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What is and is not Language-Specific about the Japanese Modal System?
A Comparative and Historical Perspective

Tetsuharu Moriya   Kaoru Horie

Kanazawa University   Tohoku University

1. Introduction.

In Japanese linguistics, the definition of modality varies between different schools particularly in relation to how key notions like *chinjutu* (or what it takes to be a sentence) should be treated (Masuoka 1991, Nitta 1991, Onoe 2001). Some scholars equate modality with subjective meaning (e.g. Nitta 2000) while others regard it as describing linguistic grammatical expressions outside the propositional content of a sentence (e.g. Masuoka 1991, 2000, 2007). It has also been debated how such definitions should be compatible with that of modality as defined in general linguistic literature (Narrog 2005, Horie and Narrog, to appear). Although numerous studies on Japanese modality are published every year, it is indeed quite difficult to determine what is and is not language-specific about the Japanese modal system relative to other languages. The purpose of this paper is to address this research question based on observations of the Japanese modal auxiliary system and through comparisons with English and Korean.

In this paper, we will first show (i) that epistemic modality was predominant in Old Japanese modal auxiliaries (e.g. *mu*, *meri*, *maji*), and (ii) that new periphrastic forms such as *kamoshirenai* (epistemic *may*) or *nakerebanaranai* (deontic *must*) began to emerge around the 17th century that made the distinction between deontic and epistemic modal auxiliaries more explicit. These facts lead us to conclude that (iii) a unidirectional development model from deontic to epistemic modality (Traugott 1989) is not straightforwardly applicable to Japanese, though "subjectification" is partly involved in the development. (Traugott and Dasher 2002, Onodera 2004). These points suggest that analyses based on the "unidirectionality" model are not appropriate and that grammaticalization is arguably not to be considered as a process governed by a set of unique rules, but as an epiphenomenon derived from several independent laws (Newmeyer 1998). Next, we compare Japanese and Korean modal auxiliaries and show that (iv) Korean, having a similar system of periphrastic modal auxiliaries, has also evolved in favor of a more explicit distinction between deontic and epistemic modalities similarly to Japanese. We will also suggest that (v) a cultural/typological factor (e.g. BE-Language vs. DO-Language) may contribute to the observed cross-linguistic similarity. Finally, based on these arguments, we will conclude by stressing the need to examine diachronic and cross-linguistic

data to investigate the nature of modal auxiliaries in Japanese.

This paper is organized as follows: Section 2 will first explain properties of grammaticalization in general and then compare developments of English and Japanese modal auxiliaries to show that the developmental mechanism proposed for English is simply not applicable to Japanese. Furthermore, we will argue that such differences lead us to choose a more restrictive definition of modality. Section 3 will compare characteristics of modal auxiliaries in Japanese and Korean to look into a possible cognitive typological factor which may have caused the parallel development in both languages. In section 4, we will summarize the discussion and stress the necessity of and usefulness in examining diachronic and cross-linguistic data in the study of Japanese modality.

2. Development of modal auxiliaries in English and Japanese

In this section, we will compare the developmental pathways of modal auxiliaries in English and Japanese and show that the developmental mechanism proposed for English is not straightforwardly applicable to Japanese. We will further argue that the process of subjectification, "a shift to a relatively abstract and subjective construal of the world in terms of language (Hopper and Traugott 2003:86)", is observable in both English and Japanese but in different ways. Before going into the discussion, we will first review the concept of grammaticalization and its characteristics, since development of modal auxiliaries in major European languages including English is usually regarded as an instance of the grammaticalization process. It is therefore important to examine whether the characteristics proposed for grammaticalization help explain different developmental pathways in English and Japanese.

2.1. Grammaticalization

Grammaticalization (also called *grammaticization*) is a process through which a lexical item takes on a grammatical meaning. It has been studied from both diachronic and synchronic perspectives. In the former perspective, grammaticalization is a subset of linguistic changes and in the latter perspective, it is seen as "primarily a syntactic, discourse pragmatic phenomenon, to be studied from the point of view of fluid patterns of language use" (Hopper and Traugott 1993: 2).

A typical example of grammaticalization in the diachronic sense is the development of an auxiliary *be going to* from a progressive form of the movement verb *go* in construction with a purposive infinitival complement. As pointed out by Hopper and Traugott (1993:2-4), this example illustrates morpho-syntactic and semantic-pragmatic consequences of

grammaticalization, such as pragmatic inference, reanalysis, phonological reduction, and abstraction of meaning:

(1) a. John *is going to* marry Mary.

   b. John *is going to* like Mary.

   c. John *is gonna* like Mary.

Grammaticalization begins in a very local context such as (1a), in which *go* co-occurs with a non-finite purposive complement, meaning something like *John is leaving/ traveling to marry Mary*. The change in meaning is triggered by pragmatic inference: if John is leaving in order to marry, the marriage will be in the future. As this inference is conventionalized, *[John is going [to marry Mary]]* is reanalyzed as *[John [is going to] marry Mary]*. This reanalysis also affects the verb following *be going to.* Consequently, the verbs which were originally incompatible with a purposive meaning have become compatible, as in (1b). As the expression *be going to* starts to be used quite often, it begins to be perceived as one word, as evidenced by its phonological reduction in (1c). Through this process, the original meaning of *go* has been mostly lost and more abstract and subjective meanings have been added.

Grammaticalization is also prevalent in the history of Japanese. For example, many of the complex postpositions such as ⁻*ni-tsuite*, -*wo-megutte*, both of which can be translated as "about/on", are derived from main verbs *tsuku* ("touch, arrive") and *meguru* ("go around") respectively. The former forms are thus considered to have evolved through grammaticalization.

(2) a. *Nebanebasuru mono-ga   te-ni   tsui-ta.*

   sticky   object-NOM   hand-LOC   get attached-PERF

   "Sticky objects got attached to my hand."

   b. *Watashitachi-wa   sono mondai ni-tsui-te   giron-shi-ta.*

    we   -TOP   that   issue   about   discussion-do-PERF

   "We discussed the issue."

   c. *Taro-wa   futatsu-no-tera-wo   megut-ta*

    Taro-TOP   two-GEN-temple-ACC   go-around-PERF

    "Taro visited two temples one after another."

   d. *Watashitachi-wa   sono mondai   wo-megut-te   tairitsu-shi-ta*.

      we-TOP   that   issue   about/on   opposition-do-PERF[1]

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1 The following abbreviations are used in this paper: ACC = accusative, ADV = adverb, ADN = adnominal, COMP = complementizer, CSfx = connective suffix, DAT = dative, FUT = future, GEN = genitive, IND = indicative mood, LOC = locative, NEG = negation, NOM = nominative, NOML = nominalizer, PERF = perfective, PRES = present, SCSfx = sentence concluding suffix, TOP = topic, UFS = upward formal speech level.

"We opposed each other on (lit. "centering around")　that issue."

In （2a）, *tsui-ta* is a complex of a main verb and a tense marker which signifies a type of physical attachment/movement of the sentential subject. In （2b）, *tsui-te,* the non-finite gerundive （or conjunctive） form of *tsuku*, functions as a complex postposition. The same is also true of （2c） and （2d）. *Megut-ta* in （2c） is a verb complex meaning "went around" but *megut-te* in （2d） functions as a postposition meaning "about/on".[2]

There are several criteria to judge whether a particular linguistic change can be categorized as grammaticalization. Ohori （2002: 182-187） gives five such criteria: （i） schematicity, （ii） closed-class, （iii） obligatoriness, （iv） boundness and （v） interaction. Schematicity (i) stands for the degree of abstractness of meaning. For example, a Japanese completive marker -*te-shimau* originates in the verb *shimau* meaning "put away". But in the former, the original meaning of putting away is lost and the grammatical meaning of completion is present （Ohori 2002:182）. The second criterion (ii) is whether a grammaticalized word is a closed-class item or not. *Te-shimau* is one of the closed class items expressing aspectuality in Japanese. A grammaticalized word is said to be obligatory (iii) when you cannot express a specific grammatical meaning any other way than using the word. A typical example is a French negator *pas*, which originally meant "step" and was optionally used to strengthen the force of negation. *Pas* has thus become an obligatory negative marker in Modern French. Boundness (iv) refers to the morpho-syntactic dependency of a morpheme on some other free morpheme. *Te-shimau* satisfies this property. It cannot be used as a matrix verb by itself, but has to be attached to a matrix verb as in *tabe-te-shimau* （"have eaten"）. Interaction (v) refers to an agreement or concord relationship holding between a grammatizalized item and other element（s） in the same sentence. Ohori （2002） notes that these five properties are manifested only in typical grammaticalization processes, but even if a particular process manifests only some of these properties, we can still regard it as a less typical instance of grammaticalization.

The development of modal auxiliaries only satisfies the properties (i) schematicity and (ii) "closed class"-hood of grammaticalization listed above. Deontic and epistemic meanings of modal auxiliaries can be viewed as more schematic relative to meanings expressed by original lexical verbs. Modal auxiliaries obviously form a closed-class. But modal auxiliaries are neither obligatory nor bound at least in English. Furthermore, concordance or agreement is not necessary. This suggests that the development of modal auxiliaries can be subsumed under grammaticalization, though it is not one of the most typical examples.

In the functionalist literature, grammaticalization is normally regarded as an

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2 For a detailed discussion on semantic change in the grammaticalization of verbs into postpositions, see Matsumoto (1998).

unidirectional process:

(3) What is common to most definitions of grammaticalization is, first, that it is conceived of as a process. Most frequently it has been claimed to form essentially a diachronic process.... A third characteristic that is implicit in these definitions and has frequently been mentioned as an intrinsic property of the process is that grammaticalization is unidirectional, that is, that it leads from a "less grammatical" to a "more grammatical" unit, but not vice-versa. (Heine, Claudi, and Hünemeyer 1991: 4)

Newmeyer (1998: 233-4) argues that the term "process" is not used here as a mere synonym for "phenomenon" but is used to mean "a process *of a particular type*, namely, one driven by a distinct set of principles *governing the phenomenon alone*" and he refers to such a phenomenon as " a distinct process".

This unidirectionality is considered to be applicable to all component changes in grammaticalization. For example, body part nouns, having undergone grammaticalization, can be employed to express points of orientation, but the reverse change from points of orientation to body parts is not likely (Heine, Claudi, and Hünemeyer 1991: 31). As we see below, in the case of modal auxiliaries, change from deontic to epistemic meanings is considered to be a specific instantiation of unidirectionality involved in grammaticalization.

Next, we will examine characteristics of English modal auxiliaries and see how their developmental process manifests unidirectionality.

2.2. English

English modal auxiliaries have several distinct meanings. For example, according to *Oxford Advanced Learner's Dictionary* (7th edition, 2005), *may* is "used to say that something is possible" as in *He may have missed the train* or "used to ask for or give permission" as in *May I come in*?. The same is true of *must*, which is "used to say that something is likely or logical as in *You must be hungry after all that walking* or "used to say that something is necessary or very important (sometimes involving a rule or a law)" as in *Car must not park in front of the entrance*. The former usages expressing possibility or likelihood are referred to as "epistemic" while the latter usages expressing permission or obligation are referred to as "deontic" or "root". The same string of words can express both epistemic and deontic meanings:

(4) a. John *must* be home by ten; Mother won't let him stay out any later.
    b. John *must* be home already; I see his coat.

In (4a) *must* is used to express obligation ascribed to John while *must* in (4b) expresses assessment of probability based on perceived evidence. Sweetser (1990) emphasizes the universality of such ambiguity:

(5) This ambiguity is not peculiar to English; indeed, there is an evident crosslinguistic tendency for lexical items to be ambiguous between these two sets of senses. Many unrelated languages (Indo-European, Semitic, Philippine, Dravidian, Mayan, and Finno-Ugric, among others) are alike in having some set of predicates which carry both the root and epistemic modal meanings as English modal verbs do.

Sweetser (1990: 49)

Some scholars argue that the two meanings as unrelated and thus *may* and *must* are just homophonous. [3] But most functionally-oriented linguists appear to accept the universality of unidirectional development from deontic to epistemic meanings. As pointed out in the literature, English modal auxiliaries are generally derived from main verbs. Also, epistemic meanings are considered to have originated from deontic meanings:

(6) There is strong historical, sociolinguistic, and psycholinguistic evidence for viewing the epistemic use of modals as an extension of a more basic root meaning, rather than viewing the root sense as an extension of the epistemic one, or both as sub-sets of some more general superordinate sense.   Sweetser (1990: 49-50)

(7) It is clear that the epistemic senses develop later than, and out of the agent-oriented senses. In fact, for the English modals, where the case is best documented, the epistemic uses do not become common until quite late.   Bybee et al. (1994: 195)

As a typical example, the modal auxiliary *must* is derived from the old English verb *motan,* which means "be obliged to" and its strong epistemic meaning does not appear until the 17th century (Traugott 1989: 42). Bybee and Pagliuca (1985: 66) went so far as to say that there is a "unidirectional evolution of agent-oriented modalities into epistemic modalities" and that "the opposite direction of development is not possible."

Two explanations have been presented for this directionality. One explanation is metaphorical extension. For example, Sweetser (1990) argues that the meaning of epistemic

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3 See Lakoff (1972) and Lyons (1977: 791).

necessity is derived from that of sociophysical force by metaphor. The other explanation is pragmatic strengthening, through which conversational implicature becomes conventionalized (Traugott 1989: 50-51). In either case, the unidirectional change from deontic to epistemic meaning is considered very robust and is held to apply not only to English but also to many other languages.

　　As we see below, however, this pattern is not observable in the development of Japanese auxiliaries.

2.3. Japanese

　　Contrary to what was stated in Section 2.2, languages like Japanese do not appear to follow the supposedly universal tendency for deontic meaning to derive epistemic meaning. As demonstrated by Horie (1997), it cannot be confirmed that Japanese modal auxiliaries evolved in a similar manner, in spite of the cross-linguistic generalization presented in Bybee and Pagliuca (1985) and Bybee et al. (1994). In Old Japanese, there were indeed several auxiliaries which encoded both epistemic and deontic meanings as shown in (8):

（8）	Deontic	Epistemic
-beshi	Obligation, Intention	Certainty
-mu	Intention	Probability
-mashi	Wish	Counterfactual conjecture

Horie（1997: 440）

Although this situation is superficially similar to the one manifested in Modern English, it is very difficult to decide whether the epistemic meaning was derived from the deontic meaning or vice versa; both deontic and epistemic senses had already been present by the time the oldest extant written documents were made (Horie 1997: 441). In fact, the epistemic meanings seem to have been fairly dominant in the overall system of Old Japanese as explicated by scholars of Old Japanese (e.g. Takayama (2002: 11), Kurotaki (2005: 128)). Based on these facts, it is quite difficult to argue that Japanese modal auxiliaries first developed deontic meanings and then later epistemic meanings were derived. [4]

　　Indeed, Modal auxiliaries in Modern Japanese are quite different from those in Old Japanese. We can point out two main characteristics of their diachronic development. First, only a few Old Japanese auxiliaries survived into Modern Japanese. For example, *meri* and *nari*,

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4 Kurotaki (2005) argues that even in Modern Japanese epistemic meanings are basic and deontic meanings are derived from them.

which primarily expressed "evidential" meanings in Old Japanese, have not survived in Modern Japanese. Those that survived, such as *beki-da* (<-*beshi*), underwent semantic narrowing (Kondo 2002: 479). In Modern Japanese, *beki-da* is used mostly as a deontic modal expression and more often *beki* is used as a nominal-modifier rather than as a sentential predicate (e.g. *suru-beki-koto*(DO-beki-THING), which means "something to do"). As another example, *-yoo* and *-daroo* (<-*mu*) mostly function as sentence-final predicates and are rarely used to modify nouns. (Kondo 2002: 479).

The second characteristic is the emergence of periphrastic modal auxiliaries. From around the 17th century, new periphrastic modal auxiliaries began to appear as if to complement decreasing Old Japanese modal auxiliaries. Although English also has periphrastic modal auxiliaries such as *have to* and *be going to*, the number is quite small and they are usually ambiguous similar to non-periphrastic auxiliaries. The following list, based on Kitahara et al. (2000), shows the earliest dates of attestation of periphrastic modal auxiliaries:

> (9) *nakere-ba-nara-nai* (obligation): 1638
> *ni-chigai-nai* (certainty): 1734
> *temo-ii* (permission): 1833
> *kamo-shire-nai* (probability): around the end of 16th century

Consequently, in Modern Japanese, there are few instances of modal auxiliaries exhibiting deontic-epistemic ambiguity, unlike the case in English.[5] Furthermore, in contrast to non-periphrastic auxiliaries in English, deontic and epistemic periphrastic auxiliaries in Japanese can co-occur in the same clause:

> （10）*Kare-wa   asu   gakko-ni   ika-**nakere-ba naranai***
>   he- Top tomorrow   school-to   go- must
>   ***ka mo shirenai**.*
>   may
>   "He may have to go to school tomorrow."

Absence of a clear indication of unidirectional development from deontic to epistemic modality in Japanese, along with the seemingly predominant nature of epistemic modality in

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5 *Beki-da*, which derived from the potentially ambiguous *beshi* in Old Japanese, preserves its ambiguity in some context. For example, *kuru beki hito* either means "a person who (morally) should come" or "a person who is (epistemically) supposed to come". But we cannot find periphrastic modal auxiliaries which show such ambiguity.

Old Japanese, casts doubts on the validity of the hypothesis of unidirectional semantic change from deontic to epistemic meanings. Furthermore, the emergence of periphrastic modal auxiliaries has made deontic and epistemic modal auxiliaries virtually distinct. Thus, the absence of systematic ambiguity in modal meaning in Modern Japanese also presents a contrast with the patterns observed in English and other languages.

2.4. Implications for the Definition of Modality

As seen in 2.2., the change from deontic to epistemic meanings is not observable in Japanese modal auxiliaries. Rather, both deontic and epistemic meanings apparently coexisted in Old Japanese auxiliaries and later became distinct in the course of development, partly due to the emergence of periphrastic modal expressions.

It is important to explain why Japanese modal auxiliaries do not show the "unidirectional" development observed in English and many other languages since this unidirectionality is considered to be almost exceptionless by some scholars (see (6) and (7) above). We assume the unidirectionality in this sense is just a result of some separate developmental factors and not an independent principle of linguistic change. Japanese and English are thus governed by different laws of development due in part to cross-linguistic differences such as source syntactic categories of modal auxiliaries. Therefore, Japanese modal auxiliaries are not an exception; they rather conform to their own laws of development different from those of English and many other languages.

The unidirectional shift from deontic to epistemic meanings is usually characterized by force dynamics. Based on Talmy (1988), Sweetser (1990) proposes that deontic meanings are extended to epistemic meanings through a metaphorical process whereby the logic of the external (sociophysical) world is applied to that of the internal mental world:

(11) Thus, we view our reasoning processes as being subject to compulsions, obligations, and other modalities, just as our real-world actions are subject to modalities of the same sort.   Sweetser (1990: 50)

To be more specific, the deontic *may* encodes "an absent potential barrier in the sociophysical world" while the meaning of epistemic *may* would be that "there is no barrier to the speaker᾿s process of reasoning from the available premises to the conclusion expressed in the sentence qualified by *may* (Sweetser 1990:59)". The fact that *may* and *must* are potentially ambiguous leads to another possibility that the modal auxiliaries have some core meaning, from

which deontic and epistemic meanings are derived.[6] However, Sweetser (1990) does not endorse the view that English modal auxiliaries have a single "core" meaning, which is interpreted deontically or epistemically according to a specific pragmatic context, because the metaphorical mapping seems fairly conventional.

On the other hand, as pointed out by Onoe (2001: 459), force dynamics as proposed by Talmy (1988) and Sweetser (1990) is not involved in the development of Japanese modal auxiliaries because modal auxiliaries in Modern Japanese, such as *-u* and *-yoo* did not derive from matrix verbs. In fact, they derived from Old Japanese *-mu*, which was an uninflected modal auxiliary/suffix itself. *-U* was derived from *-mu* through the dropping of a consonant and *-yoo* was then derived from *-u* by vowel change. Therefore, it is difficult to consider that force dynamic metaphorical mapping is involved in the development of Japanese modal auxiliaries. Then, why did some of the Old Japanese modal auxiliaries show ambiguity?

To answer this question, we have to return to the problems involved in the definition of modality. We must point out that the deontic-to-epistemic shift is not the only logical possibility to explain the deontic-epistemic polysemy in the modal auxiliary system. The alternative possibility is to postulate a schematic meaning covering both deontic and epistemic meanings. One piece of evidence that supports this view is the semantic property of Old Japanese *-mu*. *-Mu* had a wide variety of meanings such as epistemic conjecture, volition, order, request, and hypothesis. If *-mu* had a schematic meaning of irrealis, it is natural that the word had a set of meanings related to unrealized events (Onoe 2001 :457).[7] If our view is on the right track, then it can lend support to the view of modality as expression of the realis/irrealis (or factuality) distinction adopted in Narrog (2005) (cf. Palmer 2001). Narrog (2005: 168) points out that linguistic modality has been defined in three different ways:

(12) the expression of the attitude of the speaker or the expression of subjectivity and the speaker's opinions and emotions (e.g. Lyons 1968, 1977; Palmer 1986; Bybee et al. 1994; Nitta 1989, 2000 for Japanese)

(13) something including all linguistic expression outside the proposition (e.g. Fillmore, 1968)

(14) the expression of realis vs. irrealis or factuality distinctions (e.g. Givón, 1995; Palmer, 1998, 2001; Dietrich, 1992 for German; Narrog, 2002; Nomura, 2003 for Japanese)

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6 Chung and Timberlake (1985) entertain this view with respect to English.
7 Based on synchronic data, Masuoka (2007) also claims that the realis/ irrealis contrast is important in characterizing Japanese epistemic and deontic modality.

The definitions (12) and (13), including the synthesis of these two, are quite prominent among Japanese linguists, as described in Narrog (2005). This is partly due to the Japanese linguistic notion *chinjutsu* (what makes a sentence function as a sentence). These definitions led Japanese linguists to deal with a wide variety of forms and functions under the label of modality such as negation, tense and topic-focus distinction. Furthermore, although meanings expressed by modal auxiliaries and sentence final particles are different in kind, both of them are subsumed under the rubric of modality. Thus, in spite of the abundance of studies on modality in Japanese linguistics, it is quite difficult to compare their research findings directly with the observations on modality in other languages. This divergence prompts us to reconsider the definition of modality which has been employed in Japanese linguistics from the viewpoint of cross-linguistic compatibility.

As seen in 2.3, some modal auxiliaries in Old Japanese were ambiguous between deontic and epistemic meanings similar to those in English but no diachronic development from deontic to epistemic meanings has been ostensibly observed in the former. Furthermore, in the Old Japanese modal auxiliary system, epistemic meanings were arguably predominant. We can explain this situation by hypothesizing that modal auxiliaries themselves first had a schematic meaning which signified irrealis, and it took on epistemic or deontic meaning depending on a given linguistic context. This view accords with modality as defined in (14). Although the developmental patterns in English and Japanese are different, this difference can be interpreted as different manifestations of the development of schematic "irrealis" meaning in each language. In English, the force dynamic property of main verbs has caused deontic meanings to be primary and epistemic meanings to be derived. In Japanese, in contrast, both deontic and epistemic meanings were equi-distant from the irrealis meaning due to the absence of force dynamic property because Japanese modal auxiliaries have been a part of verbal inflection and do not express "force" as defined by Talmy (1988) or Sweetser (1990).

In fact, the developmental pathway of English modal auxiliary system shows that realis/irrealis distinction was also relevant in English. As pointed out in Harsh (1968), a subjunctive mood in English has become less frequently used and has been replaced by modal auxiliary verbs. The core meaning of the subjunctive mood in English was irrealis, just like that of Old Japanese -*mu*:

(15)   Like the term imperative, the term subjunctive refers to a particular verb form.
       In Old English, special verb forms existed to communicate non-facts, e.g., wants, hopes, and hypothetical situations. The subjunctive is somewhat weak in Modern

English, but there are speakers who use it routinely.   Berk (1999: 149-150)

In Japanese, -*mu* was replaced by -*u* and -*yoo*, which are also a part of verbal inflection and thus can be regarded as mood markers, while in English, the subjunctive mood weakened and was mostly replaced by auxiliary verbs, which were derived from main verbs and carried with them force dynamic properties.

　　To summarize, one of the main differences between English and Japanese modal auxiliaries is the difference in terms of source categories. English modal auxiliaries derived from main verbs while Japanese modal auxiliaries have been a part of verbal inflections. That is why force dynamic metaphorical extension is observable in English but not in Japanese. The Japanese modal auxiliary system is thus not an exception in relation to the unidirectional deontic-to-epistemic development. Unless force dynamic extension is involved, no clear development from deontic to epistemic meanings in modal auxiliaries can be observed. Furthermore, the differential developmental pathways lend support to the view of modality as the expression of factuality distinction. If we interpret modality this way, we can regard both Japanese and English modal auxiliary systems as different manifestations of the realis/irrealis distinction and it will not be necessary to regard the English system as the norm and the Japanese system as an exception. Developmental pathways of respective languages also show that this hypothesis is on the right track.

　　Although we cannot observe the development from deontic to epistemic meanings, we can observe manifestations of subjectification in some parts of the Japanese modal auxiliary system, although it is manifested in a different way from that in English. Next, we will examine how subjectification manifests itself in the Japanese modal auxiliary system.

2.5. Subjectification in the Japanese modal auxiliary system

　　Subjectification is a term whose definition varies between researchers. In Cognitive Grammar, for example, subjectification is defined as "a process whereby some feature of a designated situation gradually drifts from the profile and comes to occupy the ground" (Taylor 2002:408):

（16）a. I *can* solve this problem.
　　　b. This problem *can* be solved.   Taylor（2002: 408）

In（16a）, the ability meaning encoded by *can* is ostensibly ascribed to the first person subject. However, in（16b）, the locus of ability cannot be ascribed to the subject, even though the

sentence can be interpreted to express some property concerning the problem. Therefore, the locus of ability is backgrounded and is ascribed to the implicit speaker.

In this paper, we adopt the view that subjectification is "a shift to a relatively abstract and subjective construal of the world in terms of language" (Hopper and Traugott 2003: 86). One example of subjectification given by Hopper and Traugott (2003) is the semantic shift of *while*. *While* originally encoded simultaneity ("at the same time that") in Old English (OE) as in the OE example (17a). Conversational inferences brought about the semantic shift from simultaneity (of two situations) to cause/reason for a situation as in the Middle English (ME) example (17b). In other words, *while* acquired the sense of reason or cause for a situation expressed in the main clause. Later on, a surprise reading was ascribed to *while* by a different inferential process as in the Modern English (ModE) example (17c), which ultimately led to its concessive meaning.

(17) a. &   wicode   þær þa   *hwile*   þe   man   þa   burg   worhte
       and   lived   there that:DAT time:DAT   that   one   that fortress worked-on
       &   getimbrode.
       and   built
    "And camped there at the time that/while the fortress was worked on and built."

    b. Thar   mycht succeed na female,
       Quhill foundyn mycht be ony male.
       "No female was able to succeed while any male could be found."

    c. *Whill* others aime at greatnes boght with blod,
       Not to bee great thou strves, bot to bee good.
       "While others aim at greatness that is bought with blood, you strive to be not
         great but good."

                                                Hopper and Traugott (2003: 90-91)

Through this whole process, the meaning of *while* has become abstract and subjective in that it has come to signify the speaker's assessment of the situation. Subjectification in this sense is undoubtedly suitable to describe the deontic-to-epistemic semantic shift in English modal auxiliaries as discussed by Sweetser (1990). We will argue below that even though the developmental pathway of Japanese modal auxiliaries is different from that in English, it nevertheless manifests some features of subjectification.

As seen in 2.3., it is obvious that periphrastic modal auxiliaries contributed to the

disambiguation of the modal auxiliary system in Japanese. However, they served not only to disambiguate the system, but also to restructure the semantic organization of the modal auxiliaries, such that the Modern Japanese auxiliary *u/-yoo*, deriving from the Old Japanese modal auxiliary *mu*, for instance, was assigned an ostensibly speaker-oriented "subjective" meaning. To illustrate this, we will now examine how morpho-syntactic environments, which enabled modal auxiliaries to occur, changed from Old Japanese to Modern Japanese:

(18)   Co-occurrence Restrictions of Old Japanese Modal Auxiliaries

			Adverbial Clause			
	Question	Negation	Time	If	Reason	Antithesis
beshi	○	○	○	○	○	○
mu	○	×	×	×	×	○

based on Takayama (2002: 50)

Table (18) shows that in Old Japanese *beshi* can occur in yes-no questions, in the scope of negation, and in adverbial clauses expressing time, hypothetical situations, reason, and antithesis, while *mu* can occur only in yes-no questions and in an adverbial clause expressing antithesis. This contrast indicates that the modal meaning of *beshi* is more objective than that of *mu* because it can be questioned or negated, and be used in various kinds of adverbial clauses including non-assertive ones, while the modality of *mu* cannot be questioned or expressed in non-assertive contexts.

We will now compare the co-occurrence restrictions of Old Japanese modal auxiliaries with those of Modern Japanese:

(19) Co-occurrence Restrictions of Modern Japanese Modal Auxiliaries

			Adverbial Clause			
					Reason		
	Q	Neg.	Time	If	*-node*	*-kara*	Adversative
beki (obligation)(<*beshi*)	○	○	×	○	○	○	○
te-mo-ii (permission)	○	○	×	○	○	○	○
ka-mo-shire-nai(possibility)	×	×	×	×	○	○	○
ni-chigai-nai (certainty)	×	×	×	×	○	○	○
daroo (prediction)(<*mu*)	×	×	×	×	×	○	○
yoo (volition) (<*mu*)	×	×	×	×	×	×	×

Takayama（2002: 49, partially modified）

Several remarkable differences emerge out of this comparison. First, *yoo*, which is the deontic descendant of Old Japanese *mu* has become more subjective in the sense that it cannot occur in any non-assertive context. But the status of the epistemic modal descendant of *mu*, namely,

daroo, is not clear because it can occur in a certain type of reason clause. Takayama (2002) points out that *daroo* cannot be regarded as a pure descendant of *mu*. Secondly, periphrastic forms such as *ka-mo-shirenai* and *ni-chigai-nai* are less subjective than *yoo* or *daroo* because they can be used in reason clauses. We can interpret the fact this way: While *mu* has become more subjective, in accordance with the general tendency pointed out by Traugott (1989) the newly emerging periphrastic auxiliaries served to restructure the semantic organization of modal auxiliaries as noted earlier, in addition to serving to disambiguate the system as a whole.

Thus, Japanese modal auxiliaries differ from English ones in that the unidirectional deontic-to-epistemic shift is not observable in their development. However, some (if not all) Japanese modal auxiliaries manifest subjectification. This indicates that grammaticalization is not a process governed by coherent laws of development, but is an epiphenomenon caused by an interaction of independent factors. Subjectification is one of these factors. This view accords with that advocated in Newmeyer (1998):

(20)   Grammaticalization, as I will argue, is nothing more than a label for the conjunction of certain types of independently occurring linguistic changes.

Newmeyer (1998: 237)

In this section, we first observed that the developmental pathways of modal auxiliaries differ in English and Japanese. We then argued that it is therefore not appropriate to apply the model of unidirectional semantic shift to Japanese modal auxiliaries, though the model has successfully explained the semantic change of modal auxiliaries in English and many other languages. Rather, if we interpret modality as encoding the realis vs. irrealis distinction, we can take the Old Japanese modal auxiliary system to inherently instantiate irrealis meaning. We also argued that the process of subjectification was involved in the development of Japanese modal auxiliaries.

In the next section, we will compare the Japanese modal auxiliary system with that of Korean and then examine what factors have contributed to the disambiguation process in the Japanese modal auxiliary system.

3. Factors Contributing to the Parallel Development of Modal Auxiliaries in Japanese and Korean

In this section, we will first point out that Korean modal auxiliaries are similar to their Japanese counterparts in important respects. We will then examine a cultural/typological factor contributing to the similarity.

3.1. Parallelism of Modal Auxiliary Systems

 Korean shows remarkable similarity to Japanese in the coding of modality. Horie (2003) points out two major similarities between the two languages: (i) auxiliaries encoding epistemic modality are formally distinguishable from those encoding deontic modality, and (ii) the majority of modal auxiliaries are periphrastic constructions. The inventory of Korean modal auxiliaries on the basis of which Horie (2003) proposes these generalizations is as follows:

（21）The Inventory of Korean Modal Auxiliaries

Epistemic modality

[Japanese]	
Form	Meaning
-ka mo sirenai	Possibility (weak)
-ni tigai nai	Possibility (strong)
-hazu da	probability
-daroo	probability

[Korean]	
Form	Meaning
-nun/n/l ci moluta	possibility (weak)
-nun/n/l kes kathta	possibility (strong)
-nun/n/l tus hata	possibility (strong)
-nun/n/l kes-ita	probability

Deontic modality

[Japanese]	
Form	Meaning
-(r)eru, -koto ga dekiru	ability
-nakereba nara nai	obligation
-beki da	obligation
-te mo ii	permission
-(r)enai, koto ga dekinai	negation of ability

-te wa ikenai / naranai	negation of permission
-tai	desire

[Korean]	
Form	Meaning
-l swu issta	ability
-to toyta / cohta	permission
-ya hata / toyta	obligation
-ci anh-umyen an toyta	obligation
-l swu epsta, *mo + Verb*	negation of ability
-myen an toyta	negation of permission negation of obligation
-ko siphta	desire

<div align="right">Horie (2003:208, partially modified)</div>

Concerning the first point, (i.e. (i) auxiliaries encoding epistemic modality are formally distinct from those encoding deontic modality), Wymann (1996) argues that Korean does have modal auxiliaries showing deontic-epistemic ambiguity as in (22), but that they are rather exceptional:

(22)　*te　　hwullyungha-n　　　tayhanminkwuk-i*
　　more　be:excellent-ADN:PRES　Republic of Korea-NOM

　　toy-e　　　seykye-e　pichna-ke
　　become-CSfx world-LOC be:outstanding-ADV

　　　toyl　　　　　　　kes-ip-ni-ta
　　become-ADN:FUT　　　thing-UFS-IND-SCSfx

"An even more excellent Republic of Korea *will* arise and shine forth in the world." (epistemic)
"An even more excellent ROK *must* arise and shine forth in the world." (deontic)

<div align="right">Wymann (1996: 116)</div>

In fact, our informants rejected the deontic reading of（22）, which supports the claim that such ambiguity is quite rare, if it exists at all.

　　Fujii (2000) also argues that such ambiguity in modal meaning exists in Japanese:

(23)　*Go-kai*　　*no*　*ano heya-ni*　*akari-ga*　*tsuite-ire-ba,*
　　　fifth-floor GEN that room-LOC light-NOM　turn-on-exist-if

　　　moo　　　*kaet-te*　　　　　*i-**nakereba-naranai***
　　already　return-PERF:CONJ　exist-must

　"If the light of (the room on) the fifth floor is turned on, (he/she) *must* be already back"

<div align="right">Fujii (2000: 59)</div>

Fujii (2000) notes that the modal auxiliary *nakereba naranai* in (23), which is noramally interpreted as deontic, can be interpreted as epistemic since the first half of the sentence specifies the evidence for epistemic judgment. This judgment seems quite dubious to us. But even if this observation is correct, such cases are surely much less frequent than in English or other European languages.

　　Concerning the second point (i.e. (ii) the majority of modal auxiliaries being periphrastic constructions), there are some cases, both in Japanese and Korean, where a less periphrastic modal expression coexists with a more periphrastic one expressing the same kind of modality. But even in such cases a slight semantic difference exists between these expressions, as illustrated by pairs of "synthetic" deontic auxiliaries of obligation in Japanese and Korean (24a, 25a) and their more periphrastic counterparts (24b, 25b):

(24)　a. *Kono*　*tegami-o*　　*yomu-**beki**-da*
　　　　　this　letter-OBJ　read-must-DECL

　　　b. *Kono tegami-o*　*yoma-**nakereba-naranai***
　　　　　this　letter-OBJ　read-must-DECL
　　　　　"(He) must read this letter."

(25) a.　*i-phyenci-lul*　*ilk-**e-ya-ha**-pnita*
　　　　　this letter-OBJ read-must-POL:DECL

　　　b.　*i-phyenci-lul*　　*ilk-**ci-anh-umyon an toy**-pnita*
　　　　　this letter-OBJ　read-CONJ-must-DECL:POL
　　　　　"(He) must read this letter"

(24a) typically expresses a more subjective attitude than (24b). For example, if a speaker wants to urge someone to read the letter, s/he will use (24a) (Niwa 1991). On the other hand, if some external factor compels someone to read the letter, and the speaker merely reports the situation, s/he will use (24b). Thus, (24a) conveys stronger deontic modal meaning than (24b).[8] The same

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8　Kuno (1983) points out that a similar difference exists between *-(r)enai* and *-koto ga dekinai*,

is also true for (25). According to Wymann (1996:108-9), *ci-anh-umyon an toy-ta* is far less frequent and judged to "encode a lesser degree of stringency of obligation" than *e-ya-ha-ta.* Our informants' judgments on (24) also accord with Wymann's observation. The correctness of this observation is confirmed by (26), where one is appropriate while the other is not:

(26) a . ??Nihon-de-wa kuruma-wa hidari-gawa-wo tooru-***bekida***..

   Japan-LOC-TOP car-TOP left-side-ACC go- *must*.

  b. Nihon-de-wa kuruma-wa hidari-gawa-wo toora-***nakerebanaranai.***

   Japan-LOC-TOP car-TOP left-side-ACC go- *have to*

    "In Japan, cars have to run on the left lane."

(26a) sounds odd because traffic regulations are usually not something a person has control over, while (26b) sounds natural because traffic regulations are naturally regarded as factors external to the speaker or the immediate speech situation. Korean sentences corresponding (26a) and (26b) show the same contrast, although the difference is not as clear as in Japanese.

As stated in 2.3, Japanese periphrastic modal auxiliaries such as *nakere-ba nara-nai* are historically newer than their less periphrastic counterparts such as *beki-da*. The differing degrees of grammaticalization between the two groups of auxiliaries is reflected in their differential degrees of formal reduction and the accompanying semantic differences, in line with principles of grammaticalization proposed by Bybee et al. (1994). Since similar contrasts exist in Korean, as illustrated in (25), it is not unreasonable to assume that more periphrastic modal auxiliaries in Korean such as *ci-anh-umyon an toy-ta* are historically newer than less periphrastic modal auxiliaries such as *e-ya-ha-ta.*[9]

Thus, the fact that Korean and Japanese share periphrastic modal auxiliaries such as

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which both express negation of ability *:*
  (i) *Shibafu-ni-wa* *hai-renai*
    lawn-to-TOP enter-not:able
  (ii) *Shibafu-ni-wa* *hairu-koto-ga-dekinai*
    lawn-to-TOP enter-COMP-NOM-not:able
    "You cannot enter the lawn."
Kuno (1983: 151) notes that (ii) is more natural as a notice sign because it implies that the prohibition is imposed by some external authority while (i) indicates lack of ability of someone who might try to enter the lawn.
9 Similar contrasts also exist in English. For example, *must* and *have to* have different meanings in sentences (i) and (ii):
  (i) My daughter *must* come back by ten.
  (ii) My daughter *has to* come back by ten.
In (i), the source of obligation is most likely the speaker. On the other hand, (ii) implies that some external factors, such as dormitory regulations, oblige the daughter to come back by that

(24b) and (25b) is very interesting for the following reasons. First, although the development of the Korean language is not as well-documented as that of Japanese, given the similar inventories of modal expressions in both languages, it is not unreasonable to assume that modal auxiliaries in both languages underwent similar developmental pathways. If that is the case, the Korean and Japanese data can be used to show (i) that the developmental pathway of modal expressions is more variable than has been envisaged by previous typological work on grammaticalization such as Bybee et al. (1994), and (ii) that it is therefore necessary to re-examine the universalist claim of unidirectional semantic change in the development of modal auxiliaries. Secondly, the remarkable similarities in the inventory of the periphrastic modal expressions could be attributed to some common cultural/typological factor(s) between the two linguistic communities.

One possible venue of the commonality is the influence exerted by Classical Chinese on the lexico-grammatical structures of Japanese and Korean. As pointed out by Yamada (1935), numerous expressions in Japanese, such as *sude-ni* ("already"), *iwa-yuru* ("so-called"), and *ie-domo* ("although") are known to have evolved from Classical Chinese through translation. Old Korean is known to have developed a similar way of translating from Classical Chinese, as evidenced by the excavation of Old Korean historical relics. It is thus quite probable that the similar ways of translating Classical Chinese led to parallel developments of periphrastic modal expressions in both Korean and Japanese. If this conjecture is proven to be correct, it can help shed light on such issues as how socio-cultural factors can influence and constrain the way grammaticalization proceeds in a linguistic community, and why Japanese and Korean have a lot of periphrastic modal expressions in common. [10]

But we have yet to address precisely why Japanese and Korean elected to develop periphrastic expressions to disambiguate older synthetic/polysemous modal expressions, rather than supplementing new modal expressions or extending the use of old synthetic/polysemous modal expressions. We will address this question from a cultural/typological perspective in the following subsection.

3.2. Cultural/Typological Factor

In this subsection, we will argue that periphrastic modal expressions in Japanese and Korean

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time. In this case, too, the periphrastic auxiliary *have to* is objective while *must* is subjective.

10   Yong-key Kim-Renaud (p.c.) suggests that politeness strategies common in Japanese and Korean may be a factor influencing the prevalence of periphrastic modal expressions in both langu ages. Furthermore, she adds that this factor may also explain why the two languages generally have a lot of periphrastic verbal expressions. This is an interesting research topic which needs further investigation.

are closely related to the cultural and typological characteristics of these languages.

3.2.1. "DO-language" vs. "BECOME"-language

Ikegami (1991:290) points out that there is a contrast between "a language which focuses on "the human being (especially, one acting as agent)" and "a language which tends to suppress the notion of "the human being (especially, one acting as agent)." He notes that English belongs to the former type, while Japanese belongs to the latter. Manifestations of this contrast are observable in various aspects of the languages including two types of semantic contrasts, i.e. the HAVE/BE contrast and the DO/BECOME contrast.

English is known as a HAVE-language, in which possession is expressed using a special verb HAVE. In contrast, Japanese is a BE-language, in which possession can be expressed using a locative expression with a copulative verb:

(27) a. John has two children.

  b. *John ni wa kodomo ga futari iru*
   John LOC TOP child NOM two be

    "John has two children."   Ikegami (1991: 299)

According to Ikegami (1991), in languages which preferentially encode human agency in the grammatical structure (e.g. subject), possession is naturally expressed by focusing on the possessor, which is in most cases a person. But in languages which tend to suppress linguistic coding of agency, possession is naturally expressed by asserting the existence of the thing possessed. We must point out here that Korean also belongs to the BE-languages:

(28) *Na- ege- nun ai-ga tumyong issta*
    I LOC topic child-NOM two be:DECL
      "I have two children."

In both Japanese and Korean, a possessing agent is expressed with a locative marker, thus indicating its de-focused status.

Another characteristic of human-focusing languages is that they favor structures for higher transitivity, with the most typical one being the transitive construction, while human-defocusing languages favor grammatical structures encoding lower transitivity, with the most typical one being the intransitive construction. Thus English favors a scheme of representation "someone DOing something" while Japanese favors a representation in terms of "BECOMing"

(Ikegami 1991: 319). Such a difference manifests itself in the following example:

(29) *Watakushitachi*   *wa* *konotabi kekkonsuru*   *koto*

      we   topic now   marry   NOML

    ni   *nari*   *mashita.*

    to   become   polite-past

  "(It) has become (that is, come to pass) that we are now getting married."

<div align="right">Ikegami (1991: 316)</div>

The use of *naru* ("become") implies "the event in question is a natural (and almost inevitable) consequence beyond the control of the two persons involved" (Ikegami 1991: 317). In this respect, Korean also favors "BECOMing" expression as exemplified below:

(30) *Uli*   *yuwol-e kyolhonha-ge toe-oss-sumnida*

    we   June-LOC   marry   to become-past DECL:POL

    "(It) has become that we are getting married in June."

We will see that this tendency to defocus human agency has arguably given rise to a wealth of periphrastic modal auxiliaries. [11][12]

3.2.2. Periphrastic Modal Expressions in BECOME-languages

We can see the same kind of contrast as seen above in the area of modal expressions. Namely, while English has basically modal expressions based on "DOing" expression, Korean and Japanese tend to have modal expressions based on "BECOMing" expression and this causes these languages to have developed periphrastic modal auxiliaries.

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11 We must point out that there is another important factor responsible for the emergence of periphrastic auxiliaries: the Japanese language as a whole underwent a morpho-syntactic change characterizable as that from synthesis to periphrasis in the modern period (Tanaka 2001: 585-588). For example, *-mai*, which is potentially ambiguous between the sense of negative probability and that of negative intention, has become rarely used and is replaced by *-nai-daroo* or *-nai-rashii* (negative probability) and *-nai-tsumori-da* or *-wa-yosoo* (negative intention) (Tanaka 2001: 587). Investigation into the interplay of various linguistic and non-linguistic factors inducing this change is on our next agenda.

12 We must note that the tendency to supplement the "synthetic" modal auxiliary system with periphrastic ones is manifested also in English and its related languages. For example, *be supposed to* in Modern English encodes the meaning which was previously encoded by *should* or *can*. But the number of periphrastic modal auxiliaries relative to that of synthetic modal auxiliaries is much greater in Japanese and Korean compared to English, suggesting that the commonly observed tendency is attributable to some commonality in cultural/typological profiles between the former group of languages.

As pointed out in Ikegami (1991: 302) epistemic modal expressions in Japanese have a form as in (31b), while English epistemic modal auxiliaries have a form as in (31a):

(31) a. John *may/must* be ill in bed.
    b. It is *possible/certain* that John is ill in bed.

Ikegami (1991) maintains that this is a reflection of person-orientation in English and event-orientation (and person-backgrounding) in Japanese. Notice here that the construction in (31b) corresponds to periphrastic modal expressions in Japanese and Korean. These languages express epistemic modality by defocusing the agent and focusing the event as a whole.

As for deontic modal expressions, Araki（1985）and Ando（1986）note that deontic modal expressions in Japanese have the characteristic of "BECOMing" expressions:

(32)   *Kimi wa   ima   ika-nakutewa   nara-nai.*
      you TOP   now   go-NEG-if   become-not
        "If you do not go, (it) will not become"   Ando (1986: 260)

(32) shows a typical way of expressing deontic modality in Japanese. This is a round-about expression (or circumlocution) as is clear in the literal English translation. Deontic modality is expressed with negation using *naru*(become), thus asserting that your not going can lead to a unfavorable result. The same is also true of the deontic modal expression *chi-an umyon-an-doe-da.*

In this connection, Akatsuka (1998), based on Akatsuka and Clancy (1993) and Clancy, Akatsuka, and Strauss (1997), points out that Japanese and Korean children acquire conditional clauses earlier than American children because conditional clauses in Japanese and Korean are more frequent as an expression of deontic modality.

Thus it is clear that modal expressions in Japanese and Korean reflect the overall tendency in these languages to favor human-defocusing and "BECOMing" expressions. While the modal system was developing in the direction of disambiguation, this overall tendency arguably affected the manner in which newer modal systems were constructed.

Typological/cultural explanations set out in this section needs further refinement and substantial experiential evidence. But at least it suggests a possible account for the factors behind the attested differences in terms of developmental pathways between both Japanese and Korean, and English and many other languages.

4. Conclusion.

In this paper, we compared the developmental pathways of English and Japanese modal auxiliaries, and went on to show the developmental mechanism proposed for English cannot be applied to Japanese since a semantic shift from deontic to epistemic modalities is not observable in Japanese. Rather, viewing modality as the expression of realis vs. irrealis distinction, as was evident in Old Japanese modal auxiliary like -*mu* and in the English subjunctive mood, the developmental pathway of the Japanese modal auxiliaries is characterized as one instantiation of how the schematic irrealis meaning develops more substantial deontic and epistemic meanings while the developmental pathway of English modal auxiliaries is just another instantiation. Furthermore, we have argued the similarity between modal auxiliaries in Japanese and Korean may have been caused by common cultural/typological factors.

Through our cross-linguistic and diachronic analyses, it has become clear that the Japanese modal auxiliary system shares some common features with English, while consistently exhibiting overall similarity with Korean. Research findings gained in this study caution against blindly applying the account of "unidirectional" development from deontic to epistemic modalities and underscore the importance of cross-linguistic and diachronic perspectives in evaluating the semantic properties of modal auxiliaries synchronically.

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