'monoda'* : epistemic sentences with animate subject and present forms of action verbs in the predicates. This is exemplified by the example (11) below.

(11) *Furaipan   de   sakana wo yaku toki wa, bataa wo yoku tokasu monoda.*

　　 Fryingpan by.means.of fish OBJ fry time SUB, butter OBJ well melt should.

　　 When you fry fish using fryingpan, you should melt butter well.

In fact, this sentence can be interpreted as both deontic and epistemic usages. The subject (the person executing certain action) is implicit, but it is possible to interpret it in two ways: (a) the subject is anonymous, namely the speaker mention the general case and (b) the subject is the hearer, the speaker talk to a particular person in front of the speaker and requires the person to perform certain action. If the speaker says this sentence in the case of (a) , this is epistemic usage. If the speaker says this in the case of (b) , this is deontic usage. Thus, the sentences with these surface structures require learners to hypothesize both competed usages and to consider the differences in the contexts. Hence, these are global cues and we defined this kind of sentence as 'ambiguous' in this study.

The difference between global cue and the local cue of deontic *'monoda'* is whether the speaker imposes executing certain action on particular person or the speaker describes the particular person/people executing certain action. Therefore, it is possible to regard that local cue of deontic *'monoda'* is an exceptional case of the global cues. In other words, 'ambiguous' is core/common usage of *'monoda'* and deontic usage of *'monoda'* derives from 'ambiguous'.

Papafragou (2000) defined the core semantic feature of modal marker as 'descriptive usage of epistemic modality', but she did not mention precisely what it is. However, cue-based analysis indicates that the 'ambiguous' is the descriptive usage of epistemic modality. This indicates the validity of monosemic approach to explain the relationship between deontic modality and epistemic usage.

9. Conclusion

As studies by Coates (1983) and Halliday (1970) indicates, the ambiguity of modal markers is found among typologically different languages as long as they are polyfunctional. This leads to the argument between polysemic approach and monosemic approach. The ambiguity between deontic and epistemic usages of *'monoda'* is explained by monosemic approach, which means the possibility that monosemic approach is more valid to explain the polyfinctionality of modal markers than polysemic approach. Hence, this also means that we need to reconsider the unidirectionality of grammaticalization of deontic > epistemic as typological universal.

The notion of cue by Competition Model contributes to the analysis of the relationship between deontic and epistemic usages of modal markers. We would like to state that Competition Model originated in the area of language acquisition is also applicable to the analysis of grammaticalization.

Acknowledgement

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